Usenet Newsgroup Archive: rec.radio.amateur.antenna

2001-04 - 2001-05

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Date span: 2001-04-01 through 2001-05-31

Source text: rec.radio.amateur.antenna.txt

Source item: https://archive.org/details/usenet-rec

Messages included in this PDF: 5,400

Message records with no readable body available in the source text: 6

Messages are presented chronologically by archived date.

Binary or encoded payloads are not printed as blocks of encoded text; a placeholder appears where such material was detected. The original source text is unchanged.

1. Re: GAP antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 00:12:50 UTC
From: Ken Bessler <kg0wx@yahoo.com>
Message-ID: <3AC67282.6E8@yahoo.com>
Source record: 166949

Willaim Ellis wrote:
>
> Jut received some literature on the GAP brand antennae.
> They sound like they do well ..Anyone out there using
> them? Would appreciate your comments.
>
> Thanks,
>
> Bill
> b345s249@home.com

Bill, et all,

You might want to go to http://www.eham.net and check
out the reviews they have. You can post a review also.

73's

--

Ken Bessler, Ham Callsign KGï¿½WX
Design Services Company
http://kg0wx.users.50megs.com/
Smoke free since 9/30/96!
ICQ# 63379650

2. Re: Imaginary Resistance... Dissipationless Resistance... and all that....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 00:33:02 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9a5svl$5af$1@slb1.atl.mindspring.net>
Source record: 166950

Donaly:

Or indeed a frequency-independent capacitance in disguise.

Or perhaps it may be that old standby the Frequency Dependent Negative Resistance or FDNR. FDNR's were quite popular back in the late 60's and early 70's. The greatest proponent of FDNR's was Dr. Len Bruton of the University of Calgary. He proposed their use in low sensitivity active filters and proved their superiority over other then popular methods of active RC synthesis. There have been numerous circuits published for realizing FDNR's. They bear a certain characteristic resemblence to the circuit realizations of Gyrators, and to the whole group of devices known as Generalized Immitance Converters or GIC's.

Cecil if you'r lurking, does that IEEE Dictionary define FDNR's or imaginary resistors?

But Donaly... nope imaginary resistance is not an FDNR. Since FDNR's are frequency dependent. While Imaginary Resistance is a constant with respect to frequency. Imaginary resistors may be used to separate the real and imaginary signals in a circuit, and they help to separate negative frequencies from postive frequencies when that function is needed. One interesting application of imaginary resistances is to the realization of wide band 90 degree phase shift networks. Unfortunately since the days of phasing types of SSB exciters like the early Multi-phase exciters [Remember the Heath SSB converter] no one is interested in manufacturing wide band 90 degree phase shift networks any more. If folks want to do that today they digitize the signals and do it in the digital filtering domain using Hilbert Transforms and such. Incidently to create an imaginary resistor you have to partially synthesize an analog version of the Hilbert Transform. We built some of these devices a few decades ago for some "special" cold war analog sonar signal processing systems.

How are imaginary resistors different from capacitive and inductive reactance?

Inductive reactance rises linearly with frequency and capacitive reactance falls inversely with frequency. While imaginary resistance is constant with frequency.

Z = jR, is a constant, independent of frequency. Period, end of story. So it must be some kind of resistance I guess.

And... I assert that it is the "Only True Dissipationless Resistance". That other dissipationless resistance being discussed on this NG all the time is a phoney!

And... although you can't get buy an imaginary resistor in standard RETMA values with a 5% tolerance gold band, that operates from DC to Daylight, you can however get as close to it as you need to, over any finite frequency range, if you are willing to spend the money.

Does jR store energy? Does jR dissipate energy?

Is it resistance? Is it reactance?

What is it?

Perhaps it is that ephemeral Dissipationless Resistance all of the philosophers from the Church of Dissipationless Resistance on this NG are pursuing?

Thoughts, comments?

-Peter K1PO

"Donaly" <dtdonaly@pacbell.net> wrote in message
news:3AC65D27.F76@pacbell.net...
> Hi Peter,
> how do you know your imaginary resistance isn't just a
> frequency-independant inductive reactance in disguise?
>
> Tom Donaly
>
> Peter O. Brackett wrote:
> >
> > Rick:
> >
> > So it seems that everyone on this thread is still ignoring the
"elephant" in
> > the corner of the thread. The one sitting over there in the imaginary
> > corner. It is truly dissipationless. And no one has commented... why?
> >
> > What about "imaginary resistance"?
> >
> > Is Z = jR a valid concept? Indeed can Z = jR be physically constructed
or
> > at least approximated closely.
> >
> > I maintain that devices whose voltage, current characterization is Z =
jR =
> > V/I can be approximated in reality as closely as desired.
> >
> > I claim that one can build a device with impedance Z = jR where the
voltage
> > and current over any band of interest are 90 degrees out of phase but
the
> > impedance does not vary with frequency as with inductive and capacitive
> > reactance. There will be a lot of parts in the black box used to build
it,

> > but... at least, unlike that other dissipationless resistance, it's
real!
> >
> > I assert that these somewhat arcane, but nevertheless real devices, the
> > imaginary resistors jR, are in fact the ONLY real dissipationless
> > resistances. This imaginary resistance is fully computable,
measureable,
> > and quantitative and requires no one to suspend beliefs and accept
> > miraculous ideas.
> >
> > And after all... it is a "resistance" without dissipation. That is no
> > electrical energy or power is converted to heat within!
> >
> > Comments, thoughts,
> >
> > -Peter K1PO
> >
> > "Rick Littlefield" <k1bqt@aol.com> wrote in message
> > news:20010331105001.27480.00001595@ng-mj1.aol.com...
> > > Hi Cecil--
> > >
> > > I'm with you. I have a dummy load on my bench with 50 Ohms of
> > dissipationless
> > > resistance captured inside. I suspect it will remain so until I
connect
> > > something and turn on the juice.
> > >
> > > Dissipationless resistance strikes me as a philosophical
dillemma--like
> > the
> > > sound of one hand clapping. Without an extra hand, how do you get the
> > clap?
> > >
> > > Rick K1BQT
> > >
>

3. Re: Aluminum Tubing

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 00:34:00 UTC
From: atkes@imap1.asu.edu
Message-ID: <9a5t1o$ak1$1@news.asu.edu>
Source record: 166951

W6RCecilA (Cecil.A.Moore@IEEE.org) wrote:

: Which means that there is RF on the inside of the tubing. Where do
: the photons go?

Without the pipe inside, the inside of the tube looks like a wave guide below cutoff, and the fields and current die exponentially inside. With the inner pipe, it looks like a coaxial cable which has a TEM mode and no cutoff frequency so you can have a substantial current inside. The photons go the same places they go in other kinds of coaxial cable.

73 Kevin w9cf

4. Re: R8, GAP Titon or MFJ 1798 - which is better?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 00:42:30 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <i6ucctgk6ddcvjf4l9cn5uql8b2733e2o1@4ax.com>
Source record: 166953

On Sat, 31 Mar 2001 17:51:03 -0600, Ken Bessler <kg0wx@yahoo.com>
wrote:

>KC1DI wrote:
>>
>> Go With the Butternut.. It's a great vertical Antenna.
>> They have a web sight with all sorts of info At
>> http://www.bencher.com/ant_select.html
>>
>> Just my opinion
>> 73 Dave
>>
>
>I actually like the design (technically speaking) of the Butternut
>antennas but they require a radial set. I'm dealing with balcony
>mounting here... :)

Can't you dangle a wire down from your balcony?

An end fed monopole must work against something. Regardless what some
manufactures might say about their super signal slingers :-)

73
Danny, K6MHE

5. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 01:09:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AC67FBE.9658B29B@eznec.com>
Source record: 166952

Wow! "Phil", your grammar and spelling have improved dramatically.
Congratulations! Been taking night courses at BU? Or have you perhaps
hired a ghost writer?

Roy Lewallen, W7EL

Fractenna wrote:
>
> QST--
>
> You are invited to join one or all of the following lists on yahoo
> groups(formerly
> e-groups). All these reflectors are e-mail based, friendly, objective, and
> moderated ,so that no spam, porn, off-topic, or personal-offensive posts are
> sent out. Membership is screened against those with a history of
> disrupting/trolling. You will receive no off-list e-mails by subscribing:
> again; no spam.
>
> Occassionally free offers of antenna files and other info are presented, along
> with photos of relevant antennas (unlike most NG's you CAN do attachments).
>
> These lists (with some recent subscriber sizes) are:
> ANTENNAS@YAHOOROUPS.COM 220 members
> CROSSFIELDANTENNA@YAHOOGROUPS.COM 70 members
> FRACTALANTENNA@YAHOOGROUPS.COM 310 members
>
> Please review the descriptions at:
>
> http://www.yahoogroups.com
>
> Note the CFA list specifically deals with this antenna in an objectively
> critical fashion and no posts will be allowed that make grandiose claims
> without supporting data presented. To date, no data has been presented which
> requires the extraordinary claims made by some pundits: there is no evidence
> for better performance than any other small vertical antenna (and that
> performance is poor).
>
> Fractal antenna posts should go the the fractal antenna reflector; not the
> antennas reflector. Note that Dr. Cohen, N1IR, the founder of fractal element
> antenna technology, uses this forum to answer questions on the
> web--exclusively. If you have a web-based question for him, kindly post it on
> the FAR assuming it is of general interest.
>

> To subscribe to any list, either go through the process at egroups, or to skip
> the process (and some say 'annoying questions') just do:
>
> ----------------- -subscribe@yahoogroups.com
> where the ------------ is the name of a given list (such as 'fractalantenna')
>
> Kindly do not query this e-mail address; the info here is complete for your
> information pleasure.
>
> 73,
> Phil de
> N1ZKT

6. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 01:14:00 UTC
From: richardharrison@webtv.net
Message-ID: <15753-3AC680D8-59@storefull-118.iap.bryant.webtv.net>
Source record: 166954

Richard Clark wrote:
"The addition of the physical shield necessarily changes the geometry of the initial capacitance."

Additions almost alwaws add capacitance. They either shorten distances or increase surface for lines of force. Though the Faraday shield is a place to terminate lines of force, its difference is to disallow induced current flow on any grand scale.

The direction of induced current, of course, depends on the direction of the magnetizing force. The "Ancients" call the shield induced currents "eddy currents" which implies circular flow in the shield. As Richard Clark noted it "sounds more like the operation of laminated core than Faraday shield".

I think the function is about the same, but the purpose has differences. A laminated core prevents grand scale eddy currents. Thus, it reduces losses that the resistive transformer iron would cause, were it continuous.

In the antenna or coil shield, segmentation of the shield avoids the eddy current (Lenz law reaction) which would nullify the inducing magnetic field.

The shield, with or without segmentation, takes out the electric field. With freely roving eddy currents, the shield is effective for both conponents of an EM wave. The function of a Faraday shield is to allow the magnetic field to pass while blocking the electric field, so it must be segmented.

Best regards, Richard Harrison, KB5WZI

7. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 02:26:47 UTC
From: richardharrison@webtv.net
Message-ID: <13095-3AC691E7-85@storefull-114.iap.bryant.webtv.net>
Source record: 166956

Tom, W8JI wrote:
"Imagine taking a clamp-on meter and clamping it over the shield while the loop is excited with RF from a transmitter connected to the inner conductor in a normal manner. We will read current in the shield. If we take a voltmeter and tap it across a section of the shield, we will read voltage."

I agree your clamp-on ammeter will read current if you excite the inner-loop of a shielded loop. But, you won`t be reading tne shield current. It is zero because the shield is broken with an insulator and can pass no current.

The current you read will be the current in the inner-loop. The reason you can read it is because the break which prevents induced current in the shield also prevents reaction current in the shield so there is no bar to magnetic coupling by the shield. The fugitive magnetic field immediately regenerates its partner (the electric field) upon exiting the shield. J.C. Maxwell is not offended.

Were the outer-shield a complete closed circuit, (gap shorted across) your clamp-on ammeter would read zero.

Lenz prodiuces an almost equal and opposite induced current on the inner surface of the completed circuit shield. The exciting and induced fields inside the loop shield add to nearly zero. It is just like any other piece of coax in that respect, isn`t it?

So, your clamp-on ammeter will have one current flowing in one direction in your exciting loop and one current flowing in the opposite direction in the shield as the result of induction. Since these are very nearly equal, there would be nothing to sense in their total even if the shield were just a parallel conductor and not an enclosing shield. Bottom line: The ammeter reads zero when there is no gap in a shield.

Antennas are reciprocal in their performance. So, a receiving shielded loop antenna will be alive when there is an insulating gap in the shielded loop. The same antenna will go dead when the gap in the loop shield is shorted.

The forces described by Lenz`s law are responsibile for this behavior. I learned this from a navy electrical instruction manual while seated on an inverted bucket in the engine room of a warship at sea during WW ll. I`ve never seen any notice of the repeal of Lenz`s law.

Best regards, Richard Harrison, KB5WZI

8. Re: Imaginary Resistance... Dissipationless Resistance... and all ...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 03:11:01 UTC
From: richardharrison@webtv.net
Message-ID: <5827-3AC69C45-23@storefull-113.iap.bryant.webtv.net>
Source record: 166958

Peter Brackett wrote:
"Is Z=jR a valid concept?"

No, it`s a bad idea.

Z = jR is an oxymoron.

j = On an angle of 90 degrees.

R = On an angle of 0 degrees.

Please don`t suggest a compromise of 45 degrees.

R and j are mutually exclusive.

"Imaginary resistance" is fair for radiation resistance. We have in-phase power escaping from an antenna with a definite voltage to current ratio (a resistance) at a designated spot. A resistor of the same ratio would take the same power. As a mental crutch for the conceptually disabled, there is nothing wrong with using an imaginary resistor to replace the radiation resistance (voltage to current ratio).

Best regards, Richard Harrison, KB5WZI

9. Re: Back to bullets

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 03:31:43 UTC
From: Keith Wood <kw@bctv.com>
Message-ID: <3AC6A11F.54068CE3@bctv.com>
Source record: 166957

KB9WFK wrote:
>
> D.C. has NO law banning handguns.

That will come as a great relief to all those folks who have been
arrested for violating that nonexistent law.

> It is not possible to get a concealed carry license but this does not pertain to private property.

Right. You can carry concealed on private property, IF you can get a
gun to carry. Of course, that nonexistent law also requires that all
firearms kept at home be "unloaded, disassembled, or bound by a trigger
lock or similar device" (thus making them useless to carry).

> Concealed Carry : There is no permit system to acquire a permit to carry a
> hidden handgun.
> Purchase Limitations : Washington, DC has no purchase limitations.

Incorrect. The law requires registration, which is solely at the whim
of the police chief. He rarely "whims."

> Licensing : All firearms must be registered with District law enforcement.
> Possession By Minors : Must be over 21 to obtain permit. However, an 18-21
> year old may apply with parental consent.
> Gun Storage : There is no Child Access Prevention (CAP) or safe storage laws
> in the District.
> Waiting Period : The Chief has 60 days to approve or deny an application for
> a registration certificate

Close. Unless there is an approval within 60 days, the application is
automatically rejected. Even columnist Carl Rowan was unable to get a
permit to have a gun, so his son was forced to violate Federal and
District law, as well as FBI policy.

When the only way for a respected, intelligent homeowner to have a gun
is to get one unlawfully, THAT is a BAN.

10. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 03:48:45 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac69ed5.106482337@news.accessunited.com>
Source record: 166959

On Sat, 31 Mar 2001 11:54:00 -0800, Bart Rowlett
<bart@wb6hqk.ampr.org> wrote:

>> That transformer action is how the "shielded" loop transfers energy
>> from the shield to the center.
>
>There really is not transfer of energy from one winding to another.
>Both shield and pickup loop are coupled magnetically to the same region
>of space. Any energy in the magnetic field available to the shield is
>also available to the pickup loop.

The winding inside the shield is not directly coupled to space Bart.
It can not be because it is surrounded by a conductor that is several
skin depths thick.

Perhaps you are picturing a different kind of loop, the type with the
small pickup loop inside a larger one, or we are not understanding
what each other is saying.

In this case we are talking about a coaxial loop, with a one (or more)
turn inner winding and a shield that surrounds the inner winding
except for a gap at one point in the shield.

There is simply no way the magnetic field penetrates that shield,
since it is several skin depths thick. All energy transferred to the
inner winding gets there because of the voltage difference across the
gap. That voltage is what drives the current inside the shield.

Indeed the outer surface of the shield is "resonanted" whenever the
inner conductor is resonanted. That is very easy to prove. It is a
coupled circuit, with nearly perfect coupling.

If you measure the voltage across the gap when the inner wire is
excited, and you remove the capacitor resonanting the inner wire and
add a capacitor across the gap, the voltages remain the same.

Richards idea is the shield is a low impedance from end-to-end, but
that isn't true when the winding inside the loop is resonanted. The
shield impedance across the gao will vary all over the place depending
on what is done to the center conductor.

>> The shield, resonanted through mutual
>> coupling to the resonant secondary inside, becomes the antenna.
>
>I don't see how resonance has anything to do with it. The pickup loop
>and shield form a coaxial transmission line. In order for the loop to
>act as a receive antenna, some current must be allowed to flow around

>the loop. This current is common mode to the shield / pickup loop
>system and will actually flow on the outer surface of the shield since
>only differential mode currents exist 'inside'. This phenomenon could
>be interpreted as the shield being the antenna but I don't think it is
>an important concept.

I understand what you are saying. You are saying the inner conductor has an exactly equal and opposite current flowing compared to the inside of the shield. I agree. That makes the phase correct.

My viewpoint is this is similar to a coaxial transformer used in a PA stage, NOT a conventional power transformer. Such transformers are typically constructed of a hollow copper (or brass) tube with a winding inside.

The point I'm trying to make, without confusing Richard further, is when the primary is resonanted, the secondary is also resonated. The mutual coupling is virtually unity.

If I measure the impedance of the shield across the gap, and do not resonate the primary (using only an air core, no ferrites) the impedance across the gap in the tubing is very low, as Richard supposes. The primary impedance is also very low.

However, if I resonate the center the impedance across the gap becomes very high. I can also resonate the secondary (the shield in my example) and the effect is exactly the same (except I might have to change the value of the capacitor). The voltage ratios will be the same, the current ratios will be the same, and the shield STILL will not be a shield.

That small transformer is the same as the loop, and both will respond to external fields (electric AND magnetic). It does this with nothing passing through the walls of the shield.

73 Tom

11. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 03:51:54 UTC
From: richardharrison@webtv.net
Message-ID: <5828-3AC6A5DA-12@storefull-113.iap.bryant.webtv.net>
Source record: 166964

Tom, W8JI on wed, 21 Mar 2001 wrote:
"---there is absolutely no difference (in the response of a small single-turn loop, screened or unscreened) if you leave a gap in the screen."

That makes sense.

Tom wrote:
"If you close the gap, the loop goes dead."

That also makes sense.

Tom wrote:
"---some people somehow think the screen makes the loop immune to EMI."

I don`t doubt that either and, like Tom, I don`t find a loop immune to EMI.

Unlike Tom, I recognize enough observed electrical behavior to predict circumstances in which a shield on a loop will improve signal to noise ratio. Serious experiments and published results support this opinion.

Best regards, Richard Harrison, KB5WZI

12. Re: Homebrew Coax Colinear Tuning - Help Please

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 03:56:05 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac6a4d6.108019963@news.accessunited.com>
Source record: 166960

On 31 Mar 2001 22:27:16 GMT, k7itm@aol.com (K7ITM) wrote:

>Tom wrote:
>
>>You can not sucessfully duplicate this antenna using regular RG style
>>cables hanging in air. Even if you get the SWR right, you'd have more
>>gain from a 1/4 wl groundplane.
>
>I beg to differ. Both my modelling and my experimental results show it's quite
>possible to get considerable gain using solid-poly dielectric cable. (The gain
>is practically the same for solid dielectric and foam dielectric cable if the
>overall antenna length is the same.) The three elements needed to be
>successful: get the elements radiating in phase (1/2 wave sections, accounting
>for velocity factor), match the feedpoint to the feedline, and thoroughly
>decouple the antenna from the feedline.

You can if you make the Vp outside the cable equal the Vp inside the cable. Then the 1/2 wl sections outside are tied across out-of-phase inner voltages.

I suppose you could get lucky, but I never have been and no one else I know of has ever gotten one of these things to work. Certainly not when FS is measured.

When PD built these with solid dielectric cable, they potted the antenna in a VERY thick layer of wax. The entire radome was filled with wax. When they changed to air dielectric cable, they stopped using the wax and air-spaced the bare cable from the walls of the radome with occasional rings of light foam.

I melted the wax out of an early one to do a repair, and it quit working. Gain dropped from 5 dB to almost unity and the SWR went way up.

73 Tom

13. #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 04:00:52 UTC
From: "Dennis P. Stahr" <irfutures@earthlink.net>
Message-ID: <UJxx6.14198$aP5.1337384@newsread2.prod.itd.earthlink.net>
Source record: 166961

Well I am back at it again trying to make my "fan" dipole arrangement look a bit stealthier. If I use 16 gauge wire, will that be OK if I am using only 100 watts?

What other implications does it have? Less radiation than, say, 12 gauge? Less bandwidth? If so, can I cover most of the phone band on 10m if I tune for about 28.8mhz? Same for the one cut for 12m, 15m, 17m and 20m, if tuned to the center of the band?

Thanks again, you guys are always very helpful.

Dennis - W6NYC
---

14. Re: R8, GAP Titon or MFJ 1798 - which is better?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 04:09:49 UTC
From: nielsen@remove_this.oz.net
Message-ID: <9a69mdokr0@216.39.171.5>
Source record: 166962

On Sat, 31 Mar 2001 11:41:15 -0600, Ken Bessler wrote:
>Dennis P. Stahr wrote:
>>
>> How about throwing the Butternut HF9V into the equation?
>>
>> I have been considering a vertical also, and thought this would be a great
>> choice, but now you guys have me almost converted to the Titan...
>>
>> Any comments on the Butternut??
>>
>> Dennis Stahr - W6NYC
>
>IIRC, dosen't the HF9V require radials? I'm looking for a fixed
>counterpoise (as opposed to stringing out wires).

Butternut sells a counterpoise kit which looks similar to the
counterpoise supplied with the GAP Titan. The description of the
counterpoises on some of the other GAP models sounds suspiciously like
radials.

I guess one of the things which bothers me about the GAP products is
that their ads and literature are 99 percent marketing hype (not that
they are alone in this!)

Bob N7XY

15. Re: Back to bullets

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 04:12:28 UTC
From: KB9WFK <KB9WFK@mindspring.com>
Message-ID: <9a69q0$158$1@slb2.atl.mindspring.net>
Source record: 166963

```
--

"Keith Wood" <kw@bctv.com> wrote in message
news:3AC6A11F.54068CE3@bctv.com...
>
>
> KB9WFK wrote:
> >
> > D.C. has NO law banning handguns.
>
> That will come as a great relief to all those folks who have been
> arrested for violating that nonexistent law.
>
> > It is not possible to get a concealed carry license but this does not
pertain to private property.
>
> Right. You can carry concealed on private property, IF you can get a
> gun to carry. Of course, that nonexistent law also requires that all
> firearms kept at home be "unloaded, disassembled, or bound by a trigger
> lock or similar device" (thus making them useless to carry).

It does not! There is no Child Access Prevention (CAP) or safe storage laws
in the District.
http://www.handguncontrol.org/stateleg/statelaws.asp

>
> > Concealed Carry : There is no permit system to acquire a permit to carry
a
> > hidden handgun.
> > Purchase Limitations : Washington, DC has no purchase limitations.
>
> Incorrect. The law requires registration, which is solely at the whim
> of the police chief. He rarely "whims."
>
> > Licensing : All firearms must be registered with District law
enforcement.
> > Possession By Minors : Must be over 21 to obtain permit. However, an
18-21
> > year old may apply with parental consent.
> > Gun Storage : There is no Child Access Prevention (CAP) or safe storage
laws
> > in the District.
> > Waiting Period : The Chief has 60 days to approve or deny an application
for
> > a registration certificate
```

>
> Close. Unless there is an approval within 60 days, the application is
> automatically rejected. Even columnist Carl Rowan was unable to get a
> permit to have a gun, so his son was forced to violate Federal and
> District law, as well as FBI policy.
>
> When the only way for a respected, intelligent homeowner to have a gun
> is to get one unlawfully, THAT is a BAN.

I have several relatives that live in DC and they ALL have LEGAL handguns.
Never had any problems getting them. Went up there last year on business.
Was invited over and fired a few hundred rounds out of a legal class 3 fully
automatic AK47 (outside of DC area). Maybe he wasn't so respected,
intelligent and/or squeaky clean.

16. Re: Imaginary Resistance... Dissipationless Resistance... and all ...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 04:13:05 UTC
From: richardharrison@webtv.net
Message-ID: <5826-3AC6AAD1-65@storefull-113.iap.bryant.webtv.net>
Source record: 166967

Peter Brackett wrote:
"Inductive reactance rises linearly with frequency and capacitive reactance falls inversely with frequency."

Well, it seems Peter has already found some of that negative capacitive reactance which he has tried to slip in on us.

Best regards, Richard Harrison, KB5WZI

17. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 04:19:27 UTC
From: Jim <nospamk5ik@mindspring.com>
Message-ID: <o2adctsd0fi1jiri4mm7dudtiqasrbt8dk@4ax.com>
Source record: 166965

Dennis:

Radiation will not be much of an issue with small(er) guage wire at
100 W; however, expect the acceptable xmit bandwidth to be reduced.

When I tune a 10m xmit antenna for the phone band, I usually aim for
28.5 to 28.6 mHz. Tuning to the center of other bands you mentioned
would be my choice.

Good luck with your stealth engineering.

On Sun, 01 Apr 2001 04:00:52 GMT, "Dennis P. Stahr"
<irfutures@earthlink.net> wrote:

>Well I am back at it again trying to make my "fan" dipole arrangement look a
>bit stealthier. If I use 16 gauge wire, will that be OK if I am using only
>100 watts?
>
>What other implications does it have? Less radiation than, say, 12 gauge?
>Less bandwidth? If so, can I cover most of the phone band on 10m if I tune
>for about 28.8mhz? Same for the one cut for 12m, 15m, 17m and 20m, if tuned
>to the center of the band?
>
>Thanks again, you guys are always very helpful.
>
>Dennis - W6NYC
>---------------------------------------
>

Jim

18. Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 04:35:13 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3AC6B001.C263FF67@cticonsulting.net>
Source record: 166955
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Hi, I have a Realistic DX-390 (short wave receiver), must be around 10 years old now. It does not have any antenna jack, like a scanner would. It has one jack port, about 3.5mm size labeled AM ext. The unit has a extending vertical antenna. I think there might be a tiny screw to remove the antenna, but otherwise its not designed to come off. I would like to add on a good antenna (or build one myself ;-) in the back yard, but I'm not sure how far I'll get without an antenna jack. Can I simply solder the new antenna feeds to the extending vertical one? My guess is no? The AM jack is for AM bands only (and shortwave is usally FM?)? Should I remove the existing antenna? The manual on this unit is long gone. Unit still seems to work well, no shortage of variety programming on a good evening. However, tends to have static, and who knows what I'm missing. I guess I should mention that I'm primarily interested in short wave bands used for international broadcast. I plan to upgrade the unit in a year or so, but until then I thought a good antenna would help, but I'm at a loss as to where to feed it into the unit.
BTW, if you don't think the unit would benefit from a better antenna anyway, let me know and I'll save myself the trouble. But since I'm studdying for Technician Liscense anyway, I though this would also be a low expense way of jumping into the world of antenna building/setup, before things get 'serious'.
P.S. If the above answer is affirmative, if you'd also like to suggest some sites for info on simple SW band antennas that would complement the receiver well (particularly homemade) for backyard use, I'd appreciate that too.
Thanks

19. Re: Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 04:42:00 UTC
From: w9wi@linux1.localdomain
Message-ID: <slrn9cdcjg.18u.w9wi@linux1.localdomain>
Source record: 166966
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

On Sat, 31 Mar 2001 23:35:13 -0500, Randon Loeb
<rloebusenet@cticonsulting.net> wrote:
>Hi, I have a Realistic DX-390 (short wave receiver), must be around 10
>years old now. It does not have any antenna jack, like a scanner
>would. It has one jack port, about 3.5mm size labeled AM ext. The unit
>has a extending vertical antenna. I think there might be a tiny screw
>to remove the antenna, but otherwise its not designed to come off. I
>would like to add on a good antenna (or build one myself ;-) in the
>back yard, but I'm not sure how far I'll get without an antenna jack.

The "AM ext." jack may well be for an external antenna.

But an alternative is to simply wrap the leadin wire from whatever external
antenna you use around the builtin antenna.

>(and shortwave is usally FM?)?

No, shortwave is usually AM.

> If the above answer is affirmative, if you'd also like to suggest some
>sites for info on simple SW band antennas that would complement the
>receiver well (particularly homemade) for backyard use, I'd appreciate that
>too. Thanks

A good general rule is as much wire as possible, as high in the air as
possible, and as far from obstructions as possible. Really, you don't have
to worry about much more than that.
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com
Due to excessive spam, messages from uu.net are deleted unread.

20. Re: Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 04:55:30 UTC
From: Gray Shockley <gray@compcomm.com>
Message-ID: <01HW.B6EC10E2002E410A0707E1B0@news.canufly.net>
Source record: 166968
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

On Sat, 31 Mar 2001 22:35:13 -0600, Randon Loeb wrote:

> Hi, I have a Realistic DX-390 (short wave receiver), must be around 10
> years old now. It does not have any antenna jack, like a scanner
> would. It has one jack port, about 3.5mm size labeled AM ext.

Bingo! That's the antenna jack for shortwave. My /guess/ as to why it's labeled "AM" is to keep people from thinking it's for the 88-108 mHz "FM Band".

> The unit
> has a extending vertical antenna. I think there might be a tiny screw
> to remove the antenna, but otherwise its not designed to come off. I
> would like to add on a good antenna (or build one myself ;-) in the
> back yard, but I'm not sure how far I'll get without an antenna jack.
> Can I simply solder the new antenna feeds to the extending vertical
> one? My guess is no? The AM jack is for AM bands only (and shortwave
> is usally FM?)?

No, shortwave is generally AM or one of its variants "Single Side Band" (SSB). SSB - this is really simplified but it should do - is obtained by suppressing the carrier and leaving a "sideband" on either "side" of what would have been a "normal" AM signal.

SSB is divided into Upper Sideband (USB) and Lower Sideband (LSB). On the your 390, you would tune onto a station that's broadcasting sideband, turnh on your "BFO" (front panel - lower right if it's the same place as on my DX-392).

Others here can explain SSB much better than I and explain "zero-beating" and such.

> Should I remove the existing antenna? The manual on
> this unit is long gone.

You can get one from RadioShack. Also, you can get most (all?) of the manual at www.radioshack.com (last time I was up there, the site was still being "renewed" and it was difficult to navigate).

> Unit still seems to work well, no shortage of
> variety programming on a good evening. However, tends to have static,
> and who knows what I'm missing. I guess I should mention that I'm
> primarily interested in short wave bands used for international
> broadcast.

Ah! So - for the most part - AM is all you need.

> I plan to upgrade the unit in a year or so, but until then I
> thought a good antenna would help, but I'm at a loss as to where to feed
> it into the unit.

As above.

Btw, you may well find it very difficult to upgrade without spending quite a bit of $$$. The DX-390 is a very good SW receiver.

> BTW, if you don't think the unit would benefit from a better antenna
> anyway, let me know and I'll save myself the trouble.

$9.95 at RadioShack. Seventy feet of copper stranded wire and the necessary insulators and lead in. Add a 6 to 8 foot ground rod (do NOT buy at RadioShack - this is one of the things they charge WAY too much - usually about half RS's price at a local hardware store). Rub the wire from the end of the seventy foot longwire to the "tip" of an 1/8" plug (so-called "Sony Plug"). Just a mono mini-phone plug. Run the ground wire to the sleeve.

> But since I'm
> studdying for Technician Liscense anyway, I though this would also be a
> low expense way of jumping into the world of antenna building/setup,
> before things get 'serious'.
> P.S. If the above answer is affirmative, if you'd also like to suggest
> some sites for info on simple SW band antennas that would complement the
> receiver well (particularly homemade) for backyard use, I'd appreciate
> that too.
> Thanks

Hope this helps.

Gray

Gray Shockley
Entropy Maintenance Technician
Tao Chemical Company
---
gray@compcomm.com
http://www.compcomm.com/
Vicksburg, Mississippi US

21. Re: Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 04:59:30 UTC
From: The Johnsons <JOHNSONRKKM@lexcominc.net>
Message-ID: <3AC6B5B2.67F60348@lexcominc.net>
Source record: 166869
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

The AM antenna jack for the DX-390 is the external antenna jack and this is where you would connect an SW antenna. In fact, I am listening to mine right now on the 75mtr band. I am using a small table top SW loop (by Ed. W / Edek Electronics) with an assist by a little amp. Works really well. The DX-390, like nearly all Sangean radios, have poor sensitivity off the whip and need some kind of external boost.

Russ K3PI

Doug Smith wrote:

> On Sat, 31 Mar 2001 23:35:13 -0500, Randon Loeb
> <rloebusenet@cticonsulting.net> wrote:
> >Hi, I have a Realistic DX-390 (short wave receiver), must be around 10
> >years old now. It does not have any antenna jack, like a scanner
> >would. It has one jack port, about 3.5mm size labeled AM ext. The unit
> >has a extending vertical antenna. I think there might be a tiny screw
> >to remove the antenna, but otherwise its not designed to come off. I
> >would like to add on a good antenna (or build one myself ;-) in the
> >back yard, but I'm not sure how far I'll get without an antenna jack.
>
> The "AM ext." jack may well be for an external antenna.
>
> But an alternative is to simply wrap the leadin wire from whatever external
> antenna you use around the builtin antenna.
>
> >(and shortwave is usally FM?)?
>
> No, shortwave is usually AM.
>
> > If the above answer is affirmative, if you'd also like to suggest some
> >sites for info on simple SW band antennas that would complement the
> >receiver well (particularly homemade) for backyard use, I'd appreciate that
> >too. Thanks
>
> A good general rule is as much wire as possible, as high in the air as
> possible, and as far from obstructions as possible. Really, you don't have
> to worry about much more than that.
> --
> Doug Smith W9WI
> Pleasant View (Nashville), TN EM66
> http://www.w9wi.com
> Due to excessive spam, messages from uu.net are deleted unread.

22. Re: Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 05:10:16 UTC
From: Dwight Stewart <stewartx@sccoast.net>
Message-ID: <3AC6B808.F75D1F40@sccoast.net>
Source record: 166870
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Randon Loeb wrote:
>
> Hi, I have a Realistic DX-390 (short
> wave receiver), must be around 10
> years old now. It does not have
> any antenna jack, like a scanner
> would. It has one jack port, about
> 3.5mm size labeled AM ext.

The green "AM EXT ANT" jack is the antenna input jack. You can plug any external shortwave antenna (amplified or non-amplified) into this jack, assuming the antenna feedline has a 3.5mm mono plug. If your antenna feedline doesn't have this plug, simply replace the connector on that feedline, or use an adapter to convert the existing connector to a 3.5mm plug. If you intend to use heavy coax as a feedline, make a short jumper, using lighter coax (RG-174U for example), from the radio to the floor to take the weight of the heavy coax off the small jack on the radio.

By the way, as Doug has already said, most shortwave activity is AM, not FM. FM reception on this radio is handled by the telescoping whip (the AM antenna is inside the radio). And, yes, an external antenna will be a great improvement (especially if you're using nothing more than the internal antenna now).

Dwight Stewart (W5NET)

http://www.qsl.net/w5net

23. Re: Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 05:12:33 UTC
From: Ron or Midgie Bardo <sarge@net-link.net>
Message-ID: <010420010012330992%sarge@net-link.net>
Source record: 166871
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

THe antenna jack that comes with the DX 390 works quite well with the old Rat Shack active antenna, model mumber 20-280. I have had my 390 for about 8 years and the said antenna for about as long. Both work quite fine for me.

For BCB stuff, you could use the Select-a-tenna, whith I do not have, or the Rat Shack AM loop, #15-1853. That sells for $29.95, at lest that is what paid for it, The amplified antenna I believe has been discontinued.

As a side note, the Rat shack loop has a significant effect on the 390 (greatly increases gain), but little effect on GE SR III, other to null out noise, which also does have it benefits.

Hope this helps.

Ron Bardo <rmbardo@chartermi.net>

In article <slrn9cdcjg.18u.w9wi@linux1.localdomain>, Doug Smith <w9wi@linux1.localdomain> wrote:

> On Sat, 31 Mar 2001 23:35:13 -0500, Randon Loeb
> <rloebusenet@cticonsulting.net> wrote:
> >Hi, I have a Realistic DX-390 (short wave receiver), must be around 10
> >years old now. It does not have any antenna jack, like a scanner
> >would. It has one jack port, about 3.5mm size labeled AM ext. The unit
> >has a extending vertical antenna. I think there might be a tiny screw
> >to remove the antenna, but otherwise its not designed to come off. I
> >would like to add on a good antenna (or build one myself ;-) in the
> >back yard, but I'm not sure how far I'll get without an antenna jack.
>
> The "AM ext." jack may well be for an external antenna.
>
> But an alternative is to simply wrap the leadin wire from whatever external
> antenna you use around the builtin antenna.
>
> >(and shortwave is usally FM?)?
>
> No, shortwave is usually AM.
>
> > If the above answer is affirmative, if you'd also like to suggest some
> >sites for info on simple SW band antennas that would complement the
> >receiver well (particularly homemade) for backyard use, I'd appreciate that
> >too. Thanks
>

> A good general rule is as much wire as possible, as high in the air as
> possible, and as far from obstructions as possible. Really, you don't have
> to worry about much more than that.

24. formula: frequency ==> antenna length?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 05:30:12 UTC
From: MAF <Not@here.now>
Message-ID: <E1zx6.15347$wx.3191386@typhoon.austin.rr.com>
Source record: 166874

Could someone in here tell me the formula to determine the proper length of
an antenna?

Thank you,
MAF

25. Re: CQ Magazine-3dB gain HF mobile antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 05:34:06 UTC
From: n2ey@aol.com
Message-ID: <20010401003406.26133.00000423@nso-bj.aol.com>
Source record: 166872

In article <3ac5ef27.61501563@news.accessunited.com>, 2w8ji@akorn.net (Tom W8JI) writes:

>The latest issue of CQ contains an interesting tidbit of information.
>
>On page 61, the author states "A number of readers have urged me to
>discusss the concept of phasing two mobile antennas for big signal
>mobiling...."
>
>I'll bet they have!!!
>
>The author goes on to say if you run two HF mobile antennas on your
>car, one on each side of the trunk and feed them in parallel, you gain
>3dB!!!!! Now he admits "wider whip spacing is preferable for 40 and 80
>meters"...but he goes on to say the 3 dB does appear on 30 meters and
>above.

As Cecil points out, there's a grain of truth under that pile of misinformation. But the gain claim is valid on 30 MHz, not 30 meters.

>The author pontificates about cable length, advising people to stay
>away form pesky "resonant lengths like 1/4 wl or 1/2 wl" that cause
>problems.

One wonders what sort of car needs that much feedline on 75 meters...

>He talks about how, when we space antennas 1/2wl apart, the gain is "4
>or 5dB" but since we can't get that spacing a "trunk width is good
>for 3dB".
>
Trunk of a Humvee, maybe...

>In other articles by the same author, I learned the radiaton in a
>mobile antenna all comes from the area ABOVE the loading coil. I
>learned about power amplifiers, and how they work. One thing....these
>articles are dependable. They are all of the same educational quality
>and accuracy.
>
>I did write him once, and he wrote back saying I was the only one who
>thought his articles contained errors.

Who is the author, Tom? I don't get CQ, and if errors like that aren't corrected, stuff like this convinces me that's a good policy.

The funniest part of all this is that the whole thing is actually a pretty good April Fool joke even if all the claims are true. Any gain brought about by

phasing mobile whips on a vehicle is directional gain, which is useless in most real-world mobile-in-motion operating situations.

I sure hope it was supposed to be a joke.

73 de Jim, N2EY

26. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 05:40:45 UTC
From: Bob Headrick <bobh@proaxis.com>
Message-ID: <3ac6beed_2@news.pacifier.com>
Source record: 166873

"Dennis P. Stahr" <irfutures@earthlink.net> wrote in message
news:UJxx6.14198$aP5.1337384@newsread2.prod.itd.earthlink.net...
> Well I am back at it again trying to make my "fan" dipole arrangement look a
> bit stealthier. If I use 16 gauge wire, will that be OK if I am using only
> 100 watts?
>
> What other implications does it have? Less radiation than, say, 12 gauge?
> Less bandwidth? If so, can I cover most of the phone band on 10m if I tune
> for about 28.8mhz? Same for the one cut for 12m, 15m, 17m and 20m, if tuned
> to the center of the band?

The main difference you are likely to see will be the strength - #16 will be
more likely to break under stress. As for losses or bandwidth the effects
will be very minor.

- 73 Bob W7OV

27. Re: CQ Magazine-3dB gain HF mobile antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 05:52:36 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <3AC6C1E3.1DB13052@att.net>
Source record: 166876

What the co-phase crowd always seems to overlook is that you have *TWO* of those lossy loaded antennas plus an extra length of coax in the system to absorb power.

Kinda like a twin-engine aircraft - sounds good on paper, except that you incur twice the probability of engine failure and most light twins are barely capable of sustaining flight with any reasonable load at any reasonable altitude on one engine.

72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
Amateur Radio W5YR, in the 55th year and it just keeps getting better!
Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437

N2EY wrote:
>
> In article <3ac5ef27.61501563@news.accessunited.com>, 2w8ji@akorn.net (Tom
> W8JI) writes:
>
> >The latest issue of CQ contains an interesting tidbit of information.
> >
> >On page 61, the author states "A number of readers have urged me to
> >discusss the concept of phasing two mobile antennas for big signal
> >mobiling...."
> >
> >I'll bet they have!!!
> >
> >The author goes on to say if you run two HF mobile antennas on your
> >car, one on each side of the trunk and feed them in parallel, you gain
> >3dB!!!!! Now he admits "wider whip spacing is preferable for 40 and 80
> >meters"...but he goes on to say the 3 dB does appear on 30 meters and
> >above.
>
> As Cecil points out, there's a grain of truth under that pile of
> misinformation. But the gain claim is valid on 30 MHz, not 30 meters.
> >
> >The author pontificates about cable length, advising people to stay
> >away form pesky "resonant lengths like 1/4 wl or 1/2 wl" that cause
> >problems.
>
> One wonders what sort of car needs that much feedline on 75 meters...
> >
> >He talks about how, when we space antennas 1/2wl apart, the gain is "4
> >or 5dB" but since we can't get that spacing a "trunk width is good
> >for 3dB".

> >
> Trunk of a Humvee, maybe...
>
> >In other articles by the same author, I learned the radiaton in a
> >mobile antenna all comes from the area ABOVE the loading coil. I
> >learned about power amplifiers, and how they work. One thing....these
> >articles are dependable. They are all of the same educational quality
> >and accuracy.
> >
> >I did write him once, and he wrote back saying I was the only one who
> >thought his articles contained errors.
>
> Who is the author, Tom? I don't get CQ, and if errors like that aren't
> corrected, stuff like this convinces me that's a good policy.
>
> The funniest part of all this is that the whole thing is actually a pretty good
> April Fool joke even if all the claims are true. Any gain brought about by
> phasing mobile whips on a vehicle is directional gain, which is useless in most
> real-world mobile-in-motion operating situations.
>
> I sure hope it was supposed to be a joke.
>
> 73 de Jim, N2EY

28. Sun Spots This Weekend

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 05:52:52 UTC
From: Jay Martin <jlm26@xotmail.com>
Message-ID: <3AC6C234.526AB40B@xotmail.com>
Source record: 166875

Most activity within the past 10 years..

Check out www.nasa.gov

Jay

29. Re: Sun Spots This Weekend

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 06:31:13 UTC
From: "W.G. Ewald" <wgewald@att.net>
Message-ID: <72jdct8g1locbao8advoi54d5mun36o4bv@4ax.com>
Source record: 166877
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

On Sun, 01 Apr 2001 00:52:52 -0500, Jay Martin <jlm26@xotmail.com>
wrote:

>Most activity within the past 10 years..
>
>Check out www.nasa.gov
>
>Jay

And HAARP is active on 3390 KHz.

30. Re: Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 06:56:52 UTC
From: CW <cmagers@sprynet.com>
Message-ID: <9a6jmn$s1$1@slb6.atl.mindspring.net>
Source record: 166878
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

That's your antenna jack.
--
CW
KC7NOD
www.kc7nod.20m.com
"Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
news:3AC6B001.C263FF67@cticonsulting.net...
It has one jack port, about 3.5mm size labeled AM ext.

31. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 09:05:44 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <wuZjQnAo9ux6EAs0@ifwtech.plus.net>
Source record: 166879

Richard Harrison wrote:
>Tom, W8JI wrote:
>"Imagine taking a clamp-on meter and clamping it over the shield while
>the loop is excited with RF from a transmitter connected to the inner
>conductor in a normal manner. We will read current in the shield. If we
>take a voltmeter and tap it across a section of the shield, we will read
>voltage."
>
>I agree your clamp-on ammeter will read current if you excite the
>inner-loop of a shielded loop. But, you won`t be reading tne shield
>current. It is zero because the shield is broken with an insulator and
>can pass no current.
>
>The current you read will be the current in the inner-loop. The reason
>you can read it is because the break which prevents induced current in
>the shield also prevents reaction current in the shield so there is no
>bar to magnetic coupling by the shield. The fugitive magnetic field
>immediately regenerates its partner (the electric field) upon exiting
>the shield. J.C. Maxwell is not offended.
>
You're forgetting a third current: the current on the inside of the
shield.

Now that we're talking about a "transmitting" case, where the loop is
excited, this is much easier to think about.

When the transmitter generates a current on the inner winding (let's
assume for simplicity it is a single turn) then Lenz's law generates an
equal and opposite current on the inside of the shield (normal coax
behavior).

The RF currents are flowing on the surfaces only, because the skin
effect operates totally independently of the circuit configuration.
(Davidson's proof of the skin effect, reproduced on my web site a few
weeks ago, established that the effect does not rely on any particular
circuit configuration. The circuit configuration will determine how much
current flows, but the skin effect - a consequence of Ampere's and
Faraday's laws - operates independently to concentrate that current
close to the surfaces.)

When we move along to the gap in the shield, there is still a current
flowing on the inner conductor and an equal and opposite current flowing
on the inside of the shield. Now apply Kirchhoff's law: the current
inside the shield must flow to somewhere, and the only place is around
the end of the shield and back down its outer surface.

Following that simple logic, there _is_ a current on the outside of the shield, equal to the current on the center conductor and in the same direction.

This approach may offer a way into the analysis which the EM field approach has not succeeded in doing. My own EM theory is not strong, and frankly I'm not clear about who is right (several weeks of reading this discussion has failed to convince me fully, either way). But... whatever anybody wants to say about EM induction, their analysis _must_also_ be consistent with this simple application of skin effect and Kirchhoff's law. If there is a gap, then there also has to be a current on the outside of the shield.

Nature is self-consistent, and insists that all its physical laws be obeyed at the same time.

>Were the outer-shield a complete closed circuit, (gap shorted across)
>your clamp-on ammeter would read zero.
>
Certainly, because the current on the outer shield is "driven by the gap". No gap, no place for surface current to flow out.

>Lenz prodiuces an almost equal and opposite induced current on the inner
>surface of the completed circuit shield.

No - Lenz produces an equal and opposite current on the inner surface of _any_ length of coax. Your statement would imply that the coupling is "switched on" by the act of completing the shield at the far end. In fact the coupling between center conductor and shield is generated locally by the interaction of fields in every increment along the length of the coax.

[Snip]
>
>The forces described by Lenz`s law are responsibile for this behavior. I
>learned this from a navy electrical instruction manual while seated on
>an inverted bucket in the engine room of a warship at sea during WW ll.
>I`ve never seen any notice of the repeal of Lenz`s law.

Nor of any other physical law... but that does mean you have to apply the whole of each law, continuously and consistently.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

32. Rohn 25g "Hazer"??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 09:35:36 UTC
From: maniac9188@aol.com
Message-ID: <20010401053536.13940.00001691@ng-fd1.aol.com>
Source record: 166880

Hello, I am constructing a Rohn 25g tower together over here, and have gone through several install options without satisfaction. A friend of mine showed me, in the latest issue of Amateur Radio Trader (the second March issue), an ad for an item that is called the "Hazer", made by Glen Martin Engineering (the ad is on page 11, bottom left).. The item is described to "eliminate" ever having to climb your tower for antenna installs, or maintenance.. This item seems a little too good to be true..... Just a question, Does anyone out there know if this thing is worth picking up?? Sounds like it would be a worth while investment. You could lower the antenna array down to avoid direct contact with storms also, that's what I like most!! I sure would like to know the dimensions of the Hazer, to judge how long I need to go for the mast..... Please Email me with any comments or suggestions. The address is maniac9188@aol.com, and please NO SPAM..... Have a nice day.

Charles

33. Re: formula: frequency ==> antenna length?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 11:46:31 UTC
From: "Thomas C. Sefranek" <tcs@cmcorp.com>
Message-ID: <3AC7150F.8B47FD5C@cmcorp.com>
Source record: 166881

MAF wrote:

> Could someone in here tell me the formula to determine the proper length of
> an antenna?
>
> Thank you,
> MAF

Sure! What kind of antenna?

--
*
| __O Thomas C. Sefranek tcs@cmcorp.com
|_-\<,_ Amateur Radio Operator: WA1RHP
(*)/ (*) Bicycle mobile on 145.41, 448.625 MHz

http://hamradio.cmcorp.com/inventory/Inventory.html
http://www.harvardrepeater.org

34. Fractal Antenna Reflector

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 12:06:00 UTC
From: burt@innocent.com
Message-ID: <9a75j8kmg1@news.netmar.com>
Source record: 166882

Hey, "Phil" (and Chip), instead of QST'ing (spamming) the usenet antenna newsgroup, how about QST'ing the 300 members of the reflector, since there is NO traffic there now. Why doesn't the moderator post the messages sent to him for posting? Is there a lack of communication there?

Maybe posts should be sent to <info@telcomcity.com>, or to <query@fractenna.com>, or by mail to Phil Salkind at FAS, Telecom City.

Or would that get Chip "fired" again? :-)

See you at IEEE in Boston in July, though?

----- Posted via NewsOne.Net: Free (anonymous) Usenet News via the Web -----
http://newsone.net/ -- Free reading and anonymous posting to 60,000+ groups
NewsOne.Net prohibits users from posting spam. If this or other posts
made through NewsOne.Net violate posting guidelines, email abuse@newsone.net

35. Respond to Phil's QSpamT

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 12:26:22 UTC
From: burt@innocent.com
Message-ID: <9a76pelkf1@news.netmar.com>
Source record: 166883

Phil Salkind
Phone:
617-381-9595
Fax:
617-489-6207

Fractal Antenna Systems
Telecom City
c/o Mystic Valley Development Commission
300 Commercial Street, Suite 27
Malden, MA 02148

Other info:

Fractal brick:

http://www.fractenna.com/images/fig3.jpg

Information on fractal antennas and Fractal Antenna Systems,
Inc. can be found at http://www.fractenna.com with
information on Telecom City at http://www.telcomcity.com.

Chip in happier days:

http://www.fractenna.com/images/cfa.jpg (Does cfa = cross field antenna?)

Chip at Telecom City:

http://www.telcomcity.com/anchor/PCC/Clients/Images/fracver2.JPG

He's closest to camera. "Phil" is in the green shirt.

Quite an impressive operation there at Fractal Antenna Systems!

----- Posted via NewsOne.Net: Free (anonymous) Usenet News via the Web -----
http://newsone.net/ -- Free reading and anonymous posting to 60,000+ groups
NewsOne.Net prohibits users from posting spam. If this or other posts
made through NewsOne.Net violate posting guidelines, email abuse@newsone.net

36. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 13:18:42 UTC
From: richardharrison@webtv.net
Message-ID: <13097-3AC72AB2-28@storefull-114.iap.bryant.webtv.net>
Source record: 166886

Ian wrote:
"There is a current on the outside of the shield equal to the current on the center conductor and in the same direction."

Yes, induced current in the shield would continue around the insulated ends of the shield. Behavior would be like a small dipole.

Best regards, Richard Harrison, KB5WZI

37. 1 5/8" Heliax Cable

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 13:31:40 UTC
From: Dudley Davis <n4dpd@earthlink.net>
Message-ID: <3AC72D50.558067F2@earthlink.net>
Source record: 166884
Cross-posted to: rec.radio.amateur.antenna,rec.radio.swap

I have 5 rolls of 1 5/8" heliax for sale. All rolls are approx. 140 feet in length. Two rolls have connectors (N female) on both ends while the other rolls only have one connector. The open end has been sealed to prevent moisture from entering. This heliax was made available from a cell site that was dismantled.
Name your price on the entire package. No reasonable offer will be refused. If interested, (SERIOUS INQUIRIES ONLY), I will be attending the Dayton Hamvention and will deliver the cable there.
If only interested in one roll, I will deliver or meet half way up to 75 miles of Southern New Jersey.
Contact me ASAP so plans for transport to Dayton can be made.
Thanks,
Steve

Contact: N2KEJ, Quinton, New Jersey
n2kej@hotmail.com

38. Re: Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 14:07:27 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <pTTHOsBNAhFRpwz4LvdCPgCrU7h+@4ax.com>
Source record: 166887

Randon Loeb <rloebusenet@cticonsulting.net> wrote:

>Hi, I have a Realistic DX-390 (short wave receiver), must be around 10
>years old now. It does not have any antenna jack, like a scanner
>would. It has one jack port, about 3.5mm size labeled AM ext. The unit
>has a extending vertical antenna. I think there might be a tiny screw
>to remove the antenna, but otherwise its not designed to come off. I
>would like to add on a good antenna (or build one myself ;-) in the
>back yard, but I'm not sure how far I'll get without an antenna jack.
>Can I simply solder the new antenna feeds to the extending vertical
>one? My guess is no? The AM jack is for AM bands only (and shortwave
>is usally FM?)? Should I remove the existing antenna? The manual on
>this unit is long gone. Unit still seems to work well, no shortage of
>variety programming on a good evening. However, tends to have static,
>and who knows what I'm missing. I guess I should mention that I'm
>primarily interested in short wave bands used for international
>broadcast. I plan to upgrade the unit in a year or so, but until then I
>thought a good antenna would help, but I'm at a loss as to where to feed
>it into the unit.
>BTW, if you don't think the unit would benefit from a better antenna
>anyway, let me know and I'll save myself the trouble. But since I'm
>studdying for Technician Liscense anyway, I though this would also be a
>low expense way of jumping into the world of antenna building/setup,
>before things get 'serious'.
>P.S. If the above answer is affirmative, if you'd also like to suggest
>some sites for info on simple SW band antennas that would complement the
>receiver well (particularly homemade) for backyard use, I'd appreciate
>that too.
>Thanks

A couple of suggestions:

Radio Shack has a 70 foot outdoor wire antenna for the shortwave bands. Costs 10 dollars.

You might also try the web site, http://www.ccrane.com/ Look in their online product catalog under antennas, shortwave -- and you'll find some info on sw antennas in general, as well as a good selection of indoor and outdoor antennas for sw reception.

Have fun!

Bob
k5qwg

39. Re: Respond to Phil's QSpamT

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 14:17:29 UTC
From: fractenna@aol.com
Message-ID: <20010401101729.25665.00002079@ng-cs1.aol.com>
Source record: 166888

QST--

You are invited to join one or all of the following lists on yahoo
groups(formerly
e-groups). All these reflectors are e-mail based, friendly, objective, and
moderated ,so that no spam, porn, off-topic, or personal-offensive posts are
sent out. Membership is screened against those with a history of
disrupting/trolling. You will receive no off-list e-mails by subscribing:
again; no spam.

Occassionally free offers of antenna files and other info are presented, along
with photos of relevant antennas (unlike most NG's you CAN do attachments).

These lists (with some recent subscriber sizes) are:
ANTENNAS@YAHOOROUPS.COM 220 members
CROSSFIELDANTENNA@YAHOOGROUPS.COM 70 members
FRACTALANTENNA@YAHOOGROUPS.COM 310 members

Please review the descriptions at:

http://www.yahoogroups.com

Note the CFA list specifically deals with this antenna in an objectively
critical fashion and no posts will be allowed that make grandiose claims
without supporting data presented. To date, no data has been presented which
requires the extraordinary claims made by some pundits: there is no evidence
for better performance than any other small vertical antenna (and that
performance is poor).

Fractal antenna posts should go the the fractal antenna reflector; not the
antennas reflector. Note that Dr. Cohen, N1IR, the founder of fractal element
antenna technology, uses this forum to answer questions on the
web--exclusively. If you have a web-based question for him, kindly post it on
the FAR assuming it is of general interest.

To subscribe to any list, either go through the process at egroups, or to skip
the process (and some say 'annoying questions') just do:

---------- -subscribe@yahoogroups.com
where the ---------- is the name of a given list (such as 'fractalantenna')

Kindly do not query this e-mail address; the info here is complete for your
information pleasure.

73,
Phil de
N1ZKT

40. GOT ANY? Icollect military antennas and related stuff

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 14:33:32 UTC
From: steve4621@aol.com
Message-ID: <20010401103332.19777.00001609@ng-cb1.aol.com>
Source record: 166890

Let me know if you have any military antennas or related equipment for sale or trade. Thanx Steve (email only please)

41. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 14:45:00 UTC
From: k1bqt@aol.com
Message-ID: <20010401104500.19939.00001824@ng-cd1.aol.com>
Source record: 166891

Hi Roy--

>Been taking night courses at BU?<

If you wish to reward Phil for his academic achievement, why not contact John F Ebersole, Dean of BU's Metropolitan College, at (617) 353-6000 and let him know what a great job Mr. Salkind is doing at keeping Dr. Cohen's Fractenna AOL account active on our newsgroup!

Better yet, why not E-Mail an attached copy directly to him at met@bu.edu so he can view this excellent work firsthand!

In this age of distance learning via the internet, why wouldn't Dean Ebersole be anything but elated to see that Chip's AOL address continues to function as an active Continuing Education resource for us all?

Rick K1BQT

42. Re: A question about Transmatches - Please weigh in!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 15:04:40 UTC
From: Paul <pvanasse@mail.direcpc.com>
Message-ID: <vtHx6.36278$m8.311444@news.direcpc.com>
Source record: 166892

Hello Tom:

: >How so? The transmatch is essencially a variable capacitor that when
: >inserted into a perfectly matched feed system will produce (vary)
inductive
: >reactance on the transmitter side and insert capacitive reactance (unless
: >tuned) on the antenna side to zero, regardless of of where the transmatch
is
: >located in the feed line. Are you saying that no inductive reactance is
: >present? Please explain your theory.
:
: I explained that one.
:
: The transmatch can be considered to look like three things, in any
: combination:
:
: 1.) a Transmission line of some electrical length and impedance
:
: 2.) A transformer
:
: 3.) A shunt or series reactance of any sign.

I agree with your statements however no-one has yet to answer my question.
If one inserts a transmatch into a perfectly matched transmitter/antenna
system, what it the total loss in dB's due to the transmatch insertion? One
person did state that his incurred losses were about 10% due to transmatch
insertion however is this a manufacturers spec, or a pure observation? There
has to be *some* stated loss due to the mere fact that the potential for
increased electrical resistance is intentionally being added to the antenna
system yes - no?

Am I missing something here?

:
: >100 Watts / 1.22 Power Loss Factor = 81.97 watts seen at the antenna feed
: >point or a 18% overall loss using the transmatch.
: >
: >Now lets say the same 100 watt radio is folding back 10% due to a slight
: >mismatch and one decides to NOT use a transmatch, however they still use
the
: >and the same RG-213/U cable at 3.5 Mhz.
: >
: >.4 dB loss / 10 Inverse Log = 1.1 Power Loss Factor
: >
: >90 watts / 1.1 Power Loss Factor = 81.82 watts seen at the antenna feed

: >point or 8.2% overall loss using no transmatch.
: >
: >The numbers are practically identical. Granted, the radio will be working
:
: Unless I'm missing something you did not consider the extra loss
: caused by SWR on the feedline, which is pretty complex when the line
: is short since losses are not distributed evenly between dielectric
: and conductor losses.

Good point, and your are correct in stating that the answer requires complex calculations. After absorbing the aforementioned statement I performed a simple experiment. Heres what I did:

I intentionally went on 10 meters and ran my ICOM 706 at 100 watts. Because I have a 10 meter antenna that has been cut to exactly 28.450 Mhz I used this frequency as my starting point. I took a measurement at the transmitter and my output wattage was just about 100 watts with an SWR of 1.1:1.

I then intentionally mistuned my radio upwards to a point where the radio folded back 10% (90 watts output). The frequency I ended up on was 28.770 Mhz with an SWR of 1.6:1. I Then recruited the XYL to get ready to key the radio whilst I shimmied my lazy butt up onto the roof to take some measurements. BTW, I have a run of 95' of RG-213/U that feeds my 10 meter antenna.

At the antenna feed point my total output wattage was about 63 watts with an SWR of approx. 2.3:1. I then managed to make it down off of the roof in one piece in order to hit the books.

Using the formula:

Mismatch Line-Loss (dB) = 10 log [a2-|p2| / a(1-|p|2)] out of the ARRL Handbook, I crunched some numbers. I wont state all of the figures here but assuming my calculations were correct, my total mismatched line-loss (using actual numbers) ending up being 1.52 dB. My run of RG-213/U should have a total matched line loss of 1.14 dB under perfect conditions (Manufacturers matched cable specs = 1.2 dB loss @ 28 mhz x 95' of my run) which means my total mismatch loss was only an additional .38 dB. which equates into a Power Loss Factor of -(.09).

This begs my original question. At what point should a transmatch be inserted into a perfectly matched antenna feed system? It seems to me that this question can only be answered if one actually knows the losses incurred by the transmatch itself in addition to the range on each particular band that the transmatch is capable of recouping its own losses in relation to acting as a transformer for the benefit of the transmitter.

73

43. Re: formula: frequency ==> antenna length?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 15:18:06 UTC
From: MAF <cjpaulsen@usa.net>
Message-ID: <OEHx6.17519$wx.3480014@typhoon.austin.rr.com>
Source record: 166893

"Thomas C. Sefranek" <tcs@cmcorp.com> wrote in message
news:3AC7150F.8B47FD5C@cmcorp.com...
> Sure! What kind of antenna?

Glad you asked! (I guess my first question was a little open-ended!)

Two things actually.
1. Just for reference, a straight "whip" antenna. No load or anything, just the wavelength, ie, how do you figure VHF into 2 meters (I think thats correct anyway). I had it somewhere, been told a million times, forgot.
2. What I am actually doing is making a FM loop for a stereo, and I don't want to use one of those premade dipoles because I am trying to hide it behind a mirror, and I find no matter how I arrange it, if the top of the T isn't completely horizontal it doesn't hardly work at all. But if I use a piece of 20 AWG solid copper wire, not cut to any particular length (jsut plop either end into the signal and ground terminals), I can arrange it in several positions that work as good as the old antenna, and I want to make sure the length of wire is right to be sure it is working as good as it can.

Also, on a T shaped dipole, is the enire length of the wire the issue, or just the top of the T? Or probably both?

Thanks,
MAF

44. Mounting a hamstick on a minivan

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 15:49:41 UTC
From: Eric Ruuska <eruuska@netnitco.net>
Message-ID: <3ac74d99@news.netnitco.net>
Source record: 166894

Hey everyone,

I'm getting an Icom IC706MKII and have pretty much decided on using
Hamsticks
for my antenna system. Any ideas on mounting 2 or 3 Hamsticks on a Chrysler
minivan? I'd prefer not to drill holes, but if I must, I must. Also,
www.hamstick.com
is not exactly a gold mine of technical info. Do I need any kind of whip to
attach
to it? The HF antenna page there advertises "Extra 47 inch tapered whips",
etc.
but don't explain if I have to buy them to begin with, or if they come with
the
Hamstick.

Thanks a bunch,
Eric Ruuska

45. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 15:58:52 UTC
From: fractenna@aol.com
Message-ID: <20010401115852.24281.00001207@ng-fm1.aol.com>
Source record: 166895

Everyone can join us as long as they aren't disruptive or have a history of disruption. I'm sure that extends to folks at BU or BC or UB or UC also there Rick. I'll repeat my invitation just so you understand that was said.

Thanks and 73,
Phil
de N1ZKT

>Hi Roy--
>
>>Been taking night courses at BU?<
>
>If you wish to reward Phil for his academic achievement, why not contact John
>F
>Ebersole, Dean of BU's Metropolitan College, at (617) 353-6000 and let him
>know
>what a great job Mr. Salkind is doing at keeping Dr. Cohen's Fractenna AOL
>account active on our newsgroup!
>
>Better yet, why not E-Mail an attached copy directly to him at met@bu.edu so
>he
>can view this excellent work firsthand!
>
>In this age of distance learning via the internet, why wouldn't Dean Ebersole
>be anything but elated to see that Chip's AOL address continues to function
>as
>an active Continuing Education resource for us all?
>
>Rick K1BQT
>

QST--

You are invited to join one or all of the following lists on yahoo groups(formerly
e-groups). All these reflectors are e-mail based, friendly, objective, and moderated ,so that no spam, porn, off-topic, or personal-offensive posts are sent out. Membership is screened against those with a history of disrupting/trolling. You will receive no off-list e-mails by subscribing: again; no spam.

Occassionally free offers of antenna files and other info are presented, along with photos of relevant antennas (unlike most NG's you CAN do attachments).

These lists (with some recent subscriber sizes) are:
ANTENNAS@YAHOOROUPS.COM 220 members
CROSSFIELDANTENNA@YAHOOGROUPS.COM 70 members
FRACTALANTENNA@YAHOOGROUPS.COM 310 members

Please review the descriptions at:

http://www.yahoogroups.com

Note the CFA list specifically deals with this antenna in an objectively critical fashion and no posts will be allowed that make grandiose claims without supporting data presented. To date, no data has been presented which requires the extraordinary claims made by some pundits: there is no evidence for better performance than any other small vertical antenna (and that performance is poor).

Fractal antenna posts should go the the fractal antenna reflector; not the antennas reflector. Note that Dr. Cohen, N1IR, the founder of fractal element antenna technology, uses this forum to answer questions on the web--exclusively. If you have a web-based question for him, kindly post it on the FAR assuming it is of general interest.

To subscribe to any list, either go through the process at egroups, or to skip the process (and some say 'annoying questions') just do:

---------- -subscribe@yahoogroups.com
where the ---------- is the name of a given list (such as 'fractalantenna')

Kindly do not query this e-mail address; the info here is complete for your information pleasure.

73,
Phil de
N1ZKT

46. Re: Rohn 25g "Hazer"??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 16:20:08 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <NlXHOgKOytiL0jB2ONHMPjYKubZs@4ax.com>
Source record: 166896

maniac9188@aol.com (Maniac9188) wrote:

> Hello, I am constructing a Rohn 25g tower together over here, and have gone
>through several install options without satisfaction. A friend of mine showed
>me, in the latest issue of Amateur Radio Trader (the second March issue), an ad
>for an item that is called the "Hazer", made by Glen Martin Engineering (the ad
>is on page 11, bottom left).. The item is described to "eliminate" ever having
>to climb your tower for antenna installs, or maintenance.. This item seems a
>little too good to be true..... Just a question, Does anyone out there know if
>this thing is worth picking up?? Sounds like it would be a worth while
>investment. You could lower the antenna array down to avoid direct contact with
>storms also, that's what I like most!! I sure would like to know the
>dimensions of the Hazer, to judge how long I need to go for the mast......
>Please Email me with any comments or suggestions. The address is
>maniac9188@aol.com, and please NO SPAM..... Have a nice day.
>
> Charles

You can go to http://www.glenmartin.com/ and get info about their products and
hazer...

I bought a ground rod driver from Glen Martin, and it works extremely well.
Don't know about their other products...

Bob
k5qwg

47. Re: Fractal Antenna Reflector

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 16:47:35 UTC
From: fractenna@aol.com
Message-ID: <20010401124735.06341.00001832@ng-ff1.aol.com>
Source record: 166897

> Hey, "Phil" (and Chip), instead of QST'ing (spamming) the usenet antenna
>newsgroup, how about QST'ing the 300 members of the reflector, since there is
>NO traffic there now.

Good reason to ask a question there Burt:-) Why don't you post one? BTW, Chip
isn't me.

> Why doesn't the moderator post the messages sent to him
>for posting?

He does. But he and others help screen the ones that don't match the focus of
the group. There are no pending ones at moment.

> Is there a lack of communication there?
>

Nope.

> Maybe posts should be sent to <info@telcomcity.com>, or to
><query@fractenna.com>, or by mail to Phil Salkind at FAS, Telecom City.
>

The FAR is a fun and friendly group which has no affiliation with any of the
above places you mention. Why should people e-mail there?

> Or would that get Chip "fired" again? :-)

I don't follow. Please explain. You said something about the FAR and then
segued to e-mailing me in some off focus way and now you say something about
Dr. Cohen and termination. A little over the top Burt.

>
> See you at IEEE in Boston in July, though?
>

Let's set up a time! Who are you?:-)

73
Phil de N1ZKT

48. Re: Sailboat Antenna options

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 16:56:01 UTC
From: etagg <etagg@twcny.rr.com>
Message-ID: <B4Jx6.20636$nR.3951570@typhoon.nyroc.rr.com>
Source record: 166898

use a dead man off the top of your main mast them run a inverted v fore
and aft
"Loose Lines Limited" <looselines@lavac.com> wrote in message
news:wxox6.2261$e9.69013@news1.fdn.com...
> We are moving aboard our boat and looking for an antenna system. Several
> options are available but only four are practical.
>
> 1. Insulated backstay.
> Pros: Relatively easy to do and easy to hook up.
> Cons: Relatively expensive as a rigger would have to add the insulators,
> fixed length of about 40 feet
>
> 2. Just hook up to standing rigging with no insulators (use whole rig)
> Pros: Very easy to do, inexpensive
> Cons: I have no idea the radiation pattern or reception capabilities but
> some have said no problems
>
> 3. Freestanding whip
> Pros: Moderately easy to do
> Cons: Relatively expensive to purchase and mount
>
> 4. Wire center fed dipole hoisted up when radio is in use
> Pros: Inexpensive, very good transmission/reception characteristics
> Cons: Damned awkward to keep hoisting and retreiving the thing.
>
> Equipment is a new ICOM 718 (snipped) and a SGC 237 tuner.
>
> By the way, the dipole has other advantages as the boat at present is not
> rigged for HF transmissions and an extensive ground will have to be
> installed for all the other antennas.
>
> Environment is salt water cruising.
>
> I would appreciate any input or thoughts on the matter. I am brand new to
> amateur radio and any assistance would be most welcome.
>
> Tom
>
>

49. Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 16:58:23 UTC
From: Robert Moughton <mailliw@peoplepc.com>
Message-ID: <tcenkf9au88kb3@corp.supernews.com>
Source record: 166899

Has anyone ever used aluminum fence wire to bury for radials? I see it as being fairly inexpensive as compared to copper and you get a lot of feet for the buck but I don't know how it will perform. Also, how will burying insulated wire compare to bare wire? I'm putting up a HF6V butternut and want to install a good ground. Any help will be appreciated.

Bob
N4RPK

50. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 17:14:18 UTC
From: k1bqt@aol.com
Message-ID: <20010401131418.19862.00001797@ng-cd1.aol.com>
Source record: 166900

Hi Phil--

>Rick. I'll repeat my invitation just so you understand that was said.<

Thanks. Frequent repetition of Chip's message is good because it may encourage more newsgroup members to report on his generous outreach effort! You're a good man.

73

Rick K1BQT

51. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 17:29:19 UTC
From: fractenna@aol.com
Message-ID: <20010401132919.18426.00001695@ng-fl1.aol.com>
Source record: 166901

>Hi Phil--
>
>>Rick. I'll repeat my invitation just so you understand that was said.<
>
>Thanks. Frequent repetition of Chip's message is good because it may
>encourage
>more newsgroup members to report on his generous outreach effort! You're a
>good man.
>
>73
>
>Rick K1BQT
>

I think action is needed Rick. On that we all agree. When someone you call 'Harvey' ends up being very real that says a lot about your focus doesn't it? Not to mention your judgement.

Is there some reason why you feel I can't use this screenname? Is there some reason why you think a professor or dean at UB or BC or the Dalai Lama or whatever needs to know? I can't imagine why.

Have you checked with aol on this? If my use of this screenname breaks the rules then why has no one been notified? Why haven't you notified them?

Right now I am at a telephone. It's at someone else's place. Now, if I use this telephone and very clearly say who I am then who is responsible for my comments? Is it me? Is it the phone company? Is it the other person?

If I call from a pay phone and say your mother wears army boots (a fictitious example) then do you go after me or the vendor who owns, or pays a fee to run, that pay phone?

Same thing with screennames Rick. They are not people. People are people.

More to the point, what is this all-important violation that you feel absolutely NEEDS to be brought to the attention of others? Please fill us in. Why keep us in the dark?

From what I can see you and your buddies will just say anything you want to get me to stop saying what I want. It has a bizarre and desperate feel to it.

Won't happen. Hasn't happened.

73
Phil

de N1ZKT

52. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 17:33:17 UTC
From: fractenna@aol.com
Message-ID: <20010401133317.18426.00001696@ng-fl1.aol.com>
Source record: 166902

>Hi Phil--
>
>>Rick. I'll repeat my invitation just so you understand that was said.<
>
>Thanks. Frequent repetition of Chip's message is good because it may
>encourage
>more newsgroup members to report on his generous outreach effort! You're a
>good man.
>
>73
>
>Rick K1BQT
>

This is not Chip's message.

73
Phil
de N1ZKT

53. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 18:08:53 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <l8rectchdks29i63iukdcmnt8v33iosffb@4ax.com>
Source record: 166903

On 01 Apr 2001 17:29:19 GMT, fractenna@aol.com (Fractenna) wrote:

>
>Right now I am at a telephone. It's at someone else's place. Now, if I use this
>telephone and very clearly say who I am then who is responsible for my
>comments? Is it me? Is it the phone company? Is it the other person?

Hi All,

My fears appear to be coming to fruition sooner than this summer. Our
herr doktor appears to be having an fractexistential crisis.
>you think a professor or dean at UB or BC or the Dalai Lama or

No, no, herr doktor, you are not a dean, or the Dalai Lama... - whew -

But we all appreciate the humor (especially good dovetail to the day).

And this stirs in me the need to commemorate the occasion....

73's
Richard Clark, KB7QHC

54. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 18:20:04 UTC
From: EAG <n5nug@ix.netcom.com>
Message-ID: <9a7rfgsij1@slb7.atl.mindspring.net>
Source record: 166904

Bob, I installed aluminum wire here is the Dallas soil and they
oxidized to almost nothing in under two years time. I use insulated
wire for my radials now. 73, Ed - N5NUG

--
Edward A. Goodman 214-352-4623 ICQ 31510047
URL http://home.ix.netcom.com/~n5nug/index.html

55. BUTTERNUT BUTTERFLY ON 6 Meters..anyone tried it???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 18:24:10 UTC
From: earlve3ab@igs.net
Message-ID: <3ac77093.62867426@news.igs.net>
Source record: 166905

Hi Everyone. My boxed Butternut Butterfly is going up on the tower
this spring..and id like to know if anyone has tried it on 6 meters??
It may have a high SWR ...say 3 to 1...(just a theoretical guess)..
but if it works..I would still use it. I now have a Ten Tec 6 Mtr
transverter..so Im going to try some 6 mtrs as well.
Im thinking ..what could also be done..to make it work on 6 is to
add a very lightweight 6 mtr dipole aluminum wire element riding
piggy back somehow to the main driven element..Just curious
if anyone has tried it...Im going to try it myself by doing some
adjustments at ground level with the reflector near the ground
and the driven element pointing straight up. 73 Earl VE3AB
PS ..can anyone cofirm if the Gain figures for this mini beam..
claimed to be 3 db for 14 mhz and slightly higher for the higher
bands are true? (are they db dipole or db isotropic..i forget!)

56. screwdriver on balcony?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 18:26:24 UTC
From: Robert Joshua Chen <rjchen@Stanford.EDU>
Message-ID: <9a7rsg$p7d$1@nntp.Stanford.EDU>
Source record: 166906

Does anybody have experience setting up a screwdriver-type mobile antenna on upper floor balconies?

I have a High Sierra HS1500KKII screwdriver (hsantennas.com) that I'm in the process of setting up on a third floor non-metallic balcony. So far I've been experimenting with the number and length of radials needed (I believe the antenna is a loaded 1/4 wave on 10-80m so radials it does need, and plenty). Limited floor space has really posed a problem in this regard. I do realize on 40m and 80m it will be something like <10% efficient, but as I've been told many a time, anything I try to install for HF on my balcony will be a compromise.

Anyway, I've found if I hang down one 1/4 wave radial for 10m, 15m, 17m, and 20m (for a total of 4), I can get reasonable SWR's on these bands (plus 12m, and some parts of 40m and 80m). I added 7 more 10ft. radials, and that helped a little. I'm thinking I need to go longer on these reamining radials, but I can only do that by somehow loading the radials.

So if anybody has had experience or advice on this, I'd love to hear it. And yes, Moxon's HF antennas for all occasions book is on it's way...

Thanks in advance,
-Robert

57. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 18:29:52 UTC
From: richardharrison@webtv.net
Message-ID: <23255-3AC773A0-122@storefull-115.iap.bryant.webtv.net>
Source record: 166909

Tom, W8JI wrote:
"However, if I resonate the center the impedance across the gap becomes very high."

No doubt the inner conductor of coax is tightly coupled to its shield. No doubt a multiturn coil inside a surrounding shield is tightly coupled.

If a small loop is made from coax with an insulated break in the middle of the outer conductor, then this break becomes the drivepoint for the loop. The loop is balanced so grounding its midpoint is no problem. Thanks to Ian White for this idea.

The radiation resistance of very small loops is proportional to the fourth power of the perimeter of the loop in wavelengths. Under 1/4-wavelength in the perimeter, the radiation resistance is under one ohm. The loop also has some inductance which is proportional to the diameter of the loop. In total, the drivepoint impedance of the small loop is very low.

I am blind again to the effect tuning the center conductor of the coax to resonance would have on the impedance of a small loop made of coax shield unless the inner loop had been connected to a very low impedance indeed.

Best regards, Richard Harrison, KB5WZI

58. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 18:30:06 UTC
From: kenneth m cubilo <kce@freeway.net>
Message-ID: <3ac773ca$0$62153$2c3e98f8@news.voyager.net>
Source record: 166907

if you bury aluminum wire it will dissolve away to nothing in a very
short time. best to buy a roll of #18 copperweld

Robert Moughton wrote:
>
> Has anyone ever used aluminum fence wire to bury for radials? I see it as
> being fairly inexpensive as compared to copper and you get a lot of feet
> for the buck but I don't know how it will perform. Also, how will burying
> insulated wire compare to bare wire? I'm putting up a HF6V butternut and
> want to install a good ground. Any help will be appreciated.
>
> Bob
> N4RPK

59. Re: Sailboat Antenna options

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 18:35:48 UTC
From: kelly@dvol
Message-ID: <3ac7530b.132033781@news2.dvol.com>
Source record: 166908

On Sat, 31 Mar 2001 12:33:38 -0500, "Loose Lines Limited"
<looselines@lavac.com> wrote:

>We are moving aboard our boat and looking for an antenna system. Several
>options are available but only four are practical.
>
>1. Insulated backstay.
>Pros: Relatively easy to do and easy to hook up.
>Cons: Relatively expensive as a rigger would have to add the insulators,
>fixed length of about 40 feet
>
That'll work fine and you're right on the money as far as maintaining
the structural integrity is concerned.
>
>2. Just hook up to standing rigging with no insulators (use whole rig)
>Pros: Very easy to do, inexpensive
>Cons: I have no idea the radiation pattern or reception capabilities but
>some have said no problems
>
There's only one way to find out. You'll need an external random-wire
antenna tuner.
>
>3. Freestanding whip
>Pros: Moderately easy to do
>Cons: Relatively expensive to purchase and mount
>
Would have to be really big to get it working right on 40 & 80.
>
>4. Wire center fed dipole hoisted up when radio is in use
>Pros: Inexpensive, very good transmission/reception characteristics
>Cons: Damned awkward to keep hoisting and retreiving the thing.
>
Yeah, but it almost has to work and you don't need a ground.
>
>Equipment is a new ICOM 718 (snipped) and a SGC 237 tuner.
>
>By the way, the dipole has other advantages as the boat at present is not
>rigged for HF transmissions and an extensive ground will have to be
>installed for all the other antennas.
>
One grounding solution for glass boats is to install several square
feet (square yards is better) of brass or copper foil against the
interior surface of the hull below the water line. You can get very
low impedence capacitive coupling between the foil and the water. Same

principle used in thru-the-glass VHF/UHF mobile antennas.
>
>Environment is salt water cruising.
>
>I would appreciate any input or thoughts on the matter. I am brand new to
>amateur radio and any assistance would be most welcome.
>
Two suggestions: Dig up your local professional marine radio shop and
pick their brains, find out what antennas & grounds they install on
ragboats for offshore SSB marine use.
>
There's a daily marine ham net somwhere up the 40m phone band, I
forget the freq and I think it starts at 7am. Those guys have done it
all, good source of practical info.
>
>Tom
>
w3rv

60. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 18:47:41 UTC
From: richardharrison@webtv.net
Message-ID: <23255-3AC777CD-124@storefull-115.iap.bryant.webtv.net>
Source record: 166914

I haven`t seen the shielded MFJ ferrite loop antenna which started this thread. It`s possible that it has a real Faraday shield. If it does, it can have an improved signal to noise ratio in the near field of a noise source.

Best regards, Richard Harrison, KB5WZI

61. Re: Respond to Phil's QSpamT

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 18:55:44 UTC
From: fractenna@aol.com
Message-ID: <20010401145544.08309.00001743@ng-mn1.aol.com>
Source record: 166910

>Phil Salkind
>Phone:
>617-381-9595
>Fax:
>617-489-6207
>
>Fractal Antenna Systems
>Telecom City
>c/o Mystic Valley Development Commission
>300 Commercial Street, Suite 27
>Malden, MA 02148
>
>
>Other info:
>
> Fractal brick:
>
>http://www.fractenna.com/images/fig3.jpg
>
>
> Information on fractal antennas and Fractal Antenna Systems,
> Inc. can be found at http://www.fractenna.com with
> information on Telecom City at http://www.telcomcity.com.
>

Please don't advertise on this newsgroup. Fractal Antenna Systems, Inc. has nothing to do with this and does not encourage nor endorse any form of advertisement on newsgroups.

>
>
>Chip in happier days:
>
>http://www.fractenna.com/images/cfa.jpg (Does cfa = cross field antenna?)
>

What does this have to do with an invitation to lists that I posted?

Is Chip unhappy now? Don't think so. I'll ask him..he's soldering....standby.

Nope. He is not unhappy. He's listening to the White Album and attaching mmcx connectors. And he still doesn't want to use the newsgroups. Says send messages to the FAR. Sorry.

>Chip at Telecom City:
>

>http://www.telcomcity.com/anchor/PCC/Clients/Images/fracver2.JPG
>

A more recent pix is in April 2001 Sky and Telescope in a SETI article. Even this outdated as he lost about 25 pounds since the beginning of the year.

>He's closest to camera. "Phil" is in the green shirt.
>

Not exactly.

>Quite an impressive operation there at Fractal Antenna Systems!

Thanks. Too bad you can't see the rest of the plant in such a tight pix! There is a neat pre-production/prototyping area and some cool ranges which would make good pix:-)

Would you like to come and visit Burt? Let's work it out. Just let Fractal know who you are and bring some ID so we can 'badge' you in.

You can drop us a line at fractenna@aol.com.

73
Phil
de N1ZKT

62. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 19:01:12 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac77a2c.162643520@news.accessunited.com>
Source record: 166911

On 01 Apr 2001 17:33:17 GMT, fractenna@aol.com (Fractenna) wrote:

>This is not Chip's message.
>
>73
>Phil
>de N1ZKT

Happy Birthday Phil and Chip.

63. Re: Sun Spots This Weekend

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 19:03:27 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac77aa0.162759319@news.accessunited.com>
Source record: 166912
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

On Sun, 01 Apr 2001 06:31:13 GMT, W.G. Ewald <wgewald@att.net> wrote:

>On Sun, 01 Apr 2001 00:52:52 -0500, Jay Martin <jlm26@xotmail.com>
>wrote:
>
>>Most activity within the past 10 years..
>>
>>Check out www.nasa.gov
>>
>>Jay
>
> And HAARP is active on 3390 KHz.

Chicken Little is active on RRAA.

64. Re: A question about Transmatches - Please weigh in!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 19:14:38 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac77b27.162894748@news.accessunited.com>
Source record: 166913

On Sun, 1 Apr 2001 11:04:40 -0400, "Paul" <pvanasse@mail.direcpc.com>
wrote:

>I agree with your statements however no-one has yet to answer my question.
>If one inserts a transmatch into a perfectly matched transmitter/antenna
>system, what it the total loss in dB's due to the transmatch insertion?

No one can answer that, because there is no one single answer. It
depends on the transmatch, and how you adjust it.

>One
>person did state that his incurred losses were about 10% due to transmatch
>insertion however is this a manufacturers spec, or a pure observation? There
>has to be *some* stated loss due to the mere fact that the potential for
>increased electrical resistance is intentionally being added to the antenna
>system yes - no?

The 10% was for one condition on one particular tuner on one band.

As a general rule, losses are highest with low impedance loads on the
lowest frequency bands. Losses in general are lowest with high
impedance loads or on the highest frequancy ranges.

>This begs my original question. At what point should a transmatch be
>inserted into a perfectly matched antenna feed system? It seems to me that
>this question can only be answered if one actually knows the losses incurred
>by the transmatch itself in addition to the range on each particular band
>that the transmatch is capable of recouping its own losses in relation to
>acting as a transformer for the benefit of the transmitter.

Losses are generally so low they are not an issue. I use a transmatch
whenever the impedance is significantly other than the design value
for the radio.

The reason is simple, radios with fixed output matching can get
"dirty" on SSB when they drive other than their design load impedance.
Why risk that, and why risk other problems when the most loss change
you can expect is 1/2dB or less?

If the radio is shutting down 10%, and the loss in the tuner is 10%,
then you have a break-even power situation... but at least the radio
is seeing its design load. So why worry? Use a transmatch when
necessary, which is any time the load is noticably mismatched.

73 Tom

65. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 19:17:14 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac77db1.163544038@news.accessunited.com>
Source record: 166915

On Sun, 01 Apr 2001 14:30:06 -0400, kenneth m cubilo <kce@freeway.net>
wrote:

>if you bury aluminum wire it will dissolve away to nothing in a very
>short time. best to buy a roll of #18 copperweld

If you scratch or knick the copperweld it will disappear faster than
the aluminum.

Just use bare or insulated soft-drawn solid copper, like house wiring.
Any gauge larger than #16 will hold up very well for many many years.

73 Tom

66. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 19:29:32 UTC
From: k1bqt@aol.com
Message-ID: <20010401152932.25129.00001836@ng-cr1.aol.com>
Source record: 166916

>This is not Chip's message.<

Sure it is! Phones have no password protection, but E-mail accounts do. Did you steal Chip's password? If not, you're merely using his account with his permission to lobby on his behalf with his prior knowledge and possibly in response to his direct request. All for naught, however! As long as he's the account-holder, sponsors the address, pays the bill, controls access through passwords, and encouraged you to do it, it's his message.

As you suggest, there's no law against an account-holder disseminating the password. In fact, it's adventageous if the intent is to obfuscate the authenticity and authorship of messages eminating from the account!

Rick K1BQT

67. Re: Ultimate Stealth Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 19:44:30 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9a80gf$a1v$1@slb2.atl.mindspring.net>
Source record: 166918

Cecil:

On what date then will you be at the top of the DXCC honor roll?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AC7E2FF.D8828567@IEEE.org...
> Forget laser or plasma antennas. Quantum Physics has already
> given us the ultimate stealth antenna. When we can have action
> at a distance involved with nonlocality, who needs a localized
> antenna? The only fly in the ointment is that it violates the
> principles of special relativity. That is, unless we understand
> the principles of advanced action/backward influence. The
> concepts are well known. All that remains is the implementation.
>
> "As it stands, quantum mechanics does not embody the backward
> influence which is required to avoid nonlocality. ... Only an
> advanced action approach seems able to properly reconcile
> nonlocality with special relativity." from _Time's Arrow_
>
> So there you have it, folks, the perfect stealth antenna. There
> seems to be a nonlocal "repeater" which exercises simultaneous
> control over matched particles. Modulate half of the particles
> in your antenna restricted apartment and the other half energizes
> your remotely located antenna. Or forget the antenna altogether.
> With backward influence the person you will someday decide to talk
> to already will knew what you were going to say. In fact, it's already
> happening. I already know what the content of future QSO's was.
> --
> 73, Cecil, W6RCA
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

68. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 19:52:24 UTC
From: fractenna@aol.com
Message-ID: <20010401155224.22133.00003171@ng-fc1.aol.com>
Source record: 166769

>Sure it is! Phones have no password protection, but E-mail accounts do. Did
>you steal Chip's password? If not, you're merely using his account with his
>permission to lobby on his behalf with his prior knowledge and possibly in
>response to his direct request. All for naught, however! As long as he's the
>account-holder, sponsors the address, pays the bill, controls access through
>passwords, and encouraged you to do it, it's his message.
>
>As you suggest, there's no law against an account-holder disseminating the
>password. In fact, it's adventageous if the intent is to obfuscate the
>authenticity and authorship of messages eminating from the account!
>
>Rick K1BQT
>
>

Ohhh! I get it! So you're saying Dr. Cohen is responsible for all the actions
of others:-)

Ahhh!

I knew Dr. Cohen was good, but making him a Jesus figure in responsibility
seems a bit over the top there Rick:-)

Well I know who I am. Go ahead and complain to aol. Why haven't you done this
yet?

From what I can gather you're saying that anyone that, say, sends an e-mail
from any screenname for which, say Joe Blow pays the bill, then Joe Blow's
wife, kid, friends, visiting uncle, associates and so on should have ALL THERE
POSTS sent to, say Joe Blow's boss.

Do I follow you right?

Can you quote the part of the aol terms and conditions that says that only one
person can use a given screenname? If so, then I will gladly continue this
conversation under another screenname which contains "phil" in it.

Please enlighten me. You've worked very hard at focusing on all of this and now
it's time for you to use that knowledge:-)

73
Phil
de N1ZKT

69. QST-QST-QST-- THE FRACTAL PROJECT - THE EARLY YEARS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 19:55:12 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <l40fctsatpmkg84tijjgjdshiolthcif15@4ax.com>
Source record: 166770

notes from:

****** T H E F R A C T A L P R O J E C T *******

-------------------- the Early Years ------------------------------

li'l Grasshoppa (wiping his nose) and another monk approach the Dalai Fractal with humility and submission. They shuffle forward, toward the master as He instructs young monks on the beingness of Fractal:

"and here begins the Master's lesson.......

"The Fractal at dimension 0 is the straight wire that nature gave you to nurture and guide (as in propagate) RF gently out into that good night.

"The Fractal at dimension 1 is when We, in our lamentable ignorance, grasp the wire incorrectly and bend it. Harken tho' those who seek enlightment (this is a magic moment my little bean-pods); because we have established a unit length (provided to us by nature) and we have rendered that integer into a FRACTionAL number." The monks drew a breath together as if one man through his left nostril.

"The Fractal at dimension 2 is when the Karma of nature laughs mockingly as it clones us; and splits the wire in seperate planes of personal reality. Unable to learn from our mistakes and attain Nirvana, we are blind to the wholeness of the wire and are thus miserably tasked with the echo of the cosmos:
HTTP/1.0 404 OBJECT NOT FOUND (fract-help.doc@Sisyphus.com)
RETURNING TO PAGE: 'the definition of dimension 0'"

Five hours elapse before li'l Grasshoppa regains consciousness and notices the Dalai Fractal introducing dimension 0.... again. He decides perhaps now is the time to go out into the wilderness and claim his following. (That is: perhaps he could escape a life of abject poverty for the brighter rewards of begging and being robbed)

The Dalai Fractal, ever mindful of his students (and aware of those who approach), holds the being of our li'l Grasshoppa in his 'minds eye' and follows li'l Grasshoppa's every stupid move. (when he isn't bending wire he's picking his nose). However, tranquility was undisturbed in the Dalai Fractal: he had been (or would be going) through this before (soon/next).

OooHhhmmmmmm's lllaaaaaaawwWWW

"and here begins the Master's lesson.......

70. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 19:59:53 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9a81aa$o6i$1@slb7.atl.mindspring.net>
Source record: 166771

Kenneth:

Aluminium Al is very high on the electrochemical scale, certainly much higher than copper Cu. Al will disolve away to nothing very quickly, especially so if it is moist or wet.

Even bare Cu will tend to suffer from ionic migration and disolve over a couple of years if not properly protected. Use insulated or preferably enamelled copper wire for buried radials.

The only real way to protect outdoor buried metalic conductors is to do like they do with ships at sea, and telephone company electrical plant. They use cathodic protection! Don't let your buried or emersed wires become anodes! If you maintain the conductors at a few volts of negative DC with respect to the ground or water they are buried or submerged in, then you prevent the ionic migration of the metallic ions which causes the ultimate dissolution of the wire.

Most metal seagoing ships use either active cathodic protection or they attach sacrificial anodes to their hulls which must be periodically renewed. Often ships will use both, active cathodic protection as well as sacrificial anodes. All telephone company wire pairs are operated at a potential of -48 Volts DC with respect to earth for the same reason. This negative voltage comes from the station batteries at the Central Office or RT Cabinet. The 48 volts is used to power your telephone. If you measure it at your home you will see that it is negative with respect to ground for precisely that reason. It has negative 48 volts applied, with respect to ground (NOT postitive) to protect the copper wires from disolving due to ionic migration.

I have seen several miles of #24 AWG telephone company copper wire completely disolve and disappear within a week when +48 Volts was accidently applied wrt to ground.

I usually use enamelled copper wire for my buried HF antenna radials. The enamel coating protects the wires and they can last for 10 years or more without ionic migration effects protected by the enamel coating.

-Peter K1PO

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ac77db1.163544038@news.accessunited.com...
> On Sun, 01 Apr 2001 14:30:06 -0400, kenneth m cubilo <kce@freeway.net>
> wrote:
>
> >if you bury aluminum wire it will dissolve away to nothing in a very
> >short time. best to buy a roll of #18 copperweld

>
> If you scratch or knick the copperweld it will disappear faster than
> the aluminum.
>
> Just use bare or insulated soft-drawn solid copper, like house wiring.
> Any gauge larger than #16 will hold up very well for many many years.
>
> 73 Tom

71. Re: QST-QST-QST-- THE FRACTAL PROJECT - THE EARLY YEARS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 20:13:37 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <0d2fctklehggjqq9p6rudjl2vpkpc4chle@4ax.com>
Source record: 166772

Li'l Grasshoppa found shelter from the night in a peasants hut along el Camino Real. They were bright eyed with the wonders of his claims. In response to their generousity he assumed the lotus position on their mousepad and proceeded to enlighten his flock:

"My children, witness this pilgrim's evidence." He drew the wire from his cloak. The youngsters backed into the shadows with astonishment. The wire appeared large to some, and small to others, there were some who could see it both ways. Unadorned and straight, his wire soon lost its power to attract. From the shadows came a small voice "..but Sir, the wire has no more gain than a dipole. "Those that regained composure first, threw our pilgrim out into the street without his shoes. "Get facts or money if you want to sleep here!" they shouted through the locked door.

Stunned from being cast out, our pilgrim felt the edge of that elusive thrill of Nirvana. Shortly afterword Li'l Grasshoppa realized that this feeling was more due to the combination of the geometry of the fractal folds (that also reduced actual tissue damage) and the peasants' traditional form of revenge. He'd never been in this situation before - bare assed and in the gutter. The couple approaching him appeared to be familiar. Actually it was the dipolar reflection known as Vuja De

"Say Wah? You be lookin' my ho' m'ufu!?"

Karma returned in the form of a .45

Li'l Grasshoppa gave the gentleman his robe so the lady could walk across a puddle. "" Actually, they walked across Li'l laying in the puddle, but they used his robe to dry their shoes of what splatter there was. The fractal fold proved to be robust under pressure.

The sun came out and dryed our pilgrim. Li'l Grasshoppa reflected on the cosmic absurdity of finding himself in a puddle along el Camino Real. What a country! The door opened and the peasants emerged as though they were witness to a lightning strike. One by one they passed. It was a small crowd but a seemingly endless procession, over and over and.... The little girl of the shadow (as she is known in the legends) touched the pilgrim with her toe. The fractal held firm. [Her toe is kept as a relic in the shrine to Our SYSOP of Sisyphus.com.]

Li'l Grasshoppa tried to breath, but with mud in his face he could only manage half a snort, a nasal wheeze.

72. Re: QST-QST-QST-- THE FRACTAL PROJECT - THE EARLY YEARS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 20:18:48 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <v43fctkb3bpnac9v97k71v310j60k9688k@4ax.com>
Source record: 166773

There was the sound of the meadowbrook gurgling through his mind when Li'l Grasshoppa re-examined the fold. The simplicity of thought he had when he left the monastery had become as convoluted as a one dimensional random walk. "Oh Dalai Fractal---" was his cry, his whisper.

<<Ah Yes! li'l grasshoppa. I see you always in my mind's eye. You hold the truth before you. Can you see the fraction of the Fractal? Do you behold it's essence or merely its measure?>>

Oh Dalai Fractal, I am fallen! For I can see it one way or the other, but never both. When I stand before my doctors in dissertation, common measurement is avoided. When I take its measure with men of great experience, our ancestors are mocked.

<<Oh stop whinning li'l grasshoppa, for resolution is here!>>

Li'l Grasshoppa takes a drink from the cup of nepenthe. He recalls a time in his youth climbing the hill to the monestery. Another monk, much like him, takes the cup from his hand and says:
"The time you recall is now. Approach the Master."

Li'l Grasshoppa pulls away from the stranger and feels the jab from the end of the wire into his shoulder. Our monk gently arranges his robes so that his precious wire remains undisturbed. "It would not do to appear before the Dalai Fractal with a less than integral wire."

<<li'l grasshoppa'... Whipe your nose.>>

73. Re: A question about Transmatches - Please weigh in!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 20:21:48 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9a82kl$6n2$1@nntp9.atl.mindspring.net>
Source record: 166774

Cecil, Tom:

Even with a coil in a tuner of a "given" high Q measured when the coil is set at maximum inductance or fully engaged, it might be that the Q when it is tapped down or rolled to a new lower inductance position will be lower because of the effects of shorted turns, etc...

I'm not sure whether setting the coil for the least inductance required to achieve a 1:1 match is the least lossy setting of the tuner.

That's the common wisdom I know, but is it actually true when taking into account that the unwanted turns on the coil are shorted.

I believe that someone on the newsgroup pointed out a few weeks ago that most commercial tuners actually short out the unwanted turns to prevent spurious self-resonances from showing up as the coil is tuned due to the interwinding capacitances.

Has anyone ever investigated the actual Q or loss resistance of a tuner roller inductor or tapped inductor at various inductance settings below maximum inductance. I believe that many of the commercial antenna tuners actually "short out" the unwanted turns as the inductance is reduced. The shorted turns then become lossy or shorted "secondary windings" coupled to the rest of the coil.

If the lossy effect of the shorted turns is taken into account then, is it really true that the minimum inductance setting of the coil in a T-Tuner required to reach a perfect 1:1 VSWR match actually the lowest loss setting for the tuner?

Thoughts, comments,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AC82A63.228D4498@IEEE.org...
> Paul wrote:
> > I agree with your statements however no-one has yet to answer my
question.
> > If one inserts a transmatch into a perfectly matched transmitter/antenna
> > system, what it the total loss in dB's due to the transmatch insertion?
> > Am I missing something here?
>
> Yep, you haven't given enough information for anyone to answer your
> question. What is the 'Q' of the coil? Is there only one coil? Is
> the coil a roller coil, a tapped coil, or a fixed coil? Is the tuner
> an L-tuner, a T-tuner, a pi-net tuner, or something else?

> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

74. QST-QST-QST-- THE FRACTAL PROJECT - THE DARK YEARS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 20:23:32 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <9b3fctk06bb47vo7dj5a6mbd79ad0ngdq5@4ax.com>
Source record: 166775

notes from:

****** T H E F R A C T A L P R O J E C T *******

---------- the Dark Years ------------------------------

<<li'l grasshoppa'... Whipe your nose.>>

Ol' Grasshops smiled inwardly as the voice from another life fractalized his memory. The smile dissappeared as the moment of lucidity revealed how truly binding the sleeves tied behind him were.

Ol' Grasshops thrashed mildly in the dark until he found that it was simply twisted wire snagged to the wristband of his digital Rolex. Ah yes, he reflected ponderously, the presentation watch from the Fractal Manufacturer's Association. It had been an emotional offering from the board in expression of its admiration for our hero's... well, for "being such a great guy."

Ol' Grasshops mood darkened as he noted that his watch was slow again, and set it against the flashing VCR Clock (how many times had he been through this before?). Our hero commanded lights to blaze with a clap of his hand and once again serenity returned. With that damn wire unsnagged from his newly set digital Rolex, he was ready to face the day of Manufacturing Fractals. ((but first where's that coffee?))

The morning mail revealed another patent granted and Ol' Grasshops immediately cast an eye to the wall in search of a crack to plaster. An ironic smile came to his lips as he considered this room already had three inches of such insulation all 'round.

Our hero pushed back from the table ((where's that coffee?)) and surveyed his fractal domain. His was a lofty view from the peak as president of the Fractal Manufacturing Association. It was an exclusive association without the riff-raff and other engineering trash.

Ol' Grasshops drifted into reverie to compare himself to the Dalai Fractal he had commercialized so many years before. ((Fool couldn't see the market)) This was a dangerous habit that Ol' Grasshops found hard to break. The pleasure of this mild self delusion was offset by that former training that sometimes altered the occassion ((is that my coffee?))

Li'l Grasshoppa takes a drink from the cup of nepenthe. He recalls a time in his youth climbing the hill to the monestery. Another monk, much like him, takes the cup from his hand and says:

"The time you recall is now. Approach his lord Darth Fractal!"

75. Re: QST-QST-QST-- THE FRACTAL PROJECT - THE DARK YEARS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 20:35:52 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <ds3fctop9fkhgrffl5l3mo305ohv0qlmgr@4ax.com>
Source record: 166777

notes from:

****** T H E F R A C T A L P R O J E C T *******

---------- the Empire Strikes Back ------------------------

<<li'l grasshoppa'... Whipe your nose.>>

Darth Fractal beheld our hero (and his fractal zeit-geist fril)
approaching the podium. The corners of his smile lifted slightly with
this new amusing offering.

li'l grasshoppa and fril came to a shocked stop as they considered the
perversion of their worship - the Darth Fractal taking the Podium in
arrogant indifference to our hero's being natural heir to the Dalai
Fractal!

fril found his voice first: "reg. uspo - all pending rights are hereby
invoked!"

The Podium did not respond.

li'l grasshoppa found himself in an unusual state of indifference (too
many cups of nepenthe); but the lack of response was irritating and he
submitted to the urge to kick fril again.

"We are scheduled to speak to this august body this afternoon" fril
stammered.

The Podium did not respond. However, a mutter built across the
audience, some wondering aloud about another's mental capacity ("in
his cups is he?" being distinctly heard - repeatedly).

Darth Fractal swept his arm up to abate the rumors. The muttering
dissipated to within 0.001 dB of the cosmic background noise level.
He bent over the Podium to regard our heroes:
"Come over to the Lossy Side - you sons...!"

The shock sent our heroes stumbling out into the wilderness.
Unfortunately this iteration will have them stumbling back to witness
a second capture of the Podium by his lord Darth Fractal. Such is the
nature of the iteration.

But we will have been being here before once soon often.

<<li'l grasshoppa'... Whipe your nose.>>

...the lord Darth Fractal mocks:
"and here begins the Master's lesson......."

76. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 20:53:04 UTC
From: k1bqt@aol.com
Message-ID: <20010401165304.23196.00000178@ng-mn1.aol.com>
Source record: 166778

>I know who I am<

That's comforting, and I'm sorry you missed the point about message authenticity. Let's try something else, like helping Chip with those pesky little MMCX connectors.

First, watch your strip length--especially for the center conductor--you want the pin to sit straight up, but rest snugly on top of the dielectric (otherwise, you may have difficulty aligning the connector body and getting the pin through the center later on). A low-power resistance soldering tweezer and some fine .02" solder work great for attaching the pin without making a mess. If you're using LMR100, get all of the foil out from under the braid before you try to crimp it. Finally, make sure you don't mash down on the connector body when making the crimp--it reduces pull retention and may damage the connector!

There, this is an antenna forum and perhaps these comments are more useful.

73

Rick K1BQT

77. Re: A question about Transmatches - Please weigh in!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 21:01:10 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3AC79716.F026C941@dialpoint.net>
Source record: 166782

You are missing a lot. IF there were no losses due to the components of the transmatch (that is perfect coils and capacitors) the transmatch would not have aly loss in it. Most of the loss is in the coil not being a perfect inductor. NO INTENTIONAL resistance is added. A transmatch is not needed in a line with very low SWR. The only purpose of the transmatch is to allow a transmitter (well there are cases for a receiver but lets keep it simple) to see a load that the tuned circutis of the transmitter can match to the final tube or transistor. If the transmitter could match to any load you would not need the transmatch. Some of the older transmitters could match from about 25 to 1000 ohms or so or they were designed to work with a differant antenna system that was not 50 ohms.

Now pay attention. When the transmitter is cutting back the power due to a mismatch you are in danger of overheating and harming the transmitter. That is when you put the transmatch in the circuit so the transmitter will not be harmed.
The transmatch is not used so the transmitter can recoup its losses.

Stop worring about the ammount of power you loose or gain. If the transmatch is working properly the losses are so little they will not be noticed on the receiving end.

> I agree with your statements however no-one has yet to answer my question.
> If one inserts a transmatch into a perfectly matched transmitter/antenna
> system, what it the total loss in dB's due to the transmatch insertion? One
> person did state that his incurred losses were about 10% due to transmatch
> insertion however is this a manufacturers spec, or a pure observation? There
> has to be *some* stated loss due to the mere fact that the potential for
> increased electrical resistance is intentionally being added to the antenna
> system yes - no?
>
> Am I missing something here?
>
>
> simple experiment. Heres what I did:
>
> I intentionally went on 10 meters and ran my ICOM 706 at 100 watts. Because
> I have a 10 meter antenna that has been cut to exactly 28.450 Mhz I used
> this frequency as my starting point. I took a measurement at the transmitter
> and my output wattage was just about 100 watts with an SWR of 1.1:1.
>
> I then intentionally mistuned my radio upwards to a point where the radio
> folded back 10% (90 watts output). The frequency I ended up on was 28.770
> Mhz with an SWR of 1.6:1. I Then recruited the XYL to get ready to key the

> radio whilst I shimmied my lazy butt up onto the roof to take some
> measurements. BTW, I have a run of 95' of RG-213/U that feeds my 10 meter
> antenna.
>
> At the antenna feed point my total output wattage was about 63 watts with an
> SWR of approx. 2.3:1. I then managed to make it down off of the roof in one
> piece in order to hit the books.
>
> Using the formula:
>
> Mismatch Line-Loss (dB) = 10 log [a2-|p2| / a(1-|p|2)] out of the ARRL
> Handbook, I crunched some numbers. I wont state all of the figures here but
> assuming my calculations were correct, my total mismatched line-loss (using
> actual numbers) ending up being 1.52 dB. My run of RG-213/U should have a
> total matched line loss of 1.14 dB under perfect conditions (Manufacturers
> matched cable specs = 1.2 dB loss @ 28 mhz x 95' of my run) which means my
> total mismatch loss was only an additional .38 dB. which equates into a
> Power Loss Factor of -(.09).
>
> This begs my original question. At what point should a transmatch be
> inserted into a perfectly matched antenna feed system? It seems to me that
> this question can only be answered if one actually knows the losses incurred
> by the transmatch itself in addition to the range on each particular band
> that the transmatch is capable of recouping its own losses in relation to
> acting as a transformer for the benefit of the transmitter.
>
> 73

78. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 21:28:00 UTC
From: fractenna@aol.com
Message-ID: <20010401172800.20803.00001709@ng-fy1.aol.com>
Source record: 166780

>>I know who I am<
>
>That's comforting, and I'm sorry you missed the point about message
>authenticity. Let's try something else, like helping Chip with those pesky
>little MMCX connectors.
>
>First, watch your strip length--especially for the center conductor--you want
>the pin to sit straight up, but rest snugly on top of the dielectric
>(otherwise, you may have difficulty aligning the connector body and getting
>the
>pin through the center later on). A low-power resistance soldering tweezer
>and
>some fine .02" solder work great for attaching the pin without making a mess.
>
>If you're using LMR100, get all of the foil out from under the braid before
>you
>try to crimp it. Finally, make sure you don't mash down on the connector
>body
>when making the crimp--it reduces pull retention and may damage the
>connector!
>
>There, this is an antenna forum and perhaps these comments are more useful.
>
>73
>
>Rick K1BQT
>

Most of the time we just get the cable assemblies with plugs. Otherwise Dr. Cohen has a crimping tool and has been doing these for a couple of years now. Soldering is not a problem.

I don't like to put together anything smaller than an SMA.

Your advice sounds good and will no doubt prove helpful to those who have to attack these darn small connectors for the first time.

73
Phil
de N1ZKT

79. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 21:41:33 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AC7A08D.F2B53EBE@hiwaay.net>
Source record: 166781

Phil-Chip- The real answer is- the "owner"of the account is --
accountable--!

THe other half of the answer is:
Most regular readers of this NG think the signature "Phil" is a lie- and
the real author- hiding from an agreement he made, is ---Chip Cohen--!

THe sig, "Phil" is a fiction- this post is an opinion.

Bill

Fractenna wrote:
>
> >Sure it is! Phones have no password protection, but E-mail accounts do. Did
> >you steal Chip's password? If not, you're merely using his account with his
> >permission to lobby on his behalf with his prior knowledge and possibly in
> >response to his direct request. All for naught, however! As long as he's the
> >account-holder, sponsors the address, pays the bill, controls access through
> >passwords, and encouraged you to do it, it's his message.
> >
> >As you suggest, there's no law against an account-holder disseminating the
> >password. In fact, it's adventageous if the intent is to obfuscate the
> >authenticity and authorship of messages eminating from the account!
> >
> >Rick K1BQT
> >
> >
>
> Ohhh! I get it! So you're saying Dr. Cohen is responsible for all the actions
> of others:-)
>
> Ahhh!
>
> I knew Dr. Cohen was good, but making him a Jesus figure in responsibility
> seems a bit over the top there Rick:-)
>
> Well I know who I am. Go ahead and complain to aol. Why haven't you done this
> yet?
>
> From what I can gather you're saying that anyone that, say, sends an e-mail
> from any screenname for which, say Joe Blow pays the bill, then Joe Blow's
> wife, kid, friends, visiting uncle, associates and so on should have ALL THERE
> POSTS sent to, say Joe Blow's boss.
>

> Do I follow you right?
>
> Can you quote the part of the aol terms and conditions that says that only one
> person can use a given screenname? If so, then I will gladly continue this
> conversation under another screenname which contains "phil" in it.
>
> Please enlighten me. You've worked very hard at focusing on all of this and now
> it's time for you to use that knowledge:-)
>
> 73
> Phil
> de N1ZKT

80. Re: Sun Spots This Weekend

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 22:38:20 UTC
From: mike.luther@ziplog.com
Message-ID: <tcfbesfk2ihh01@corp.supernews.com>
Source record: 166783
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

In <3ac77aa0.162759319@news.accessunited.com>, 2w8ji@akorn.net (Tom W8JI) writes:
>On Sun, 01 Apr 2001 06:31:13 GMT, W.G. Ewald <wgewald@att.net> wrote:

>>On Sun, 01 Apr 2001 00:52:52 -0500, Jay Martin <jlm26@xotmail.com>
>>wrote:
>>
>>>Most activity within the past 10 years..
>>>
>>>Check out www.nasa.gov
>>>
>>>Jay
>>
>> And HAARP is active on 3390 KHz.
>
>Chicken Little is active on RRAA.

In a very serious side to all this for DX'ers .. It would be nice to see both H40RW and the VK9-X operation able to take advantage of the decaying side of this for low band operations.

It often turns out that on the downhill side, as things go back to normal, there are some very good low band conditions during gray line and on into night time operations on 40, 80, and I would think, 160, but I'm not able to work 160. So I've never heard it there.

The good chance for really up-level path work on 40 and 80 as this thing dies off could give a lot of little folks a really good shot at low band contacts with both these sites, plus a big boost in the expedition station's level back to us.

I'm no expert. From what I think I've learned, the residual ionization that's left up there after daylight is a contributor to what we use on these bands for the night time reflection. The decaying mode in these storms, so said, seems to favor leaving a good bit extra where needed during the night after an event settles, helping bring about these extra decent signal strengths for the 40 and 80 meter gang.

Here's hoping that the operators know it, if it happens, and will take the opportunity to spend the extra time and effort to make for a lot of what a great many of us would otherwise miss on low band.

If you will note, H40RW's signal to the USA on 14.027 during the hours just prior to the on-rushing flare here picked up very markedly into the USA that night. I think you will find that was from the same effect that I'm told is a factor in gray-line enhancement for the morning side

QTH's operations at the terminator line. It's that on-rushing wall of ionization from the rising sun that appears to form the extra reflector for the enhancement focus back into the dark zone. Similarly, so noted to me, the onrush of an event like this, if taken at exactly the right time, provides for pretty spectacular enhancement of even 20 meter signals, as we saw this time with H40RW and Ron's work. He took beautiful advantage off the effect ..

He is a top operator .... you folks watched it happen that were there. ;)

--> Sleep well; OS2's still awake! ;)

Mike - W5WQN
Mike.Luther@ziplog.com
Mike.Luther@f3000.n117.z1.fidonet.org

81. Re: Unconventional RF ground ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 22:41:12 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <0KrHOmwbXeEXI=VgqC8T1aYPVBnN@4ax.com>
Source record: 166784

Jason Hsu <jhsu-no-spam@cotse.com> wrote:

>(NOTE: Suggestions that suggest I wimp out of apartment HF activity, bury an 8-
>foot metal rod underground, or mount the antenna on my car and route coax to my
>apartment will be construed as an April Fool's joke. In other words, these are
>not options for me.)
>
>Can a large (aluminum foil) or long (aluminum foil tape) area of metal be used
>as an RF ground? Can a counterpoise be made out of aluminum foil tape instead
>of wire?

I guess it would depend on the conductivity of the "aluminum foil," and whether or not it really is a bonafide metal or just some blend of metal powder and paper fiber or whatever; all of that, versus plain old round copper wire.

I tried a little test: I touched the leads of my VOM to a piece of kitchen aluminum foil, and the continuity seems to be just fine.

If your tape shows similiar continuity, then I can't think of any reason why it would not work.

Some people make dipoles with metal tape that unrolls to set up the antenna, and then rolls back up for portability.

Bob
k5qwg

82. Re: Ultimate Stealth Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 22:45:36 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <4rbfct4tt1tq7gdjjqqgs32qm7qlhbcvb6@4ax.com>
Source record: 166785

My best guess would be by next April Fools Day.

Dick - W6CCD

On Sun, 1 Apr 2001 15:44:30 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Cecil:
>
>On what date then will you be at the top of the DXCC honor roll?
>
>-Peter K1PO
>
>
>"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
>news:3AC7E2FF.D8828567@IEEE.org...
>> Forget laser or plasma antennas. Quantum Physics has already
>> given us the ultimate stealth antenna. When we can have action
>> at a distance involved with nonlocality, who needs a localized
>> antenna? The only fly in the ointment is that it violates the
>> principles of special relativity. That is, unless we understand
>> the principles of advanced action/backward influence. The
>> concepts are well known. All that remains is the implementation.
>>
>> "As it stands, quantum mechanics does not embody the backward
>> influence which is required to avoid nonlocality. ... Only an
>> advanced action approach seems able to properly reconcile
>> nonlocality with special relativity." from _Time's Arrow_
>>
>> So there you have it, folks, the perfect stealth antenna. There
>> seems to be a nonlocal "repeater" which exercises simultaneous
>> control over matched particles. Modulate half of the particles
>> in your antenna restricted apartment and the other half energizes
>> your remotely located antenna. Or forget the antenna altogether.
>> With backward influence the person you will someday decide to talk
>> to already will knew what you were going to say. In fact, it's already
>> happening. I already know what the content of future QSO's was.
>> --
>> 73, Cecil, W6RCA
>>
>>
>> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
>> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
>> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----
>

83. Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 23:13:41 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <FCOx6.78289$Ok4.6317833@news1.rdc1.ct.home.com>
Source record: 166786

I am going to break my new tower guy wires with insulators. Is there a preferred length that handily avoids interactions with any of the Amateur bands between 160 and 10 meters? Can the guys be checked for resonances using a dipmeter? I will be using Strandvices on the insulators and I am not sure of the effect they will have on the resonant frequencies.

What adverse effects - if any - would a resonant guys have on HF yagis or LPYs? My main concern will be the inverted Ls running off of the tower for 160 and 80 meters, the higher frequencies are also a concern but they will be covered by dipoles for 40/30 and a small KMA log antenna.

--
Peter, K1ZJH

84. Re: Sun Spots This Weekend

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 23:19:09 UTC
From: Ron Hardin <rhhardin@mindspring.com>
Message-ID: <3AC7B758.74FE@mindspring.com>
Source record: 166787
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

mike.luther@ziplog.com wrote:
> I'm no expert. From what I think I've learned, the residual ionization
> that's left up there after daylight is a contributor to what we use on
> these bands for the night time reflection. The decaying mode in these
> storms, so said, seems to favor leaving a good bit extra where needed
> during the night after an event settles, helping bring about these extra
> decent signal strengths for the 40 and 80 meter gang.

I'm no expert on 40 and 80, but I seem to remember 40 was always open at night,
from long ago, suggesting that it always reflects but is absorbed in the day.

The two competing things about ionization is that high altitude ionization
fails to reflect high frequencies first when it gets weak, but low frequency
always reflects; and that low altitude ionization absorbs low frequency
when it gets strong. So: MW is good at night when low-altitude ionization
is missing (it always reflects from high-altitude ionization otherwise);
20m is good only in the day when high-altitude ionization is strong
(20m is not affected by low-altitude ionization).

Low altitude ionization absorbs low frequencies first because the electrons
move larger distances during a (slower-changing) cycle and thus hit more
things and fail to reradiate the energy (albeit with a phase change, but no
loss). High frequency doesn't move the electrons as far and so they hit
less and lose less energy.

High altitude ionization reflects everything below the natural resonance
of the ionized plasma, which is how it oscillates if you displace all the
electrons left and all the ions right and let go. That gives the vertical
reflection frequency cutoff. It reflects things at an angle better.
The plasma frequency up there never falls low enough to prevent MW from
reflecting, but it does fall low enough to prevent 20m from reflecting.

At high altitudes collisions are not significant at any frequency.
--
Ron Hardin
rhhardin@mindspring.com

On the internet, nobody knows you're a jerk.

85. Re: Ultimate Stealth Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-01 23:30:41 UTC
From: kelly@dvol
Message-ID: <3ac7b972.158204140@news2.dvol.com>
Source record: 166788

On Sun, 01 Apr 2001 21:25:03 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>to already will knew what you were going to say. In fact, it's already
>happening. I already know what the content of future QSO's was.
>--
For the umpteenth time Cecil don't smoke the stuff that got SPRAYED! .
. . sheesh.
>.
>73, Cecil, W6RCA
>
w3rv

86. Re: CQ Magazine-3dB gain HF mobile antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 00:25:42 UTC
From: kg4fet@aol.combadspam
Message-ID: <20010401202542.10366.00001470@ng-xa1.aol.com>
Source record: 166789

>The latest issue of CQ contains an interesting tidbit of information.
>
>On page 61, the author states "A number of readers have urged me to
>discusss the concept of phasing two mobile antennas for big signal
>mobiling...."
>
>I'll bet they have!!!
>
>The author goes on to say if you run two HF mobile antennas on your
>car, one on each side of the trunk and feed them in parallel, you gain
>3dB!!!!! Now he admits "wider whip spacing is preferable for 40 and 80
>meters"...but he goes on to say the 3 dB does appear on 30 meters and
>above.
>
>The author pontificates about cable length, advising people to stay
>away form pesky "resonant lengths like 1/4 wl or 1/2 wl" that cause
>problems.
>
>He talks about how, when we space antennas 1/2wl apart, the gain is "4
>or 5dB" but since we can't get that spacing a "trunk width is good
>for 3dB".
>
>In other articles by the same author, I learned the radiaton in a
>mobile antenna all comes from the area ABOVE the loading coil. I
>learned about power amplifiers, and how they work. One thing....these
>articles are dependable. They are all of the same educational quality
>and accuracy.
>
>I did write him once, and he wrote back saying I was the only one who
>thought his articles contained errors.
>
>73 Tom
>
I hate to bring this up but it is common knowledge in the CB shootout crowd the using a dual antenna set up will add forward gain. In most cases the forward antenna is set up only as a director and has no coax even fed to it. Adding a second cophased antenna will add gain to the front AND the back. If you put the cophased set up on the right and left side of the vehicle the pattern of radiation will be similar to a dipole with deep nulls to the sides of the vehicle and gain to the front and rear. Test me if you wish on this and pull out the feild strength or the grid dip meters and go to work.
best of luck and 73 to all de KG4FET Sandor

87. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 00:46:47 UTC
From: k1bqt@aol.com
Message-ID: <20010401204647.14371.00002131@ng-da1.aol.com>
Source record: 166790

>so you're saying Dr. Cohen is responsible for all the actions of others.<

Please quote where I said that? I said I think Chip is responsible for his account regardless of who writes on it. You seem confused between that accountability and your personal eagerness to participate in what he's soley accountable for. I'm sorry you can't make that sophomoric distinction. However, should Fractenna's newsgroup activity be problematic for anyone on here, it is their right to drop a dime. They know where to call.

73

Rick K1BQT

88. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 01:15:21 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac7d1d5.185088156@news.accessunited.com>
Source record: 166791

On Sun, 1 Apr 2001 12:47:41 -0600 (CST), richardharrison@webtv.net
(Richard Harrison) wrote:

>I haven`t seen the shielded MFJ ferrite loop antenna which started this
>thread. It`s possible that it has a real Faraday shield. If it does, it
>can have an improved signal to noise ratio in the near field of a noise
>source.
>
>Best regards, Richard Harrison, KB5WZI

And it can have a worse one also, since the shield has nothing to do
with anything but balance.

73 Tom

89. Re: CQ Magazine-3dB gain HF mobile antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 01:37:49 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AC7D7EC.C1F99080@IEEE.org>
Source record: 166885

"George, W5YR" wrote:
> What the co-phase crowd always seems to overlook is that you have *TWO* of
> those lossy loaded antennas plus an extra length of coax in the system to
> absorb power.

If the efficiencies of the two antennas are the same, how does splitting
the power cause any additional losses? (besides the extra coax)
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

90. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 01:42:06 UTC
From: Jeff Maass <jmaass@columbus.rr.com>
Message-ID: <ONQx6.30462$BB5.277621@typhoon.columbus.rr.com>
Source record: 166792

"Fractenna" <fractenna@aol.com> wrote in message
news:20010401132919.18426.00001695@ng-fl1.aol.com...
> >Hi Phil--
> >
> >>Rick. I'll repeat my invitation just so you understand that was said.<
> >
> >Thanks. Frequent repetition of Chip's message is good because it may
> >encourage
> >more newsgroup members to report on his generous outreach effort! You're
a
> >good man.
> >
> >73
> >
> >Rick K1BQT
> >
>
> Is there some reason why you feel I can't use this screenname? Is there
some
> reason why you think a professor or dean at UB or BC or the Dalai Lama or
> whatever needs to know? I can't imagine why.
>
> Have you checked with aol on this? If my use of this screenname breaks the
> rules then why has no one been notified? Why haven't you notified them?
>

At one time, AOL *did* prohibit multiple users from the same
screenname from an account. Has someone who uses AOL
looked over the current Terms of Service?

--
Jeff Maass jmaass@columbus.rr.com Located near Columbus Ohio
USPSA # L-1192 NROI/CRO Amateur Radio K8ND
Maass' IPSC Resources Page: http://home.columbus.rr.com/jmaass

91. Re: CQ Magazine-3dB gain HF mobile antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 01:43:29 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac7d2c5.185327648@news.accessunited.com>
Source record: 166793

On 02 Apr 2001 00:25:42 GMT, kg4fet@aol.combadspam (KG4FET) wrote:

>I hate to bring this up but it is common knowledge in the CB shootout crowd the
>using a dual antenna set up will add forward gain.

There is a lot of idiotic nonsense in CB, like the little hoops on
antennas and the "dual loading coils" that improve signals...or 1wl
5/8th wl of wire on a 1/8 wl rod to make a gain antenna.

Certainly if you add a director it focuses the signal and can improve
the signal a bit in that direction, but the claim two antennas spaced
less than 5/8th wl apart and fed in-phase adds 3 dB of gain is utter
nonsense, just as the claim that two antennas 1/2wl apart fed in-phase
will have 4 to 5dB of gain is nonsense.

It is especially wrong to claim on 30 meters, that two similar
antennas mounted on a trunk can improve FS 3dB.

>second cophased antenna will add gain to the front AND the back. If you put the
>cophased set up on the right and left side of the vehicle the pattern of
>radiation will be similar to a dipole with deep nulls to the sides of the
>vehicle and gain to the front and rear.

That isn't true unless the vehicle is nearly 1/2 wl wide. Let's assume
the antenna mounting area on the vehicle is 5 feet wide.

Adding a second element in-phase at five feet of spacing adds less
than 0.5 dB of gain in the BEST directon on 27 MHz when that system is
compared to a single element mounted in the center of the vehicle.

73 Tom

92. Re: A question about Transmatches - Please weigh in!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 02:17:26 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac7de78.188323703@news.accessunited.com>
Source record: 166794

On Sun, 1 Apr 2001 16:21:48 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>I'm not sure whether setting the coil for the least inductance required to
>achieve a 1:1 match is the least lossy setting of the tuner.

I am.

>That's the common wisdom I know, but is it actually true when taking into
>account that the unwanted turns on the coil are shorted.

Since the change in Q is not as rapid as the change in current, it is.
The exception is when a coil approaches self-resonance.

>I believe that someone on the newsgroup pointed out a few weeks ago that
>most commercial tuners actually short out the unwanted turns to prevent
>spurious self-resonances from showing up as the coil is tuned due to the
>interwinding capacitances.

So?

>Has anyone ever investigated the actual Q or loss resistance of a tuner
>roller inductor or tapped inductor at various inductance settings below
>maximum inductance. I believe that many of the commercial antenna tuners
>actually "short out" the unwanted turns as the inductance is reduced. The
>shorted turns then become lossy or shorted "secondary windings" coupled to
>the rest of the coil.

Mutual coupling is low in an air wound coil with a long form factor.

>If the lossy effect of the shorted turns is taken into account then, is it
>really true that the minimum inductance setting of the coil in a T-Tuner
>required to reach a perfect 1:1 VSWR match actually the lowest loss setting
>for the tuner?

Maximum capacitance is generally the best setting, not minimum
inductance. I'm sure there are exceptions, but it is a good general
rule.

The only time it doesn't work is with a fractal roller.

73 Tom

93. Ultimate Stealth Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 02:25:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AC7E2FF.D8828567@IEEE.org>
Source record: 166889

Forget laser or plasma antennas. Quantum Physics has already
given us the ultimate stealth antenna. When we can have action
at a distance involved with nonlocality, who needs a localized
antenna? The only fly in the ointment is that it violates the
principles of special relativity. That is, unless we understand
the principles of advanced action/backward influence. The
concepts are well known. All that remains is the implementation.

"As it stands, quantum mechanics does not embody the backward
influence which is required to avoid nonlocality. ... Only an
advanced action approach seems able to properly reconcile
nonlocality with special relativity." from _Time's Arrow_

So there you have it, folks, the perfect stealth antenna. There
seems to be a nonlocal "repeater" which exercises simultaneous
control over matched particles. Modulate half of the particles
in your antenna restricted apartment and the other half energizes
your remotely located antenna. Or forget the antenna altogether.
With backward influence the person you will someday decide to talk
to already will knew what you were going to say. In fact, it's already
happening. I already know what the content of future QSO's was.
--
73, Cecil, W6RCA

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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94. RFI from satellite dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 03:11:28 UTC
From: BILL <w5ikb@satx.rr.net>
Message-ID: <3AC7ED83.8B59E95D@satx.rr.net>
Source record: 166797

Has anyone had problems with RFI generated by a neighbor's Satellite
Dish?

Thanks,

Bill

For correct address change .net to .com

95. Chip 'n' Phil

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 04:30:36 UTC
From: "W.G. Ewald" <wgewald@att.net>
Message-ID: <d00gctc1ut4g3gefn38pib2ttcnlctif4t@4ax.com>
Source record: 166798

On 02 Apr 2001 00:46:47 GMT, k1bqt@aol.com (Rick Littlefield) wrote:

>>so you're saying Dr. Cohen is responsible for all the actions of others.<
>
>Please quote where I said that? I said I think Chip is responsible for his
>account regardless of who writes on it. You seem confused between that
>accountability and your personal eagerness to participate in what he's soley
>accountable for. I'm sorry you can't make that sophomoric distinction.
>However, should Fractenna's newsgroup activity be problematic for anyone on
>here, it is their right to drop a dime. They know where to call.
>
>73
>
>Rick K1BQT
>

I don't understand why the same people want to lie here and at
the same time expect others to believe what is claimed on their
website.

Specifically, "Phil" shills for "Chip" about the latter's
defunct e-list, claiming it's viable, and we're to believe Fractal
Antenna Systems is a legitimate operation.

Don't either of them believe in integrity?

96. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 05:09:59 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ac808e2.223226155@news.aepnet.com>
Source record: 166799

On Sun, 01 Apr 2001 20:05:47 -0500, Dean L <deanl@bigfoot.com> wrote:

>Nice idea,,, I think you will have a lot of trouble...
>The reason is that when you cut up your guy wires you do not want to have them
>in the length of a quarter wave or multiple of a quarter wave .. In other words,
>Don't make them into an antenna.
>Now with that said.. If you operated on only one frequency life would be simple.
>If you are that worried then use ropes for guy wires but find the correct type
>that will not break after the sun has been on them for a couple of years..

What's the matter with 1/4 wavelength???

N7WS

97. Re: Respond to Phil's QSpamT

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 05:46:36 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AC8123C.701@wt.net>
Source record: 166801

burt@innocent.com wrote:

>
> http://www.telcomcity.com/anchor/PCC/Clients/Images/fracver2.JPG
>
> He's closest to camera. "Phil" is in the green shirt.

Hummmm... I think thats really Beaver Cleaver, Larry Haskell, and
Lumpy Rutherford. MK
--
http://web.wt.net/~nm5k

98. Re: Respond to Phil's QSpamT

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 05:54:25 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AC81411.596B@wt.net>
Source record: 166802

Fractenna wrote:

>
> Is Chip unhappy now? Don't think so. I'll ask him..he's soldering....standby.
>
> Nope. He is not unhappy. He's listening to the White Album and attaching mmcx
> connectors. And he still doesn't want to use the newsgroups. Says send
> messages to the FAR. Sorry.

I bet he's listening to "Everybody's Got Something to Hide Except Me and
My Monkey". MK
--
http://web.wt.net/~nm5k

99. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 06:23:06 UTC
From: kelly@dvol
Message-ID: <3ac81475.181504566@news2.dvol.com>
Source record: 166800

On Sun, 1 Apr 2001 12:58:23 -0400, "Robert Moughton"
<mailliw@peoplepc.com> wrote:

>Has anyone ever used aluminum fence wire to bury for radials? I see it as
>being fairly inexpensive as compared to copper and you get a lot of feet
>for the buck but I don't know how it will perform. Also, how will burying
>insulated wire compare to bare wire? I'm putting up a HF6V butternut and
>want to install a good ground. Any help will be appreciated.
>
My own preference is Home Depot #14 stranded insulated copper "type
THHN", a UL-acceptable "house wire". Much more conductive than
aluminum, the insulation is virtually bulletproof which protects it
from any form of chemical attack you'll run into in any back yard,
it's easy to handle and solder, it's available everywhere and it's
only $14 or so for a 500 foot roll. You even get to pick your color.
They also carry the solid equivalent but that's nowhere near as
flexible as the stranded type. Neighborhood electrical contractor's
supply stores also carry the stuff but they charge a few bucks more
per roll than Home Depot.
>
There is form of "velocity factor length correction" involved when
using insulated vs. bare wire for antenna purposes but it's small and
doesn't matter a bit when using insulated wire for radials.
>
>Bob
>N4RPK
>
w3rv

100. Re: A question about Transmatches - Please weigh in!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 07:29:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AC82A63.228D4498@IEEE.org>
Source record: 166917

Paul wrote:
> I agree with your statements however no-one has yet to answer my question.
> If one inserts a transmatch into a perfectly matched transmitter/antenna
> system, what it the total loss in dB's due to the transmatch insertion?
> Am I missing something here?

Yep, you haven't given enough information for anyone to answer your
question. What is the 'Q' of the coil? Is there only one coil? Is
the coil a roller coil, a tapped coil, or a fixed coil? Is the tuner
an L-tuner, a T-tuner, a pi-net tuner, or something else?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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101. Re: Misleading Statement in Antenna Book

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 08:25:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AC8378D.F334320B@eznec.com>
Source record: 166803

My face is really red!

I commented several times about the "misleading statement in the Antenna Book" without actually looking it up myself. For this I apologize and have no excuse.

Dean Straw, N6BV, who has done an excellent job of editing the past several editions, pointed out that the statement in question hasn't been in the Antenna Book since 1991! It was only in the 15th and earlier editions. I believe the 16th Edition is the one which Jerry Hall, K1TD, reworked from beginning to end. Jerry did a tremendous job of weeding out the folklore and misinformation that had crept its way in over the years and replacing it with accurate information -- it was a very major undertaking. Dean has been the editor for most editions since, and he's also done a careful and conscientious job of keeping it accurate. I know that on the few occasions I've found an error, he's been quick to correct it.

I think this thread has been beneficial in that it sparked discussion on some basic topics, which we've all learned from. The unfortunate and unfair aspect is that it conveyed the mistaken impression that the misleading statement is in current editions of the ARRL Antenna Book. It's not. I apologize to Dean, the ARRL, and the group for any part I played in propagating this misperception.

Those of you with earlier versions of the ARRL Antenna Book would do yourselves a great favor by getting a more recent one. There's a vast difference, the statement in question being just one small example.

Thanks to Danny, K6MHE, for bringing this to Dean's attention.

Roy Lewallen, W7EL

102. Re: Ultimate Stealth Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 08:34:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AC8399F.E585ABD7@IEEE.org>
Source record: 166776

"Peter O. Brackett" wrote:
> On what date then will you be at the top of the DXCC honor roll?

Based on my quantum knowledge of advance action, I can say it will
has never ever happening.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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103. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 09:37:54 UTC
From: richardharrison@webtv.net
Message-ID: <14886-3AC84872-8@storefull-113.iap.bryant.webtv.net>
Source record: 166804

Peter, K1ZJH wrote:
"I am going to break my new tower guy wires with insulators. Is there a preferred length that handily avoids interactions with any of the amateur bands between 160 and 10 meters?

Insulated guy segments become resonant at 1/2-wavelengths. So, if you break them at every 3 or 4 meters they can`t be 5 meters at 10-meters. At lower frequencies you are well in the clear. That might require a lot of insulators if your tower is tall.

Ed Laport says: "---seems that there is slight justification for the expense of breakup insulators except where the guys are in very strong fields, and this only because of the ease with which a guy can be detuned by short-circuiting one or more of the insulators or placing inductors across one or more of them."

Another after the fact way to detune a resonant guy wire or any resonant re-radiator is to parallel it with another wire insulated from it at one end and connected with it through a variable tuned circuit at the other end. It makes a short-circuited stub that has opposing currents in its two conductors. The fields will add to zero eliminating the problem with proper circuit tuning.

You can use a dipmeter to find resonances. A 1/2-wave resonant segment has maximum current in the center and maximum voltage at its insulated ends.

You might just insulate the guys at the top of your tower and use a couple of insulated sections at the lower end where you can reach them so they may be shorted out for detuning the guy wire if necessary.

Best regards, Richard Harrison, KB5WZI

104. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 09:53:02 UTC
From: richardharrison@webtv.net
Message-ID: <14886-3AC84BFE-9@storefull-113.iap.bryant.webtv.net>
Source record: 166806

Wes, N7WS wrote:
"What`s the matter with !/4 wavelength???"

It isn`t resonant as a guy section , so no problem, unless it is the section connected to the grounded anchor. At a frequency where that grounded segment is a small part of the entire guy, still no problem.

Best regards, Richard Harrison, KB5WZI

105. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 10:03:28 UTC
From: ON4CLN <on4cln@qsl.net>
Message-ID: <Q7Yx6.2922$Pm4.991677@afrodite.telenet-ops.be>
Source record: 166805

Peter,

Now I finally know why it is -48V, negative!
It makes sense, and now that I know the reason it's even obvious...

Thanks for clearing this one out!

ON4CLN - Franki
http://www.qsl.net/on4cln/

106. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 10:21:29 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac85035.217444268@news.accessunited.com>
Source record: 166807

On Sun, 01 Apr 2001 23:13:41 GMT, "Peter J. Bertini"
<commquart@home.com> wrote:

>I am going to break my new tower guy wires with insulators. Is there a
>preferred length that handily avoids interactions with any of the Amateur
>bands between 160 and 10 meters? Can the guys be checked for resonances
>using a dipmeter? I will be using Strandvices on the insulators and I am
>not sure of the effect they will have on the resonant frequencies.

The most important area for keeping the line sections short is right
up under the antenna. I break mine up about ten feet long near the
antennas, or use long fiberglass rods.

When out away from under or around the HF antennas a bit, I break them
up about every 20 feet. Near the ground I break them up every 40
feet.

73 Tom

107. vhf/uhf vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 11:57:38 UTC
From: f4ckv@radioamateur.org
Message-ID: <SOZx6.344$nB7.1478693@nnrp4.proxad.net>
Source record: 166808

73's

all informations are welcome to bilt a vertical GP VHF/UHF.
many thanks from f4ckv pierre.

f4ckv@radioamateur.org

108. TH6-DXX

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 12:09:13 UTC
From: f4ckv@radioamateur.org
Message-ID: <JZZx6.262$Ay6.1513591@nnrp3.proxad.net>
Source record: 166809

HI from france,

To hard there, to find plastic trapp (rain insulator).

____
______ /////////// _________
- - - - -
Thanks for help.

f4ckv@radioamateur.org

109. Re: RFI from satellite dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 12:39:50 UTC
From: Dave <rni220fgi@email.com>
Message-ID: <9a9s5r$461fb$1@ID-49477.news.dfncis.de>
Source record: 166811

Yeah, it is a switch mode piece of crap made by Pace, and it causes me nightmares when I am trying to listen to any DX. I tried a lump of ferrite at the box end, but it still radiates thru the braid oaf the coax.

BILL <w5ikb@satx.rr.net> wrote in message news:3AC7ED83.8B59E95D@satx.rr.net...
> Has anyone had problems with RFI generated by a neighbor's Satellite
> Dish?
>
> Thanks,
>
> Bill
>
> For correct address change .net to .com
>
>

110. Re: QST-QST-QST-- THE FRACTAL PROJECT

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 12:43:33 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AC873F5.4F5DE943@bwcc.com>
Source record: 166810

Richard Clark wrote:
> "Come over to the Lossy Side - you sons...!"
You are good.

111. FindArticles - Fractal Antenna Systems Develops Diversarray: Small Package, Big Solution.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 12:50:54 UTC
From: chipn1ir@aol.com
Message-ID: <200104021250.FAA08035@dyn1i.looksmart.com>
Source record: 166812

Dr. Nathan Cohen, Ph.D [chipn1ir@aol.com] thought you'd find this article useful.

Fractal Antenna Systems Develops Diversarray: Small Package, Big Solution.
http://www.findarticles.com/m0EIN/1999_June_15/54888342/p1/article.jhtml

---

FindArticles - "The Web's First Articles Archive"
http://www.findarticles.com/

--
Posted from lksm@ink1.looksmart.com [207.138.42.99]
via Mailgate.ORG Server - http://www.Mailgate.ORG

112. Re: Misleading Statement in Antenna Book

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 13:02:13 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <pL_x6.5331$IJ1.455406@bgtnsc05-news.ops.worldnet.att.net>
Source record: 166813

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9a5bkv$7qs$1@slb7.atl.mindspring.net...
> Steve:
>
> [snip]
> >
> > I do not disagree with your discussion of how the circuit works, or the
> fact
> > that the circuit can be adjusted to work with any Zo section. You are
> > however (IMO), seem to be missing what is happening in that section of
> line.
> >
> > Take care,
> > Steve
> >
> > > 73 Tom
> [snip]
>
> I agree with Tom.
>
> I believe that you may be confusing the metrology of measuring waves with
> the characteristics of the transmission media itself. A reflected
voltmeter
> or SWR "meter" needs no line section.
>

Peter:

I agree with both you and Tom on this point. This was not the basis of my discussion with Tom. From my perspective, the issue was not how to "measure" forward and reflected power (V and I), nor was it how the circuit works. I would also admit that Tom has more knowledge than I as to how the circuit itself works.

My points were directed at what is happening when the meter does have a short section of non-Zo transmission line. When the meter does not have a section of transmission line, something different happens. Even in this case however, a combination of wave and circuit theory can be used to accurately describe what physically happens.

That's it for me on this one.

Steve, VE9SRB

> There are as many ways of measuring waves on transmission lines as there
are

> engineers to invent them. Some SWR or reflected voltmeters do have line
> sections in their construction, but line sections are by no means
necessary
> to the precise and accurate measurement of waves. Good traveling wave
> meters can be constructed without line sections.
>
> A "sampling directional coupler", that is a device which can accurately
and
> precisely measure reflected and incident wave voltages without disturbing
> the line, does not need a "section of line". In fact if well made, it
can
> be completely transparent to and not perceptably disturb the line when
> inserted..
>
> The only "circuitry" required to non-invasivly "tap" across and through a
> transmission line, or any kind of network for that matter, and accurately
> indicate incident and reflected voltages is a simple but high impedance
> bridge circuit to measure voltage and a simple low impedance current
> sampler.
>
> A reflected voltmeter is nothing more nor less than a high impedance
bridge
> combined with a low impedance current sampler. It has no need for an
> "intrinsic" characteristic impedance of its' own but needs to use a
> "facsimile" of Zol as a reference impedance with which to "compute" the
> reflected and incident voltages present on the line. In fact, although in
> practice it often does, the Zo of the metering device used to compute the
> "waves" from the current and voltage, need have no relationship to the Zo
of
> the line to be useful.
>
> If V is the voltage across a line or network port at a certain point and I
> is the current in the line or network port at the same point, then one
can
> sample V (with a very high impedance "across" probe) and sample I (with a
> very low impedance "through" probe) and then use one of several methods of
> calculating and displaying the "wave variables" A and B.
>
> The desired wave variables A and B are nothing more nor less than a simple
> linear transformation of the line voltage V and current I. Where A is the
> incident wave and B is the reflected wave.
>
> The computation required to transform V and I into A and B, be it
performed
> in digital or analog circuitry is simply:
>
> B = V - IZo "The reflected wave voltage with respect to Zo"
> A = V + IZo "The incident wave voltage with respect to Zo"
>
> The "metering" device itself, needs no "line section". In fact the so

> called line section in the meter can be "vanishingly small" and have no
> perceivable characteristic impedance itself.
>
> All one has to do to measure the "waves" is to measure V and I and perform
> the above computation.
>
> By simple algebra you can readily check that B = rho * A where rho is the
> reflection coefficient, [rho = (Z-Zo)/(Z+Zo)] calculated with respect to
Zo
> if the line or network port beyond the meter has an impedance Z.
>
> I see no need for a line section in such a metering device.
>
> -Peter K1PO
>
>
>
>
>
>
>

113. Re: Radio Shack Antenna Rotors?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 14:00:09 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3ac92fe8_4@news3.prserv.net>
Source record: 166862

John:
If it is on a 10 foot boom, it'll work OK until you get a big wind. If it is longer, it may not have enough torque to work reliably. What I don't know is how they synchronize the rotor and control.

--
Crazy George

John Sicotte <jsicotte@nospam.earthlink.net> wrote in message news:Z3ay6.20120$aP5.1893656@newsread2.prod.itd.earthlink.net...
> I know. I know. No REAL ham would ever buy anything from Radio Shack -
> right? But put your prejudice aside for just one moment. All I have is an
> 11-element 2-Meter beam. So do I really need anything bigger or stronger
> than a Radio Shack TV antenna rotor? Let's be honest now!
>
> Thanks,
> John
> N7MTB
>
>
>
>

114. Re: Respond to Phil's QSpamT

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 14:12:50 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <CN%x6.5361$IJ1.458778@bgtnsc05-news.ops.worldnet.att.net>
Source record: 166814

"Fractenna" <fractenna@aol.com> wrote in message
news:20010401145544.08309.00001743@ng-mn1.aol.com...
>
> Please don't advertise on this newsgroup. Fractal Antenna Systems, Inc.
has
> nothing to do with this and does not encourage nor endorse any form of
> advertisement on newsgroups.
>
>
> 73
> Phil
> de N1ZKT

I think this is a commendable position for any company as corporate advertising really does not belong on the newsgroup. I did find the FAS advertisement in the "Find Articles - Fractal Antenna Systems Develops .." newsgroup post interesting. It was a nice article and advertisement for FAS. Congratulations and good work.

Steve

115. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 14:30:47 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AC88D17.A3B1746C@IEEE.org>
Source record: 166795

Dean L wrote:
> The reason is that when you cut up your guy wires you do not want to have them
> in the length of a quarter wave or multiple of a quarter wave .. In other words,
> Don't make them into an antenna.

Don't you mean 1/2 WL?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

116. Re: Ultimate Stealth Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 14:34:20 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AC88DEC.8E2DE7B8@IEEE.org>
Source record: 166796

"Brian Kelly, w3rv" wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >to already will knew what you were going to say. In fact, it's already
> >happening. I already know what the content of future QSO's was.

> For the umpteenth time Cecil don't smoke the stuff that got SPRAYED! .
> . . sheesh.

Brian, you are just showing your ignorance. Anybody who understands
backward influence knows what I am talking about and knows I had
absolutely no choice in the matter.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

117. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 15:12:26 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AC896DA.5A102821@oio.net>
Source record: 166815

Dennis,
As long as the wire is of such size that it can support it's own weight, along with any insulators, coax, etc, it will work as well as any other size wire. Wire diameter has very little affect at HF. The #16 should carry as much power as any other size wire, up to and over 'legal limit'. The diameter of wire begins to have an affect at VHF, definitely has an affect at UHF, but not at HF. The lower the frequency, the less affect there is.
'Doc

118. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 15:15:31 UTC
From: "Dennis P. Stahr" <irfutures@earthlink.net>
Message-ID: <nl0y6.18632$aP5.1737581@newsread2.prod.itd.earthlink.net>
Source record: 166816

As usual, I got the help I needed, and I thank all who responded to the group and by email.

The new 16 gauge "fan dipole" array goes up later this week.

Dennis - W6NYC

119. Re: CQ Magazine-3dB gain HF mobile antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 15:27:38 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AC89A6A.CE3EFC2@oio.net>
Source record: 166817

Tom,
I haven't decided if this is an 'Aprill Fool' joke, or not. If not, it makes me wonder why the editors would let something that's as full of 'mistakes' as thisis, to get to print!
Two antennas at the 'wrong' spacing (or phasing) do not have positive gain. When spacing/phasing are correct, the gain is realized by the system being directional. Except for only one or two instances, why would a mobile ~want~ a directional antenna? The mobile would be 'pointed' in the 'wrong' direction at least 50% of the time. Oh well, the CB market has been making money on this kind of thinking for years. I guess it's time the amateur market got in on it too...
'Doc

120. car radio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 15:30:10 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9aa61cluf1@bob.news.rcn.net>
Source record: 166818

```
why were loop sticks used instead of a variable capacitor to tune an analog
car radio?
```

121. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 15:39:21 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <J21y6.7865$RF1.470177@bgtnsc06-news.ops.worldnet.att.net>
Source record: 166819

Have you heard the expression "the straw that broke the camel's back"

"Fractenna" <fractenna@aol.com> wrote in message
news:20010331095926.08237.00001869@ng-mn1.aol.com...
> QST--
>
> You are invited to join one or all of the following lists on yahoo
> groups(formerly
> e-groups). All these reflectors are e-mail based, friendly, objective, and
> moderated ,so that no spam, porn, off-topic, or personal-offensive posts
are
> sent out. Membership is screened against those with a history of
> disrupting/trolling.

and against those with a history of presenting the correct facts ...

>You will receive no off-list e-mails by subscribing:
> again; no spam.
>
> Occassionally free offers of antenna files and other info are presented,
along
> with photos of relevant antennas (unlike most NG's you CAN do
attachments).
>
> These lists (with some recent subscriber sizes) are:
> ANTENNAS@YAHOOROUPS.COM 220 members
> CROSSFIELDANTENNA@YAHOOGROUPS.COM 70 members
> FRACTALANTENNA@YAHOOGROUPS.COM 310 members
>
> Please review the descriptions at:
>
> http://www.yahoogroups.com
>
> Note the CFA list specifically deals with this antenna in an objectively
> critical fashion and no posts will be allowed that make grandiose claims
> without supporting data presented. To date, no data has been presented
which
> requires the extraordinary claims made by some pundits: there is no
evidence
> for better performance than any other small vertical antenna (and that
> performance is poor).
>
> Fractal antenna posts should go the the fractal antenna reflector; not the
> antennas reflector. Note that Dr. Cohen, N1IR, the founder of fractal

element
> antenna technology, uses this forum to answer questions on the
> web--exclusively. If you have a web-based question for him, kindly post it
on
> the FAR assuming it is of general interest.
>
> To subscribe to any list, either go through the process at egroups, or to
skip
> the process (and some say 'annoying questions') just do:
>
> ----------------- -subscribe@yahoogroups.com
> where the ------------ is the name of a given list (such as
'fractalantenna')
>
>
> Kindly do not query this e-mail address; the info here is complete for
your
> information pleasure.
>
> 73,
> Phil de
> N1ZKT

Here is the complete info ...

Fractal antennas are a class of electromagnetic radiators where the antenna's total wire length (in the case of linear wire antennas) is arranged into a fractal geometry. In most, if not all cases, the overall physical size of the fractal antenna will be smaller than that of the Euclidean antenna, both being resonant at the same frequency. However, the fractal antenna will have more total wire length than the Euclidean antenna, both being resonant at the same frequency.

It has been demonstrated that antennas with a fractal geometry exhibit lower resonant frequencies and compressed resonance behavior when compared to Euclidean antennas of the same overall physical size. Note that in this case, the fractal antenna will have significantly more total wire length.

It has been previously concluded that this lowering of resonant frequencies and compressed resonance behavior is a direct result of the antenna's fractal geometry. This conclusion is simply incorrect. An antenna of virtually any geometry, having the same total wire length and same overall physical area as the fractal antenna will exhibit this same behavior. Additionally, an antenna with a fractal geometry will not necessarily provide optimum performance, i.e. the lowest resonant frequency. Although the antenna geometry is certainly one factor in determining the antenna's performance, the total wire length in the antenna is by far the single most significant factor in the lowering of resonant frequency and in creating compressed resonance behavior. Note also that as the antenna is made more "fractal" (increased fractal iteration) it will have increased wire length in terms of it's resonant wavelength.

Techniques for lowering of an antenna's resonant frequency through increasing the total wire length in the same overall size pre-date "fractal technology" by many, many years. "Fractal technology" offers nothing new in this regard. Antennas with fractal geometry exhibit the same behavior as antennas with non-fractal geometries: For a fixed overall physical size, as the total wire length increases (fractal iteration increases), the antenna's resonant frequency decreases. At the same time however, the antenna's resonant resistance decreases, the antenna's resonant bandwidth decreases (increased Q), and the antenna's resonant radiation efficiency decreases. Note that these performance trade-offs have not been previously (or correctly) identified in the open literature.

"Fractal technology" is simply a mathematical tool that allows one to create a fractal geometry from a given wire length.

Any claims to the contrary are invalid and false. Computed and measured proof available and forthcoming ....

Steve VE9SRB

122. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 15:44:15 UTC
From: richardharrison@webtv.net
Message-ID: <10207-3AC89E4F-4@storefull-117.iap.bryant.webtv.net>
Source record: 166820

Tom, W8JI wrote:
"And it (the MFJ loop) can have a worse one (S/N ratio) also (due to the shield), since the shield has nothing to do with anything but balance."

Ordinary loops are not Faraday shielded, but they could be. A Faraday shield can improve S/N ratio in the near field of a noise source. Maybe Tom knows that the new MFJ loop is not Faraday shielded. Maybe Tom is still claiming that electric and magnetic fields are inseparable.

Best regards, Richard Harrison, KB5WZI

123. Re: Unconventional RF ground ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 16:46:07 UTC
From: richardharrison@webtv.net
Message-ID: <18574-3AC8ACCF-39@storefull-112.iap.bryant.webtv.net>
Source record: 166824

Jason, AG4DG wrote:
"1. Can 1/4 wavelength counterpoise be made of aluminum foil instead of copper wire?"

Wider conductors improve bandwidth as antenna elements. Multiple conductors to obtain equivalent widths can have the same effect. Aluminum conducts about as well as copper, but can`t be easily soldered.

"2. Can I make a ground out of a broad area of aluminum foil or a metal shelf?"

Is an aircraft fuselage a "ground"?

"3. Can I make a ground out of a long length of aluminum foil tape?"

As radials, foil tape could work given space and materials. Plenty of good conducting material is what is needed. Connections need to be good. Copper, aluminum, etc. will work.

Why fight a balanced antenna? If you can run one wire, you should be able to run two. Why avoid copper? It can be taped to interior surfaces and it is solderable, too.

Best regards, Richard Harrison, KB5WZI

124. Re: QST-QST-QST--INVITATION TO THREE ANTENNA-RELATED REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 16:55:23 UTC
From: kb7qhc@home.com
Message-ID: <3ac8ac82.568485218@news.seanet.com>
Source record: 166822

On 01 Apr 2001 19:52:24 GMT, fractenna@aol.com (Fractenna) wrote:

>I knew Dr. Cohen was good, but making him a Jesus figure

herr doktor,

This is a strange form of expression, given that if anyone else were to make it, it would be taken very offensively. However, we can all observe that you speak of yourself in the third person to provide your standard remoteness to these - postings. Seems like this time last year (on Easter no less) you were mocking others' attempt to "crucify" you. You can trust that (those who know you so well and understand your "conditions" - the depression of a poor winter) no one will rise to this bait of yours.

The strain is beginning to show in advance of this summer's "fun" as you put it. Please remember to take your aspirin.

73's
Richard Clark, KB7QHC

125. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 16:55:27 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9aaatv$99k$0@208.207.71.158>
Source record: 166821

Richard Harrison wrote:

>Tom`s declaration that the Faraday shield is just the plate of a
> capacitor is laughable.

Actually it's the common plate of two capacitors in series.

Dick

126. Re: QST-QST-QST-- THE FRACTAL PROJECT

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 17:03:25 UTC
From: kb7qhc@home.com
Message-ID: <3ac9af77.569242637@news.seanet.com>
Source record: 166823

On Mon, 02 Apr 2001 08:43:33 -0400, Denver Braughler
<Braughler@bwcc.com> wrote:

>Richard Clark wrote:
>> "Come over to the Lossy Side - you sons...!"
>You are good.

Hi Denver,

Thanx. It is a yearly tribute to our KaotiK Klown of fraKtal Komedy.

more fun and jokes may be found at:
>ANTENNAS@YAHOOROUPS.COM 220 members
>CROSSFIELDANTENNA@YAHOOGROUPS.COM 70 members
>FRACTALANTENNA@YAHOOGROUPS.COM 310 members
>
join now to add to the Kapers.

73's
Richard Clark, KB7QHC

127. Re: Fractal Antenna Reflector

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 17:56:21 UTC
From: kb7qhc@home.com
Message-ID: <3ac8b848.571499462@news.seanet.com>
Source record: 166825

On 01 Apr 2001 16:47:35 GMT, fractenna@aol.com (Fractenna) wrote:

>
>> Why doesn't the moderator post the messages sent to him
>>for posting?
>
>He does. But he and others help screen the ones that don't match the focus of
>the group. There are no pending ones at moment.
>
>> Is there a lack of communication there?
>>
>
>Nope.

herr doktor,

I would offer that the only communication is here, unfortunately the quality in both venues remain the same.

Sorry to hear of your focus problems and the drying up of your lists. This must be very disappointing. However, you might want to reflect on how the Amateur Radio population must be avoiding your lists because of your prior poor judgement in falsely claiming one of them as the Wakefield killer. A simple apology would probably have remarkable curative effects.

Another reason for the decline in activity could be related to your not following through with the presentation of the award for the FRACTAL CHALLENGE you lost last winter. We all realize how demoralizing this was in the face of your champion being blasted by 6 better designs, and with the poor offering from the patent office to boot. What with these disappointments, no wonder you could only work one paper (with assistance) into the schedule. This last is a good sign you are on the road to recovery though. Keep up the good work! If you could couple up that apology with a check to Steve Best for those CHALLENGE winners, then you might find the world a happier place.

This summer's activities promise a new beginning (you may find yourself starting out all over again). Been taking your aspirin? ;-)

73's
Richard Clark, KB7QHC

128. Re: Visit - www.ab7sl.com -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 18:11:06 UTC
From: Zoran Brlecic <zbrlecic@earthlink.net>
Message-ID: <3AC8C11F.6A39C2DE@earthlink.net>
Source record: 166827
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.misc,rec.radio.amateur.policy

Peter Lemken wrote:

> Zoran Brlecic wrote:
> >
> > Charles Johnston wrote:
> >
> > > Lots of STUFF to do at www.ab7sl.com such as...
> >
> > Oh, no, I can feel Peter's fingers itching already...
>
> Know what, Zoran; I give up.
>
> There are people who are thoughtless drones, no matter how hard you hit
> them with a hammer. Charles is one of them. He doesn't care about usenet
> and he doesn't care about other people's interest in this fabulous
> medium. He sees it as the perfect place to run his adv^H^H^HSPAM and
> think that it's just great.

To each his own, Peter. Spam will be with us no matter what, and probably the best way to deal with it is a filter. I tend to not use filters in newsgroups because, to quote a friend of mine who does the same: "I like to have the latest figure of the index of stupidity".

73 .... Zoran WA7AA

--
Support freedom of speech, or I'll kill you!

129. Re: Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 18:22:04 UTC
From: Bill Meacham <NOSPAMexray@coqui.net>
Message-ID: <3AC8C34C.FF237024@coqui.net>
Source record: 166828
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Randon Loeb wrote:

>
> A few more questions though:
> 1. With wire like the one from RS, does orientation matter?

Very unlikely that you would notice any difference.

> 2. Is there also a relatively inexpensive amplifier that would also
> help?

I'm not a fan of receiving pre-amplifiers for SW bands...I'll let
somebody with more experience using them elaborate.

> 3. Grounding rod- if it's 8', how much of that sticks out of the
> ground--iow how much is burried? And can several antennas share the
> same grounding rod?

Ideally, all 8 feet should be in the ground. Thats not always
easy. But if you can only drive a rod 5 feet in your soil, then
save a buck and buy a 5 foot rod and eliminate 3 feet of ugly rod
sticking out of the dirt. Yes, it SHOULD BE a common ground for
all of your antennas and whatever equipment grounds you may have.

Good luck,
Bill

130. Re: Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 18:43:11 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <HsbIOq4XzMoK0FgDUIR+eui6OxLD@4ax.com>
Source record: 166829

Randon Loeb <rloebusenet@cticonsulting.net> wrote:

>Thanks to all! In summary , I learned:
>1. DX-390, despite its age, is a still a decent unit.
>2. The jack is indeed for an external antenna!
>3. With $10 from RS I can increase the reception (I saw this at RS the
>other day, but wanted to wait for resonses on this list first)
>
>A few more questions though:
>1. With wire like the one from RS, does orientation matter?
>2. Is there also a relatively inexpensive amplifier that would also
>help?

There are pre-amplifiers, as well as amplified antennas, but you might take a listen at your location. If there is much static or powerline noise, the amplifier will just make that louder, along with the radio signals.

>3. Grounding rod- if it's 8', how much of that sticks out of the
>ground--iow how much is burried? And can several antennas share the
>same grounding rod?

Bury as much as possible. Leave at least a few inches sticking out of the ground, so you can attach your grounding wires in the clear. If if turns out you buy an 8 foot rod, and it only goes into the ground 4 feet before hitting rock, you can always hacksaw off the remainder.

I once got the shorter grounding rod from Radio Shack, I believe it's 3 or 4 feet in length. It's a skinny rod, and it rusted up completely after only a few months. I got a better rod from a hardware store (still, it only cost $15 or so), 8 feet in length, that has never rusted up.

Bob
k5qwg

131. Re: Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 19:10:05 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3AC8CE8D.2375B5A0@cticonsulting.net>
Source record: 166826
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Thanks to all! In summary , I learned:
1. DX-390, despite its age, is a still a decent unit.
2. The jack is indeed for an external antenna!
3. With $10 from RS I can increase the reception (I saw this at RS the other day, but wanted to wait for resonses on this list first)

A few more questions though:
1. With wire like the one from RS, does orientation matter?
2. Is there also a relatively inexpensive amplifier that would also help?
3. Grounding rod- if it's 8', how much of that sticks out of the ground--iow how much is burried? And can several antennas share the same grounding rod?

132. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 19:32:15 UTC
From: Cortland Richmond <Cortland.Richmond@usa.alcatel.com>
Message-ID: <3AC8D3BF.9A616957@usa.alcatel.com>
Source record: 166830

This might work.

Place a complete loop antenna inside a shield and if little electric field enters the tube, then, if the loop's operation is dependent on the electric field, it will lose the signal there in the same proportion that an electric-field probe antenna would in the same place. If the magnetic component of the incident EM-field does penetrate inside the shield more than the electric part, then the reduction in received signal should be less.

Cortland

Bart Rowlett wrote:

> ... What evidence do you have the magnetic field penetrates the shield? What
> observable behavior of the system suggests the magnetic field penetratesthe
> outer shield? Tom's point is that the voltage induced in the pickup loop
> (per turn) is identical to the voltage induced in the shield. If Tom is
> correct, then negligible magnetic field from the oncoming wave penetrates
> the shield. Can you devise a practical experiment which could disprove
> Tom's assertion?

133. Re: car radio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 20:01:53 UTC
From: richardharrison@webtv.net
Message-ID: <13111-3AC8DAB1-3@storefull-114.iap.bryant.webtv.net>
Source record: 166831

Marvin Rosen wrote:
"Why were loop sticks used instead of a variable capacitor in tuning analog car radios?"

Permeability tuning never superseded the variable capacitor in analog car radios. An r-f amplifier is worthwhile in a car radio, so there is a possibility of oscillation.(same frequency in and out)

I can only speculate why designers would use permeability tuning, But,it is easier to avoid coupling due to a common shaft in a tuning capacitor if you don`t use one.

It is advantageous to resonate the primary of an antenna transformer below the i-f used in the i-f amplifier to avoid spurious responses and instability. Addition of an antenna can`t bring the primary into resonance at the i-f frequency. Car radios often use lower frequencies in i-f amplifiers than other radios do. The susceptibility to image response is often offset with an r-f stage which is often more beneficial to a car radio than to other radios. The low resonant frequency of an antenna coil`s primary gives more uniform response across the tuning range of the receiver.

The high Q of the permeability tuned antenna coil can be used to get a better solution to the off-frequency resonance problem. The set of coils can be designed for better tracking and response over the entire band.

You also see permeability tuned sets with less frequency crowding at the high end of the dial. Tuning capacitors with special plate shapes can also linearize a tuning dial, but it is obviously more economical to do it with a permeability tuner, because that`s where the action is.

Best regards, Richard Harrison, KB5WZI

134. computer show,fest??Seattle?? thanks

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 20:14:47 UTC
From: kc5cqa@devtex.net
Message-ID: <3accdd9d.8492042@news.devtex.net>
Source record: 166832

I know this is 'off subject' but hope you can help, I went to my first computer 'fest,swap, show', this last weekend, and was really amazed at the amount of 'equipment'. Had I 'known' , would have 'made the trip way before this'! But, back to my question, I was telling my daughter about the computer show, and she ask me if I could find the locations of such ''shows'' in the Seattle area, she (a ham) is new to that area (just married) ... I live in south Tex. , so a 'little out of touch with that area'. Appreciate any and all input. thanks inadvance. Chuck Lorentson "73"

135. Re: Sun Spots This Weekend

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 20:24:28 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AC8DFFC.BB948D4C@toast.net>
Source record: 166833
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

Ron Hardin wrote:

>
> At high altitudes collisions are not significant at any frequency.

What do you mean by collisions?

john

136. Re: computer show,fest??Seattle?? thanks

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 20:32:48 UTC
From: kb7qhc@home.com
Message-ID: <3ac8e0a7.581834593@news.seanet.com>
Source record: 166834

On Mon, 02 Apr 2001 20:14:47 GMT, kc5cqa@devtex.net (kc5cqa) wrote:

>I know this is 'off subject' but hope you can help, I went to my
>first computer 'fest,swap, show', this last weekend, and was really
>amazed at the amount of 'equipment'. Had I 'known' , would have 'made
>the trip way before this'! But, back to my question, I was telling my
>daughter about the computer show, and she ask me if I could find the
>locations of such ''shows'' in the Seattle area, she (a ham) is new
>to that area (just married) ... I live in south Tex. , so a 'little
>out of touch with that area'. Appreciate any and all input. thanks
>inadvance. Chuck Lorentson "73"

Hi Chuck,

Here in the Great Northwest we have a major swap meet at the Puyallup Fairgrounds in early March (courtesy of the Mike And Key club). There is another big one in early June at Seaside in Oregon (on the beach). And there are many small ones around the state (actually they are all small compared to Dayton; but the two named here do get a respectfully large crowd nonetheless). Summer is pretty eventful in this regard.

Sorry, but I don't have a link to provide the details, perhaps someone else can provide that.

73's
Richard Clark, KB7QHC

137. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 20:46:50 UTC
From: richardharrison@webtv.net
Message-ID: <17959-3AC8E53A-10@storefull-118.iap.bryant.webtv.net>
Source record: 166836

Dick Carroll wrote:
"Actually it`s (the faraday shield) the common plate of two capacitors in series."

That`s exactly right, but that`s not just what it is, there`s more. It`s called a Faraday shield because that common plate of two capacitors forces the capacitive lines of force to ground potential eliminating capacitive coupling between the external plates of those two capacitors.

Here`s the more. Slots are cut perpendicular to the ground connection to thwart eddy currents that magnetic fields might induce in the "common plate". With no effective current induced in the common plate, there is no induced opposition to the magnetic coupling between the two sides of the plate. Magnetic coupling is free to link whatever is on either side of the plate. Every mediumwave broadcast station has a Faraday shield in its antenna coupling system because capacitive coupling would favor transmission of harmonics. The shield kills their advantage via capacitive coupling. The Faraday shield also serves as a dandy lightning defense. Every hillbilly microwatt radiated by a mediumwave broadcast station is strained through a Faraday shield and it only gets hot when lightning strikes.

Best regards, Richard Harrison, KB5WZI

138. La

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 20:49:08 UTC
From: Joe <joe@me.com>
Message-ID: <3AC8E5C4.EC95034D@me.com>
Source record: 166844

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la la la
```

139. 40 Meter Announcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 20:51:19 UTC
From: Joe <joe@me.com>
Message-ID: <3AC8E647.3CAD8D05@me.com>
Source record: 166845
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

RELIEF FOR HAMS IN SIGHT
Amateurs gain reprieve from long-time clash with broadcasters

-from the Arizona State Union-Tribune, April 1, 2001

WASHINGTON, D.C.- Ask any Arizonan amateur radio operator what the most pressing problem on his frequencies is, and he will likely tell you it is the serious interference from shortwave broadcast stations in the 40 meter band that has grown progressively worse over the last two decades.

Yesterday, international broadcasters announced their intent to vacate the hams' frequencies in favor of another portion of the radio spectrum, bringing clear frequencies to hams for the first time in over forty-five years, the Bush administration reported.

Since the early- to mid-sixties, hams have had to endure increasing shortwave activity fueled by the Cold War, tensions between Cuba and the West, and the rise of governments in the Third World anxious to use radio to spread propaganda. Protected by international law, national broadcasters, religious programmers, and others have enjoyed virtually unlimited access to frequencies, cheap worldwide coverage, and operation at almost any power level they desired, creating an "elbow to elbow" situation for which no resolution was seen, given the squatters' stance taken by all parties involved.

Now, a major bloc of broadcasters has unilaterally proposed moving off of 40 meters onto a frequency band much less utilized now that it has been recently vacated by the military. The new band had been under the control of the United States Department of Defense since 1950, but has lied in fallow for years with the steady rise in the use of satellites for military communications. Broadcasters finalized an agreement with the Department to assume administration of the frequencies over the weekend.

The announcement came at a meeting of the International Federation of Shortwave Broadcasters (Fï¿½dï¿½ration Internationale de Stations de Onde Courte) in Geneva in late January. Of the 75 member countries of the organization, 61 have operations in the 40 meter band, meaning that the move away from 40 meters will constitute a mass exodus of signals which have hampered amateur radio stations for years. Ham radio operators stand to gain the most from the surprise announcement, but millions of shortwave listeners-- hobbyists with special receivers that can pick up the shortwave stations-- are also rejoicing at the prospect of clearer frequencies and more enjoyable reception.

The vote in favor of the move was 72 to 2, the two lone dissenting votes coming from Cuba and Iraq. Libyan representatives abstained from the voting.

"When you talk about surprise in the context of world policy, you imply that something has been discussed for a long, long time with what seemed like no possible solution, and that the solution was not foreseen by anybody, anywhere, at any time in the next five years. This is definitely an astonishing surprise," declared Warren Kruger, a diplomat and regulatory commissioner with the State Department in Brussels who was involved in recent restructuring of shortwave allocations for the European Union. He said that prior to the announcement, the best scenario envisioned by US and European policymakers was the remote possibility of the question of 40 meter broadcast interference appearing on the agenda for the World Radiocommunication Conference (WRC) in 2003. "Even then, it was doubtful whether the issue would have made it past the committees onto the general floor. It just wasn't seen as pressing enough in the face of other, stickier matters," he said.

Under the proposed move, shortwave stations from the 61 nations would vacate the 7100-7300 kilohertz band between now and the end of 2006. The majority would move to a band between 7325 and 7490 kilohertz, with some others scattering to several frequencies above and below that band. According to Kruger, the major consideration was the acquisition of frequencies with characteristics similar to the 40 meter band in terms of range and time of day when the best reception was possible. Evidently, the new frequency band is satisfactory to the stations involved on all accounts.

Other officials blindsided by the shotgun announcement were from both the Federal Communications Commission (FCC) and the national association for amateur radio in the US, the American Radio Relay League (ARRL). LaVonne Burke, head of the FCC field office near Quantico, Virginia, expressed shock and confusion over the Geneva statement. "We didn't even have representatives there, thinking that there wouldn't be any significant movement coming out of Geneva. All of our attention was fixed on 2003, frankly." In Newington, Connecticut, an ARRL spokesman struck a skeptical tone. "We need to be very cautious in our response to this unilateral agreement," he said. "What effect will it really have? Does it leave us more or less susceptible to other actions aimed at reducing our frequency allocations? All these questions remain unanswered and our vigilance cannot diminish at this time just because a group of broadcasters decide to up and move off a frequency."

Hailing the agreement as "monumental, a gift from heaven," well-known Arizona ham Clyde "Skip" Butler declared the dawn of a 21st century era for ham radio. "We never thought we would see this day. It is the answer to our dreams and I can't tell you how exciting and how promising this is to us. It's like being told you've just won the lottery." Another Flagstaff-area amateur who identified himself as "John L.", explained what this meant to him. "My buddies and I have met on 40 meters every night for the last eighteen years, and every single one of those nights,

it has been a struggle to find a clear spot to set up our transmitters. If it wasn't the howling of Radio Moscow, it was the splatter from one of those darned religious stations that completely wiped out the band. We've hoped for years that the ARRL could somehow kick them out and give us some relief. Man, I can't tell you how nice it will be without having to worry about [the broadcasters] anymore. I can't wait."

Amazingly, not all amateurs are welcoming the less-cluttered future of 40 meters with open arms. In Ohio, a demonstration is planned at the Dayton ham convention in May, the largest in the country. Organized by a group of ham traditionalists, the demonstration will take the form of an 80-vehicle-long caravan which will parade through the city carrying signs and placards and protesting on a number of ham frequencies as they progress. An unidentified member of the protest stated, "Generations of hams have literally grown up with having to dodge interference on 40. It made us better operators, having to use operating saavy to survive in between Radio Moscow and Voice of Free China. This makes us look like wimps who have to be pandered to and who can't stand a little bit of rough going. Our mission is to fight for ham ingenuity and for the reputation of hams everywhere."

Other amateurs reserved their excitement for other reasons. In phone conversations with this reporter, several hams expressed concern that the elevation of amateur radio to exclusive use of the 40 meter band could endanger their hold on other, nearby frequencies that are being eyed by a number of other services who have a new-found, increased appetite for spectrum space for Internet and communication services. They said also that new hams entering the hobby through a streamlined FCC licensing process that has been generally viewed as easier and less demanding would not appreciate their frequency privileges without the added challenge of having to confront shortwave interference.

Within the next five years, whether it is good or bad for the hobby, it will undoubtedly be easier and more pleasant to tune the 40 meter band and converse with other radio aficionados. While some will enjoy the arrangement, others will bemoan the loss of yet another ham tradition. Whatever the outcome, hams will be left to craft a response to the sudden and very unexpected windfall.

140. Re: CQ Magazine-3dB gain HF mobile antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 21:01:52 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3AC8E8C0.721D7228@dialpoint.net>
Source record: 166838

I doubt that most hams would want or do the directional thing for a mobile. One arangement on the CB bands had a switch that would phase (may be a slight misleadig word) in an extra length of coax so the direction could be changed. Also for the trucks and cars driving up and down the interstate a direction of forward and to the back is most useful. I have not ran the paterns to see if the spacing and phasing would do that , but it is their selling point so the antenna companies can make twice the money.

'Doc wrote:
>
> Tom,
> I haven't decided if this is an 'Aprill Fool' joke, or
> not. If not, it makes me wonder why the editors would let
> something that's as full of 'mistakes' as thisis, to get
> to print!
> Two antennas at the 'wrong' spacing (or phasing) do not
> have positive gain. When spacing/phasing are correct, the
> gain is realized by the system being directional. Except
> for only one or two instances, why would a mobile ~want~ a
> directional antenna? The mobile would be 'pointed' in the
> 'wrong' direction at least 50% of the time. Oh well, the
> CB market has been making money on this kind of thinking
> for years. I guess it's time the amateur market got in on
> it too...
> 'Doc

141. Re: computer show,fest??Seattle?? thanks

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 21:10:39 UTC
From: jimmy john <jj@sandwitch.org>
Message-ID: <4A8A59F2BDCDD311BFC800508BA36AC807EDBC5D@www.premiersi.com>
Source record: 166835

Go to www.arrl.org and click on "hamfest" to access a searchable database
(by date, locale, etc.)

"kc5cqa" <kc5cqa@devtex.net> wrote in message
news:3accdd9d.8492042@news.devtex.net...
> I know this is 'off subject' but hope you can help, I went to my
> first computer 'fest,swap, show', this last weekend, and was really
> amazed at the amount of 'equipment'. Had I 'known' , would have 'made
> the trip way before this'! But, back to my question, I was telling my
> daughter about the computer show, and she ask me if I could find the
> locations of such ''shows'' in the Seattle area, she (a ham) is new
> to that area (just married) ... I live in south Tex. , so a 'little
> out of touch with that area'. Appreciate any and all input. thanks
> inadvance. Chuck Lorentson "73"

142. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 21:21:18 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9aaqhm$6pf$1@slb4.atl.mindspring.net>
Source record: 166837

Franki:

Yes, that's why telephone companies keep their loops at a negative potential wrt ground.

If not! Conductors gone!

I didn't really understand this deeply myself until after I joined the Navy and was responsible for the cathodic protection systems on board ships. I saw how quickly those big sacrificial anodes dissappeared! After that really I understood why telephone companies ground the positive side of their station batteries.

Undersea cables have a similar problem to overcome.

If you place metallic conductors outdoors keep them as dry as possible and apply a negative voltage to them wrt ground whenever you can... otherwise the metallic ions disolve into the environment and... poof! Conductors gone.

Aluminium is very susceptable to this effect, since it is so much more chemically active than copper. Aluminium dust makes a very good high explosive! In the early days, when they never thought about "tomorrow", the cable TV companies mistakenly deployed 75 Ohm coaxial cable with inexpensive aluminium shielding. Heh, heh. That aluminium shielding rapidly began to look like Swiss Cheese. Their Al cable plant became very EMC/EMI susceptable and gradually "rotted" away. Today cable companies deploy only copper coaxial cable and the smart ones are likely to also apply cathodic protection techniques.

-Peter K1PO

"ON4CLN" <on4cln@qsl.net> wrote in message
news:Q7Yx6.2922$Pm4.991677@afrodite.telenet-ops.be...
> Peter,
>
> Now I finally know why it is -48V, negative!
> It makes sense, and now that I know the reason it's even obvious...
>
> Thanks for clearing this one out!
>
> ON4CLN - Franki
> http://www.qsl.net/on4cln/
>
>

143. Simple 10m & 80m Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 22:04:32 UTC
From: Peter <ve9ptr@hotmail.com>
Message-ID: <QH6y6.95$im4.2529@sodalite.nbnet.nb.ca>
Source record: 166839

Does anyone have any simple plans for 10m and 80m antennas? Space is somewhat limited so that is my primary concern....

Pete

144. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 22:06:51 UTC
From: kb7qhc@home.com
Message-ID: <3ac8f3a5.586696044@news.seanet.com>
Source record: 166841

On Mon, 2 Apr 2001 14:46:50 -0600 (CST), richardharrison@webtv.net (Richard Harrison) wrote:

>Here`s the more. Slots are cut perpendicular to the ground connection to >thwart eddy currents that magnetic fields might induce in the "common >plate". With no effective current induced in the common plate, there is >no induced opposition to the magnetic coupling between the two sides of >the plate.

Hi Richard,

I have never seen these "slots" purposely added for just the reason you describe. For one, there is no eddy current as a result of induction without a complete loop presented by the shield, and the shields are (at least for transformers) not complete loops around the core, but are insulated (as you've already described elsewhere).

As posed before, this sounds more like the property of core lamination, not Faraday shielding. You might want to consider, if the slot is enough to snub an induced current, is equally effective in snubbing the drain current of the capacitive connection (and that is its entire purpose which you appear to be defeating by this description of slots).

Any field induced into the common plate is going to be self-negating according to the balance of the shield. This elaboration of slots is both contradictory to the requirements and rather strained as a perceived need. In the lab we could prove the efficacy of the shield by measuring the induced voltage at the open ends of the shield. With the test leads following the arc of the shield (in both directions from the central ground point), you will read 0 volts. If, on the other hand, you measure with the leads across the gap, you will measure plenty of voltage. The difference is simply a matter of the leads being placed into the same fields as the shield (or not).

These apparent contradictions still appear to be problems of geometry of application which I pointed out some time ago to no one's particular concern.

73's
Richard Clark, KB7QHC

145. Re: car radio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 22:07:03 UTC
From: kb7qhc@home.com
Message-ID: <3ac9f805.587816335@news.seanet.com>
Source record: 166840

On Mon, 2 Apr 2001 11:30:10 -0400, "marvin rosen"
<n3bqa@starpower.net> wrote:

>why were loop sticks used instead of a variable capacitor to tune an analog
>car radio?
>

Hi Marvin,

Actually, loop sticks are not used, but ferrite slug tuning is very common in automotive tuning. It is strictly a matter of geometry and user practices. The pushbutton is the most common control, and the pushbutton is generally a levered, cammed or geared connection to a ferrite plunger whose position is controlled by a hidden thread in the pushbutton. Other, alternative mechanical features employ a clutch so that you first tune and then "remember" the slug position just adjusted to your favorite station.

However, most of the discussion above relates to very old automotive radios. With today's generation of receivers, most tuning is electronic (synthesized).

When I was young, I found that car radios (as far as AM went) were often superior in performance to most Ham gear. Makes sense in that the conditions presented to a car are far more borderline than table top sets (also gone from the american scene).

73's
Richard Clark, KB7QHC

146. Radials and DX-A sloper

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 22:25:03 UTC
From: enigma_y_2000@yahoo.com
Message-ID: <3ac8fbe8.13770223@news.usfamily.net>
Source record: 166842

HI,

Has anyone done RF field or RF line current measurments on an Alpha
Delta DX-A sloper. If so, what was the result. Did the addition of
radials increase the radiation of this antenna?

Thanks,

Bob

147. Re: Sun Spots This Weekend

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 22:38:01 UTC
From: Ron Hardin <rhhardin@mindspring.com>
Message-ID: <3AC8FF34.7CF4@mindspring.com>
Source record: 166843
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

John O'Flaherty wrote:
> > At high altitudes collisions are not significant at any frequency.
>
> What do you mean by collisions?

Particles colliding with each other, as they do in gasses. The mean
free path is how far they go before this happens, and it increases
as you go up in altitude.

When a charged particle collides, it loses the energy that it was
scheduled to re-radiate that your radio wave gave it, and that counts
as absorption of your energy, a dead loss to your signal.

If it doesn't collide, it re-radiates the signal with a phase change,
is all, which is what accounts for refraction and reflection of
the wave rather than its absorption.
--
Ron Hardin
rhhardin@mindspring.com

On the internet, nobody knows you're a jerk.

148. Re: 40 Meter Announcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 23:10:02 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AC906CA.19D723AB@bwcc.com>
Source record: 166846

ha ha ha

149. Re: Sun Spots This Weekend

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 23:16:00 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AC90830.4DE4@wt.net>
Source record: 166851

Jay Martin wrote:
>
> Most activity within the past 10 years..
>
> Check out www.nasa.gov
>
> Jay

We are having a MEGA flare as I type. I just checked my solar indicator on my web site which updates every ten minutes. This is the first time I've seen a "MEGA" flare since I've had that thing. "Mega Flare: An unprecedented X-ray event has occurred (X-ray flux >= 1.00e-3 W/m^2) ".
MK
--
http://web.wt.net/~nm5k

150. Re: CQ Magazine-3dB gain HF mobile antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 23:35:50 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac90ade.265236628@news.accessunited.com>
Source record: 166847

On Mon, 02 Apr 2001 17:01:52 -0400, Ralph Mowery
<rmowery@dialpoint.net> wrote:

>useful. I have not ran the paterns to see if the spacing and phasing
>would do that , but it is their selling point so the antenna companies
>can make twice the money.

>> gain is realized by the system being directional. Except
>> for only one or two instances, why would a mobile ~want~ a
>> directional antenna? The mobile would be 'pointed' in the
>> 'wrong' direction at least 50% of the time. Oh well, the
>> CB market has been making money on this kind of thinking
>> for years. I guess it's time the amateur market got in on
>> it too...

The point everyone keeps ignoring is there is almost no directivity
change when two antennas are mounted 5 feet apart and fed broadside on
ANY band below 30 MHz.

The broadside gain of two veticals on 28MHz spaced 5 feet is about 1/2
dB under ideal conditions.

It was bad enough for the author to claim 1/2 wave spaced antennas
have 4 to 5 dB gain, and claiming 5 or 6 feet of spacing on 30 meters
produces 3 dB gain is even worse.

My worry is we are heading the way of the CB band in our technical
information. That's unfortunate, because ham radio could be a good
place to learn.

73 Tom

151. Re: 40 Meter Announcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 23:41:44 UTC
From: Kenneth Scharf <kajfre@telocity.com>
Message-ID: <3AC90E38.170C19C1@telocity.com>
Source record: 166849
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Sounded great, until I noticed the story date. Oh well.

> RELIEF FOR HAMS IN SIGHT
> Amateurs gain reprieve from long-time clash with broadcasters
>
> -from the Arizona State Union-Tribune, April 1, 2001
>
> WASHINGTON, D.C.- Ask any Arizonan amateur radio operator what the most
> pressing problem on his frequencies is, and he will likely tell you it
> is the serious interference from shortwave broadcast stations in the 40
> meter band that has grown progressively worse over the last two decades.
>
> Yesterday, international broadcasters announced their intent to vacate
> the hams' frequencies in favor of another portion of the radio spectrum,
> bringing clear frequencies to hams for the first time in over forty-five
> years, the Bush administration reported.
>
> Since the early- to mid-sixties, hams have had to endure increasing
> shortwave activity fueled by the Cold War, tensions between Cuba and the
> West, and the rise of governments in the Third World anxious to use
> radio to spread propaganda. Protected by international law, national
> broadcasters, religious programmers, and others have enjoyed virtually
> unlimited access to frequencies, cheap worldwide coverage, and operation
> at almost any power level they desired, creating an "elbow to elbow"
> situation for which no resolution was seen, given the squatters' stance
> taken by all parties involved.
>
> Now, a major bloc of broadcasters has unilaterally proposed moving off
> of 40 meters onto a frequency band much less utilized now that it has
> been recently vacated by the military. The new band had been under the
> control of the United States Department of Defense since 1950, but has
> lied in fallow for years with the steady rise in the use of satellites
> for military communications. Broadcasters finalized an agreement with
> the Department to assume administration of the frequencies over the
> weekend.
>
> The announcement came at a meeting of the International Federation of
> Shortwave Broadcasters (Fï¿½dï¿½ration Internationale de Stations de Onde
> Courte) in Geneva in late January. Of the 75 member countries of the
> organization, 61 have operations in the 40 meter band, meaning that the
> move away from 40 meters will constitute a mass exodus of signals which
> have hampered amateur radio stations for years. Ham radio operators
> stand to gain the most from the surprise announcement, but millions of

> shortwave listeners-- hobbyists with special receivers that can pick up
> the shortwave stations-- are also rejoicing at the prospect of clearer
> frequencies and more enjoyable reception.
>
> The vote in favor of the move was 72 to 2, the two lone dissenting votes
> coming from Cuba and Iraq. Libyan representatives abstained from the
> voting.
>
> "When you talk about surprise in the context of world policy, you imply
> that something has been discussed for a long, long time with what seemed
> like no possible solution, and that the solution was not foreseen by
> anybody, anywhere, at any time in the next five years. This is
> definitely an astonishing surprise," declared Warren Kruger, a diplomat
> and regulatory commissioner with the State Department in Brussels who
> was involved in recent restructuring of shortwave allocations for the
> European Union. He said that prior to the announcement, the best
> scenario envisioned by US and European policymakers was the remote
> possibility of the question of 40 meter broadcast interference appearing
> on the agenda for the World Radiocommunication Conference (WRC) in 2003.
> "Even then, it was doubtful whether the issue would have made it past
> the committees onto the general floor. It just wasn't seen as pressing
> enough in the face of other, stickier matters," he said.
>
> Under the proposed move, shortwave stations from the 61 nations would
> vacate the 7100-7300 kilohertz band between now and the end of 2006. The
> majority would move to a band between 7325 and 7490 kilohertz, with some
> others scattering to several frequencies above and below that band.
> According to Kruger, the major consideration was the acquisition of
> frequencies with characteristics similar to the 40 meter band in terms
> of range and time of day when the best reception was possible.
> Evidently, the new frequency band is satisfactory to the stations
> involved on all accounts.
>
> Other officials blindsided by the shotgun announcement were from both
> the Federal Communications Commission (FCC) and the national association
> for amateur radio in the US, the American Radio Relay League (ARRL).
> LaVonne Burke, head of the FCC field office near Quantico, Virginia,
> expressed shock and confusion over the Geneva statement. "We didn't even
> have representatives there, thinking that there wouldn't be any
> significant movement coming out of Geneva. All of our attention was
> fixed on 2003, frankly." In Newington, Connecticut, an ARRL spokesman
> struck a skeptical tone. "We need to be very cautious in our response to
> this unilateral agreement," he said. "What effect will it really have?
> Does it leave us more or less susceptible to other actions aimed at
> reducing our frequency allocations? All these questions remain
> unanswered and our vigilance cannot diminish at this time just because a
> group of broadcasters decide to up and move off a frequency."
>
> Hailing the agreement as "monumental, a gift from heaven," well-known
> Arizona ham Clyde "Skip" Butler declared the dawn of a 21st century era

> for ham radio. "We never thought we would see this day. It is the answer
> to our dreams and I can't tell you how exciting and how promising this
> is to us. It's like being told you've just won the lottery." Another
> Flagstaff-area amateur who identified himself as "John L.", explained
> what this meant to him. "My buddies and I have met on 40 meters every
> night for the last eighteen years, and every single one of those nights,
> it has been a struggle to find a clear spot to set up our transmitters.
> If it wasn't the howling of Radio Moscow, it was the splatter from one
> of those darned religious stations that completely wiped out the band.
> We've hoped for years that the ARRL could somehow kick them out and give
> us some relief. Man, I can't tell you how nice it will be without having
> to worry about [the broadcasters] anymore. I can't wait."
>
> Amazingly, not all amateurs are welcoming the less-cluttered future of
> 40 meters with open arms. In Ohio, a demonstration is planned at the
> Dayton ham convention in May, the largest in the country. Organized by a
> group of ham traditionalists, the demonstration will take the form of an
> 80-vehicle-long caravan which will parade through the city carrying
> signs and placards and protesting on a number of ham frequencies as they
> progress. An unidentified member of the protest stated, "Generations of
> hams have literally grown up with having to dodge interference on 40. It
> made us better operators, having to use operating saavy to survive in
> between Radio Moscow and Voice of Free China. This makes us look like
> wimps who have to be pandered to and who can't stand a little bit of
> rough going. Our mission is to fight for ham ingenuity and for the
> reputation of hams everywhere."
>
> Other amateurs reserved their excitement for other reasons. In phone
> conversations with this reporter, several hams expressed concern that
> the elevation of amateur radio to exclusive use of the 40 meter band
> could endanger their hold on other, nearby frequencies that are being
> eyed by a number of other services who have a new-found, increased
> appetite for spectrum space for Internet and communication services.
> They said also that new hams entering the hobby through a streamlined
> FCC licensing process that has been generally viewed as easier and less
> demanding would not appreciate their frequency privileges without the
> added challenge of having to confront shortwave interference.
>
> Within the next five years, whether it is good or bad for the hobby, it
> will undoubtedly be easier and more pleasant to tune the 40 meter band
> and converse with other radio aficionados. While some will enjoy the
> arrangement, others will bemoan the loss of yet another ham tradition.
> Whatever the outcome, hams will be left to craft a response to the
> sudden and very unexpected windfall.

152. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-02 23:42:30 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac90ce0.265750561@news.accessunited.com>
Source record: 166848

On Mon, 2 Apr 2001 17:21:18 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Aluminium is very susceptable to this effect, since it is so much more
>chemically active than copper. Aluminium dust makes a very good high
>explosive! In the early days, when they never thought about "tomorrow", the
>cable TV companies mistakenly deployed 75 Ohm coaxial cable with
>inexpensive aluminium shielding. Heh, heh. That aluminium shielding
>rapidly began to look like Swiss Cheese. Their Al cable plant became very
>EMC/EMI susceptable and gradually "rotted" away. Today cable companies
>deploy only copper coaxial cable and the smart ones are likely to also apply
>cathodic protection techniques.
>
> -Peter K1PO

Hi Peter,

You'd better contact all the cable companies in the state of Georgia,
and the rest of the US, and tell them that.

They are all using aluminum shield cable.

I have probably a hundred thousand feet here in my system, purchased
from Com Scope over the past few years.

I also use bare copper wire in radial system, as do almost all BC
stations. You can go to an old station installed in the 20's and dig
up the radials, and they are perfectly good.

My #16 bare copper radials will be in the ground and in good shape
long after I am a silent key.

73 Tom

153. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 00:02:05 UTC
From: Cortland Richmond <Cortland.Richmond@usa.alcatel.com>
Message-ID: <3AC912FD.A5E8AF77@usa.alcatel.com>
Source record: 166850

I think this particular illustration was a Faraday shield between two loops
-- an air-core transformer. And yes, such slots ARE often used.

If the loop and the shield are of similar area, as a shield interposed
between loops might be, then the presence of an unbroken plane shield near
the loop will cause currents to flow in the shield as in a shorted turn of
the same diameter. When the shield is much thicker than skin depth this is
not necessarily a shielding problem, but it IS a problem in transferring
energy, as the shorted turn adversely affects this.

By cutting slots perpendicular to the ground plane, the area in which these
currents can flow, and their magnitude, are reduced.

Cortland

Richard Clark wrote:

> I have never seen these "slots" purposely added for just the reason
> you describe. For one, there is no eddy current as a result of
> induction without a complete loop presented by the shield, and the
> shields are (at least for transformers) not complete loops around the
> core, but are insulated (as you've already described elsewhere).

154. Re: aluminum cable

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 00:18:28 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AC916D4.8B0A1E55@bwcc.com>
Source record: 166852

Tom W8JI wrote:
> They are all using aluminum shield cable.
>
> I have probably a hundred thousand feet here in my system, purchased
> from Com Scope over the past few years.
>
> I also use bare copper wire in radial system, as do almost all BC
> stations. You can go to an old station installed in the 20's and dig
> up the radials, and they are perfectly good.

Does any of the above employ cathodic protection?

155. Re: Mounting a hamstick on a minivan

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 00:20:19 UTC
From: John Kennedy <jkenned1@rochester.rr.com>
Message-ID: <7H8y6.28856$nR.5030113@typhoon.nyroc.rr.com>
Source record: 166853

I put on a trailer hitch, then bought a bike rack. I got alum. square tubing, and fabricated simple brackets to hold the hamsticks.(JC Whitney). I used quick disonnects, and an MFJ mobile matcher.
works like a charm, and i even use the bike carrier once in a while. Look for the hinged receiver mount in the catalog. The upright bike holder is replaced by the al tubing. an L bracket holds the antenna mount.and base A second bracket higher up supports the antenna and prevents whip. The tube is abt 5 ft tall. This gets the antenna whip above the roof.
I used a heavy ground strap.
Best of all, you can move it car to car if you change vehicles
Good luck,
John

156. Re: Unconventional RF ground ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 00:24:59 UTC
From: John Kennedy <jkenned1@rochester.rr.com>
Message-ID: <vL8y6.28857$nR.5033393@typhoon.nyroc.rr.com>
Source record: 166854

Try using copper strip. 2in .003 run along the baseboards.
Also useful are counterpoises which are resonant, these can be made up from
multi conductor computer cables, cheap to buy.
there is good info in the Wireman catalog.
John

157. Re: Simple 10m & 80m Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 00:36:01 UTC
From: dcollin@connix.com
Message-ID: <3ac91ad5.893981@news.mybizz.net>
Source record: 166855

On Mon, 02 Apr 2001 22:04:32 GMT, "Peter" <ve9ptr@hotmail.com> wrote:

>Does anyone have any simple plans for 10m and 80m antennas? Space is
>somewhat limited so that is my primary concern....
>
>Pete

How limited, Pete? Are we talking about a balcony vertical, or can
you get some wire out?

158. Re: Simple 10m & 80m Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 01:16:52 UTC
From: Peter <ve9ptr@hotmail.com>
Message-ID: <8w9y6.142$im4.3862@sodalite.nbnet.nb.ca>
Source record: 166856

Well, I could get some wire out, but by no means an80m dipole!

P

Dennis Collin <dcollin@connix.com> wrote in message
news:3ac91ad5.893981@news.mybizz.net...
> On Mon, 02 Apr 2001 22:04:32 GMT, "Peter" <ve9ptr@hotmail.com> wrote:
>
> >Does anyone have any simple plans for 10m and 80m antennas? Space is
> >somewhat limited so that is my primary concern....
> >
> >Pete
>
> How limited, Pete? Are we talking about a balcony vertical, or can
> you get some wire out?

159. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 01:35:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ab9br$oc6$1@slb7.atl.mindspring.net>
Source record: 166857

Tom:

CATV is not going copper? What? Correct me if I am wrong.

I agree, there is a ton of old Al shielded cable coaxial plant out there in the "installed base".

However as far as I have been able to determine all of the new HFC [Hybrid Fiber Coax] cable installations are now using copper shielded coaxial cable.

There's a reason why HFC overbuilds and new greenfield construction have gone to Cu shield rather than the potentially "rotten" Al shielding, and it's not just cost... it's related to decay of the cable and ingress noise in the upstream path at HF frequencies.

The new bi-directional cable systems with directional couplers to support DOCSIS cable modems operating in the HF band upstream do not use Al shielded cables. Attempts to add directional couplers to the older installed base of Al shielded cable to support cable modem upstream operation often result in excess noise ingress in the upstream direction because of the "leaky" old Al coaxial cable. Maintenance of modern EMC/EMI integrity levels for modern CATV systems is too expensive with the older Al cable.

I believe that quad shielded copper coax is the norm on modern HFC bi-directional cable systems. And none too soon, since those leaky cable systems have been killing my local reception on 147.27 with literally uncontrolled leakage from cable Channel E.

On buried copper radials, I agree with you if the ground is not wet or damp and the radials are large guage as with most MF AM broadcasters one will not even notice the decay of copper radials over several decades. Copper is much more benign on the electrochemical scale than aluminium. Just don't put it in the ground with any significant bias of positive DC voltage applied!

As to buried radials in general, copper is fine, but as those knife jugglers used to say about juggling at home, "don't try that with Aluminium"!

Thoughts, comments,

-Peter K1PO

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ac90ce0.265750561@news.accessunited.com...
> On Mon, 2 Apr 2001 17:21:18 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Aluminium is very susceptable to this effect, since it is so much more

> >chemically active than copper. Aluminium dust makes a very good high
> >explosive! In the early days, when they never thought about "tomorrow",
the
> >cable TV companies mistakenly deployed 75 Ohm coaxial cable with
> >inexpensive aluminium shielding. Heh, heh. That aluminium shielding
> >rapidly began to look like Swiss Cheese. Their Al cable plant became
very
> >EMC/EMI susceptable and gradually "rotted" away. Today cable companies
> >deploy only copper coaxial cable and the smart ones are likely to also
apply
> >cathodic protection techniques.
> >
> > -Peter K1PO
>
> Hi Peter,
>
> You'd better contact all the cable companies in the state of Georgia,
> and the rest of the US, and tell them that.
>
> They are all using aluminum shield cable.
>
> I have probably a hundred thousand feet here in my system, purchased
> from Com Scope over the past few years.
>
> I also use bare copper wire in radial system, as do almost all BC
> stations. You can go to an old station installed in the 20's and dig
> up the radials, and they are perfectly good.
>
> My #16 bare copper radials will be in the ground and in good shape
> long after I am a silent key.
>
> 73 Tom

160. Re: Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 01:44:45 UTC
From: NEWS <bwestman@mcs.net>
Message-ID: <q%9y6.6092$JN5.143868@news.goodnet.com>
Source record: 166859
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

I have a DX-390 and created an antenna suitable for my high rise condo that has 3 large windows facing west in Chicago. I bought a spool of thin coated wire of about 100 ft. I soldered the approriate size connector to one end and then draped the wire on my blinds going back and forth until it was all used up. Everything is inernal.I attached the wires with alligator clips. I'm impressed with the reception. I don't know if more distance on the wire would improve reception or not. The whole thing was pretty inexpensive. $10. I was cautioned about amplifying the sound in terms of damaging circuitry. I had used a RS amplifier for SW before, but the current setup seems to work best. I only have a western exposure and wonder what would happen if I could lay wire NS. Also, I'm assuming this is as safe as an internal TV antenna.

161. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 01:48:25 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <89aict4eptgfmrrbril8it0rmf5i54k1pc@4ax.com>
Source record: 166858

On Mon, 02 Apr 2001 17:02:05 -0700, Cortland Richmond
<Cortland.Richmond@usa.alcatel.com> wrote:

>I think this particular illustration was a Faraday shield between two loops
>-- an air-core transformer. And yes, such slots ARE often used.
>
>If the loop and the shield are of similar area, as a shield interposed
>between loops might be, then the presence of an unbroken plane shield near
>the loop will cause currents to flow in the shield as in a shorted turn of
>the same diameter. When the shield is much thicker than skin depth this is
>not necessarily a shielding problem, but it IS a problem in transferring
>energy, as the shorted turn adversely affects this.
>
>By cutting slots perpendicular to the ground plane, the area in which these
>currents can flow, and their magnitude, are reduced.
>
>Cortland
>

Hi Cortland,

Well, this is consistent with those that I've seen.

Now, it seems to me there are perhaps a few missing elements here -
all geometric. We have the slot perpendicular to the ground plane,
but I have seen no discussion of the orientation of one coil to the
other (I would presume they are coaxial) and I presume that an
unbroken plane would present a shorted turn, if that plane were also
perpendicular to the coil (the loop of a coil and the plane are
parallel). A slot cut anywhere, radially (not just simply normal to
ground), in the plane should snub eddy currents then - ground seems to
have nothing to do with this mechanism.

73's
Richard Clark, KB7QHC

162. Re: BUTTERNUT BUTTERFLY ON 6 Meters..anyone tried it???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 01:51:03 UTC
From: none@no!spam.org
Message-ID: <3ac9250e.37091742@news.uswest.net>
Source record: 166860

Hello Earl-

It's a good antenna. Before you start putting it togather, mark which

coil is which with a marker, as when your assembling it, the tags can
come off. Follow the instructions religously and you will be rewarded
with a good antenna.

The gain figures are valid, it only gets better except for 18mc where
its a dipole. On 24mc the gain is off the back.

Mine measures about 3.5 to one...but your results may vary.
Directivity? Who knows!

Good Luck

On Sun, 01 Apr 2001 18:24:10 GMT, earlve3ab@igs.net wrote:

>Hi Everyone. My boxed Butternut Butterfly is going up on the tower
>this spring..and id like to know if anyone has tried it on 6 meters??
>It may have a high SWR ...say 3 to 1...(just a theoretical guess)..
>but if it works..I would still use it. I now have a Ten Tec 6 Mtr
>transverter..so Im going to try some 6 mtrs as well.
>Im thinking ..what could also be done..to make it work on 6 is to
>add a very lightweight 6 mtr dipole aluminum wire element riding
>piggy back somehow to the main driven element..Just curious
>if anyone has tried it...Im going to try it myself by doing some
>adjustments at ground level with the reflector near the ground
>and the driven element pointing straight up. 73 Earl VE3AB
>PS ..can anyone cofirm if the Gain figures for this mini beam..
>claimed to be 3 db for 14 mhz and slightly higher for the higher
>bands are true? (are they db dipole or db isotropic..i forget!)

163. Radio Shack Antenna Rotors?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 01:55:05 UTC
From: John Sicotte <jsicotte@nospam.earthlink.net>
Message-ID: <Z3ay6.20120$aP5.1893656@newsread2.prod.itd.earthlink.net>
Source record: 166861

I know. I know. No REAL ham would ever buy anything from Radio Shack - right? But put your prejudice aside for just one moment. All I have is an 11-element 2-Meter beam. So do I really need anything bigger or stronger than a Radio Shack TV antenna rotor? Let's be honest now!

Thanks,
John
N7MTB

164. Re: Add antenna with no antenna jack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 02:15:26 UTC
From: CW <cmagers@sprynet.com>
Message-ID: <9abbuseod1@slb6.atl.mindspring.net>
Source record: 166863
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

I have tried that radio and antenna combination. You most definitly will need no further amplification. As a matter of fact, overload may be a problem under some circumstances. An attenuator would be a good idea. You probably won't need it most of the time, but when you do you will be glad you have it. One can be found on my site.
--
CW
KC7NOD
www.kc7nod.20m.com
"Bill Meacham" <NOSPAMexray@coqui.net> wrote in message
news:3AC8C34C.FF237024@coqui.net...
> Randon Loeb wrote:
>
> >
> > A few more questions though:
> > 1. With wire like the one from RS, does orientation matter?
>
> Very unlikely that you would notice any difference.
>
> > 2. Is there also a relatively inexpensive amplifier that would also
> > help?
>
> I'm not a fan of receiving pre-amplifiers for SW bands...I'll let
> somebody with more experience using them elaborate.
>
> > 3. Grounding rod- if it's 8', how much of that sticks out of the
> > ground--iow how much is burried? And can several antennas share the
> > same grounding rod?
>
> Ideally, all 8 feet should be in the ground. Thats not always
> easy. But if you can only drive a rod 5 feet in your soil, then
> save a buck and buy a 5 foot rod and eliminate 3 feet of ugly rod
> sticking out of the dirt. Yes, it SHOULD BE a common ground for
> all of your antennas and whatever equipment grounds you may have.
>
> Good luck,
> Bill
>

165. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 02:29:53 UTC
From: richardharrison@webtv.net
Message-ID: <13113-3AC935A1-10@storefull-114.iap.bryant.webtv.net>
Source record: 166864

Richard Clark wrote:
"I have never seen these "slots" purposely added for just the reason you describe."

There are various configurations of Faraday shields. The thing they have in common is at least one non-conducting joint, slot, gap, or what have you. It`s there to stop current flow across the gap. Some shields are called Faraday shields when they are not. Real Faraday shields exist to block the electric field while they let the magnetic field pass. This action is effective at some frequency or group of frequencies. It works with induction or radiation or both.

Ian White showed me how I was mis-characterizing the shield on a common direction finding loop as a Faraday Shield. It isn`t. It needs more segmentation to prevent significant induced current, though both of its sides are grounded.

As Terman starts his description of elimination of magnetic field opposition by an r-f shield, he simply gives an example of one high-resistance seam in the shield as destructive of the shield`s ability to exclude the magnetic field. Obviously, size and form must be accounted for.

I gather from Richard Clark`s comments that he is referring to the Faraday shield in an audio or power transformer. These don`t look like a brass comb with its back soldered to a ground plane. Faraday shields take different forms.

I`ll quote from a 1975 book, "Electronic Communication", p.293 by Robert L. Shrader, published by McGraw-Hill.

"Some transformers may also have electrostatic shielding between primary and secondary. This may take the form of a single layer of insulated wire or a single turn of sheet brass (insulated to prevent forming a shorted turn) placed between the primary and secondary windings. The shield is grounded or connected to the core. An electrostatic shield reduces capacitive coupling between primary and secondary coils. Since high frequencies are passed better by a capacitance than low frequencies are, any capacitive feed increases the transfer of higher frequencies into the secondary and also produces a difference in phase between the capacitive and inductive coupling. With this shield, any signal attempting to get from primary to secondary by capacitive effects encounters the shield and is led to ground. The only signal induced into the secondary is that produced by magnetic induction. Magnetic fields are not affected by nonferrous electrostatic shield.

From page 370 in Shrader`s book:
10. A Faraday shield may be installed between the final tank and the antenna. It is a gridwork of thin parallel wires, not connected together at the top but soldered together at the bottom and grounded. This electrostatic shield materially decreases capacitive coupling, thereby decreasing the possibility of harmonic transfer to the antenna circuit.

In my experience with many broadcast installations the Faraday shields were blunter. They wer cut and stamped out of aluminum stock, but they serve the same purpose.

I think it serves no purpose to refer to Maxwell, the right-hand-rule, Lenz, or anything else at this point of the discussion. If the pantheon of experts already presented hasn`t persuaded the skeptics that a Faraday shield blocks capacitive coupling but allows magnetic coupling, perhaps something else later will turn on the light.

Best regards, Richard Harrison, KB5WZI

166. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 03:12:08 UTC
From: richardharrison@webtv.net
Message-ID: <13113-3AC93F88-12@storefull-114.iap.bryant.webtv.net>
Source record: 166866

Richard Clark wrote:
"A slot cut anywhere, radially (not just simply normal to ground), in the plane should snub eddy currents then."

That`s right. Structurally, it`s usually easier just to make a row or column of vertical (or horizontal) projections.

Ground is essential to shorting out the capacitive coupling.

Magnetically induced current in the Faraday shield produces a counter field at the surface of an r-f shield without the slots to interrupt the circulating current. The shield being a very good conductor produces a counter field almost equal and opposite to that of the inciting field. The sum of the two is nearly zero. That`s how r-f magnetic shielding works. Electrostatic shielding works simply by shorting the electric field to ground. Eliminating the magnetic reaction of the shield allows the magnetic field to operate through the shield.

Just such a picket fence Faraday shield is very common in broadcast antenna coupling units. It suppresses harmonic radiation and takes the lightning hits that happen repeatedly during nearly every thunderstorm in the area. There is transformer coupling between coils on the same axis. The Faraday shield is perpendicular to the axis of the coils and is inserted between the coils. The arc-gaps at the tower base remain pristine. It`s the Faraday shields that look like the face of the moon.

Best regards, Richard Harrison, KB5WZI

167. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 03:26:19 UTC
From: richardharrison@webtv.net
Message-ID: <13115-3AC942DB-1@storefull-114.iap.bryant.webtv.net>
Source record: 166867

As I read a previous posting quoting Shrader, I see an omission. The sentence should read:
"Some transformers may also have electrostatic (Faraday) shielding between primary and secondary. I left out (Faraday).

Best regards, Richard Harrison, KB5WZI

168. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 03:41:30 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac943e1.279834520@news.accessunited.com>
Source record: 166865

On Mon, 2 Apr 2001 20:29:53 -0600 (CST), richardharrison@webtv.net (Richard Harrison) wrote:

>I think it serves no purpose to refer to Maxwell, the right-hand-rule, >Lenz, or anything else at this point of the discussion. If the pantheon >of experts already presented hasn`t persuaded the skeptics that a >Faraday shield blocks capacitive coupling but allows magnetic coupling, >perhaps something else later will turn on the light.

Hi Richard,

I'm glad you finally realize the shield on a loop antenna is the actual antenna, and does not stop the electric field of an electromagnetic wave or affect the noise response of the loop....other than what balance might do. It does not alter the field impedance of the loop either.

There is a vast difference between an antenna and a closed system like a transformer. Even in the transfomer it is important that the "Faraday shield" be arranged correctly. If it is not, or if it is not connected to the proper point in the system for termination or "grounding", electrostatic coupling may actually be increased.

Anyway, I'm glad we finally made progress. I was starting to think you were stuck on that misconception.

73 Tom

169. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 03:59:21 UTC
From: 2w8ji@akorn.net
Message-ID: <3ac9461c.280404696@news.accessunited.com>
Source record: 166868

On Mon, 2 Apr 2001 21:35:37 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>However as far as I have been able to determine all of the new HFC [Hybrid
>Fiber Coax] cable installations are now using copper shielded coaxial cable.

Sorry, but I have a few thousand feet of spanking new T-10 625-50 ohm
power cable from Times and it is aluminum shield with a copper center
conductor. It feel off a truck that was installing brand new CATV
cables in a new housing area. Underground cables none the less. They
were pulling both 50 and 75 ohm cables, both were aluminum jackets.

>There's a reason why HFC overbuilds and new greenfield construction have
>gone to Cu shield rather than the potentially "rotten" Al shielding, and
>it's not just cost... it's related to decay of the cable and ingress noise
>in the upstream path at HF frequencies.

The only "rotting" aluminum I have ever seen is when something chews
the aluminum in the air, or when the cable is cut or damaged to the
point where the l flooding compound fails to seal the wound when
buried.

>I believe that quad shielded copper coax is the norm on modern HFC
>bi-directional cable systems. And none too soon, since those leaky cable
>systems have been killing my local reception on 147.27 with literally
>uncontrolled leakage from cable Channel E.

What fools. The radiation from a single solid shield cable is
absolutely undetectable even right next to the cable. The vast
majority of problems are at connectors, or normal damage. When I
managed engineering of about 50 small systems, the only problem we had
was with tree-rats and poor fittings...most of that was on the drop
cables.

If they are worried about life, they need to use a jacketed cable.
Four shields won't fix a thing. As a matter of fact, I had a lot of
double and triple sheilded cable removed from problem areas because it
was actually better to work with regular hardline.

>On buried copper radials, I agree with you if the ground is not wet or damp
>and the radials are large guage as with most MF AM broadcasters one will not
>even notice the decay of copper radials over several decades. Copper is
>much more benign on the electrochemical scale than aluminium.

My ground is wet. What, me worry? Not on your life.

170. Re: High Power HF Antenna Suplliers?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 15:47:35 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3aca9954_1@news3.prserv.net>
Source record: 166744

1. Antenna Products, Mineral Wells, TX
2. Grainger Associates
3. The company BR now belongs to; I'm having a senior moment and can't think of their name.
Your post as appears below was incomplete. I have a source of rotatable HF LPAs in the UK if that is what you seek. Email me directly, and I will put you in touch with them.
--
Crazy George
Philip de Cadanet <phil@invest.fsbusiness.co.uk> wrote in message news:XJC9yXArihy6EwSr@invest.fsbusiness.co.uk...
> I have a commercial client who has requested a quote on the follow
> antennas.
>
> Can anyone recommend sources for any of these?
>
> I'm aware of one US manufacturer of HF log periodics and I believe there
> is an Italian company that produces large and high power handling
> verticals though I have no contact details.
>
> Any help much appreciated.
>
> (((73)))
>
> Phil G4ZOW
>

171. Re: FindArticles - Fractal Antenna Systems Develops Diversarray: Small Package, Big Solution.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 21:23:24 UTC
From: Gilbert Mouget <gilbert.mouget@waika9.com>
Message-ID: <gbry6.1012$hZ.3870826@nnrp6.proxad.net>
Source record: 166754

```
In article <200104021250.FAA08035@dyn1i.looksmart.com>, chipn1ir@aol.com says...
> Dr. Nathan Cohen, Ph.D [chipn1ir@aol.com] thought you'd find this article useful.
>
> Fractal Antenna Systems Develops Diversarray: Small Package, Big Solution.
> http://www.findarticles.com/m0EIN/1999_June_15/54888342/p1/article.jhtml
>

Please Herr Doktor Cohen, stop spamming, this is old news:

Issue: June 15, 1999
```

172. Re: K4WGE: William Ewald

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 23:20:29 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3ACA5ABD.5DE1@wt.net>
Source record: 166724

Fractenna wrote:
>
> William Ewald sent from his work office at the EPA in Research Triangle Park,
> North Carolina---

Are you a peeping tom? Nothing in the headers to that post infers originality from the EPA. Actually, it looks to be from a car system being it ran thru mobilphone.net. I imagine you are in your usual location up there in Boston, but it wouldn't matter if you were in Cleveland Tx to me.

>
> LOOKS LIKE I UNDERSTAND MY MOTIVATION (caps for ease of response) :-)

Makes me think you are gritting your teeth while typing...That will cause headaches eventually. Not to mention excessive tooth wear problems.
>
> >Integrity isn't something you display here though William. According to my
> >e-mail you had two new posts on the so-called "defunct e-list". So you say it
> >is defunct publicly and privately participate in it.
>
> Any reasonable person would conclude that 5 messages in the first
> quarter of 2001 approaches extinction. When the last message was
> posted in February, and my response were rejected, I concluded that
> fractalantennas was defunct. Just an observation, not a lapse of
> integrity.
>
> YOUS ASSERTED IT IS DEFUNCT IN ORDER TO DISCOURAGE OTHERS FROM USING IT. AND
> YET THE SAME DAY YOU POST TWICE!

Duhhhhh, that was in feb. This is now april. That was over a month ago. But you should know that.
>
> HOW CAN SOMETHING BEING USED BE DEFUNCT? ANSWER: IT'S NOT (caps for ease of
> response:-)) IF YOU DON"T LIKE IT THEN DON'T USE IT. EASY, DON'T YOU THINK?

Well, if no one tells him different, how is he supposed to know?
>
> > I also checked with the moderator and he says you tried to post
> > twice last week. Your posts were rejected because they were
> > personal replies to an individual and not of general interest to
> > the membership.
>
> How would the membership make a judgment about interest if it
> doesn't see the messages?

>
> THE MEMBERSHIP DOESN'T MAKE THE DECISION. THE MODERATOR DOES.

yep, that's a bummer. That's why I don't join such affairs. No one is
going to control what I say.

>
> Could I not infer from arbitrarily
> rejected posts that the list was defunct?
>
> NOT ARBITRARY.

Boy, that makes a lot of sense.
>
> Why did the moderator not
> respond to the individual himself?
>
> BECAUSE HE ASSUMED YOU HAVE THE SMARTS TO SEND PERSON TO PERSON EMAILS RATHER
> THAN COPYING 300 PLUS OTHERS ON IT.

See, that's what you get for assuming.
>
> > Sticking to fair and accommodating rules. That's integrity.
>
> The rules of fractalantennas are as fair and accommodating as
> those of the Red Queen.

I liked that one. He can pass go and collect 200$.
>
> YOU ARE ENTITLED TO YOUR OPINION. YOU ARE NOT ENTITLED TO LIE AND PASS
> INCORRECT INFO TO DEFAME SUCH AS BELOW (from your earlier post as quoted)....

ROFLMAONWMP!
>
> If the moderator either has not enough time
> to be a moderator, or needs such complete control that almost
> nothing is posted, then the list is dead.
>
> > Making public and bizarre accusations that a ramping-up company is
> > illegal is not.
>
> Did I say FAS is illegal?
>
> YES. YOU SAID:
>
> *****
> "Specifically, "Phil" shills for "Chip" about the latter's
> defunct e-list, claiming it's viable, and we're to believe Fractal
> Antenna Systems is a legitimate operation."
> *****

I see nothing in there that refers to illegality.
>
> No, I said there was less at its
> website than meets the eye.
>
> READ WHAT YOU SAID.

OK, lets do that...> Making public and bizarre accusations that a
ramping-up company is
> illegal is not.

Did I say FAS is illegal? No, I said there was less at its
website than meets the eye.

Well, ok then. There you have it.
>

>
> Who is being libelled? Who is being malicious? I merely question
> your puffery.
>
> NO YOU CHARACTERIZE A VIABLE AND ABOVE BOARD BUSINESS AS NOT LEGITIMATE. THAT
> IS WHAT YOU SAID.

Nothing illegal about that. What do you expect if you ignore him like
he's not really there?
>
> If you want fractalantennas to be viable, do something more
> proactive than claiming that it is.
>
> WILLIAM GIVEN YOUR JOB FOR THE EPA I TRUST YOU ARE IN A BETTER POSITION TO
> 'CLEAN UP YOUR OWN ACT'

The thing is , he's not putting out general "QST's to everyone and his
sister to go check out the moderated EPA "list". So what he does with
his act doesn't really matter as far as the "antenna usenet group". You
people are the ones locking everyone off that list if they seem to pose
any threat whatsoever to your "list". This can range from actually
knowing what they are talking about, to wanting to talk to other
members, to just being on Chips "turd" list, among other reasons I'm
sure. Sounds like a police state to me . MK
--
http://web.wt.net/~nm5k

173. K4WGE: William Ewald

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 23:22:09 UTC
From: fractenna@aol.com
Message-ID: <20010403192209.14618.00000236@ng-da1.aol.com>
Source record: 166719

William Ewald sent from his work office at the EPA in Research Triangle Park, North Carolina---

>> Don't either of them believe in integrity?

> I sure do! Being around a pioneer in a major new technology you
> have to have that attitude William! (William is K4WGE by the way).

Your cheerleading for Cohen isn't necessarily integrity.

LOOKS LIKE I UNDERSTAND MY MOTIVATION (caps for ease of response) :-)

>Integrity isn't something you display here though William. According to my
>e-mail you had two new posts on the so-called "defunct e-list". So you say it
>is defunct publicly and privately participate in it.

Any reasonable person would conclude that 5 messages in the first quarter of 2001 approaches extinction. When the last message was posted in February, and my response were rejected, I concluded that fractalantennas was defunct. Just an observation, not a lapse of integrity.

YOUS ASSERTED IT IS DEFUNCT IN ORDER TO DISCOURAGE OTHERS FROM USING IT. AND YET THE SAME DAY YOU POST TWICE!

HOW CAN SOMETHING BEING USED BE DEFUNCT? ANSWER: IT'S NOT (caps for ease of response:-)) IF YOU DON"T LIKE IT THEN DON'T USE IT. EASY, DON'T YOU THINK?

> I also checked with the moderator and he says you tried to post
> twice last week. Your posts were rejected because they were
> personal replies to an individual and not of general interest to
> the membership.

How would the membership make a judgment about interest if it doesn't see the messages?

THE MEMBERSHIP DOESN'T MAKE THE DECISION. THE MODERATOR DOES. I CHECKED WITH HIM. YOU CAN CONTACT YAHOO GROUPS AND COMPLAIN IF YOU LIKE. BE SURE TO SHOW THEM THE REJECTED POSTS WHICH ARE RESPONSES FOR ONE PERSON. THEN BE PREPARED TO EXPLAIN WHY 300 PLUS OTHERS WOULD BENEFIT FROM THIS RESPONSE. BE PREPARED TO DEMONSTRATE THAT YOUR REJECTED POSTS WERE TOTALLY WITHIN THE PURVIEW OF THE LIST.

ALSO WHY THE MODERATOR SHOULD HAVE TO DEAL WITH COMPLAINTS FROM OTHER MEMBERS JUST BECAUSE YOU WANTED TO SEND A SINGLE PERSON AN EMAIL ON THE LIST(caps for ease of response:-))

Could I not infer from arbitrarily
rejected posts that the list was defunct?

NOT ARBITRARY.

Why did the moderator not
respond to the individual himself?

BECAUSE HE ASSUMED YOU HAVE THE SMARTS TO SEND PERSON TO PERSON EMAILS RATHER
THAN COPYING 300 PLUS OTHERS ON IT.

> Sticking to fair and accomodating rules. That's integrity.

The rules of fractalantennas are as fair and accommodating as
those of the Red Queen.

YOU ARE ENTITLED TO YOUR OPINION. YOU ARE NOT ENTITLED TO LIE AND PASS
INCORRECT INFO TO DEFAME SUCH AS BELOW (from your earlier post as quoted)....

If the moderator either has not enough time
to be a moderator, or needs such complete control that almost
nothing is posted, then the list is dead.

> Making public and bizarre accusations that a ramping-up company is
> illegal is not.

Did I say FAS is illegal?

YES. YOU SAID:

*****
"Specifically, "Phil" shills for "Chip" about the latter's
defunct e-list, claiming it's viable, and we're to believe Fractal
Antenna Systems is a legitimate operation."
*****

No, I said there was less at its
website than meets the eye.

READ WHAT YOU SAID.

> Apparently there is quite a bit gathered about your operation
> there William. Integrity means not giving libelious and malicious
> persons the satisfaction of a response.

> 73
> Phil
> de N1ZKT

Who is being libelled? Who is being malicious? I merely question
your puffery.

NO YOU CHARACTERIZE A VIABLE AND ABOVE BOARD BUSINESS AS NOT LEGITIMATE. THAT
IS WHAT YOU SAID.

If you want fractalantennas to be viable, do something more
proactive than claiming that it is.

WILLIAM GIVEN YOUR JOB FOR THE EPA I TRUST YOU ARE IN A BETTER POSITION TO 'CLEAN UP YOUR OWN ACT' (caps for ease of response).

73
Phil
de N1ZKT

174. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 23:30:11 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3ACA5D03.6BC3@wt.net>
Source record: 166728

Peter O. Brackett wrote:

> Long live Cu, especially with cathodic protection.
>
> -Peter K1PO

I'd like to rig up cathodic protection for my old truck. I've been thinking about it, as I've heard mention of it. The truck is in pretty good shape now, but I'd like to keep it that way. Unfortunately, I can't garage keep it like the previous owner. Cars rust fast down here in mildew city if you don't keep a handle on it. I guess I'd do it in much the same way as a ship??? MK

--
http://web.wt.net/~nm5k

175. Re: Ford F-250 Diesel Interference on 40 Mtrs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 23:37:04 UTC
From: Cortland Richmond <Cortland.Richmond@usa.alcatel.com>
Message-ID: <3ACA5EA0.25CB6423@usa.alcatel.com>
Source record: 166720

Richard Clark wrote:

> ... Any attempt to snub this pulse would have current flowing again, the magnetic
> fields held in place, and leaving the injector ON.

Good thing I don't have a diesel! (grin)

One thing we don't know here is how long the injector is actually on; if a diode snubber holds it on only a small fraction of the desired operating time, that might be tolerable.

One could still pass each injector's power through ferrites to absorb high-frequency components of the discharge wave form; proper selection of ferrite could avoid problems at times on the order of magnitude of the injector's closing while still reducing RFI.

Cortland

176. Re: La

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 23:47:31 UTC
From: KB9WFK <KB9WFK@mindspring.com>
Message-ID: <9adna9$a4s$1@slb7.atl.mindspring.net>
Source record: 166721

--

"Joe" <joe@me.com> wrote in message news:3AC8E5C4.EC95034D@me.com...
> la la la
la la la la la la la la la la la 1 banana 2 banana 3 banana 4. 5
bananas make a bunch and so do many more.....

I like the banana splits too. :-)

177. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-03 23:50:54 UTC
From: richardharrison@webtv.net
Message-ID: <4112-3ACA61DE-288@storefull-113.iap.bryant.webtv.net>
Source record: 166722

Richard Clark wrote:
"This is a contradiction to earlier discussion---."

Griffith wrote:
"There is no circulating current in the shield and therefore nothing to stop the penetration of the shield by the magnetic field."

We were defining the Faraday shield by its function. It functions to allow penetration of the magnetic field because it has gaps to prevent eddy currents. Because of the gaps which are parts of the Faraday shield there is no Lenz and nothing to stop penetration of the magnetic field.

The seeming contradiction is my fault for not re-quoting, just once more, the previous description of the Faraday shield construction details. By saying we were defining a Faraday shield, I thought that was adequately covered, but I was wrong.

Have I guessed wrong as to what Richard Clark sees as a contradiction?

Best regards, Richard Harrison, KB5WZI

178. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 00:17:21 UTC
From: 2w8ji@akorn.net
Message-ID: <3aca65a6.354026100@news.accessunited.com>
Source record: 166723

On Tue, 03 Apr 2001 20:27:50 GMT, "Peter J. Bertini"
<commquart@home.com> wrote:

>Do I need to calculate or measure the capacitance of the Strandvise loops
>throught the insulators?

I'm not sure. I'd bet most guyline lengths are pulled out from near
someone's back pocket.

I was asking a question Pete because I'd wager no consideration at all
was given to the end-capacitance in the insulator connections. That
can be appreciable in large cables.

>> Contrary to popular myth, being "non-resonant" does NOT insure the guy
>> line will not change the antenna pattern. Resonance has something to
>> do with it, but not as much as we seem to assume.
>
>What is best for segment lengths vs. wavelength?

As below Pete.

>> The guy wire should always be much less than 1/2 wl long between
>> sections near the antenna or in areas where it can affect the pattern.
>>
>Much less is very subjective... Would 1/4 wave for the highest frequency of
>interest cover all bases?

Much less would be say 70% or smaller of a half wave. It would depend
on how close to the antenna it is, and how the antenna behaves nearby.

But I'd guess that .35 wl would be safe.

>> >Fewer insulators are needed the farther away from the antenna. If you
>are
>> >going to load the tower, then insulate the guys at the tower also.
>
>If running an inverted L I assume the lower insulators and segment lengths
>become equally important?

Yes, but the frequency is lower with the low band antennas so the
lengths can be longer.

I would think this could all be modelled, with loads used for the
insulators to represent the wire loops at the insulators.

I wonder if anyone has done that?

73 Tom

179. Re: K4WGE: William Ewald

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 00:24:04 UTC
From: k1bqt@aol.com
Message-ID: <20010403202404.25041.00002176@ng-cr1.aol.com>
Source record: 166725

> YOU CAN CONTACT YAHOO GROUPS<

You may also contact Dean John F Ebersole at (617) 353-6000, and the E-Mail is met@bu.edu. IF you wish, you may also share all Fractenna posts as attached files so the Dean and his associates may better understand Chip-n-Phil's selfless contribution to our group.

Rick K1BQT

180. Re: K4WGE William Ewald

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 00:25:33 UTC
From: k1bqt@aol.com
Message-ID: <20010403202533.25041.00002177@ng-cr1.aol.com>
Source record: 166726

>libelious and malicious persons<

Oh Oh! Here we go again!

Rick K1BQT

181. Re: Ford F-250 Diesel Interference on 40 Mtrs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 00:26:48 UTC
From: 2w8ji@akorn.net
Message-ID: <3aca67c6.354570695@news.accessunited.com>
Source record: 166727

On Tue, 03 Apr 2001 16:37:04 -0700, Cortland Richmond
<Cortland.Richmond@usa.alcatel.com> wrote:

>One thing we don't know here is how long the injector is actually on; if a diode
>snubber holds it on only a small fraction of the desired operating time, that might
>be tolerable.

I don't recall the on-time now, but it was small. I used a scope to
look at the injector solenoids and decided they were to short to mess
with.

The defining parameter was the price of a new control module! I wanted
no risk of damaging it!

By the way, it is an interesting system. Ford uses the solenoid to
apply engine oil pressure to what amounts to a tiny injector pump at
each cylinder.

The pressure from the main oiling line drives a shuttle inside the
injector, which has a hydraulic pressure gain. The other side forces
fuel through the injector.

73 Tom

182. Re: Ford F-250 Diesel Interference on 40 Mtrs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 00:39:27 UTC
From: kb7qhc@home.com
Message-ID: <3aca68de.682241571@news.seanet.com>
Source record: 166729

On Tue, 03 Apr 2001 16:37:04 -0700, Cortland Richmond
<Cortland.Richmond@usa.alcatel.com> wrote:

>Richard Clark wrote:
>
>> ... Any attempt to snub this pulse would have current flowing again, the magnetic
>> fields held in place, and leaving the injector ON.
>
>Good thing I don't have a diesel! (grin)
>
>One thing we don't know here is how long the injector is actually on; if a diode
>snubber holds it on only a small fraction of the desired operating time, that might
>be tolerable.
>
>One could still pass each injector's power through ferrites to absorb high-frequency
>components of the discharge wave form; proper selection of ferrite could avoid
>problems at times on the order of magnitude of the injector's closing while still
>reducing RFI.
>
>Cortland
>
>

Hi Cortland,

Nope, no, nada, nyet.

If you robbed the signal of its hi frequency components, you are by
definition lengthening the pulse.

My RX-7 can run up to 10,000 RPM without too much trouble (except for
water pump cavitation). That means that in one rev, it goes a full
360 in 6 milliseconds, or 1 degree in 17 microseconds. I am not aware
of the open time for my injectors, but I do know that it would be a
waste if it were open for more than the induction cycle (roughly a
millisecond). From experience, I am too aware of how difficult it is
to open an injector and close it within 1 millisecond using only 12
volts. Any attempt to tailor the pulse would flood my engine - or
starve it.

Those with V8's can scale this to their own red-line (where the
rise/fall times are more leisurely).

73's
Richard Clark, KB7QHC

183. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 00:43:38 UTC
From: 2w8ji@akorn.net
Message-ID: <3aca6cd7.355867865@news.accessunited.com>
Source record: 166730

On Tue, 03 Apr 2001 18:30:11 -0500, Mark Keith <nm5k@wt.net> wrote:

>I'd like to rig up cathodic protection for my old truck. I've been
>thinking about it, as I've heard mention of it. The truck is in pretty
>good shape now, but I'd like to keep it that way. Unfortunately, I can't
>garage keep it like the previous owner. Cars rust fast down here in
>mildew city if you don't keep a handle on it. I guess I'd do it in much
>the same way as a ship??? MK

Yes, but the trailing ground rod wire can get you in trouble. You need
a long wire, and a big reel of wire.

Otherwise the system won't work. It also does not stop rust in air,
only where metal contacts the earth or sits in water.

Since your truck is on rubber tires, it won't do much except maybe at
the edges of the tire rims and only then if you can get a ground rod
connection while moving.

73 Tom

184. Re: 40 Meter Announcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 00:44:44 UTC
From: bomc <bomc@goodnet.com>
Message-ID: <3ACA6E7D.AB8112A8@goodnet.com>
Source record: 166731
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Who publishes the Arizona State Union-Tribune? I live in Phoenix, and I want it!

Kenneth Scharf wrote:
>
> Sounded great, until I noticed the story date. Oh well.
>
> > RELIEF FOR HAMS IN SIGHT
> > Amateurs gain reprieve from long-time clash with broadcasters
> >
> > -from the Arizona State Union-Tribune, April 1, 2001
> >
> > WASHINGTON, D.C.- Ask any Arizonan amateur radio operator what the most
> > pressing problem on his frequencies is, and he will likely tell you it
> > is the serious interference from shortwave broadcast stations in the 40
> > meter band that has grown progressively worse over the last two decades.
> >
> > Yesterday, international broadcasters announced their intent to vacate
> > the hams' frequencies in favor of another portion of the radio spectrum,
> > bringing clear frequencies to hams for the first time in over forty-five
> > years, the Bush administration reported.
> >
> > Since the early- to mid-sixties, hams have had to endure increasing
> > shortwave activity fueled by the Cold War, tensions between Cuba and the
> > West, and the rise of governments in the Third World anxious to use
> > radio to spread propaganda. Protected by international law, national
> > broadcasters, religious programmers, and others have enjoyed virtually
> > unlimited access to frequencies, cheap worldwide coverage, and operation
> > at almost any power level they desired, creating an "elbow to elbow"
> > situation for which no resolution was seen, given the squatters' stance
> > taken by all parties involved.
> >
> > Now, a major bloc of broadcasters has unilaterally proposed moving off
> > of 40 meters onto a frequency band much less utilized now that it has
> > been recently vacated by the military. The new band had been under the
> > control of the United States Department of Defense since 1950, but has
> > lied in fallow for years with the steady rise in the use of satellites
> > for military communications. Broadcasters finalized an agreement with
> > the Department to assume administration of the frequencies over the
> > weekend.
> >
> > The announcement came at a meeting of the International Federation of
> > Shortwave Broadcasters (F�d�ration Internationale de Stations de Onde
> > Courte) in Geneva in late January. Of the 75 member countries of the

> > organization, 61 have operations in the 40 meter band, meaning that the
> > move away from 40 meters will constitute a mass exodus of signals which
> > have hampered amateur radio stations for years. Ham radio operators
> > stand to gain the most from the surprise announcement, but millions of
> > shortwave listeners-- hobbyists with special receivers that can pick up
> > the shortwave stations-- are also rejoicing at the prospect of clearer
> > frequencies and more enjoyable reception.
> >
> > The vote in favor of the move was 72 to 2, the two lone dissenting votes
> > coming from Cuba and Iraq. Libyan representatives abstained from the
> > voting.
> >
> > "When you talk about surprise in the context of world policy, you imply
> > that something has been discussed for a long, long time with what seemed
> > like no possible solution, and that the solution was not foreseen by
> > anybody, anywhere, at any time in the next five years. This is
> > definitely an astonishing surprise," declared Warren Kruger, a diplomat
> > and regulatory commissioner with the State Department in Brussels who
> > was involved in recent restructuring of shortwave allocations for the
> > European Union. He said that prior to the announcement, the best
> > scenario envisioned by US and European policymakers was the remote
> > possibility of the question of 40 meter broadcast interference appearing
> > on the agenda for the World Radiocommunication Conference (WRC) in 2003.
> > "Even then, it was doubtful whether the issue would have made it past
> > the committees onto the general floor. It just wasn't seen as pressing
> > enough in the face of other, stickier matters," he said.
> >
> > Under the proposed move, shortwave stations from the 61 nations would
> > vacate the 7100-7300 kilohertz band between now and the end of 2006. The
> > majority would move to a band between 7325 and 7490 kilohertz, with some
> > others scattering to several frequencies above and below that band.
> > According to Kruger, the major consideration was the acquisition of
> > frequencies with characteristics similar to the 40 meter band in terms
> > of range and time of day when the best reception was possible.
> > Evidently, the new frequency band is satisfactory to the stations
> > involved on all accounts.
> >
> > Other officials blindsided by the shotgun announcement were from both
> > the Federal Communications Commission (FCC) and the national association
> > for amateur radio in the US, the American Radio Relay League (ARRL).
> > LaVonne Burke, head of the FCC field office near Quantico, Virginia,
> > expressed shock and confusion over the Geneva statement. "We didn't even
> > have representatives there, thinking that there wouldn't be any
> > significant movement coming out of Geneva. All of our attention was
> > fixed on 2003, frankly." In Newington, Connecticut, an ARRL spokesman
> > struck a skeptical tone. "We need to be very cautious in our response to
> > this unilateral agreement," he said. "What effect will it really have?
> > Does it leave us more or less susceptible to other actions aimed at
> > reducing our frequency allocations? All these questions remain

> > unanswered and our vigilance cannot diminish at this time just because a
> > group of broadcasters decide to up and move off a frequency."
> >
> > Hailing the agreement as "monumental, a gift from heaven," well-known
> > Arizona ham Clyde "Skip" Butler declared the dawn of a 21st century era
> > for ham radio. "We never thought we would see this day. It is the answer
> > to our dreams and I can't tell you how exciting and how promising this
> > is to us. It's like being told you've just won the lottery." Another
> > Flagstaff-area amateur who identified himself as "John L.", explained
> > what this meant to him. "My buddies and I have met on 40 meters every
> > night for the last eighteen years, and every single one of those nights,
> > it has been a struggle to find a clear spot to set up our transmitters.
> > If it wasn't the howling of Radio Moscow, it was the splatter from one
> > of those darned religious stations that completely wiped out the band.
> > We've hoped for years that the ARRL could somehow kick them out and give
> > us some relief. Man, I can't tell you how nice it will be without having
> > to worry about [the broadcasters] anymore. I can't wait."
> >
> > Amazingly, not all amateurs are welcoming the less-cluttered future of
> > 40 meters with open arms. In Ohio, a demonstration is planned at the
> > Dayton ham convention in May, the largest in the country. Organized by a
> > group of ham traditionalists, the demonstration will take the form of an
> > 80-vehicle-long caravan which will parade through the city carrying
> > signs and placards and protesting on a number of ham frequencies as they
> > progress. An unidentified member of the protest stated, "Generations of
> > hams have literally grown up with having to dodge interference on 40. It
> > made us better operators, having to use operating saavy to survive in
> > between Radio Moscow and Voice of Free China. This makes us look like
> > wimps who have to be pandered to and who can't stand a little bit of
> > rough going. Our mission is to fight for ham ingenuity and for the
> > reputation of hams everywhere."
> >
> > Other amateurs reserved their excitement for other reasons. In phone
> > conversations with this reporter, several hams expressed concern that
> > the elevation of amateur radio to exclusive use of the 40 meter band
> > could endanger their hold on other, nearby frequencies that are being
> > eyed by a number of other services who have a new-found, increased
> > appetite for spectrum space for Internet and communication services.
> > They said also that new hams entering the hobby through a streamlined
> > FCC licensing process that has been generally viewed as easier and less
> > demanding would not appreciate their frequency privileges without the
> > added challenge of having to confront shortwave interference.
> >
> > Within the next five years, whether it is good or bad for the hobby, it
> > will undoubtedly be easier and more pleasant to tune the 40 meter band
> > and converse with other radio aficionados. While some will enjoy the
> > arrangement, others will bemoan the loss of yet another ham tradition.
> > Whatever the outcome, hams will be left to craft a response to the
> > sudden and very unexpected windfall.

185. Re: K4WGE William Ewald

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 00:45:06 UTC
From: 2w8ji@akorn.net
Message-ID: <3aca6da6.356074755@news.accessunited.com>
Source record: 166732

On 04 Apr 2001 00:25:33 GMT, k1bqt@aol.com (Rick Littlefield) wrote:

>>libelious and malicious persons<
>
>Oh Oh! Here we go again!
>
>Rick K1BQT

Chip and Phil are emotionally twisted lovers.

186. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 00:50:30 UTC
From: richardharrison@webtv.net
Message-ID: <12406-3ACA6FD6-180@storefull-116.iap.bryant.webtv.net>
Source record: 166735

Richard Clark, KB7QHC wrote:
"This is related to my earlier observation that geometry of the loop and its shield were significant..."

They certainly are. Different relationships can produce opposite results.

I`m a lazy correspomdent, so I try to keep it short and often get it too short. I apologize but don`t vow to improve.

Most readers have experimented with small loops and know they have axial nulls. In the tortured route taken by the signal in a shielded direction-finding loop, I thought it necessary to explain where I thought the signal came from.

Maybe I should have said that there are very few degrees of phase in a small loop so a current entering the loop from one end is almost the same in phase and magnitude to the current leaving the loop from the other end. So the voltage vectors associated with the currents in opposite sides of the small loop are nearly equal and opposite when the loop is broadside to a wavefront. The characteristic null results.

I think that most posters were assuming the most advantageous or least advantageous positioning of components used in the descriptions. The extremes usually simplify understanding of phenomena for me.

Best regards, Richard Harrison, KB5WZI

187. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 00:55:00 UTC
From: Frank Donovan <donovanf@erols.com>
Message-ID: <9adrdakup1@bob.news.rcn.net>
Source record: 166733

Rudy,

You should always use an insulator within a few feet of a guyed tower.
It should be just far enough away so that a climber's head can't hit it
(an insulator makes a much bigger "target" for the climber's head
than the guy wire alone).

Since you did not place an insulator near the tower, your minimum
wire length is actually 28 feet times two (56 ft), plus the width of the
tower
face, plus an additional lengthing factor because you have three wires
instead
of two, plus the capacitive end loading factor of the insulators and loops
at
end of each wire...

My judgement is that your guy configuration is highly likely to degrade any
40 meter antenna on or near your tower. A little effort modelling your
tower and 40 meter antenna could quickly move this out of the conjecture
domain. I'd suggest adding another insulator to each of your guys.

The 27 to 28 foot length you specified was popular prior to the introduction
of the "WARC" bands. Unfortunately, that length makes a darn good
reflector for the 18 MHz ham band! I wouldn't want it within a wavelength
of an 18 MHz antenna that you expect to perform properly.

Steel guys for a tower that will (or potentially will) support antennas for
all
HF bands should be designed as follows:
- An insulator at the tower, just out of "headache" range.
- The remaining lengths of wire should be less than 0.35 wavelengths at the
highest frequency antenna that will be within one wavelength of that
wire.
(Don't forget to think about all antennas below the guy as well).

If you are not using directive antennas that you have invested lots of
blood,
sweat and money in, you could consider relaxing one wavelength distance
to one-half wavelength.

For these reasons, many designers of high performance amateur arrays have
opted for non-conductive guys; however, this comes at the price of
a more mechanically fragile system. You never want to drop anything on
a non-conductive guy (especially fiberglas!). If you do (and the tower
doesn't fail), your first order of business is a very thorough inspection
of the guy(s) for damage!

73
Frank
W3LPL
donovanf@erols.com

188. Re: K4WGE: William Ewald

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 01:11:20 UTC
From: KB9WFK <KB9WFK@mindspring.com>
Message-ID: <9ads3e$oq9$1@slb6.atl.mindspring.net>
Source record: 166734

I thought he lost that job... Where was he fired from then?

--

"Rick Littlefield" <k1bqt@aol.com> wrote in message
news:20010403202404.25041.00002176@ng-cr1.aol.com...
> > YOU CAN CONTACT YAHOO GROUPS<
>
> You may also contact Dean John F Ebersole at (617) 353-6000, and the
E-Mail is
> met@bu.edu. IF you wish, you may also share all Fractenna posts as
attached
> files so the Dean and his associates may better understand Chip-n-Phil's
> selfless contribution to our group.
>
> Rick K1BQT

189. Re: Rohn 25g "Hazer"??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 01:14:40 UTC
From: wb4una@aol.com
Message-ID: <20010403211440.12585.00000192@ng-fv1.aol.com>
Source record: 166736

well alittle story on the HAZER...I have 2 rohn 25 towers at 75'..bothn have the Hazer on them and both have guy wires. You can install the top set of guys on the bottom of the hazer and then you can have a trailing set of guys 30' below buy using a special traling section that will pull the guys up when you crank the hazer and come down when you crank it down. It works great and i have been using mine for going on 10 years..I am and do not work for the company just very pleased with the product.
here is what I have on the towers and as said both have the Hazer..
Tower # 1:
20' section of T-6061 allum. mast
Th7dx tribander
D-4 40 meter rotateable dipole
A3WS 12-17 meter beam
Ringo Ranger for 10 meters at the top of the mast..
Tower # 2:
20' section of t-6061 allun. mast
617b
17b2
k1fo 432
Ringo Ranger 2 at the top

Know that is a load and have never had a proplem with the Hazer handeling the job for me.We have had winds as high as 60mph and all stood up...
Well there you go...hope that helps someone on the HAZER project..

ARS: WB4UNA
Randy Chavis
247 Goff Court
West Columbia
S.C. 29172

190. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 01:37:23 UTC
From: Frank Donovan <donovanf@erols.com>
Message-ID: <9adtsp$7r4$1@bob.news.rcn.net>
Source record: 166737

Rudy,

You should always use an insulator within a few feet of a guyed tower.
It should be just far enough away so that a climber's head can't hit it
(an insulator makes a much bigger "target" for the climber's head
than the guy wire alone).

Since you did not place an insulator near the tower, your minimum
wire length is actually 28 feet times two (56 ft), plus the width of the
tower
face, plus an additional lengthing factor because you have three wires
instead of two, plus the capacitive end loading factor of the insulators
and loops at the end of each wire...

My judgement is that your guy configuration is highly likely to degrade any
40 meter antenna on or near your tower. A little effort modelling your
tower and 40 meter antenna could quickly move this out of the conjecture
domain. I'd suggest adding another insulator to each of your guys.

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of the "WARC" bands. Unfortunately, that length makes a darn good
reflector for the 18 MHz ham band! I wouldn't want it within a wavelength
of an 18 MHz antenna that you expect to perform properly.

Steel guys for a tower that will (or potentially will) support antennas for
all HF bands should be designed as follows:
- An insulator at the tower, just out of "headache" range.
- The remaining lengths of wire should be less than 0.35 wavelengths at
the
highest frequency antenna that will be within one wavelength of that
wire.
(Don't forget to think about all antennas below the guy as well).

If you are not using directive antennas that you have invested lots of
blood, sweat and money in, you could consider relaxing one wavelength
distance to one-half wavelength.

For these reasons, many designers of high performance amateur arrays have
opted for non-conductive guys; however, this comes at the price of
a more mechanically fragile system. You never want to drop anything on
a non-conductive guy (especially a fiberglas guy!). If you do (and the
tower
doesn't fail), your first order of business becomes a very thorough
inspection
of the guy(s) for damage!

73
Frank
W3LPL
donovanf@erols.com

191. Re: La

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 02:28:02 UTC
From: k3bu@aol.com
Message-ID: <20010403222802.29683.00001782@ng-ms1.aol.com>
Source record: 166738

>
>--
>
>
>"Joe" <joe@me.com> wrote in message news:3AC8E5C4.EC95034D@me.com...
>> la la la
>la la la la la la la la la la 1 banana 2 banana 3 banana 4. 5
>bananas make a bunch and so do many more.......
>
>I like the banana splits too. :-)
>
>

Sound more like Freakabanana :-)

192. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 02:28:42 UTC
From: richardharrison@webtv.net
Message-ID: <271-3ACA86DA-136@storefull-117.iap.bryant.webtv.net>
Source record: 166740

Bill Sabin wrote:
"To be right on target, we must use the term "electromagnetic".

I`m glad I`ve lots of company in being careless. but sorry if it makes what I write difficult.

Terman says on page 38 of his 1955 tome:
"It is possible to shield electrostatic flux without simultaneously affecting the magnetic field by surrounding the space to be shielded with a conducting cage that is made in such a way as to provide no low-resistance path for the flow of eddy currents, while at the same time offering a metallic terminal upon which electrostatic flux lines can terminate."

As Terman did not say use a brass strap or single continuous layer of insulated wire, but instead said "shielded with a conducting cage", Terman was making a general statement which would apply to the various types of Faraday shields. But Terman did follow this statement with the iron-cored transformer example. He also has an r-f example in there somewhere which I`ve quoted several times in this thread, but at the moment I`m loath to look it up. I`ll quote something new instead.
Prob.2-45 on page 43:
"A grid of wires such as shown in the accompanying figure will provide electrostatic shielding without magnetic shielding providing the structure (shown dotted in the illustration) supporting the sides of the shield is an insulator. However, if the material supporting (the sides) of the structure is a conductor, then magnetic as well as electrostatic fields are shielded at least to some extent." "Explain"

Terman`s example of the Faraday shield in this instance is a conducting "fish skeleton" stood on end with the end of the backbone grounded. The extreme ends of the little spines are the points shown first insulated, then shorted to ground.

I think I`ve already answered Terman`s question many times in this thread.

I`m sure the energy in the electrostatic flux is not annihilated when the voltage is shorted. When a transmission line is shorted its electric field energy is briefly transferred to the magnetic field until current in the shorted line regenerates the electric field. Something similar must happen as a result of shorting the electric field in the Faraday shield.

All the "Ancients" I have access to describe the Faraday shield in the same way. Reg has a term for this: "Plagiarism"

Best regards, Richard Harrison, KB5WZI

193. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 02:34:55 UTC
From: k3bu@aol.com
Message-ID: <20010403223455.29683.00001783@ng-ms1.aol.com>
Source record: 166739

>Cars rust fast down here in
>mildew city if you don't keep a handle on it. I guess I'd do it in much
>the same way as a ship??? MK

Do it cheap Canuck way: spray it every year before salty season, undercarriage
with used oil, engine compartment with WD40 or that LPS something stuff.

Beats commercial rustproofing.

Yuri, K3BU
cheap Canuck also known as VE3BMV and VE1BY

PS
This is not based on computer modeling, but on practical experiences.

194. Are old TET beams any good ??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 02:51:01 UTC
From: ETE <ete@mindspring.com>
Message-ID: <9ae25g$3d0$1@slb5.atl.mindspring.net>
Source record: 166742

I have an old (but still brand new in the box) TET HB43SP 4 elelment 20-15-10 meter beam made in Japan. I keep hearing that these were pretty good antennas till the Japanese owner died and the antenna company got sold to the Australians. It apparently uses dual driven elements. Any comments opinions on this old beam would be appreciated. I dont know whether to use it or sell it at the next ham fest. thanks. WB4JCY Please post to the newsgroup if you dont mind so others can read this. wb4jcy@arrl.net

195. Re: Back to 11 Meters.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 02:53:06 UTC
From: Delbert McCord <dmccord@usol.com>
Message-ID: <tcl32u3jhfk0bc@corp.supernews.com>
Source record: 166741

Why can't the Amateur community just "Get Over It"

When I got into am Radio (Over 15 years ago) I was lucky and had an Elmer, he was very old and is a silent key now. He had cancer and lost his ability to speak and used to talk using code on his 2 meter radio at the hospital. I thought if he could use code with all the problems he had I could learn and use code.

What happened to the deal where Hams help the new guys? If we keep treating the new people like crap why would they want to be a Ham?

I enjoy PSK31 on HF, how much fun would that be if there was no one on the other end of the QSO?

This kind of reminds me of when I got my ticket Heathkit was very popular and a lot of the old guys (Including my Elmer) used to call people "Appliance Operators" that did not run some kind of Kit Radio. Today there are VERY FEW people that have built there radio, I have built a few Heathkits HW101, HW18, HW2036 (Two meter rig). I no longer use them because they are obsolete, do we still want to buy crystals?

Lets all grow with our hobby and present something to non Hams that is something that we can be proud of and be a hobby that new people might want to be a part of.

If we don't recruit more new Hams sooner or later as our numbers shrink we will loose bands. Just think about how much our UHF Band would be worth to a wireless internet provider. If I was the FCC sooner or later I would find a way to move more and more of Amateur frequencys into the business sector and create revenue instead of listening to all us "Old Guys" Bitching and Complaining"

Excuse me while I get off my soap box,
73's Delbert McCord
KA8OCN

196. Re: ferrite loopstick antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 02:58:03 UTC
From: Jeff Cooper <cooperz@bellatlantic.net>
Message-ID: <%4wy6.4870$bv.1168362@typhoon2.ba-dsg.net>
Source record: 166743

Marvin,

I'm not sure what your exact application is but there exist a wide variety of ferrite "loopstck" antenna coils. They consist, of course, of a coil wrapped around a ferrite rod. There are cheap ones that date back to the days of Lafayette and Radio Shack, etc. These are often available rattling around in some box at a hamfest.
They often appear as a coil wound on a tan/brown cardboard tube with a phenolic collar with solder tabs. One popular configuration was about 3/8" in diameter and maybe 2 -to- 2-1/2" long. At the other end a small piece of threaded stock protrudes from its ferrite rod/slug inside the tube. There are also some high quality units used in commercial receivers especially those that tried to exploit the directional qualities of ferrite rod based inductors. They show up on eBay from time to time also.

For modern, albeit pricy, sources, you can try:
Antique Electronic Supply http://www.tubesandmore.com
Ocean State Electronics http://www.oceanstateelectronics.com
Amidon Associates http://www.amidoncorp.com/f_ham.htm

There are other suppliers and probably some readers out there can enumerate them better than I. If you search around Amidon, you might find a formula for computing the inductance of a coiled wrapped around a given ferrite rod for a given number of turns. To resonate your coil with a capacitor, use the vernerable formula:

freq = 0.159/sqrt(L*C)

The book "Radio Receiver Projects You Can Build" by Homer L. Davidson shows some ferrite antenna coils being made but I'm sure there are other sources of the same information. Enameled magnet wire is often used and is easily obtained (even Radio Shack sells it, I think). You'll want to appreciate the fragility of ferrite rods and if you're making your own, you may want to understand what Q-dope is if stable inductance value is critical to your application.. Forgive me if I've articulated the obvious. I'm a bit of a ferrite aficonado myself.

Good Luck,
Coop, AA1WW

"marvin rosen" <n3bqa@starpower.net> wrote in message
news:9acud3$4ec$1@bob.news.rcn.net...
> does anyone know of a commercial source of ferrite loopstick antennas for
> the am broadcast band and/or is it feasable for me to make my own?
>
>

197. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 03:59:11 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ae668$o2r$1@nntp9.atl.mindspring.net>
Source record: 166745

Mark:

Heh, heh great idea... yeah keep the old truck in the ocean or tied up at dockside and set up a low voltage cathodic protection system on it. Can probably recover an old cathodic protection system from the GAO surplus sales from the Navy's mothball fleet as they retire the old hulls. Great idea... the cathodic protection gear should look good mounted on the old truck as well. Sort of a match for the big ol 20 foot whip with 8 inch diameter 25 turn coil mounted on the tool box. Right beside the Rotweiler... I love it.

Really though for an old truck, paint, scratch, ding, and dent upkeep is a lot more feasible than cathodic protection.

If you don't want to do that kind of maintainence then move to Tuscon or Phoenix, AZ and kept the old truck garaged there permanently, it will erode more slowly in arrid Arizona than overb there in humid Texas. That would be cheaper than tying the old truck up at a Galveston, TX dockside and going to the trouble of installing cathodic protection. And would save the expense of waterproofing the floorboards.

However... Mark if you do insist on cathodic protection for the old truck, keep Consumer Reports and Car and Driver updated with monthly rust reports. Maybe you could get Ralph Nader interested enough to insist that the auto manufacturers include active cathodic protection on all new vehicles.

Good luck.

Best,

-Peter K1PO

"Mark Keith" <nm5k@wt.net> wrote in message news:3ACA5D03.6BC3@wt.net...
> Peter O. Brackett wrote:
>
> > Long live Cu, especially with cathodic protection.
> >
> > -Peter K1PO
>
> I'd like to rig up cathodic protection for my old truck. I've been
> thinking about it, as I've heard mention of it. The truck is in pretty
> good shape now, but I'd like to keep it that way. Unfortunately, I can't
> garage keep it like the previous owner. Cars rust fast down here in
> mildew city if you don't keep a handle on it. I guess I'd do it in much
> the same way as a ship??? MK
>
> --

> http://web.wt.net/~nm5k

198. Re: CQ Magazine-3dB gain HF mobile antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 04:10:27 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ae6t3vjt1@slb2.atl.mindspring.net>
Source record: 166746

Tom:

Ham radio magazines "used to be" a good place to learn. I believe those days are now gone forever. QEX being the sole exception and even there I worry...

Most of the popular ham magazines have decended to a low enough technical level now that learning technical topics from those magazines is almost infeasible.

Clearly most newcomers to our hobby are not really interested in learning technical aspects of radio any more... it is the operational aspects that seem to appeal. And we should encourage that, however...

I wonder where the next generations of technicians, engineers and scientists interested in radio and electronics will get their motivation?

From computer simulations?

Thoughts, comments,

=Peter K1PO

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ac90ade.265236628@news.accessunited.com...
> On Mon, 02 Apr 2001 17:01:52 -0400, Ralph Mowery
> <rmowery@dialpoint.net> wrote:
>
> >useful. I have not ran the paterns to see if the spacing and phasing
> >would do that , but it is their selling point so the antenna companies
> >can make twice the money.
>
> >> gain is realized by the system being directional. Except
> >> for only one or two instances, why would a mobile ~want~ a
> >> directional antenna? The mobile would be 'pointed' in the
> >> 'wrong' direction at least 50% of the time. Oh well, the
> >> CB market has been making money on this kind of thinking
> >> for years. I guess it's time the amateur market got in on
> >> it too...
>
> The point everyone keeps ignoring is there is almost no directivity
> change when two antennas are mounted 5 feet apart and fed broadside on
> ANY band below 30 MHz.
>
> The broadside gain of two veticals on 28MHz spaced 5 feet is about 1/2
> dB under ideal conditions.
>

> It was bad enough for the author to claim 1/2 wave spaced antennas
> have 4 to 5 dB gain, and claiming 5 or 6 feet of spacing on 30 meters
> produces 3 dB gain is even worse.
>
> My worry is we are heading the way of the CB band in our technical
> information. That's unfortunate, because ham radio could be a good
> place to learn.
>
> 73 Tom

199. Re: 40 Meter Announcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 04:19:13 UTC
From: kelly@nospam.dvol.com
Message-ID: <3aca9ef0.159572217@news2.dvol.com>
Source record: 166747
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

On Mon, 02 Apr 2001 13:51:19 -0700, Joe <joe@me.com> wrote:

>
>RELIEF FOR HAMS IN SIGHT
>Amateurs gain reprieve from long-time clash with broadcasters
>
. . . .

>Whatever the outcome, hams will be left to craft a response to the
>sudden and very unexpected windfall.
>
Only in our dreams. Beautifully done and congratulations for the great
wordsmithing.
>
w3rv

200. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 04:37:16 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3ACAA4FC.6553@wt.net>
Source record: 166751

Peter O. Brackett wrote:
>

> However... Mark if you do insist on cathodic protection for the old truck,
> keep Consumer Reports and Car and Driver updated with monthly rust reports.
> Maybe you could get Ralph Nader interested enough to insist that the auto
> manufacturers include active cathodic protection on all new vehicles.
>
> Good luck.
>
> Best,
>
> -Peter K1PO

Hummm, I've seen ad's for systems for cars using this method. I assume from yours and Tom's comments, they must not work. I can't remember what they used on those systems, but it involved applying a voltage to the frame??? I guess. I'd have to look back into that. I guess just keeping the rust spots under control about all I can do. I have too much stuff in the garage to keep it there. AZ is out.. The SW airline tickets back and forth to my truck would outweigh the rust advantages. :(MK
--
http://web.wt.net/~nm5k

201. Re: Simple 10m & 80m Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 04:42:49 UTC
From: Mike Allan <"mike.allan<nospamm>"@rmit.edu.au>
Message-ID: <3ACAA649.BD3E4B91@rmit.edu.au>
Source record: 166752

you could try the largest dipole you can fit in the space available,
even with a few bends in the dipole legs and feed it with tuned feeders
(open wire line) to a atu. I use a full size 80 meter dipole fed with
300 ohm line on all bands and it works fine. I have tried all sorts of
multiband antennas such as common feed dipoles , trap dipoles etc, but
the dipole with open wire (tuned feeders) works best for me.
hope that helps
Mike
VK3XL

Peter wrote:

> Does anyone have any simple plans for 10m and 80m antennas? Space is
> somewhat limited so that is my primary concern....
>
> Pete

202. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 05:07:27 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ACAAC0F.25ECD08F@mwci.net>
Source record: 166748

Richard Harrison wrote:

> Bill Sabin wrote:
> "To be right on target, we must use the term "electromagnetic".
>
> I`m glad I`ve lots of company in being careless. but sorry if it makes
> what I write difficult.
>
> Terman says on page 38 of his 1955 tome:
> "It is possible to shield electrostatic flux without simultaneously
> affecting the magnetic field by surrounding the space to be shielded
> with a conducting cage that is made in such a way as to provide no
> low-resistance path for the flow of eddy currents, while at the same
> time offering a metallic terminal upon which electrostatic flux lines
> can terminate."

When he says "electrostatic" he is referring to the the direct capacitive coupling from an external interference maker to the internal coil.

This is not the same as the "electric field" component of the electromagnetic wave that is the *desired* signal. The wires do not (and cannot) eliminate that. Do you know why the Ancients for more than 150 years have been calling it an "electro-magnetic" wave?

I have very carefully repeated this several times, and you do not seem to believe or understand what I mean.

I give up. Look on page 865 of Terman 1955.

Bill W0IYH

203. Re: RFI from satellite dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 05:14:50 UTC
From: Roger <rdhalste@tm.net>
Message-ID: <e5yy6.675$4e.183168@newshog.newsread.com>
Source record: 166750

"BILL" <w5ikb@satx.rr.net> wrote in message
news:3AC7ED83.8B59E95D@satx.rr.net...
> Has anyone had problems with RFI generated by a neighbor's Satellite
> Dish?

C-Band (big dish), Ku (small dish), or both?

Roger Halstead (K8RI) www.RogerHalstead.com
N833R World's Oldest Debonair? s# CD-2
>
> Thanks,
>
> Bill
>
> For correct address change .net to .com
>
>

204. Re: RFI from satellite dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 05:16:01 UTC
From: Roger <rdhalste@tm.net>
Message-ID: <l6yy6.676$4e.182993@newshog.newsread.com>
Source record: 166749

```
--
Roger Halstead (K8RI) www.RogerHalstead.com
N833R World's Oldest Debonair? s# CD-2

"Dave" <rni220fgi@email.com> wrote in message
news:9a9s5r$461fb$1@ID-49477.news.dfncis.de...
> Yeah, it is a switch mode piece of crap made by Pace, and it causes me
> nightmares when I am trying to listen to any DX. I tried a lump of ferrite
> at the box end, but it still radiates thru the braid oaf the coax.
>
What size dish?

I have two C-band dishes and neither creates any problem on 440 and below.
Never listened above that.

Roger Halstead (K8RI) www.RogerHalstead.com
N833R World's Oldest Debonair? s# CD-2
> BILL <w5ikb@satx.rr.net> wrote in message
> news:3AC7ED83.8B59E95D@satx.rr.net...
> > Has anyone had problems with RFI generated by a neighbor's Satellite
> > Dish?
> >
> > Thanks,
> >
> > Bill
> >
> > For correct address change .net to .com
> >
> >
>
>
```

205. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 06:28:03 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <wbczN+Az7ry6EAnB@ifwtech.plus.net>
Source record: 166753

William E. Sabin wrote:
>
>Also, forget about the current-over-the-open-end-and-down-the-other-side
>baloney.
>
That remark is totally out of place in what is attempting to be a
technical discussion.

You have my line of argument. Either quote it, pick it apart and
demonstrate why my interpretation of skin effect, Kirchhoff's and Lenz's
laws does not hold - or withdraw that remark.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

206. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 09:39:03 UTC
From: 2w8ji@akorn.net
Message-ID: <3acaeaac.388085490@news.accessunited.com>
Source record: 166755

On Wed, 04 Apr 2001 00:07:27 -0500, "William E. Sabin"
<sabinw@mwci.net> wrote:

>> Terman says on page 38 of his 1955 tome:
>> "It is possible to shield electrostatic flux without simultaneously
>> affecting the magnetic field by surrounding the space to be shielded
>> with a conducting cage that is made in such a way as to provide no
>> low-resistance path for the flow of eddy currents, while at the same
>> time offering a metallic terminal upon which electrostatic flux lines
>> can terminate."
>
>When he says "electrostatic" he is referring to the the direct capacitive
>coupling from an external interference maker to the internal coil.
>
>This is not the same as the "electric field" component of the
>electromagnetic wave that is the *desired* signal. The wires do not (and
>cannot) eliminate that. Do you know why the Ancients for more than 150 years
>have been calling it an "electro-magnetic" wave?
>
>I have very carefully repeated this several times, and you do not seem to
>believe or understand what I mean.

Richard seems to be having a probelm with that, that no one can get
past.

The key is most of readers probably got the message by now.

73 Tom

207. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 09:45:14 UTC
From: 2w8ji@akorn.net
Message-ID: <3acaebd0.388377680@news.accessunited.com>
Source record: 166756

On Tue, 03 Apr 2001 23:37:16 -0500, Mark Keith <nm5k@wt.net> wrote:

>
>Hummm, I've seen ad's for systems for cars using this method. I assume
>from yours and Tom's comments, they must not work. I can't remember what
>they used on those systems, but it involved applying a voltage to the
>frame??? I guess. I'd have to look back into that. I guess just keeping
>the rust spots under control about all I can do. I have too much stuff
>in the garage to keep it there. AZ is out.. The SW airline tickets back
>and forth to my truck would outweigh the rust advantages. :(MK

If you bury your truck in dirt, or park it in a lake or river,
cathodic protection will have an effect.

It does absolutley nothing to a vehicle in air, because the corrosion
is not from current flow. Even if it was current related, which it
isn't, to charge the vehicle you need a second terminal or an ion gun.

Like Fractals, it is pathological hoo doo.

73 Tom

208. Re: CQ Magazine-3dB gain HF mobile antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 09:49:55 UTC
From: Jim Rodenkirch <rodenkir@spawar.navy.mil>
Message-ID: <9aer39rgd1@newpoisson.nosc.mil>
Source record: 166758

Well, George, your comment on a two engine plane and, "twice the probability of engine failure" is a little off the mark. Here's what probability number really works: assuming the two engines are equal (i.e., they both have a .95 (95%) probability of running and .05 (05%) probability of failing) the probability that you'll have an engine failure (both engines are running) is .0975 (09.75%). That's assuming there's no replacement of a failed engine. For simple problems like this (simple in that the number of things that have a failure and success number - in this case two engines) you can construct a simple tree and figure out what the probability is. In this example, you'd have a success or failure for one engine. If it's successful (.95) than the chance for the second engine to fail (.95) is multiplied times the first success and the result (.9025) is your probability of one engine failing. The probability of failure P(f) is 1 - .9075 .

Regards, Jim R.

"George, W5YR" <w5yr@att.net> wrote in message
news:3AC6C1E3.1DB13052@att.net...
> What the co-phase crowd always seems to overlook is that you have *TWO*
of
> those lossy loaded antennas plus an extra length of coax in the system to
> absorb power.
>
> Kinda like a twin-engine aircraft - sounds good on paper, except that you
> incur twice the probability of engine failure and most light twins are
> barely capable of sustaining flight with any reasonable load at any
> reasonable altitude on one engine.
>
> 72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
> Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
> Amateur Radio W5YR, in the 55th year and it just keeps getting better!
> Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437
>
>
> N2EY wrote:
> >
> > In article <3ac5ef27.61501563@news.accessunited.com>, 2w8ji@akorn.net
(Tom
> > W8JI) writes:
> >
> > >The latest issue of CQ contains an interesting tidbit of information.
> > >
> > >On page 61, the author states "A number of readers have urged me to
> > >discusss the concept of phasing two mobile antennas for big signal
> > >mobiling...."

> > >
> > >I'll bet they have!!!
> > >
> > >The author goes on to say if you run two HF mobile antennas on your
> > >car, one on each side of the trunk and feed them in parallel, you gain
> > >3dB!!!!! Now he admits "wider whip spacing is preferable for 40 and 80
> > >meters"...but he goes on to say the 3 dB does appear on 30 meters and
> > >above.
> >
> > As Cecil points out, there's a grain of truth under that pile of
> > misinformation. But the gain claim is valid on 30 MHz, not 30 meters.
> > >
> > >The author pontificates about cable length, advising people to stay
> > >away form pesky "resonant lengths like 1/4 wl or 1/2 wl" that cause
> > >problems.
> >
> > One wonders what sort of car needs that much feedline on 75 meters...
> > >
> > >He talks about how, when we space antennas 1/2wl apart, the gain is "4
> > >or 5dB" but since we can't get that spacing a "trunk width is good
> > >for 3dB".
> > >
> > Trunk of a Humvee, maybe...
> >
> > >In other articles by the same author, I learned the radiaton in a
> > >mobile antenna all comes from the area ABOVE the loading coil. I
> > >learned about power amplifiers, and how they work. One thing....these
> > >articles are dependable. They are all of the same educational quality
> > >and accuracy.
> > >
> > >I did write him once, and he wrote back saying I was the only one who
> > >thought his articles contained errors.
> >
> > Who is the author, Tom? I don't get CQ, and if errors like that aren't
> > corrected, stuff like this convinces me that's a good policy.
> >
> > The funniest part of all this is that the whole thing is actually a
pretty good
> > April Fool joke even if all the claims are true. Any gain brought about
by
> > phasing mobile whips on a vehicle is directional gain, which is useless
in most
> > real-world mobile-in-motion operating situations.
> >
> > I sure hope it was supposed to be a joke.
> >
> > 73 de Jim, N2EY

209. Re: Check Out: NX7U mobile multi-multi-mode station

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 09:55:56 UTC
From: Jim Rodenkirch <rodenkir@spawar.navy.mil>
Message-ID: <9aerehrtd1@newpoisson.nosc.mil>
Source record: 166757
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.equipment

A Ford! HURRAH!

Regards, Jim R., K9JWV - proud owner of a Ford F-250, replete with Power Stroke Diesel.

"Scott Townley" <nx7u@primenet.com> wrote in message news:3ac5f8c9.60795480@news.primenet.com...
> Continually updated with HF/VHF/Satellite etc.., mobile operating
> info/equipment/pix/etc.
> Plus, I just put a new counter on the page and I want to see it work
> <g>
>

210. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 10:49:18 UTC
From: ON4CLN <on4cln@qsl.net>
Message-ID: <O_Cy6.2459$ii5.380030@afrodite.telenet-ops.be>
Source record: 166759

Peter (and all other posters - no pun intended),

this truely is an interesting series of postings...

Peter, you seem to have an interesting job, do you work for a telco?

Greetings,
Franki - ON4CLN
http://qsy.to/on4cln

211. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 11:20:51 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ACB0393.BEE16C96@mwci.net>
Source record: 166760

Ian White, G3SEK wrote:

> William E. Sabin wrote:
> >
> >Also, forget about the current-over-the-open-end-and-down-the-other-side
> >baloney.
> >
>
> You have my line of argument. Either quote it, pick it apart and
> demonstrate why my interpretation of skin effect, Kirchhoff's and Lenz's
> laws does not hold - or withdraw that remark.

That subject has been talked to death in this forum for several years, and I have given very detailed viewpoints, most recently within the past two weeks, which I am not going to regurgitate.

It is hogwash. Baloney. It doesn't happen.

I withdraw *nothing*.

Bill W0IYH

212. KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 11:47:37 UTC
From: chipn1ir@aol.com
Message-ID: <20010404074737.06341.00002346@ng-ff1.aol.com>
Source record: 166761

"It has been brought to my attention that an illegal and bogus use of my screenname has been employed here to falsely represent a public message as being written and sent by me.

Under recommendation of my attorney, I am taking this sole opportunity to make public notice regarding this: This is a public notification that any and all claimed USENET messages after January 5, 2001, that bear the signature of Chip N1IR, Nathan Cohen, or chipn1ir@aol.com, are false and bogus.

Fractenna@aol.com continues to be used by several individuals including myself. This is a legal and long standing use by those affiliated with Fractal Antenna Systems,Inc. However, I do not use this screenname on USENET. I do not participate in USENET. I understand that Phil, N1ZKT, is doing so and he is welcome under the premise so given.

Under the recommendation of my attorney, I have not been involved in any USENET activities since 5 January 2001, so that action against certain individuals may proceed.

My superiors at my home institution have been apprised of the situation in January. I have not participated in USENET since the January date. Nor do I intend to.

Below is the bogus post. It is not an AOL post.It appears to be a routed post through looksmart. That individual must have used either bogus routing or obtained an account which emulates an AOL screenname.

It is not me or anyone I know of.

I wish my friends well on USENET and remind then that I may be reached by e-mail for friendly chats, or through the various moderated antenna lists on yahoogroups.

Nathan 'Chip' Cohen
N1IR
617-489-6952 "

Text of bogus post:
From: chipn1ir@aol.com (chipn1ir@aol.com)
Subject: FindArticles - Fractal Antenna Systems Develops Diversarray: Small Package, Big Solution.
Newsgroups: rec.radio.amateur.antenna
View complete thread
Date: 2001-04-02 05:52:05 PST

Dr. Nathan Cohen, Ph.D [chipn1ir@aol.com] thought you'd find this article useful.

Fractal Antenna Systems Develops Diversarray: Small Package, Big Solution.
http://www.findarticles.com/m0EIN/1999_June_15/54888342/p1/article.jhtml

---

FindArticles - "The Web's First Articles Archive"
http://www.findarticles.com/

--
Posted from lksm@ink1.looksmart.com [207.138.42.99]
via Mailgate.ORG Server - http://www.Mailgate.ORG

213. Re: Radio Shack Antenna Rotors?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 12:00:39 UTC
From: Paul <pvanasse@mail.direcpc.com>
Message-ID: <7cEy6.36393$m8.329209@news.direcpc.com>
Source record: 166763

Hello John:

There are two types of Radio Shack rotors. One is manufactured by Phillips and the other is made by Channel Master. One can tell the difference between the two by the other casing. The Channel Master rotor has a 30 or so degree angle on the top of the case sloping from the rotor mast housing to the opposite side. The Phillips rotor is perfectly rectangular. Why do I tell you all this?

Because the Phillips rotor is excellent. Im using a Phillips rotor with a 4 element 10 meter (16' wide) beam in addition to a 2m/440 vertical collinear dipole (15.9' high) up the middle for years now. I live in the North East and this rotor has survived blizzards, ice storms, and hurricanes. Granted, I wouldnt go putting anything more than my application on one of these rotors however keep in mind that this rotor was designed to rotate a 8-14 element broadcast band TV antenna which have some pretty good wind load numbers.

214. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 12:11:11 UTC
From: Paul <pvanasse@mail.direcpc.com>
Message-ID: <9cEy6.36394$m8.329209@news.direcpc.com>
Source record: 166762

Ive been using old 7/8" and 1-5/8" Heliax that most amateurs dont want because the connectors are too expensive. The cable companies usually give this stuff away to anyone who is willing to haul it off. Just strip off the outer sheathing with a razor knife and you have 1-5/8" copper pipe that easily brazes to copper strapping.

The 1-5/8" Heliax is especially nice because there is alot of surface area to make earth contact with once it is buried. All you have to do is have enough room to do all of this fun stuff!

73

215. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 13:14:29 UTC
From: jbarrett@remove.stny.rr.com
Message-ID: <V6Fy6.34961$nR.6157193@typhoon.nyroc.rr.com>
Source record: 166764

In article <20010404074737.06341.00002346@ng-ff1.aol.com>, chipn1ir@aol.com (Chipn1ir) wrote:

>Under recommendation of my attorney, I am taking this sole opportunity to make
>public notice regarding this: This is a public notification that any and all
>claimed USENET messages after January 5, 2001, that bear the signature of Chip
>N1IR, Nathan Cohen, or chipn1ir@aol.com, are false and bogus.
>

Interesting... Since the above disclaimer was posted April 4, 2001, using the signature "chipn1ir@aol.com", we can safely assume that it a bogus post, and should be ignored.

Thank you for clearing this up.

Jim Barrett

216. Re: Sun Spots This Weekend

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 14:57:17 UTC
From: mike.luther@ziplog.com
Message-ID: <tcmdido4dda646@corp.supernews.com>
Source record: 166765

In <3ACA3A8A.2184@wt.net>, Mark Keith <nm5k@wt.net> writes:

Mark ..

>http://web.wt.net/~nm5k

That's good work. I bookmarked it. A nice find

--> Sleep well; OS2's still awake! ;)

Mike.Luther@ziplog.com
Mike.Luther@f3000.n117.z1.fidonet.org

217. Re: Using copper for 2M antenna project HELP.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 15:19:07 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3ACB3B6B.84D61024@oio.net>
Source record: 166767

Dino,
Changing the diameter of a conductor can make a difference
in conductor length, so your correct in that regard. There
are two things I'd think about though. The use of copper
tubing/pipe will make a difference in weight. How will that
affect your project? Also, the difference in conductivity
between copper and aluminum just isn't enough to worry about
in this type of application.
'Doc

218. Re: Grounding rod question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 15:21:55 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <rDrLOv6+9j+vx39U++NwvZ=P1N5K@4ax.com>
Source record: 166768

Randon Loeb <rloebusenet@cticonsulting.net> wrote:

>Thanks to the list, I will be installing a longwire antenna this weekend
>on my roof, to better capture shortwave broadcasts. I do have some
>questions about grounding, as my radio, the Realistic DX-390 does not
>have a grounding screw, as it has a plastic chassis.
>My questions:
>1. Should I run a wire of some kind directly from the antenna to the
>grounding rod?

Have you purchased your antenna yet, and looked at the instructions? If a ground is needed, the instructions will usually tell you where to attach the ground wire.

There are all kinds of different receiving antennas, and their grounding needs are not all the same.

If you're worried about lightening protection, you best bet is to simply disconnect your antenna from the radio when it's not in use.

Good luck!

Bob
k5qwg

> My assumption is that the path to earth ground should be
>as far away from the radio/inside of house as possible, or in otherwords
>entirely outside of the house?
>2. How should this wire be attached to the antenna?
>3. What guage or type of wire should be used from antenna to ground?
>4. More of a theory question: Why do other radios have a grounding screw
>on the chassis? It seems to me that the lightning would then have path
>to chassis, and then to earth ground. Why not just go directly from the
>antenna to the earth ground outside the house? Or does grounding this
>way help during non-lightning situations to channel unwanted static
>electricity to earth ground? Should I run another ground wire closer to
>my radio unit to the earth ground as well for this purpose?
>Thanks

219. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 15:29:16 UTC
From: richardharrison@webtv.net
Message-ID: <22773-3ACB3DCC-2@storefull-112.iap.bryant.webtv.net>
Source record: 166669

Bill Sabin wrote:
"Look at page 865 of Terman 1955."

I find no contradiction to what I wrote.

Terman says: "The intensity B of the magnetic field of the radio wave is everywhere proportional to the strength E of the electric field."

The above is from a discussion of radiation from a doublet antenna.

Since voltage between ends of a wire causes a proportional current through the wire, the magnetic field of the wire is proportional to the voltage. The voltage the traveling magnetic field induces in a distant wire by sweeping across it is also proportional.

We know the energies in the traveling electric and magnetic fields are equal because they trade their energies back and forth as they travel in space.

Bill also wrote:
"When he (Terman) says "electrostatic" he is referring to the direct capacitive coupling from an external interference maker to the internal coil.
This is not the same as the "electric field" component of the electromagnetic wave that is the "desired" signal. The wires do not (and cannot) eliminate that."

Coil shields function the same whether an electric field comes from a static charge, the near electric field from a radio antenna, or a distant r-f source. A grounded shield simply puts the electric force lines contacting the shield at ground potential.

Ancients writing "electrostatic" indeed include dynamic electric lines of force (electric fields) in their meaning. It`s a distinction without a difference.

In a water analogy, a seawall withstands both tides and waves.

Bill said the wires do not and cannot eliminate the electric field component. Almost any conductive enclosure terminates an electric field. It need not be continuous. The electric field has an affinity for grounded conductors. We have "screened rooms" etc. which demonstrate that shield solidity is not required.

A solid shield stops the magnetic r-f field component, but Terman showed how a shield can be made porous to only the magnetic field by preventing circulating induced currents in the shield.

These induced currents, and these electric lines of force don`t care where they come from, as far as the shield is concerned. They may be from near or far. The action of the shield is the same.

The difference of behavior in a shield comes from construction of the shield. A continuous shield allows circulation of induced currents. A picket fence shield (Faraday shield) with one end only of the pickets grounded does not allow circulation. The Faraday shield allows free passage of the magnetic field but bars the electric field. That is its purpose.

The electric and magnetic fields are separable. The separation is only very brief. On the other side of the Faraday shield the surviving magnetic field instantly recreates an electric field. This is practically a lossless process. A 50KW broadcast transmitter doesn`t heat its Faraday shields enough to feel any temperature rise.

Best regards, Richard Harrison, KB5WZI

220. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 15:44:52 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <T+qeQtB0F0y6EAQo@ifwtech.plus.net>
Source record: 166671

William E. Sabin wrote:
>
>
>Ian White, G3SEK wrote:
>
>> William E. Sabin wrote:
>> >
>> >Also, forget about the current-over-the-open-end-and-down-the-other-side
>> >baloney.
>> >
>>
>> You have my line of argument. Either quote it, pick it apart and
>> demonstrate why my interpretation of skin effect, Kirchhoff's and Lenz's
>> laws does not hold - or withdraw that remark.
>
>That subject has been talked to death in this forum for several years, and I
>have given very detailed viewpoints, most recently within the past two
>weeks, which I am not going to regurgitate.
>
That is precisely what I was NOT asking you to do. Your own viewpoint
has been very clearly stated.

As you know Bill, I don't claim your expertise on EM theory, having no
formal training in that area. All I can do is ask questions in the hope
that others can explain how it all fits together.

But when it comes to the application of scientific method and discourse,
I do have that training and will go to the mat with anyone who
misapplies it... as in:

>It is hogwash. Baloney. It doesn't happen.
>
>I withdraw *nothing*.

Anyone can be excused the occasional "Error: out of patience" message
like that but making a habit of it does not enhance your reputation,
Bill.

If you want to establish that my speculation is not correct, name-
calling will not achieve it. You'll have to disprove it the right and
rigorous way, by picking your way through my line of argument (you
correctly identified that nothing will be achieved by repeating your own
line of argument again).

Whatever happens, it won't upset me, because either way I will learn
something.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

221. Grounding rod question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 15:47:18 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3ACB4206.6FA728B4@cticonsulting.net>
Source record: 166766

Thanks to the list, I will be installing a longwire antenna this weekend on my roof, to better capture shortwave broadcasts. I do have some questions about grounding, as my radio, the Realistic DX-390 does not have a grounding screw, as it has a plastic chassis.
My questions:
1. Should I run a wire of some kind directly from the antenna to the grounding rod? My assumption is that the path to earth ground should be as far away from the radio/inside of house as possible, or in otherwords entirely outside of the house?
2. How should this wire be attached to the antenna?
3. What guage or type of wire should be used from antenna to ground?
4. More of a theory question: Why do other radios have a grounding screw on the chassis? It seems to me that the lightning would then have path to chassis, and then to earth ground. Why not just go directly from the antenna to the earth ground outside the house? Or does grounding this way help during non-lightning situations to channel unwanted static electricity to earth ground? Should I run another ground wire closer to my radio unit to the earth ground as well for this purpose?
Thanks

222. Re: Are old TET beams any good ??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 15:49:22 UTC
From: millersg@dmapub.dma.org
Message-ID: <9affq2$b2f$1@dmapub.dma.org>
Source record: 166670

In article <9ae25g$3d0$1@slb5.atl.mindspring.net>,
ETE <ete@mindspring.com> wrote:
>I have an old (but still brand new in the box) TET HB43SP 4 elelment
>20-15-10 meter beam made in Japan. I keep hearing that these were
>pretty good antennas till the Japanese owner died and the antenna
>company got sold to the Australians. It apparently uses dual driven
>elements. Any comments opinions on this old beam would be
>appreciated. I dont know whether to use it or sell it at the next
>ham fest. thanks. WB4JCY Please post to the newsgroup if you dont
>mind so others can read this. wb4jcy@arrl.net

I used an HB43SP for almost 20 years until it broke in an ice storm last Christmas. It's performance is typical of a tribander from that era (early 1980's) on a similar length (6 meter ?) boom. My antenna resonated a bit low on all bands which can be easily shifted higher by shortening the driven elements. (I never bothered since I prefer CW.) I suppose some the newer, computer optimized tribanders may perform a little better than the HB43SP but it had reasonable gain, good SWR, and a pretty good pattern. Mechanically, the antenna is on the light side and will not survive 1/2" of radial icing like we had here last December. I also had to replace a lot of rusted mounting hardware (originally metric sized) when I installed the antenna at a new QTH last year.

TET-Emtron may still sell the same basic antenna design as model TE-43 with stainless steel hardware and, based on the product description, improved boom to mast and element to boom brackets:

http://www.emtron.com.au/Antennas/ThreeBand.html

hope this helps,

--
Steve Miller N8SM millersg@dma.org http://www.dma.org/~millersg

223. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 16:34:43 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3acb4d1e.87271841@news.aepnet.com>
Source record: 166672

On Tue, 3 Apr 2001 23:59:11 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
wrote:

>If you don't want to do that kind of maintainence then move to Tuscon or
>Phoenix, AZ and kept the old truck garaged there permanently, it will erode
>more slowly in arrid Arizona than overb there in humid Texas.

You can move to Phoenix or Tuscon (sic) but under no circumstance should you
move to Tucson. We have way too many people and cars here now.

Got all of those rust-free fifties Chevies clogging up the streets doncha know.

Wes Stewart N7WS

[snip]

224. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 16:46:44 UTC
From: richardharrison@webtv.net
Message-ID: <13275-3ACB4FF4-102@storefull-117.iap.bryant.webtv.net>
Source record: 166675

After saying a shield reacts the same to waves from near or far, (it does), it dawned on me that some readers may think, so what?

The electric and magnetic fields are replicas of each other so why bother to sort out the electrostatic field and dispose of it for an instant?

Many, many, posts ago we showed a greater electric field intensity than magnetic field intensity in the near field of an r-f source. This is due to differences in their rather fast rates of decline.

So, in case we are in the near field of a noise source, terminating only the electric field might slightly improve the signal to noise ratio. The fields are replicas of each other, but in the case of noise we don`t want either replica, and if we can trash the larger replica we have helped our cause. The new electric noise field created by the surviving magnetic noise field will be proportional to surviving magnetic field`s lower strength.

Best regards, Richard Harrison, KB5WZI

225. Re: Using copper for 2M antenna project HELP.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 17:01:13 UTC
From: KA9CAR <nospam@nospam.usa>
Message-ID: <9afjvc$9se$1@news.tribune.com>
Source record: 166673

I used number 4 or number 6 for the 2 meter eggbeater and #8 for the 432. I still needed a top support for the 2 meter one.

KA9CAR

Dino <dinod@deltanet.com> wrote in message news:cPqy6.548607$ge4.198469689@news2.rdc2.tx.home.com...
> Hello!
>
> I'm going to build K5OE's Eggbeater II project. He suggests an 8 guage
> wire for 2 meters as 10 guage is only mmarginal for performance.
>
> I remember reading where K1FO discovered that 3/16 rod was best for VHF
> beams. I have also seen J-Poles made out of 1/2 copper pipe.
>
> I was thinking about using 1/4" copper for the Eggbeater II project as
> it is real close to 3/16"
>
> My question is this...
>
> Will the larger diameter copper pipe (1/4" in place of 8 guage wire)
> require me to SHORTEN the dimensions because of the increased surface
> area?
>
> If I know to expect this, I can build it large and shorten it down. Also,
> Jerry suggests feeding BOTH loops in parallel to make sure the SWR is
> correct (the phasing line would be installed later). As I understand
> this, the full wave loop ALONE would be 100 ohms and by doubling them
> up I get 50 ohms. Am I wrong?
>
> I would like to build 1 loop and end feed it until I get the SWR correct.
> Then I can build the second loop to match the first. How can I test 1
loop
> only?
>
> Thanks for all the help!
>
> Dino
>

226. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 17:13:05 UTC
From: 2w8ji@akorn.net
Message-ID: <3acb5423.415088568@news.accessunited.com>
Source record: 166674

On Wed, 4 Apr 2001 09:29:16 -0600 (CST), richardharrison@webtv.net (Richard Harrison) wrote:

>Coil shields function the same whether an electric field comes from a >static charge, the near electric field from a radio antenna, or a >distant r-f source. A grounded shield simply puts the electric force >lines contacting the shield at ground potential.

That is where you are wrong. That is the root of you misunderstanding of the problem.

"Fields" are only descriptive terms we use to describe actions of charges at a distance on other charges. When you start thinking the effects are all the same, no matter whether the charge is standing, accelerating, or moving at a constant velocity any hope of understanding effects of charges in systems by using "fields" is impossible.

Very clearly, from the statement you made above, you have a conceptual problem with fields.

73 Tom

227. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 17:21:04 UTC
From: 2w8ji@akorn.net
Message-ID: <3acb5645.415634923@news.accessunited.com>
Source record: 166676

On Wed, 4 Apr 2001 08:11:11 -0400, "Paul" <pvanasse@mail.direcpc.com>
wrote:

>Ive been using old 7/8" and 1-5/8" Heliax that most amateurs dont want
>because the connectors are too expensive. The cable companies usually give
>this stuff away to anyone who is willing to haul it off. Just strip off the
>outer sheathing with a razor knife and you have 1-5/8" copper pipe that
>easily brazes to copper strapping.

Cable (CATV) companies do not use copper jacketed cable for
distribution, and they certainly do not use 7/8th or 1-5/8th cable.
Most CATV cables are .500, .625, .750, or 1.00 inch. Some (rarely) is
50 ohm, most is 75, and virtually all is aluminum shield.

Cellular and two-way companies often use 7/8 and 1-5/8th lines. most
of which is copper shield.

73 Tom

228. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 18:18:12 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9afoea$v5p$1@slb3.atl.mindspring.net>
Source record: 166678

Franki:

Work for Telco's. No, but I used to.

These days we provide consulting services for them and as well we design and manufacture equipment and try to sell it to them.

-Peter K1PO

"ON4CLN" <on4cln@qsl.net> wrote in message
news:O_Cy6.2459$ii5.380030@afrodite.telenet-ops.be...
> Peter (and all other posters - no pun intended),
>
> this truely is an interesting series of postings...
>
> Peter, you seem to have an interesting job, do you work for a telco?
>
> Greetings,
> Franki - ON4CLN
> http://qsy.to/on4cln
>
>

229. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 18:19:53 UTC
From: Paul <pvanasse@mail.direcpc.com>
Message-ID: <RBJy6.36398$m8.330265@news.direcpc.com>
Source record: 166677

: Cable (CATV) companies do not use copper jacketed cable for
: distribution, and they certainly do not use 7/8th or 1-5/8th cable.
: Most CATV cables are .500, .625, .750, or 1.00 inch. Some (rarely) is
: 50 ohm, most is 75, and virtually all is aluminum shield.
:
: Cellular and two-way companies often use 7/8 and 1-5/8th lines. most
: of which is copper shield.
:

You'd better tell COX Cable that they're either in possession of the wrong cable or using the wrong cable because as of a couple of weeks ago they still had a couple of dozen reels of it in their yard.. 1.5 years ago a local cable TV company (COX) donated over 8000' of Heliax to me for $0. All I had to do was pick up the partially used reels (7 of them) and partially clean out their stock yard. All were copper and most of the load was 1-5/8" ANDREW LDF-7 Heliax, RFS Cablewave 158, and ANDREW HJ5 7/8" cable.

I machine my own connectors according to ANDREW specs (that way I can buy the seals directly from ANDREW for $6), only I use brass as the connector material and cut 5/8"-24 Unified threading for PL-259's as compared to N connector threads. The most difficult part of the process is wrestling a 150' piece of 1-5/8" Heliax in place. Kinda reminds me of Jim Fowler wrestling that Anaconda on Wild Kingdom some years ago.

73

230. Lightning Protection

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 18:22:07 UTC
From: Harry Williams <harry.w.williams@cdc.com>
Message-ID: <3ACB664D.5ED30FEB@cdc.com>
Source record: 166679

I need some ideas on how to effectively ground 450 ohm ladder line for lightning
protection. I would like to be able to go outside and throw a switch to put my
ladder line to ground. I was thinking of an old DPDT knife switch but can not find
one anywhere. Anybody got other ideas on how to do this??

Thanks,
Harry - W0PIY

231. Quad parasitic elements and polarization.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 18:34:07 UTC
From: Scott McClements <yetbbwa@grove.iup.edu>
Message-ID: <3ACB691F.B1C81B48@grove.iup.edu>
Source record: 166681

In studying (checking out the websites) the antenna manufacturers that
have models that are capable of circular polarity (for EME and OSCAR)
- I notice these antennas all use Yagi elements. Is there any advantage
to
using quad loop elements instead?

My (primitive) thinking is that since a quad loop element is
polarization
insensitive, it would be better suited as a parasitic element for the
above uses.
If a linear polarization was being received (and let's assume the
incoming signal
is oriented at 45 degrees, between vertical and horizontal), wouldn't
quad parasitic
elements "relay" a *slighly* stronger signal to the driven element over
the yagi
parasitic elements? If this is the case, is it the same for "offset"
style Yagi elements too?

How about the case where the incoming signal is circular polarized? Does
anybody
think quad loop parasitic elements would have an advantage over Yagi
parasitic elements?

Scott McClements

232. Quad parasitic elements and polarization.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 18:34:26 UTC
From: Scott McClements <yetbbwa@grove.iup.edu>
Message-ID: <3ACB6932.6B698F35@grove.iup.edu>
Source record: 166680

In studying (checking out the websites) the antenna manufacturers that have models that are capable of circular polarity (for EME and OSCAR) - I notice these antennas all use Yagi elements. Is there any advantage to
using quad loop elements instead?

My (primitive) thinking is that since a quad loop element is polarization
insensitive, it would be better suited as a parasitic element for the above uses.
If a linear polarization was being received (and let's assume the incoming signal
is oriented at 45 degrees, between vertical and horizontal), wouldn't quad parasitic
elements "relay" a *slighly* stronger signal to the driven element over the yagi
parasitic elements? If this is the case, is it the same for "offset" style Yagi elements too?

How about the case where the incoming signal is circular polarized? Does anybody
think quad loop parasitic elements would have an advantage over Yagi parasitic elements?

Scott McClements

233. Re: Rohn 25g "Hazer"??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 19:21:38 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3acb747a$0$88178$bbae4d71@news.net-link.net>
Source record: 166683

How exactly do the bottom guys disconnect from the tower and come down with the Hazer? Do they get tangled with the upper guys? Can you use the Hazer on a 100 foot tower with 3 sets of guys?
Randy Chavis wrote in message
<20010403211440.12585.00000192@ng-fv1.aol.com>...
>well alittle story on the HAZER...I have 2 rohn 25 towers at 75'..bothn have
>the Hazer on them and both have guy wires. You can install the top set of guys
>on the bottom of the hazer and then you can have a trailing set of guys 30'
>below buy using a special traling section that will pull the guys up when you
>crank the hazer and come down when you crank it down. It works great and i have
>been using mine for going on 10 years..I am and do not work for the company
>just very pleased with the product.
> here is what I have on the towers and as said both have the Hazer..
> Tower # 1:
>20' section of T-6061 allum. mast
>Th7dx tribander
>D-4 40 meter rotateable dipole
>A3WS 12-17 meter beam
>Ringo Ranger for 10 meters at the top of the mast..
> Tower # 2:
>20' section of t-6061 allun. mast
> 617b
> 17b2
> k1fo 432
>Ringo Ranger 2 at the top
>
>Know that is a load and have never had a proplem with the Hazer handeling the
>job for me.We have had winds as high as 60mph and all stood up...
> Well there you go...hope that helps someone on the HAZER project..
>
>
>
>
>
> ARS: WB4UNA
> Randy Chavis
> 247 Goff Court
> West Columbia
> S.C. 29172

>

234. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 19:26:25 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ACB7560.E411A496@mwci.net>
Source record: 166684

Ian White, G3SEK wrote:

> snip the rhetoric

I don't "have to do" anything, Ian. It is not Ian's prerogative to tell me what I "have to do". And I don't need any lecturing about my behavior, especially from Ian.

Attached is a copy of a post of March 19. It says everything that I believe regarding this subject. It is sensible, it agrees with every basic principle and every reference that I am aware of and, in short, it just feels right. I have been through fire and brimstone on this general subject over a period of several years (off and on). I have a lot of confidence in it and I really and truly am not going to get into any more haggling about it. It does not coincide exactly with opinions that one or two others have expressed, but that is OK.

An open-circuited conductor is just that, and the fact that it is hollow doesn't change one cotton picking thing. The basic ideas regarding behavior of free electron charges and induced EMF change nothing that I can possibly think of.

I believe three things with respect to the electrically minuscule coaxial Faraday shield that is being considered:

1) The net, or composite, RF E field at any specific very small location X in a good conductor is the sum of induced EMF and electric fields due to charges (free electrons) at that location X. In a perfect conductor that sum is zero. In copper it is extremely close to zero. In a nonconductor it is not true, in a good conductor it is true. The free electrons make *all* the difference.

2) A net current (flow of charges) does not flow in an open-circuit conductor of any kind, solid or hollow. Reason: if the composite E field is zero, then the composite current in *any* direction is zero. As the inducing field changes EMF at location X, the charges at location X adjust so that E=0. But this readjustment is strictly "local" at X.

3) The inside of the coax is at the same potential as the outside at location X. Copper is a *very* good conductor through its thickness. There is *no* skin effect at location X through the braid between the two surfaces. I can't imagine how the notion that there is ever got started.

The rest is discussed below.

Tom W8JI wrote:

> The time-varying fields can NOT pass through a conductor several
> skin depths thick. They get to the inside of the loop by "spilling
> over" the cut in the shield.

Beg to differ on this one. The field does not reach the inside by a current "spilling over the edge" and
back along the inside surface. This "loop-current-over-the-open end" fallacy has been floating around for
quite a few years.

It is also not true that an EM wave cannot be transmitted *through* a Faraday shield. It happens all the
time.

Skin effect does not operate to prevent this coupling from the outside to the inside. At any particular
location on the shield, there is no skin effect between the outside and the inside, measured directly
through (perpendicular to the surface) the thickness of the shield, which is an excellent conductor.
Skin effect doesn't work like that, it only works for a current that is flowing along the surface, not
directly through the thickness. Also, a net current does not flow along the length of the outer surface
for the simple reason that it is open-circuited, just like any other conventional transformer, which is
exactly what we are talking about here.

The induced EMF and charge distribution on the outer surface exists identically on the inner surface.
This EMF and charge distribution on the inner surface creates an EM wave at the inside of the shield that
then propagates to the turns of the inner multiturn loop. Depending on the load resistance connected to
this multiturn loop, a "counter-wave" can also be created that reflects back to (and through) the shield.

A length of coax shield that is not shorted to itself is an excellent Faraday shield and does not stop
the transmission of an EM wave. This wave is "re-created" in-phase at the inside of the shield. There is
no mickey mouse phase shift due to a travel time around the open end of the shield and back into the
inside of the shield. The wave inside the shield is exactly in-phase (or very damn near) with the wave on
the outside of the shield.

In an open-circuited length of coax Faraday shield there is no circulating current. It is just like any
other open-circuit winding on any other ordinary transformer.

There is a simple and interesting way to see what is going on along the length of the Faraday shield.
Imagine that the shield is composed of a very large number of very small segments. Within each segment
there are two things 1) an induced EMF created by the incoming wave and 2) a charge distribution due to

electrons. These two fields cancel each other so that the "net composite" E field within that tiny
segment is zero, just as it's supposed to be. But because of the charges, each segment is like a small
open-circuited battery. The total voltage is the sum of these many individual voltages. And because the
net E field in each segment is zero, and because the shield is open-circuited, there is *no* net current
flow along the surface.

Now suppose the incoming EM wave suddenly reverses direction. Within each tiny segment the induced EMF
and the charge arrangement both quickly reverse directions. The zero net E field is maintained at each
and every location. This reversal occurs "locally" and there is no "sloshing" of electrons (current flow)
from one end of the shield to the other. The EMF and charge distribution are both *uniform* along the
length.

Is there any dissipation in the copper due to these reversals? Yes, there is a small dissipation within
each tiny segment due to the reorientations of electrons within that segment. In other words, an
open-circuit transformer winding will dissipate a very small power due to high frequency cycling within
each of the many tiny segments.

Bill W0IYH

235. Re: Grounding rod question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 19:29:18 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3ACB760D.9B080EFC@cticonsulting.net>
Source record: 166682

The instructions say to ground on the radio's chassis. They also say to
add a grounding rod for lightning protection.
I suppose I could experiment with different locations and see how
reception is affected. I am mainly concerned about lightning (South
Florida), not so much about minor improvements in reception.

Bob Miller wrote:
>
> Randon Loeb <rloebusenet@cticonsulting.net> wrote:
>
> >Thanks to the list, I will be installing a longwire antenna this weekend
> >on my roof, to better capture shortwave broadcasts. I do have some
> >questions about grounding, as my radio, the Realistic DX-390 does not
> >have a grounding screw, as it has a plastic chassis.
> >My questions:
> >1. Should I run a wire of some kind directly from the antenna to the
> >grounding rod?
>
> Have you purchased your antenna yet, and looked at the instructions? If a ground
> is needed, the instructions will usually tell you where to attach the ground
> wire.
>
> There are all kinds of different receiving antennas, and their grounding needs
> are not all the same.
>
> If you're worried about lightening protection, you best bet is to simply
> disconnect your antenna from the radio when it's not in use.
>
> Good luck!
>
> Bob
> k5qwg
>
> > My assumption is that the path to earth ground should be
> >as far away from the radio/inside of house as possible, or in otherwords
> >entirely outside of the house?
> >2. How should this wire be attached to the antenna?
> >3. What guage or type of wire should be used from antenna to ground?
> >4. More of a theory question: Why do other radios have a grounding screw
> >on the chassis? It seems to me that the lightning would then have path
> >to chassis, and then to earth ground. Why not just go directly from the
> >antenna to the earth ground outside the house? Or does grounding this
> >way help during non-lightning situations to channel unwanted static
> >electricity to earth ground? Should I run another ground wire closer to

> >my radio unit to the earth ground as well for this purpose?
> >Thanks

236. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 19:35:35 UTC
From: richardharrison@webtv.net
Message-ID: <27148-3ACB7787-6@storefull-118.iap.bryant.webtv.net>
Source record: 166685

Bart, WB6HQK wrote:
"The usual way to solve such a problem (a shorted transmission line) is to postulate the existence of a forward and reverse wave, each which is a solution to Maxwell`s equations for the continuous transmission line."

When a radio wave strikes a perfect conducting surface a perfect reflection happens. Maxwell`s equations must fit reality.

Best regards, Richard Harrison, KB5WZI

237. Re: Grounding rod question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 19:41:23 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3ACB78E3.17D5@wt.net>
Source record: 166687

Randon Loeb wrote:
>
> Thanks to the list, I will be installing a longwire antenna this weekend
> on my roof, to better capture shortwave broadcasts. I do have some
> questions about grounding, as my radio, the Realistic DX-390 does not
> have a grounding screw, as it has a plastic chassis.
> My questions:
> 1. Should I run a wire of some kind directly from the antenna to the
> grounding rod? My assumption is that the path to earth ground should be
> as far away from the radio/inside of house as possible, or in otherwords
> entirely outside of the house?
> 2. How should this wire be attached to the antenna?
> 3. What guage or type of wire should be used from antenna to ground?
> 4. More of a theory question: Why do other radios have a grounding screw
> on the chassis? It seems to me that the lightning would then have path
> to chassis, and then to earth ground. Why not just go directly from the
> antenna to the earth ground outside the house? Or does grounding this
> way help during non-lightning situations to channel unwanted static
> electricity to earth ground? Should I run another ground wire closer to
> my radio unit to the earth ground as well for this purpose?
> Thanks

A lightning grounds job is to direct a strike to ground with the least
resistance possible.Preferably well away from where you are. So it's
outside at the base of a tower, mast, etc, or at the "feed" end of a end
fed wire. With the end fed wire, you can use ground rods and a
suppressor, or manually ground the antenna to that ground when a storm
is near. If you leave the antenna hooked up all the time, you need a
grounded bulkhead connection at the entry to the shack, and a suppressor
to ground from the antenna lead in to the radio. This method would deal
with your static charges if that were a problem. The ground doesn't need
to be connected the radio at all. In fact, I consider it a bad idea with
a lightning ground. It has no rf purpose as far as the radio is
concerned. All grounds should be tied together outside. Check the
polyphaser website for more info. #6 wire is usually good enough as far
as ground wires from antenna bases to ground. MK
--
http://web.wt.net/~nm5k

238. Re: High Power HF Antenna Suplliers?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 20:23:39 UTC
From: Philip de Cadanet <phil@invest.fsbusiness.co.uk>
Message-ID: <7QKm0BALL4y6EwmB@invest.fsbusiness.co.uk>
Source record: 166689

Hi George,

>1. Antenna Products, Mineral Wells, TX
>2. Grainger Associates
>3. The company BR now belongs to; I'm having a senior moment and can't
>think of their name.
>Your post as appears below was incomplete.
Yes, sorry about that.

Here's the complete requirement:

The basic configuration is capable of transmitting speech and teletype
data
in the short wave range 2-30 MHz. . All common classes of emission such
as
SSB, ISB, AME, CW, FSK, AFSK. The equipment can be used both for high
quality SSB/AME/FM radiotelephony and teletype and fast data
transmission.
With additional options can be added.
System Configuration:
1- Dual switchable H.F. antenna structure consisting of:
a) Rotatable Log-periodic antenna system with power handling
capabilities of
15 Kw PEP
b) H.F omni antenna with power handling of 10 Kw PEP, Mechanical
structure
(Towers, Guy wire, Fixture, etc...) to support the above items are
included.

2-R.F. feeding cable and control cable will be supplied for a distance
of up
to 500 meters required connectors and accessories.

3- A cabinet which houses a high power amplifier of 10 Kw PEP amplifier
for
very long distance communications capable of handling different type of
modulation scheme, the cabinet also housed the required antenna matching
unit.

I have reservations regarding the loss through all that feeder so will
suggest he parks the 10kw amp under the antenna farm!

> I have a source of rotatable HF
>LPAs in the UK if that is what you seek. Email me directly, and I will put
>you in touch with them.

I'll drop you a line directly.

Many thanks

Phil

239. Trace Cutting Alternative Solutions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 20:25:35 UTC
From: clvancil@aol.com.spamnix
Message-ID: <20010404162535.06341.00002404@ng-ff1.aol.com>
Source record: 166686

Hi All,

I have a video sender and receiver that I would like to test different amplifiers and antennas on. They are low cost and have no external antenna connections, just an etched loop on each circuit board. But, would prefer not to use an Exacto Knife to cut traces, yet. Is there some quick and dirt solution?

I have heard you can simply wrap three of four turns of some #12 wire around the present antenna and attach an external connector that why...
73,
Chris Vancil (KD7LRV)
"Limine fato impedito, perage fenestram"
"When fate closes a door go in through a window."
http://members.aol.com/CLVANCIL/MarsBalloon.html

240. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 20:29:34 UTC
From: richardharrison@webtv.net
Message-ID: <23513-3ACB842E-63@storefull-114.iap.bryant.webtv.net>
Source record: 166688

For grins, I looked for evidence of Faraday shielding in direction finding loops.

Charles E. Dean, one of the Ancients who worked for Hazeltine Electronics, wrote the "Receiving Systems" section of Henney`s "Radio Engineering Handbook". He wrote:

"The directional properties of the loop antenna and its independence of the electric field when shielded make it a valuable type of aircraft antenna for the lower frequency ranges."
Dean goes on to say both air-cored and iron-cored loops are used, but alas, does not elaborate with details of the shielding. If independent of the electric field, it must include Faraday shielding.

Best regards, Richard Harrison, KB5WZI

241. Re: RFI from satellite dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 21:11:06 UTC
From: BILL <w5ikb@satx.rr.net>
Message-ID: <3ACB8DE7.66C99EED@satx.rr.net>
Source record: 166690

Hi Roger,

This is a small dish. It appears that Dave is right based on what Ed told me.

Many thanks to you and Dave,

Bill
For address change .net to .com

Roger wrote:

> "BILL" <w5ikb@satx.rr.net> wrote in message
> news:3AC7ED83.8B59E95D@satx.rr.net...
> > Has anyone had problems with RFI generated by a neighbor's Satellite
> > Dish?
>
> C-Band (big dish), Ku (small dish), or both?
>
> Roger Halstead (K8RI) www.RogerHalstead.com
> N833R World's Oldest Debonair? s# CD-2
> >
> > Thanks,
> >
> > Bill
> >
> > For correct address change .net to .com
> >
> >

242. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 21:27:38 UTC
From: Searoy <searoy@aircooled.net>
Message-ID: <elMy6.1815$VF3.185692@newsread2.prod.itd.earthlink.net>
Source record: 166691

Accusedly fraudelent poster's information:

Path:
newsmaster1.prod.itd.earthlink.net!newsfeed1.earthlink.net!newsfeed.earthlin
k.net!news.maxwell.syr.edu!newsfeed.icl.net!newsfeeds.belnet.be!news.belnet.
be!newsfeed.online.be!ams.uu.net!news.mailgate.org!ink1.looksmart.com!not-fo
r-mail
From: chipn1ir@aol.com
Newsgroups: rec.radio.amateur.antenna
Subject: FindArticles - Fractal Antenna Systems Develops Diversarray: Small
Package, Big Solution.
Date: Mon, 2 Apr 2001 12:50:54 +0000 (UTC)
Organization: Mailgate.ORG Server - http://www.Mailgate.ORG
Lines: 17
Message-ID: <200104021250.FAA08035@dyn1i.looksmart.com>
NNTP-Posting-Host: ink1.looksmart.com
X-Trace: news.mailgate.org 986215853 28114 207.138.42.99 (Mon, 2 Apr 2001
05:50:49 -0700 (PDT))
X-Complaints-To: ink1.looksmart.com@abuse.net abuse@mailgate.org
NNTP-Posting-Date: Mon, 2 Apr 2001 12:50:54 +0000 (UTC)
Mail-From: lksm@looksmart.net from lksm@ink1.looksmart.com [207.138.42.99]
X-URL: http://www.Mailgate.ORG
Xref: newsmaster1.prod.itd.earthlink.net rec.radio.amateur.antenna:142310

Accuser's posting information:

Path:
newsmaster1.prod.itd.earthlink.net!newsfeed1.earthlink.net!newsfeed.earthlin
k.net!news.maxwell.syr.edu!howland.erols.net!portc.blue.aol.com.MISMATCH!por
tc03.blue.aol.com!audrey04.news.aol.com!not-for-mail
Lines: 69
X-Admin: news@aol.com
From: chipn1ir@aol.com (Chipn1ir)
Newsgroups: rec.radio.amateur.antenna
Date: 04 Apr 2001 11:47:37 GMT
References: <gbry6.1012$hZ.3870826@nnrp6.proxad.net>
Organization: AOL http://www.aol.com
Subject: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP
Message-ID: <20010404074737.06341.00002346@ng-ff1.aol.com>
Xref: newsmaster1.prod.itd.earthlink.net rec.radio.amateur.antenna:142466

Notice that the accused fraudulent poster didi not use aol, while
chip/nathan has a history of using aol.

--

*** Teach a Man to Fish ***
Searoy

243. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 21:38:40 UTC
From: 2w8ji@akorn.net
Message-ID: <3acb90f7.430663037@news.accessunited.com>
Source record: 166692

On Wed, 4 Apr 2001 14:19:53 -0400, "Paul" <pvanasse@mail.direcpc.com>
wrote:

>You'd better tell COX Cable that they're either in possession of the wrong
>cable or using the wrong cable because as of a couple of weeks ago they
>still had a couple of dozen reels of it in their yard.. 1.5 years ago a
>local cable TV company (COX) donated over 8000' of Heliax to me for $0. All
>I had to do was pick up the partially used reels (7 of them) and partially
>clean out their stock yard. All were copper and most of the load was 1-5/8"
>ANDREW LDF-7 Heliax, RFS Cablewave 158, and ANDREW HJ5 7/8" cable.

It was not for distribution systems then, they had it for some other
reason. If it was at a CATV company, it was most likely for the
microwave links between systems. We had limited quantities of 50 ohm
cable in some systems I was involved with, but not for distribution.

I obtained over a half mile of 50 ohm .625 inch cable from a CATV
company also, but it was for a special system. I got it because they
had no other use for it. It was T-10 .625-50ohm "power cable" for use
where power supplies had to be a long distance away from the
electronics in a mixed fiber and coxial system (it was a
bi-directional system).

They do not use 50 ohm 1-5/8th inch cable, or 7/8th inch cable, in
CATV distribution systems. Cellular, two-way, and other communications
applications, yes. MDS (multi-point microwave distribution) yes. CATV,
no.

244. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 22:04:55 UTC
From: richardharrison@webtv.net
Message-ID: <22777-3ACB9A87-1@storefull-112.iap.bryant.webtv.net>
Source record: 166693

Bill Sabin wrote:
"There is "no" skin effect at location X through the braid between the two surfaces."

I thought just about everybody believed in skin effect. I`m shocked. Well, maybe Bill means there is no penetration of the shield because of "skin effect".

Best regards, Richard Harrison, KB5WZI

245. Re: Quad parasitic elements and polarization.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 22:13:36 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3ACB9C90.FB52FFE8@dialpoint.net>
Source record: 166695

Your thinkig is all wrong. A quad loop is not polarization
insensitive. If mounted with the wires parallel to the ground and fed
in the center at the bottom (or top) it will be horizontal and if fed on
either of the sides it will be vertical polorized. Yagis are used
because they are simple to change the sense from right to left hand
polarity.

If the incomming signal is circular polarized there is no advantage to
have a quad over a Yagi.

Scott McClements wrote:
>
> In studying (checking out the websites) the antenna manufacturers that
> have models that are capable of circular polarity (for EME and OSCAR)
> - I notice these antennas all use Yagi elements. Is there any advantage
> to
> using quad loop elements instead?
>
> My (primitive) thinking is that since a quad loop element is
> polarization
> insensitive, it would be better suited as a parasitic element for the
> above uses.
> If a linear polarization was being received (and let's assume the
> incoming signal
> is oriented at 45 degrees, between vertical and horizontal), wouldn't
> quad parasitic
> elements "relay" a *slighly* stronger signal to the driven element over
> the yagi
> parasitic elements? If this is the case, is it the same for "offset"
> style Yagi elements too?
>
> How about the case where the incoming signal is circular polarized? Does
> anybody
> think quad loop parasitic elements would have an advantage over Yagi
> parasitic elements?
>
> Scott McClements

246. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 22:43:26 UTC
From: n4jzh@knology.net
Message-ID: <3acba311.1299363662@news.knology.net>
Source record: 166694

On 04 Apr 2001 11:47:37 GMT, chipn1ir@aol.com (Chipn1ir) wrote:

>"It has been brought to my attention that an illegal and bogus use of my
>screenname has been employed here to falsely represent a public message as
>being written and sent by me.
>
>Under recommendation of my attorney, I am taking this sole opportunity to make
>public notice regarding this: This is a public notification that any and all
>claimed USENET messages after January 5, 2001, that bear the signature of Chip
>N1IR, Nathan Cohen, or chipn1ir@aol.com, are false and bogus.
>
>Fractenna@aol.com continues to be used by several individuals including myself.
>This is a legal and long standing use by those affiliated with Fractal Antenna
>Systems,Inc. However, I do not use this screenname on USENET. I do not
>participate in USENET. I understand that Phil, N1ZKT, is doing so and he is
>welcome under the premise so given.
>
>Under the recommendation of my attorney, I have not been involved in any USENET
>activities since 5 January 2001, so that action against certain individuals may
>proceed.
>
>My superiors at my home institution have been apprised of the situation in
>January. I have not participated in USENET since the January date. Nor do I
>intend to.
>
>Below is the bogus post. It is not an AOL post.It appears to be a routed post
>through looksmart. That individual must have used either bogus routing or
>obtained an account which emulates an AOL screenname.
>
>It is not me or anyone I know of.
>
>I wish my friends well on USENET and remind then that I may be reached by
>e-mail for friendly chats, or through the various moderated antenna lists on
>yahoogroups.
>
>Nathan 'Chip' Cohen
>N1IR
>617-489-6952 "
>
>--
>Text of bogus post:
> From: chipn1ir@aol.com (chipn1ir@aol.com)
>Subject: FindArticles - Fractal Antenna Systems Develops Diversarray: Small
>Package, Big Solution.

>Newsgroups: rec.radio.amateur.antenna
>View complete thread
> Date: 2001-04-02 05:52:05 PST
>
>
>
>
>Dr. Nathan Cohen, Ph.D [chipn1ir@aol.com] thought you'd find this article
>useful.
>
>Fractal Antenna Systems Develops Diversarray: Small Package, Big Solution.
>http://www.findarticles.com/m0EIN/1999_June_15/54888342/p1/article.jhtml
>
>
>
>_____
>
>FindArticles - "The Web's First Articles Archive"
>http://www.findarticles.com/
>
>
>
>--
>Posted from lksm@ink1.looksmart.com [207.138.42.99]
>via Mailgate.ORG Server - http://www.Mailgate.ORG
>
>
Seems to me you havent followed your legal advice very well
you posted this tidbit of useless information.
Putting it politely. Who cares and Hit the road...
Donnie

247. Re: Quad parasitic elements and polarization.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 23:05:40 UTC
From: Scott McClements <yetbbwa@grove.iup.edu>
Message-ID: <3ACBA8C4.597E8512@grove.iup.edu>
Source record: 166696

I should have been more specific - parasitic quad loops are polarization insensitive.

Ralph Mowery wrote:

> Your thinkig is all wrong. A quad loop is not polarization
> insensitive. If mounted with the wires parallel to the ground and fed
> in the center at the bottom (or top) it will be horizontal and if fed on
> either of the sides it will be vertical polorized. Yagis are used
> because they are simple to change the sense from right to left hand
> polarity.
>
> If the incomming signal is circular polarized there is no advantage to
> have a quad over a Yagi.
>
> Scott McClements wrote:
> >
> > In studying (checking out the websites) the antenna manufacturers that
> > have models that are capable of circular polarity (for EME and OSCAR)
> > - I notice these antennas all use Yagi elements. Is there any advantage
> > to
> > using quad loop elements instead?
> >
> > My (primitive) thinking is that since a quad loop element is
> > polarization
> > insensitive, it would be better suited as a parasitic element for the
> > above uses.
> > If a linear polarization was being received (and let's assume the
> > incoming signal
> > is oriented at 45 degrees, between vertical and horizontal), wouldn't
> > quad parasitic
> > elements "relay" a *slighly* stronger signal to the driven element over
> > the yagi
> > parasitic elements? If this is the case, is it the same for "offset"
> > style Yagi elements too?
> >
> > How about the case where the incoming signal is circular polarized? Does
> > anybody
> > think quad loop parasitic elements would have an advantage over Yagi
> > parasitic elements?
> >
> > Scott McClements

248. Re: Quad parasitic elements and polarization.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 23:12:55 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3ACBAA77.534121CD@dialpoint.net>
Source record: 166698

Well, either way the quad loops respond ONLY to one polariaty,
horizontal or vertical depending on where the feed point is. It will
still be about 20 db down if the feed is rotated 90 deg . That is if the
feed point is at the top or bottom or one one of the sides. If the feed
point is rotated so it is not either parallel or 90 deg to the earth it
will act just the same as a Yagi that is tilted the same ammout.

Scott McClements wrote:
>
> I should have been more specific - parasitic quad loops are polarization
> insensitive.
>
> Ralph Mowery wrote:
>
> > Your thinkig is all wrong. A quad loop is not polarization
> > insensitive. If mounted with the wires parallel to the ground and fed
> > in the center at the bottom (or top) it will be horizontal and if fed on
> > either of the sides it will be vertical polorized. Yagis are used
>

249. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-04 23:23:51 UTC
From: fractenna@aol.com
Message-ID: <20010404192351.27504.00002385@ng-mj1.aol.com>
Source record: 166697

```
>Accusedly fraudelent poster's information:
>
>Path:
>newsmaster1.prod.itd.earthlink.net!newsfeed1.earthlink.net!newsfeed.earthlin
>k.net!news.maxwell.syr.edu!newsfeed.icl.net!newsfeeds.belnet.be!news.belnet.
>be!newsfeed.online.be!ams.uu.net!news.mailgate.org!ink1.looksmart.com!not-fo
>r-mail
>From: chipn1ir@aol.com
>Newsgroups: rec.radio.amateur.antenna
>Subject: FindArticles - Fractal Antenna Systems Develops Diversarray: Small
>Package, Big Solution.
>Date: Mon, 2 Apr 2001 12:50:54 +0000 (UTC)
>Organization: Mailgate.ORG Server - http://www.Mailgate.ORG
>Lines: 17
>Message-ID: <200104021250.FAA08035@dyn1i.looksmart.com>
>NNTP-Posting-Host: ink1.looksmart.com
>X-Trace: news.mailgate.org 986215853 28114 207.138.42.99 (Mon, 2 Apr 2001
>05:50:49 -0700 (PDT))
>X-Complaints-To: ink1.looksmart.com@abuse.net abuse@mailgate.org
>NNTP-Posting-Date: Mon, 2 Apr 2001 12:50:54 +0000 (UTC)
>Mail-From: lksm@looksmart.net from lksm@ink1.looksmart.com [207.138.42.99]
>X-URL: http://www.Mailgate.ORG
>Xref: newsmaster1.prod.itd.earthlink.net rec.radio.amateur.antenna:142310
>
>Accuser's posting information:
>
>Path:
>newsmaster1.prod.itd.earthlink.net!newsfeed1.earthlink.net!newsfeed.earthlin
>k.net!news.maxwell.syr.edu!howland.erols.net!portc.blue.aol.com.MISMATCH!por
>tc03.blue.aol.com!audrey04.news.aol.com!not-for-mail
>Lines: 69
>X-Admin: news@aol.com
>From: chipn1ir@aol.com (Chipn1ir)
>Newsgroups: rec.radio.amateur.antenna
>Date: 04 Apr 2001 11:47:37 GMT
>References: <gbry6.1012$hZ.3870826@nnrp6.proxad.net>
>Organization: AOL http://www.aol.com
>Subject: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP
>Message-ID: <20010404074737.06341.00002346@ng-ff1.aol.com>
>Xref: newsmaster1.prod.itd.earthlink.net rec.radio.amateur.antenna:142466
>
>Notice that the accused fraudulent poster didi not use aol, while
>chip/nathan has a history of using aol.
>
```

>
>--
>
>*** Teach a Man to Fish ***
>Searoy

Dr. Cohen has sent notice to looksmart.net requesting that they take action against the person who did this impersonation.

73
Phil
de N1ZKT

250. Re: Radials

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 01:02:24 UTC
From: accrider3@aol.comnojunque
Message-ID: <20010404210224.20311.00000404@ng-fz1.aol.com>
Source record: 166699

>Like Fractals, it is pathological hoo doo.

Tom,

Do you mean there is no Easter Bunny either?
73
Dale
KG4KZG

251. Re: Trace Cutting Alternative Solutions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 01:25:14 UTC
From: Keith Wood <kw@bctv.com>
Message-ID: <3ACBC97A.7ACE159E@bctv.com>
Source record: 166700

Just cut the traces (clear about 1/4" between them). If you decide to
go back, it's a simple thing to solder a jumper across the gap.

CLVANCIL wrote:
>
> Hi All,
>
> I have a video sender and receiver that I would like to test different
> amplifiers and antennas on. They are low cost and have no external antenna
> connections, just an etched loop on each circuit board. But, would prefer not
> to use an Exacto Knife to cut traces, yet. Is there some quick and dirt
> solution?
>
> I have heard you can simply wrap three of four turns of some #12 wire around
> the present antenna and attach an external connector that why...
> 73,
> Chris Vancil (KD7LRV)
> "Limine fato impedito, perage fenestram"
> "When fate closes a door go in through a window."
> http://members.aol.com/CLVANCIL/MarsBalloon.html

252. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 01:42:49 UTC
From: Jim Warner <jpwarner1@gte.net>
Message-ID: <01c0bd71$d6bae2e0$1dde1b3f@jpwarner>
Source record: 166701

As I read this one, I'm wondering to myself...How long some of these discertations would be if we were using pencils?

Frank Donovan <donovanf@erols.com> wrote in article <9adtsp$7r4$1@bob.news.rcn.net>...
> Rudy,
>
> You should always use an insulator within a few feet of a guyed tower.
> It should be just far enough away so that a climber's head can't hit it
> (an insulator makes a much bigger "target" for the climber's head
> than the guy wire alone).
>
> Since you did not place an insulator near the tower, your minimum
> wire length is actually 28 feet times two (56 ft), plus the width of the
> tower
> face, plus an additional lengthing factor because you have three wires
> instead of two, plus the capacitive end loading factor of the insulators
> and loops at the end of each wire...
>
> My judgement is that your guy configuration is highly likely to degrade
any
> 40 meter antenna on or near your tower. A little effort modelling your
> tower and 40 meter antenna could quickly move this out of the conjecture
> domain. I'd suggest adding another insulator to each of your guys.
>
> The 27 to 28 foot length you specified was popular prior to the
introduction
> of the "WARC" bands. Unfortunately, that length makes a darn good
> reflector for the 18 MHz ham band! I wouldn't want it within a
wavelength
> of an 18 MHz antenna that you expect to perform properly.
>
> Steel guys for a tower that will (or potentially will) support antennas
for
> all HF bands should be designed as follows:
> - An insulator at the tower, just out of "headache" range.
> - The remaining lengths of wire should be less than 0.35 wavelengths at
> the
> highest frequency antenna that will be within one wavelength of that
> wire.
> (Don't forget to think about all antennas below the guy as well).
>
> If you are not using directive antennas that you have invested lots of
> blood, sweat and money in, you could consider relaxing one wavelength

> distance to one-half wavelength.
>
> For these reasons, many designers of high performance amateur arrays have
> opted for non-conductive guys; however, this comes at the price of
> a more mechanically fragile system. You never want to drop anything on
> a non-conductive guy (especially a fiberglas guy!). If you do (and the
> tower
> doesn't fail), your first order of business becomes a very thorough
> inspection
> of the guy(s) for damage!
>
> 73
> Frank
> W3LPL
> donovanf@erols.com
>
>
>
>

253. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 01:50:24 UTC
From: richardharrison@webtv.net
Message-ID: <27146-3ACBCF60-48@storefull-118.iap.bryant.webtv.net>
Source record: 166703

Bill Sabin wrote:
"The inside of the coax is at the same potential as the outside at location X. Copper is a "very" good conductor through its thickness. There is "no" skin effect at location X through the braid between the two surfaces.. I can`t imagine how the notion that there is ever got started."

The depth of the "effective skin thickness" in a conductor depends on its properties and is inversely proportional to the square root of the frequency.

In copper at 1 MHz, the effective skin thickness is 0.0026 in. At 10 MHz in copper, this 0.0026-in. is divided by the square root of 10 or 3.16 because of the 10 to 1 frequency ratio. So, at 10 MHz the effective skin thickness is 0.00082 in.

Not much current will sink deeper into copper than the effective skin thickness and that which does eventually is slowed so much that its phase completely reverses!

So, at r-f it is quite ordinary for a signal not to penetrate a conductor, but to take the long way around.

Best regards, Richard Harrison, KB5WZI

254. Re: Quad parasitic elements and polarization.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 01:54:24 UTC
From: Scott McClements <yetbbwa@grove.iup.edu>
Message-ID: <3ACBD050.A8F280C4@grove.iup.edu>
Source record: 166702

Yes, I agree with everything you said. However, my whole point, which may not have been stated cleary was: do quad *parastic* elements have a small advantage over yagi parasitic elements. Yes, the signal will down some amount because the driven element doesn't "respond" as well to a signal whose polarity isn't exactly the same (20db worst case) - but, are the signals that have been re-radiated off the parasitic elements that reach the driven element (in-phase) stronger because the quad elements respond equally well to any polarity (as opposed to being weaker if they struck linear Yagi elements instead) ?

And how does this hold against signals that aren't linear?

Scott McClements.

Ralph Mowery wrote:

> Well, either way the quad loops respond ONLY to one polariaty,
> horizontal or vertical depending on where the feed point is. It will
> still be about 20 db down if the feed is rotated 90 deg . That is if the
> feed point is at the top or bottom or one one of the sides. If the feed
> point is rotated so it is not either parallel or 90 deg to the earth it
> will act just the same as a Yagi that is tilted the same ammout.
>
> Scott McClements wrote:
> >
> > I should have been more specific - parasitic quad loops are polarization
> > insensitive.
> >
> > Ralph Mowery wrote:
> >
> > > Your thinkig is all wrong. A quad loop is not polarization
> > > insensitive. If mounted with the wires parallel to the ground and fed
> > > in the center at the bottom (or top) it will be horizontal and if fed on
> > > either of the sides it will be vertical polorized. Yagis are used
> >

255. Re: High Power HF Antenna Suplliers?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 03:07:46 UTC
From: richardharrison@webtv.net
Message-ID: <22770-3ACBE182-94@storefull-112.iap.bryant.webtv.net>
Source record: 166704

Philip de Cadanet wrote:
Grainger Associates

Granger Associates was bought by DSC in Dallas maybe 15 years ago, I was issued DSC stock in trade for my Granger stock. I sold it. That proved to be the right trade.

Best regards, Richard Harrison, KB5WZI

256. DX-390 External Antenna Jack - Caution

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 03:19:33 UTC
From: KA9FLX <rshprd@home.com>
Message-ID: <9vRy6.207762$t67.3706907@news1.rdc1.il.home.com>
Source record: 166705

In regards to connecting an external SW antenna to the Green "AM Antenna" jack on the DX390. Be sure to use some form of static discharge unit between the antenna and radio.

The 1st RF amplifier is easily destroyed by a relatively small static discharge from the simple act of "plugging in" the external antenna. This has the result of rendering the unit extremely deaf.

It is sad that an otherwise decent design has such a fatal shortcoming. It would have been a simple matter to add some shunt diodes across the antenna input, but they (Tandy/Sangean) apparently felt it unnecessary.

Remember, a wire antenna in the wind, especially a long wire, can build up enough of a charge to put most adult men on their behinds. Just think of what that could do to the poor little silicon transistor!

Use Caution!

257. Re: Trace Cutting Alternative Solutions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 05:00:53 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3ACBFC05.39635297@oio.net>
Source record: 166706

Chris,
Either method will work (not well, but will work). The
'best' way would be to eliminate the antenna completely,
replace with a suitable connector.
'Doc

"Sempere Ubi Sub Ubi"
'Always where under where'

258. Re: Lightning Protection

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 05:04:50 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3ACBFCF2.3EBBA4FB@oio.net>
Source record: 166707

Harry,
A SPST would work too. 'Open' = no connection. 'Closed'
shorts to ground. A 'better' solution is to use 'quick'
disconnects and just drop it on the ground, or plug into
a grounded 'disconnect'.
'Doc

259. Re: Latin Cutting Solutions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 05:22:36 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3ACC011C.FC2C9E0D@bwcc.com>
Source record: 166708

'Doc wrote:
> "Sempere Ubi Sub Ubi"
Semper

260. preamplifier

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 07:25:07 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9ah6nv$5sf$1@bob.news.rcn.net>
Source record: 166709

need a recommendation of a preamplifier for medium & shortwave use--i will be using loop antennas.

261. Re: K4WGE William Ewald

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 08:06:53 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3ACC279D.E1BD9566@spam.me.not>
Source record: 166710

Jeez... It's been, what? 6 months since I've posted, and he's STILL at it? ::sigh::

That's OK... his AIM SN is still the same, so at least I can hop OFFLINE when he pops on...

-SSB

Tom W8JI wrote:

> On 04 Apr 2001 00:25:33 GMT, k1bqt@aol.com (Rick Littlefield) wrote:
>
> >>libelious and malicious persons<
> >
> >Oh Oh! Here we go again!
> >
> >Rick K1BQT
>
> Chip and Phil are emotionally twisted lovers.

262. Re: Latin Cutting Solutions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 10:46:49 UTC
From: clvancil@aol.com.spamnix
Message-ID: <20010405064649.08989.00002364@ng-mo1.aol.com>
Source record: 166711

Denver Braughler wrote:

>Doc wrote:
>> "Sempere Ubi Sub Ubi"
>Semper
>

"Semper ubi sub ubi"

"Always where under where"

This sounds latin but is not. Might be funny to someone...

Thanks so much for your help.

73,
Chris Vancil (KD7LRV)
"Limine fato impedito, perage fenestram"
"When fate closes a door go in through a window."
http://members.aol.com/CLVANCIL/MarsBalloon.html

263. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 14:28:22 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3acc8142$0$88187$bbae4d71@news.net-link.net>
Source record: 166712

27 to 28 feet.

Jim Warner wrote in message <01c0bd71$d6bae2e0$1dde1b3f@jpwarner>...
>As I read this one, I'm wondering to myself...How long some of these
>discertations would be if we were using pencils?
>
>
>Frank Donovan <donovanf@erols.com> wrote in article
><9adtsp$7r4$1@bob.news.rcn.net>...
>> Rudy,
>>
>> You should always use an insulator within a few feet of a guyed tower.
>> It should be just far enough away so that a climber's head can't hit it
>> (an insulator makes a much bigger "target" for the climber's head
>> than the guy wire alone).
>>
>> Since you did not place an insulator near the tower, your minimum
>> wire length is actually 28 feet times two (56 ft), plus the width of the
>> tower
>> face, plus an additional lengthing factor because you have three wires
>> instead of two, plus the capacitive end loading factor of the insulators
>> and loops at the end of each wire...
>>
>> My judgement is that your guy configuration is highly likely to degrade
>any
>> 40 meter antenna on or near your tower. A little effort modelling your
>> tower and 40 meter antenna could quickly move this out of the conjecture
>> domain. I'd suggest adding another insulator to each of your guys.
>>
>> The 27 to 28 foot length you specified was popular prior to the
>introduction
>> of the "WARC" bands. Unfortunately, that length makes a darn good
>> reflector for the 18 MHz ham band! I wouldn't want it within a
>wavelength
>> of an 18 MHz antenna that you expect to perform properly.
>>
>> Steel guys for a tower that will (or potentially will) support antennas
>for
>> all HF bands should be designed as follows:
>> - An insulator at the tower, just out of "headache" range.
>> - The remaining lengths of wire should be less than 0.35 wavelengths at
>> the
>> highest frequency antenna that will be within one wavelength of that
>> wire.

>> (Don't forget to think about all antennas below the guy as well).
>>
>> If you are not using directive antennas that you have invested lots of
>> blood, sweat and money in, you could consider relaxing one wavelength
>> distance to one-half wavelength.
>>
>> For these reasons, many designers of high performance amateur arrays have
>> opted for non-conductive guys; however, this comes at the price of
>> a more mechanically fragile system. You never want to drop anything on
>> a non-conductive guy (especially a fiberglas guy!). If you do (and the
>> tower
>> doesn't fail), your first order of business becomes a very thorough
>> inspection
>> of the guy(s) for damage!
>>
>> 73
>> Frank
>> W3LPL
>> donovanf@erols.com
>>
>>
>>
>>

264. Re: Aluminum Tubing

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 14:58:21 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <mB0z6.30658$BC6.9006884@e3500-chi1.usenetserver.com>
Source record: 166714

This is for Wes Stewart.

Wes, I've been trying for several days to send you email, but it is returned for incorrect address. The address I use for you is what I've had in my address book for eons, identical with the one you are using on this thread.

Will you please send me an email with your present address so that I can copy it into my address book and try again?

tnx,

Walt

265. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 15:38:15 UTC
From: richardharrison@webtv.net
Message-ID: <3508-3ACC9167-20@storefull-112.iap.bryant.webtv.net>
Source record: 166713

Tom, W8JI wroyte:
"--you have a conceptual problem with fields."

The subject is shields.

The contents of a grounded metal box are shielded electrostatically and electromagnetically from electrical perturbances outside in nearly all cases. The box is a short-circuit making the voltage on one side of the box nearly the same as that on another side, so no motivation causes current inside the box. This is true for static charge, d-c, and a-c for which the box is a perfect conductor. Nothing is perfect but some things come close enough.

Most metals are conductive enough to electrostatiically shield well. Electromagnetic shielding is never quite perfect.

If a solid substantial grounded conducting plate is inserted perpendicular to the common axis and between two coupled r-f coils, there will be a capacitance between each coil and the grounded shield formed by the plate between the coils.

Electrostatic energy can flow from either coil via the shield to ground, but none can flow from one coil to the other.

A solid conducting plate in this scenario allows an energized coil to electromagnetically induce an eddy current into the plate between the coils. By Lenz`s law the induced current produces an opposing field which ideally cancels the field which induced the current into the plate in the first place.

Just a grounded plate between the two coupled coils in the example above was enough to decouple them.

Slice the plate between the coils so that grounded teeth with insulated crowns are produced. There will be no eddy currents through the teeth.This makes a Faraday shield. The teeth still capture nearly all the capacitive electrostatic lines of force, eliminating capacitance between the coils (no electric field coupling), but the Faraday shield by eliminating the cancellation of the magnetic field that a solid plate would cause, allows magnetic coupling (the magnetic field gets through).

Best regards, Richard Harrison, KB5WZI

266. Re: Ford F-250 Diesel Interference on 40 Mtrs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 16:39:59 UTC
From: Jim Rodenkirch <rodenkir@spawar.navy.mil>
Message-ID: <9ai7ennir1@newpoisson.nosc.mil>
Source record: 166715

Jeff: it seems to me I read of a Technical Service Bulletin (TSB) that addressed the noise problem in the earlier models. I'm racking my brain to remember where - that won't take long. Hey, I'll contact Ford on their owner web site and see what I can locate. I'm almost certain there's something on that. Oh, there is a Power Stroke Registry group that you can join. They have a monthly magazine and extensive web site. I was going to join it (I have a 2000 model) but put it off. I'll check into it more.

I noticed Tom's (W8JI) response to you where he mentions that Ford was not responsive. Don't know what communications paths he took where they were not responsive but I'll dig around a little.

Regards, Jim R.
"Jeff Lewis" <jeffl@nexusdata.com> wrote in message
news:6DA858F231B01126.F584A948054ADBED.D63AA5D77DBEBBC9@lp.airnews.net...
> Does anyone have any experience with interference issues on 40 meters on a
> 2000 Ford F250 7.3 liter diesel? It's typically and S-9. It is
definitely
> radiated in that it is quiet with the antenna disconnected from the radio.
> Any help would be greatly appreciated.
>
> Thanks,
>
> Jeff
>
>

267. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 17:02:34 UTC
From: richardharrison@webtv.net
Message-ID: <24392-3ACCA52A-27@storefull-117.iap.bryant.webtv.net>
Source record: 166716

Ed Laport was Chief Engineer of RCA International. Ed put shortwave transmitting stations all over the globe. Ed says:
"---seems that there is slight justification for the expense of breakup insulators except where the guys are in very strong fields, and this only because of the ease with which a guy can be detuned by short-circuiting one or more insulators, or placing inductors across one or more of them."

Ed is saying guy breakup insulators are not particularly advantageous. Any conductor hanging out there in the r-f field only deforms the field to the extent it is excited. It must be near some multiple of 1/2 wavelength if it is ungrounded and insulated at both ends. So, if you hit resomance in a guy wire what happens?
If there were enough loss resistance in the guy to equal its radiation resistance, the worst condition possible exists. The guy would waste 1/2 the power accepted from the field and re-radiate the other half, distorting the antenna`s radiation pattern. Off-resonance or off-match, the guy`s influence would be less deleterious.

I`ve put up countless support towers for HF and VHF communication antennas with never a guy breakup insulator. They worked just fine.

All the medium wave broadcast transmitters I`ve worked with used breakup insulators in their tower guys because the tower was an antenna array element. The breakup insulators insured the pattern was not deformed. Non-directional antennas use them too.

I`ve put up many rhombics for shortwave broadcasting. Many of these were accepting 100 KW. None with guy breakup insulators and no problems.

If a problem occurs, you can detune the troublesome guys by detuning them with parallel wires as I described in a previous posting.

Best regards, Richard Harrison, KB5WZi

268. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 17:46:26 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3accaf2a.177920953@news.aepnet.com>
Source record: 166619

On Tue, 3 Apr 2001 21:37:23 -0400, "Frank Donovan" <donovanf@erols.com> wrote:

>Rudy,
>
> You should always use an insulator within a few feet of a guyed tower.
>It should be just far enough away so that a climber's head can't hit it
>(an insulator makes a much bigger "target" for the climber's head
>than the guy wire alone).

I have to ask... why?

Wes Stewart N7WS
>
[snip]

269. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 17:47:08 UTC
From: 2w8ji@akorn.net
Message-ID: <3accabf6.503120881@news.accessunited.com>
Source record: 166717

On Thu, 5 Apr 2001 11:02:34 -0600 (CST), richardharrison@webtv.net (Richard Harrison) wrote:

>Ed is saying guy breakup insulators are not particularly advantageous.
>Any conductor hanging out there in the r-f field only deforms the field
>to the extent it is excited. It must be near some multiple of 1/2
>wavelength if it is ungrounded and insulated at both ends. So, if you
>hit resomance in a guy wire what happens?
>If there were enough loss resistance in the guy to equal its radiation
>resistance, the worst condition possible exists. The guy would waste 1/2
>the power accepted from the field and re-radiate the other half,
>distorting the antenna`s radiation pattern. Off-resonance or off-match,
>the guy`s influence would be less deleterious.

That is not correct. The worse case condition is if the guy wire is LOSSLESS, and resonant or near resonance. Under these conditions the guy wire will re-radiate ALL of the energy that excites it. That re-radiation is the real problem we face, not the I^2R loss you and your friend Ed worry about.

>I`ve put up countless support towers for HF and VHF communication
>antennas with never a guy breakup insulator. They worked just fine.

How do you know that? Why do you think that means something in other applications?

>All the medium wave broadcast transmitters I`ve worked with used breakup
>insulators in their tower guys because the tower was an antenna array
>element. The breakup insulators insured the pattern was not deformed.
>Non-directional antennas use them too.

That's right, and that is the real reason. So the patterns are not changed.

The guy line does NOT have to be resonant to affect the pattern, it simply has to have noticable current. That easily occurs in long guy lines that are NOT resonant because their impedance is moderated by the long length.

We should never use guy wires anywhere near...or longer that...1/2 wl in a strong field area of a radiator unless we are absolutely sure the re-radiated field does not harm the pattern of the overall system in a deleterious manner. Not being resonant, by itself, is not enough unless the guy line section is short compared to a 1/2 wave.

>I`ve put up many rhombics for shortwave broadcasting. Many of these were
>accepting 100 KW. None with guy breakup insulators and no problems.

How do you know?

>If a problem occurs, you can detune the troublesome guys by detuning
>them with parallel wires as I described in a previous posting.

So you are saying we can take a guy wire near a 160-10 meter transmitting station, and with a simple parallel wire detune the guy wire on all bands?

Seriously, we all should know better than that!

73 Tom

270. Re: Ford F-250 Diesel Interference on 40 Mtrs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 17:49:50 UTC
From: 2w8ji@akorn.net
Message-ID: <3accaf33.503949606@news.accessunited.com>
Source record: 166718

On Thu, 5 Apr 2001 12:39:59 -0400, "Jim Rodenkirch"
<rodenkir@spawar.navy.mil> wrote:

>I noticed Tom's (W8JI) response to you where he mentions that Ford was not
>responsive. Don't know what communications paths he took where they were
>not responsive but I'll dig around a little.

Please dig around and let me know if you have better luck with a
response.

I would like to suppress my truck's noise further, especially on 160
meters.

73 Tom

271. Re: High Power HF Antenna Suplliers?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 19:06:45 UTC
From: Philip de Cadanet <phil@invest.fsbusiness.co.uk>
Message-ID: <wE4kRlAFJMz6Ewvb@invest.fsbusiness.co.uk>
Source record: 166623

, Richard Harrison <richardharrison@webtv.net> writes
>Philip de Cadanet wrote:
>Grainger Associates
>
>Granger Associates was bought by DSC in Dallas maybe 15 years ago, I was
>issued DSC stock in trade for my Granger stock. I sold it. That proved
>to be the right trade.
It's good to be forewarned.

Thanks Richard.

Any other HF LPA manufacturers in the US or Canada ?

(((73)))

Phil G4ZOW

272. Re: DX-390 External Antenna Jack - Caution

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 19:25:53 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3ACCC6C1.811ECAFE@cticonsulting.net>
Source record: 166621

Thanks for the warning. I was intending to run a cable from the point
where the feed cable meets the antenna to a grounding rod in the earth
as lightning protection. Would this also take care of the static
problem? You mentioned "static discharge unit", what would this
typically be? Just a simple voltage limiter with diodes?
Thanks

KA9FLX wrote:
>
> In regards to connecting an external SW antenna to the Green "AM Antenna"
> jack on the DX390. Be sure to use some form of static discharge unit
> between the antenna and radio.
>
> The 1st RF amplifier is easily destroyed by a relatively small static
> discharge from the simple act of "plugging in" the external antenna. This
> has the result of rendering the unit extremely deaf.
>
> It is sad that an otherwise decent design has such a fatal shortcoming. It
> would have been a simple matter to add some shunt diodes across the antenna
> input, but they (Tandy/Sangean) apparently felt it unnecessary.
>
> Remember, a wire antenna in the wind, especially a long wire, can build up
> enough of a charge to put most adult men on their behinds. Just think of
> what that could do to the poor little silicon transistor!
>
> Use Caution!

273. Antennas and Static charge!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 19:30:01 UTC
From: DeniGm3skn <deni@gm3skn.fsnet.co.uk>
Message-ID: <9aihfl$b8g$1@news5.svr.pol.co.uk>
Source record: 166625

Looking for a recommended method of continuous bleeding of static charge from my antennas, (NOT a spark gap please) and NOT looking for lightning protection. I am going to operate portable with a kite lifted wire worked against a counterpoise. I have done this before and was plagued with static shocks and very concerned about zapping my Rx front end or worse! I know it is possible to use a bleed resistor of say 50k ? or perhaps a choke to provide a leakage path to earth, but is there a recommended method someone has used?
I would also like to incorporate a static bleed system into my home antennas, I just hate to hear the clicking noise of that static charge flashing over somewhere!
What do you use?
Do modern transceivers have any form of static protection on their antenna inputs?
--
73, Deni GM3SKN Shetland Islands UK
K2 1188 Fists 2817 ARS 827 ARCI 10659
_ _ .. .. _ _

274. Tape measure element effective spacing

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 19:37:28 UTC
From: Larry Benko <benko@aztek-eng.com>
Message-ID: <3ACCC978.541F6CF3@aztek-eng.com>
Source record: 166624

I know the tape measure effective length topic has been discussed
previously but the effective spacing issue is not mentioned. I am
building a few tape measure yagi antennas for direction finding on 2m.
I am using "heavy duty" steel tape which is 1" wide (slightly curved)
and about .02" thick and made of some very magnetic steel alloy. The
elements will be mounted with the flat of the tape measure material
in line with the yagi elements. The boom will made of fiberglass
or PVC. What would be the best way to model it in EZNEC? The element
widths are an appreciable fraction of the element spacing (~10%).
From previous posts I believe the effective diameter of this material
would be somewhere near .4". Should I ignore the element width to
element spacing or is there something I should do to compensate for it?
Would the permeability and resivitivy be different that ordinary mild
steel?

Thanks,
Larry Benko, W0QE

275. Re: Lightning protection...again

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 19:46:28 UTC
From: "Kai-Uwe Hoefs, DL1AH" <dl1ah@agcw.de>
Message-ID: <9aii0eqfr1@ac1.ewetel.de>
Source record: 166627

I use a pair of spark plugs which lead energy to the ground if voltage is
high enough (e.g. at lightning) just before the ladderline enters the house.

> I am in South Florida, where wind and lightning are real concerns.
> Grandpa was an electrician, always taught us to have utmost respect for
> elecricity.

He was definitely right.

73, Kai

276. Lightning protection...again

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 19:59:28 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3ACCCEA0.7724DEF9@cticonsulting.net>
Source record: 166622

Thanks again for all the help regarding an appropriate SW antenna, I'm sure I'll have more questions when I start to set up a ham rig.
BUT, I am still not at all confident that I understand how to safely protect myself and radio from lightning and static. Normally one can just use trial and error, but I'd rather not learn that way in this case ;-)
To summarize:

1. I will be setting up a longwire antenna 75' (the $10 one from radioshack), which appears to have a copper antenna, then another feed line that runs to the radio, 50' but I'll probably use a lot less.

2. My intent is to run a thick cable from the antenna/feedline junction outside, to a grounding rod in the earth. The feedline then runs inside to the 3.5mm ANT jack on the radio. Radio unit will be on second floor of the house.

3. The radio is plastic chassis, no screw or anything like that labled for grounding.

4. Even if I disconnect the jack from the antenna during a storm, is it still safe to have the jack in the room?

5. I have several computers in this room, that are a little leaky with RFI. Can I also run a shielded wire from the chassis of the computer to the grounding rod outside to help with this problem? Is this safe?

6. I want to keep things simple, but will eventually have a ham rig, so I don't mind spending a little on equipment if it will be usefull later anyway.

So based on this,
Am I going to be safe from lightning? What about static electricity, will it go to ground rod in the earth as well? Will reception be compromized by grounding at the antenna/feedline junction? Will static be safely dissipated?

And by the way, I am used to the term "ground" as being the negative (or less positive) part of a circuit. How does the earth ground actually protect?

I am in South Florida, where wind and lightning are real concerns. Grandpa was an electrician, always taught us to have utmost respect for elecricity.

Thanks.

277. Where is Bob Haviland when you need him?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 20:34:17 UTC
From: Scott McClements <yetbbwa@grove.iup.edu>
Message-ID: <3ACCD6C9.312CF882@grove.iup.edu>
Source record: 166628

come on, it's spring time - time to think about antennas again!

Scott McClements wrote:

> In studying (checking out the websites) the antenna manufacturers that
> have models that are capable of circular polarity (for EME and OSCAR)
> - I notice these antennas all use Yagi elements. Is there any advantage
> to using quad loop elements instead?
>
> My (primitive) thinking is that since a quad loop element is
> polarization insensitive, it would be better suited as a parasitic element
> for the
> above uses. If a linear polarization was being received (and let's assume
> the
> incoming signal is oriented at 45 degrees, between vertical and
> horizontal), wouldn't
> quad parasitic elements "relay" a *slighly* stronger signal to the driven
> element over
> the yagi parasitic elements? If this is the case, is it the same for
> "offset"
> style Yagi elements too?
>
> How about the case where the incoming signal is circular polarized? Does
> anybody think quad loop parasitic elements would have an advantage over
> Yagi
> parasitic elements?
>
> Scott McClements

278. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 20:49:34 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <8nRFmjBepNz6EANC@ifwtech.plus.net>
Source record: 166629

William E. Sabin wrote:
>
>
>Ian White, G3SEK wrote:
>
>> snip the rhetoric
>
No, let's put the relevant paragraph back in again, so that people can
judge this discussion fairly.

I had written:
>>>If you want to establish that my speculation is not correct,
>>>name-calling will not achieve it. You'll have to disprove it the
>>>right and rigorous way, by picking your way through my line of
>>>argument (you correctly identified that nothing will be achieved
>>>by repeating your own line of argument again).

>I don't "have to do" anything, Ian. It is not Ian's prerogative to tell me
>what
>I "have to do".

There are many different meanings of "have to". The re-inserted
paragraph shows that I clearly meant was "have to, according to the
logic of a rational scientific discussion."

It is equally clear that I did NOT mean "have to, because I'm ordering
you to."

>And I don't need any lecturing about my behavior, especially
>from
>Ian.

Others will judge both Bill's behavior and mine. I'm content with that.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

279. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 22:39:22 UTC
From: 2w8ji@akorn.net
Message-ID: <3accf2d5.521266560@news.accessunited.com>
Source record: 166630

On Fri, 06 Apr 2001 01:20:17 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Egads, what effect are my new 40m vertical's elevated radials going to
>have on my 20m-10m rotatable dipole? Does the coax braid attached to the
>radials detune them in a passive configuration?
>--
>http://www.mindspring.com/~w6rca

Even if (magically) four elevated radials near earth make a good
ground system, they certainly cause other problems.

I avoid having as many unneeded wires hanging in the air as I can.

73 Tom

280. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-05 23:21:53 UTC
From: kelly@nospam.dvol.com
Message-ID: <3accfb3d.41269744@news2.dvol.com>
Source record: 166631

On Wed, 04 Apr 2001 22:43:26 GMT, n4jzh@knology.net (Donnie) wrote:

>>
> Seems to me you havent followed your legal advice very well
> you posted this tidbit of useless information.
> Putting it politely. Who cares and Hit the road...
> Donnie
>
Seems to me that the worst thing us RRAA dwellers can do to ourselves is even respond to the asshole's posts, he's another Lenny Anderson type like we have over in RRAP. We need to work hard and restrain ourselves from hitting the "reply" button and not feed them any rant fodder else they'll never go away. Considering that both are only in the Ham newsgroups to attract posts and generate retorts at any cost.
>
w3rv

281. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 00:29:27 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3ACD0DE7.802DC521@spam.me.not>
Source record: 166633

What's a Kegal notice?

-SSB

Chipn1ir wrote:

> "It has been brought to my attention that an illegal and bogus use of my
> screenname has been employed here to falsely represent a public message as
> being written and sent by me.
>
> Under recommendation of my attorney, I am taking this sole opportunity to make
> public notice regarding this: This is a public notification that any and all
> claimed USENET messages after January 5, 2001, that bear the signature of Chip
> N1IR, Nathan Cohen, or chipn1ir@aol.com, are false and bogus.
>
> Fractenna@aol.com continues to be used by several individuals including myself.
> This is a legal and long standing use by those affiliated with Fractal Antenna
> Systems,Inc. However, I do not use this screenname on USENET. I do not
> participate in USENET. I understand that Phil, N1ZKT, is doing so and he is
> welcome under the premise so given.
>
> Under the recommendation of my attorney, I have not been involved in any USENET
> activities since 5 January 2001, so that action against certain individuals may
> proceed.
>
> My superiors at my home institution have been apprised of the situation in
> January. I have not participated in USENET since the January date. Nor do I
> intend to.
>
> Below is the bogus post. It is not an AOL post.It appears to be a routed post
> through looksmart. That individual must have used either bogus routing or
> obtained an account which emulates an AOL screenname.
>
> It is not me or anyone I know of.
>
> I wish my friends well on USENET and remind then that I may be reached by
> e-mail for friendly chats, or through the various moderated antenna lists on
> yahoogroups.
>
> Nathan 'Chip' Cohen
> N1IR
> 617-489-6952 "
>
> --
> Text of bogus post:

> From: chipn1ir@aol.com (chipn1ir@aol.com)
> Subject: FindArticles - Fractal Antenna Systems Develops Diversarray: Small
> Package, Big Solution.
> Newsgroups: rec.radio.amateur.antenna
> View complete thread
> Date: 2001-04-02 05:52:05 PST
>
>
> Dr. Nathan Cohen, Ph.D [chipn1ir@aol.com] thought you'd find this article
> useful.
>
> Fractal Antenna Systems Develops Diversarray: Small Package, Big Solution.
> http://www.findarticles.com/m0EIN/1999_June_15/54888342/p1/article.jhtml
>
> ---
>
> FindArticles - "The Web's First Articles Archive"
> http://www.findarticles.com/
>
> --
> Posted from lksm@ink1.looksmart.com [207.138.42.99]
> via Mailgate.ORG Server - http://www.Mailgate.ORG

282. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 01:39:12 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3ACD1E40.4B20CDA5@hiwaay.net>
Source record: 166634

Sideband wrote:
>
> What's a Kegal notice?
>
> -SSB
>

Very little- they have very thick skin.
Bill

283. Re: J-pole feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 01:49:00 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3ACD208C.316681A8@hiwaay.net>
Source record: 166636

Russell- One of the advantages of the J-pole is that it can be made to match Coax very well. I would use any good 50 Ohm Coax. In addition, I think you will find it difficult to run twin-lead to an attic location without getting it close to, or in cantact with, the structure. Twin lead should not be close to anything.

Bill-W4BSG

Russell Van Hees wrote:
>
> Howdy all,
> I have just built an all copper J-pole for 2 meters. I was wondering
> what is the best thing to feed it with. I have a run of about 30-40 feet.
> It will be in an attic so weatherproofness is not needed. I have been told
> that I can feed it with 300 ohm twin lead for low loss. I plan on using it
> with my HTX-202 so I will be only using 5 watts. Do I just attach the twin
> lead to the antenna and then to a bnc connector and then tune it or am I
> missing something.
> Thanks,
>
> --
> From--Russell Van Hees KD5NPM
> Email- Rvanhees@tamu.edu
> Webpage- Http://members.nbci.com/Rwv2055

284. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 01:51:15 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ACD2113.13246C19@toast.net>
Source record: 166635

Richard Harrison wrote:

> Tom, W8JI wroyte:
> "--you have a conceptual problem with fields."
>
> The subject is shields.
>
> The contents of a grounded metal box are shielded electrostatically and
> electromagnetically from electrical perturbances outside in nearly all
> cases. The box is a short-circuit making the voltage on one side of the
> box nearly the same as that on another side, so no motivation causes
> current inside the box. This is true for static charge, d-c, and a-c for
> which the box is a perfect conductor. Nothing is perfect but some things
> come close enough.
>
> Most metals are conductive enough to electrostatiically shield well.
> Electromagnetic shielding is never quite perfect.
>
> If a solid substantial grounded conducting plate is inserted
> perpendicular to the common axis and between two coupled r-f coils,
> there will be a capacitance between each coil and the grounded shield
> formed by the plate between the coils.
>
> Electrostatic energy can flow from either coil via the shield to ground,
> but none can flow from one coil to the other.
>
> A solid conducting plate in this scenario allows an energized coil to
> electromagnetically induce an eddy current into the plate between the
> coils. By Lenz`s law the induced current produces an opposing field
> which ideally cancels the field which induced the current into the plate
> in the first place.
>
> Just a grounded plate between the two coupled coils in the example above
> was enough to decouple them.
>
> Slice the plate between the coils so that grounded teeth with insulated
> crowns are produced. There will be no eddy currents through the
> teeth.This makes a Faraday shield. The teeth still capture nearly all
> the capacitive electrostatic lines of force, eliminating capacitance
> between the coils (no electric field coupling), but the Faraday shield
> by eliminating the cancellation of the magnetic field that a solid plate
> would cause, allows magnetic coupling (the magnetic field gets through).
>
> Best regards, Richard Harrison, KB5WZI

It occurs to me to wonder: what if, while it was operating, you rotated the shield 90 degrees in its own plane. That is to say, if the teeth went the other way. Would it still do the same thing?

john

285. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 02:32:34 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <mjaqctcfg9pd408b0h1k0imgq0n0g2uukm@4ax.com>
Source record: 166638

On Thu, 5 Apr 2001 21:49:34 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.com> wrote:

>
>Others will judge both Bill's behavior and mine. I'm content with that.
>
>73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
> 'In Practice' columnist for RadCom (RSGB)
> http://www.ifwtech.com/g3sek

Hi Ian,

You are justified in your contentment.

73's
Richard, KB7QHC

286. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 03:12:14 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3ACD340E.B26D93CA@spam.me.not>
Source record: 166639

Heh... Are Kegal's related to Dicfers?

-SSB

Bill Aycock wrote:

> Sideband wrote:
> >
> > What's a Kegal notice?
> >
> > -SSB
> >
>
> Very little- they have very thick skin.
> Bill

287. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 03:13:38 UTC
From: richardharrison@webtv.net
Message-ID: <3052-3ACD3462-17@storefull-114.iap.bryant.webtv.net>
Source record: 166642

John O`Flaherty wrote:
"It occurs to me to wonder: what if while it was operating, you rotated the shield around in its own plane. That is to say, if the teeth went the other way. Would it still do the same thing?"

Good question. I gave an example from Terman yesterday. It was a Faraday shield in which the electrostatic shield wires were horizontal. It was a problem for the student to explain how it worked to bar the electric field and yet pass the magnetic field. I likened Terman`s shield to a fish skeleton in which the backbone itself was planted to the ground with the spiny ribs horizontal. The skeleton was conductive of course. I opined that I`d answered Terman`s question various times already in this thread. But, I digress.

The short answer to: Would it do the same thing? is yes.

The plate needs to maintain contact with ground to bar the electrostatic field. The crowns of the teeth must not become connected because that would allow current circulation among the teeth. The circulation current has an associated magnetic field which tends to cancel the inducing field. If the induction field is cancelled, it can`t extend beyond the shield to couple with our desired target on the other side of the Faraday shield. In fact, if the magnetic induction field is cancelled along with the electric field, the shield isn`t a Faraday shield at all but it is only a shield of a very ordinary kind.
The slots in the shield prevent the circulating (eddy) currents which allow opposition to the magnetic field to rise.

The gaps between the teeth let the magnetic field through without opposition and the gaps can be very small indeed.if the plate is thin.

Another poster likened the circulating currents in the ordinary shield`s surface as those in a shorted turn of a coil. That sounds pretty good to me.

The open-circuited ends of the teeth must remain open-circuited to avoid circulation and the grounded ends of the teeth must remain grounded, but those teeth don`t know which end is up, and they don`t care.

Best regards, Richard Harrison, KB5WZI

288. Re: Are old TET beams any good ??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 03:16:49 UTC
From: sam@severs.com
Message-ID: <sam-0504012023410001@c307794-c.frmt1.sfba.home.com>
Source record: 166640

I had a TET 3 band/4 element tribander in the mid 80's that worked just fine - as I recall I sold it when I moved from one QTH to another and adopted the 4 element Quad. They were mechanicaly sound enough for California but I would avoid some of the early production that actually had some plastic pieces (a friend of mine had one and he complained...that got him metal replacement pieces and TET changed their kit to eliminate the plastic).

The dual driven elements provided a very low SWR on all bands. I never heard of anyone having to make any adjustments and never it presented any problems. I had not heard of TET for many years. I vote that you put it up!

Sam / WS6S

In article <9ae25g$3d0$1@slb5.atl.mindspring.net>, "ETE" <ete@mindspring.com> wrote:

> I have an old (but still brand new in the box) TET HB43SP 4 elelment
> 20-15-10 meter beam made in Japan. I keep hearing that these were
> pretty good antennas till the Japanese owner died and the antenna
> company got sold to the Australians. It apparently uses dual driven
> elements. Any comments opinions on this old beam would be
> appreciated. I dont know whether to use it or sell it at the next
> ham fest. thanks. WB4JCY Please post to the newsgroup if you dont
> mind so others can read this. wb4jcy@arrl.net

289. Re: K4WGE: William Ewald

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 03:20:23 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3ACD35F7.7BCD5124@spam.me.not>
Source record: 166641

Hrm.

I wasn't aware that "legitimate" meant exactly the same thing as "legal"

I see alot of the same "I know exactly what you were thinking, despite what you wrote" attitude that Fractenna envinced in the olden days... I'm so glad he hasn't changed.. I haven't laughed this hard in a long time...

::grin::

73's
-SSB

Fractenna wrote:

> William Ewald sent from his work office at the EPA in Research Triangle Park,
> North Carolina---
>
> >> Don't either of them believe in integrity?
>
> > I sure do! Being around a pioneer in a major new technology you
> > have to have that attitude William! (William is K4WGE by the way).
>
> Your cheerleading for Cohen isn't necessarily integrity.
>
> LOOKS LIKE I UNDERSTAND MY MOTIVATION (caps for ease of response) :-)
>
> >Integrity isn't something you display here though William. According to my
> >e-mail you had two new posts on the so-called "defunct e-list". So you say it
> >is defunct publicly and privately participate in it.
>
> Any reasonable person would conclude that 5 messages in the first
> quarter of 2001 approaches extinction. When the last message was
> posted in February, and my response were rejected, I concluded that
> fractalantennas was defunct. Just an observation, not a lapse of
> integrity.
>
> YOUS ASSERTED IT IS DEFUNCT IN ORDER TO DISCOURAGE OTHERS FROM USING IT. AND
> YET THE SAME DAY YOU POST TWICE!
>
> HOW CAN SOMETHING BEING USED BE DEFUNCT? ANSWER: IT'S NOT (caps for ease of
> response:-)) IF YOU DON"T LIKE IT THEN DON'T USE IT. EASY, DON'T YOU THINK?
>
> > I also checked with the moderator and he says you tried to post
> > twice last week. Your posts were rejected because they were
> > personal replies to an individual and not of general interest to

> > the membership.
>
> How would the membership make a judgment about interest if it
> doesn't see the messages?
>
> THE MEMBERSHIP DOESN'T MAKE THE DECISION. THE MODERATOR DOES. I CHECKED WITH
> HIM. YOU CAN CONTACT YAHOO GROUPS AND COMPLAIN IF YOU LIKE. BE SURE TO SHOW
> THEM THE REJECTED POSTS WHICH ARE RESPONSES FOR ONE PERSON. THEN BE PREPARED TO
> EXPLAIN WHY 300 PLUS OTHERS WOULD BENEFIT FROM THIS RESPONSE. BE PREPARED TO
> DEMONSTRATE THAT YOUR REJECTED POSTS WERE TOTALLY WITHIN THE PURVIEW OF THE
> LIST.
>
> ALSO WHY THE MODERATOR SHOULD HAVE TO DEAL WITH COMPLAINTS FROM OTHER MEMBERS
> JUST BECAUSE YOU WANTED TO SEND A SINGLE PERSON AN EMAIL ON THE LIST(caps for
> ease of response:-))
>
>
> Could I not infer from arbitrarily
> rejected posts that the list was defunct?
>
> NOT ARBITRARY.
>
> Why did the moderator not
> respond to the individual himself?
>
> BECAUSE HE ASSUMED YOU HAVE THE SMARTS TO SEND PERSON TO PERSON EMAILS RATHER
> THAN COPYING 300 PLUS OTHERS ON IT.
>
> > Sticking to fair and accomodating rules. That's integrity.
>
> The rules of fractalantennas are as fair and accommodating as
> those of the Red Queen.
>
> YOU ARE ENTITLED TO YOUR OPINION. YOU ARE NOT ENTITLED TO LIE AND PASS
> INCORRECT INFO TO DEFAME SUCH AS BELOW (from your earlier post as quoted)....
>
> If the moderator either has not enough time
> to be a moderator, or needs such complete control that almost
> nothing is posted, then the list is dead.
>
> > Making public and bizarre accusations that a ramping-up company is
> > illegal is not.
>
> Did I say FAS is illegal?
>
> YES. YOU SAID:
>
> *****
> "Specifically, "Phil" shills for "Chip" about the latter's
> defunct e-list, claiming it's viable, and we're to believe Fractal

> Antenna Systems is a legitimate operation."
> *****
>
> No, I said there was less at its
> website than meets the eye.
>
> READ WHAT YOU SAID.
>
> > Apparently there is quite a bit gathered about your operation
> > there William. Integrity means not giving libelious and malicious
> > persons the satisfaction of a response.
>
> > 73
> > Phil
> > de N1ZKT
>
> Who is being libelled? Who is being malicious? I merely question
> your puffery.
>
> NO YOU CHARACTERIZE A VIABLE AND ABOVE BOARD BUSINESS AS NOT LEGITIMATE. THAT
> IS WHAT YOU SAID.
>
> If you want fractalantennas to be viable, do something more
> proactive than claiming that it is.
>
> WILLIAM GIVEN YOUR JOB FOR THE EPA I TRUST YOU ARE IN A BETTER POSITION TO
> 'CLEAN UP YOUR OWN ACT' (caps for ease of response).
>
> 73
> Phil
> de N1ZKT
>
>

290. Re: DX-390 External Antenna Jack - Caution

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 03:48:41 UTC
From: KA9FLX <rshprd@home.com>
Message-ID: <t0bz6.213153$t67.3960430@news1.rdc1.il.home.com>
Source record: 166643

Not real sure of a particular brand or model discharge unit off the top of my head. However, I would think most SWL/Amateur suppliers would have some commercially made devices.

On the other hand, if it is just a wire antenna for SWL, then a high value resistor say 50K to 10M, rated 1-? Watt (higher is better) on either end of the wire to a good ground, should bleed off static without having any noticeable effect on reception. I would not consider this lightening protection by any means! If you want 100% lightening protection, disconnect the antenna.

On a more practical note, I have seen SWLers use a large, two position knife switch to short the wire to ground when not actively using the antenna. I would still use a bleeder resistor on a longwire RX only antenna, even with a shorting switch, just to keep the static pops down.

A proper value/constructed RF Choke between the antenna wire and ground would also bleed off the static buildup without affecting reception. Depending on the value and construction of a choke, it is possible to transmit on such an antenna as well, but that takes a bit more thought to build. Depending on the antenna's physical construction, a large enough choke could (and "could" is emphasized) provide some minimal lightening protection as well.

The bottom line is to always use common sense where antennas are concerned. In commercial radio, we usually make the best effort/practice to lose the lightening and static build-up before it enters a building, and typically spend many dollars doing so. As hobbyists listening and/or transmitting from our homes in most cases, it is best to try and emulate commercial radio practices whenever possible, and affordable. Safety First Always!!

As far as the diode thing, that is more of a last ditch line of defense, usually internal to a receiver. It will keep you from blowing away the front end due to a static discharge from your hand perhaps, but seriously, the charge that can build up on a longwire can be damn near lethal, or at least feel like it! So the diode this probably would not be much help.

Be Practical and be Careful.
Good Luck!
Bob - KA9FLX

"Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
news:3ACCC6C1.811ECAFE@cticonsulting.net...
> Thanks for the warning. I was intending to run a cable from the point
> where the feed cable meets the antenna to a grounding rod in the earth
> as lightning protection. Would this also take care of the static

> problem? You mentioned "static discharge unit", what would this
> typically be? Just a simple voltage limiter with diodes?
> Thanks
>
> KA9FLX wrote:
> >
> > In regards to connecting an external SW antenna to the Green "AM
Antenna"
> > jack on the DX390. Be sure to use some form of static discharge unit
> > between the antenna and radio.
> >
> > The 1st RF amplifier is easily destroyed by a relatively small static
> > discharge from the simple act of "plugging in" the external antenna.
This
> > has the result of rendering the unit extremely deaf.
> >
> > It is sad that an otherwise decent design has such a fatal shortcoming.
It
> > would have been a simple matter to add some shunt diodes across the
antenna
> > input, but they (Tandy/Sangean) apparently felt it unnecessary.
> >
> > Remember, a wire antenna in the wind, especially a long wire, can build
up
> > enough of a charge to put most adult men on their behinds. Just think
of
> > what that could do to the poor little silicon transistor!
> >
> > Use Caution!

291. Re: J-pole feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 04:11:18 UTC
From: Gene <webmaster@zylay.com>
Message-ID: <3ACD41E5.83D2D002@zylay.com>
Source record: 166644

Russell Van Hees wrote:

> Howdy all,
> I have just built an all copper J-pole for 2 meters. I was wondering
> what is the best thing to feed it with. I have a run of about 30-40 feet.
> It will be in an attic so weatherproofness is not needed. I have been told
> that I can feed it with 300 ohm twin lead for low loss. I plan on using it
> with my HTX-202 so I will be only using 5 watts. Do I just attach the twin
> lead to the antenna and then to a bnc connector and then tune it or am I
> missing something.
> Thanks,
>
> --
> From--Russell Van Hees KD5NPM
> Email- Rvanhees@tamu.edu
> Webpage- Http://members.nbci.com/Rwv2055

I use 450-ohm ladderline (about $15.00/ft) and feed it with a 4:1 1/2W coax balun and a 1/4W 300 ohm transformer. Check out http://www.tfn.net/~gfloyd7/antenna/ for pics. It works great, is perfectly matched, and is much cheaper than coax. You can do it with 300-ohm (maybe), but I'm not sure how well teh matching works out. Unless you want a high SWR along the line, you'd have to convert the 50 ohms unbalanced to 300 ohms balanced where you go from coax (or the BNC) to twin-lead.

292. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 05:02:14 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3ACD4DD6.3CD62BF8@hiwaay.net>
Source record: 166645

I think so, but the only one I know well does not have thick skin.

Bill

Sideband wrote:
>
> Heh... Are Kegal's related to Dicfers?
>
> -SSB
>
> Bill Aycock wrote:
>
> > Sideband wrote:
> > >
> > > What's a Kegal notice?
> > >
> > > -SSB
> > >
> > >
> > > Very little- they have very thick skin.
> > > Bill

293. Re: DX-390 External Antenna Jack - Caution

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 05:10:50 UTC
From: CW <cmagers@sprynet.com>
Message-ID: <9ajjgkbmi1@slb7.atl.mindspring.net>
Source record: 166646

You have received some good advice, now I will throw in a little. As to your idea of grounding the antenna. No. That will short the antenna to ground rendering it (almost) useless. Have a look at my web site. Build the "Improved random wire antenna". It will help with many of your concerns. The antenna is at DC ground through the transformer. Static will drain to ground continuously. The lead in is coax. This will help greatly in eliminating the noise problems in your house such as the computers you mentioned. As for lightning protection, for a bullet proof installation, talk to Gary Coffman. For an installation that is quite good, do what I do. Bury the coax from the antenna to the house. Use a grounding block and ground rod just before the entrance to the house. Between the transformer (Which would blow up upon a direct strike but would present a relatively small air gap to a lightning bolt) and direct burial (which again gives the bolt a very attractive path to ground) and the grounding block before the house, you will have about the best setup you can besides using Gary's setup. Also on that site, you will find a static discharge unit. It is not really needed due to the transformer bleeding static but it can't hurt. The unit also provides a convenient way of hooking up your radio. Run the coax lead in to the static discharge unit and from it, run a small shielded cable (audio patch cord works well) to the radio. This way, you don't have the strain on the antenna jack that a heavy coax would provide. I had a DX 390 hooked to the Radio Shack antenna that you describe. Blew the front end twice. After installing the antenna as previously described, I have had no problem in several years. If you have any questions that I might be able to help with, send me an email.
--
CW
KC7NOD
www.kc7nod.20m.com

> "Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
> news:3ACCC6C1.811ECAFE@cticonsulting.net...
> > Thanks for the warning. I was intending to run a cable from the point
> > where the feed cable meets the antenna to a grounding rod in the earth
> > as lightning protection. Would this also take care of the static
> > problem? You mentioned "static discharge unit", what would this
> > typically be? Just a simple voltage limiter with diodes?
> > Thanks
> >
> > KA9FLX wrote:
> > >
> > > In regards to connecting an external SW antenna to the Green "AM
> Antenna"
> > > jack on the DX390. Be sure to use some form of static discharge unit
> > > between the antenna and radio.

> > >
> > > The 1st RF amplifier is easily destroyed by a relatively small static
> > > discharge from the simple act of "plugging in" the external antenna.
> This
> > > has the result of rendering the unit extremely deaf.
> > >
> > > It is sad that an otherwise decent design has such a fatal
shortcoming.
> It
> > > would have been a simple matter to add some shunt diodes across the
> antenna
> > > input, but they (Tandy/Sangean) apparently felt it unnecessary.
> > >
> > > Remember, a wire antenna in the wind, especially a long wire, can
build
> up
> > > enough of a charge to put most adult men on their behinds. Just think
> of
> > > what that could do to the poor little silicon transistor!
> > >
> > > Use Caution!
>
>

294. Re: Antennas and Static charge!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 06:16:41 UTC
From: R E Heath <re.heath@sympatico.ca>
Message-ID: <3ACD5F80.61158CD6@sympatico.ca>
Source record: 166647

DeniGm3skn wrote:
>
> Looking for a recommended method of continuous bleeding of static charge
> from my antennas, (NOT a spark gap please) and NOT looking for lightning
> protection. I am going to operate portable with a kite lifted wire worked
> against a counterpoise. I have done this before and was plagued with static
> shocks and very concerned about zapping my Rx front end or worse! I know it
> is possible to use a bleed resistor of say 50k ? or perhaps a choke to
> provide a leakage path to earth, but is there a recommended method someone
> has used?
> I would also like to incorporate a static bleed system into my home
> antennas, I just hate to hear the clicking noise of that static charge
> flashing over somewhere!
> What do you use?
> Do modern transceivers have any form of static protection on their antenna
> inputs?
> --
> 73, Deni GM3SKN Shetland Islands UK
> K2 1188 Fists 2817 ARS 827 ARCI 10659
> _ _ .. .. _ _

I too would like to hear of a simple solution to this problem. I'm using a multiband dipole, a 128 ft flattop with ladderline down to my Johnson Matchbox. I installed home made spark gaps at the balanced terminals on the Matchbox. The really bad times for static buildup on the flattop are usually near the beginning of a period of precipitation, either rain or snow (I believe I understand the reason for this particular behavior). The spark gaps prevent the previous flashover somewhere inside the Matchbox. However, my receiver is essentially unusable until the discharges cease. Anything I've tried so far to bleed off the charge has burned up.

Bob VA3BZ, W8BZ

295. TVI the TV Dishs?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 06:17:20 UTC
From: Standing Stone & Morning Cloud <macadi@qn.net>
Message-ID: <3acd5f02@news.qn.net>
Source record: 166648

I am hoping to put up 2 Meter and possibly 430-440 beams. I am thinking vertical and horizontal on both bands. I cannot go up more than 40 to 45 feet due to restrictions here. The next door neighbor has Direct TV. I have no experience around these. Am I going to interfere with his dish reception? All advice appreciated.

Mac, N8EYE

296. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 06:20:17 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ACD6021.280FAD7F@IEEE.org>
Source record: 166620

Tom W8JI wrote:
> We should never use guy wires anywhere near...or longer that...1/2 wl
> in a strong field area of a radiator unless we are absolutely sure the
> re-radiated field does not harm the pattern of the overall system in a
> deleterious manner.

Egads, what effect are my new 40m vertical's elevated radials going to
have on my 20m-10m rotatable dipole? Does the coax braid attached to the
radials detune them in a passive configuration?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

297. Re: Lightning protection...again

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 07:07:52 UTC
From: "W.G. Ewald" <wgewald@att.net>
Message-ID: <j1rqctob0orfb4gv5p0v7uqkq1599oeif9@4ax.com>
Source record: 166649

On Thu, 5 Apr 2001 21:46:28 +0200, "Kai-Uwe Hoefs, DL1AH"
<dl1ah@agcw.de> wrote:

>I use a pair of spark plugs which lead energy to the ground if voltage is
>high enough (e.g. at lightning) just before the ladderline enters the house.
>

How long is the ground rod the plugs are connected to?

298. Re: Antennas and Static charge!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 07:49:20 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3ACD7500.43EF@wt.net>
Source record: 166653

DeniGm3skn wrote:
>
> Looking for a recommended method of continuous bleeding of static charge
> from my antennas, (NOT a spark gap please) and NOT looking for lightning
> protection. I am going to operate portable with a kite lifted wire worked
> against a counterpoise. I have done this before and was plagued with static
> shocks and very concerned about zapping my Rx front end or worse! I know it
> is possible to use a bleed resistor of say 50k ? or perhaps a choke to
> provide a leakage path to earth, but is there a recommended method someone
> has used?

Seems to me a gas tube device would be about as good as anything, but
I'm just guessing. Don't take my word for it.

> I would also like to incorporate a static bleed system into my home
> antennas, I just hate to hear the clicking noise of that static charge
> flashing over somewhere!

I bet a lot of what you hear is from streamers elswhere. A discharge
device won't help that. I don't really see how you could discharge
static to ground without making some sort of hearable arc as far as your
own antenna.
In my case, I have very little static buildup on my antennas that I can
notice. All my noise is usually from streamers elsewhere in the area.
You know that gieger sounding noise that builds up and then discharges
instantly with a lightning crash. You are hearing the streamers which
lead up to a strike. Or I think anyway..
The strike completes the circuit and the noise "arcing" is gone, until
more streamers occur. It's usually not connected to your antenna, unless
the antenna is acting as a lightning rod. A kite antenna most certainly
would qualify.

> What do you use?

Nothing usually. I have an alpha delta ant switch which has a device in
it, but I don't always use that switch.
Static is not a problem in this area. Just lightning. The only time I've
had a static buildup problem was with a 10m 5/8 ground plane I had once.
I used a series ungrounded coil. That thing would build up a charge when
clouds passed over and arc from the center pin to shield on the coax
connector in the shack. I noticed it one day when the antenna was
unhooked. I kept hearing this "pop,pop,pop, every few seconds, and was
the coax end laying on the table. That antenna was acting as a pretty
good lightning rod. I started grounding it out after that. MK

--
http://web.wt.net/~nm5k

299. Re: Antennas and Static charge!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 07:51:00 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ACD7564.84E4549@IEEE.org>
Source record: 166626

DeniGm3skn wrote:
> Looking for a recommended method of continuous bleeding of static charge
> from my antennas, ...

A couple of ideas - a 4:1 voltage balun will bleed off the charge.
On my new 40m vertical with elevated radials, I intend to use a
powdered iron toroidal choke across the coax connection. (These
ideas do not do anything for lightning protection.)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

300. Re: Lightning protection...again

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 08:26:11 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3ACD7DA3.2B77@wt.net>
Source record: 166654

Randon Loeb wrote:
>
> Thanks again for all the help regarding an appropriate SW antenna, I'm
> sure I'll have more questions when I start to set up a ham rig.
> BUT, I am still not at all confident that I understand how to safely
> protect myself and radio from lightning and static. Normally one can
> just use trial and error, but I'd rather not learn that way in this case
> ;-)
> To summarize:
>
> 1. I will be setting up a longwire antenna 75' (the $10 one from
> radioshack), which appears to have a copper antenna, then another feed
> line that runs to the radio, 50' but I'll probably use a lot less.
>
> 2. My intent is to run a thick cable from the antenna/feedline junction
> outside, to a grounding rod in the earth. The feedline then runs inside
> to the 3.5mm ANT jack on the radio. Radio unit will be on second floor
> of the house.
>

If it were me, I'd set it up like an inverted L. Run the wire all the
way to the ground to the ground rod/rods. Feed with coax that lays on
the ground or is buried from that point to the entry of the shack. The
use of coax makes it easy to install a gas tube suppressor at that
ground point if needed. "You would also want a ground bulkhead at the
entry point". Run the coax to the radio and either use the plug, or just
use an alligator clip from the center pin to the whip. That would work
fine for just receive purposes. Don't run the lead-in to the shack as an
elevated wire from the antenna. If you don't want to use a gas tube,
just disconnect the coax and ground outside to the ground connection. If
you use two grounds, one for the rods at the base of the antenna, and
one for a entry bulkhead, tie them together.

> 3. The radio is plastic chassis, no screw or anything like that labled
> for grounding.

No problem. Doesn't need a connection.
>
> 4. Even if I disconnect the jack from the antenna during a storm, is it
> still safe to have the jack in the room?

Not if it leads to the antenna outside. I'd want a way to totally
disconnect and ground out, or chunk it outside and ground out. The
latter the best.
>

> 5. I have several computers in this room, that are a little leaky with
> RFI. Can I also run a shielded wire from the chassis of the computer to
> the grounding rod outside to help with this problem? Is this safe?

The best way to cut that down is with good decoupling. The method I
like, "inv L style" would be fairly decent at this being it's coax fed.
Some puters don't like being grounded. Sparks can fly. I'd make sure
the chassis isn't hot.
>
> 6. I want to keep things simple, but will eventually have a ham rig, so
> I don't mind spending a little on equipment if it will be useful later
> anyway.
>
> So based on this,
> Am I going to be safe from lightning?

Sure, if you are totally isolated from it.

> What about static electricity,
> will it go to ground rod in the earth as well?

Only if you use a suppressor.
Will reception be
> compromised by grounding at the antenna/feedline junction?

Probably would be enhanced due to the better decoupling from the
feedline if ground mounted.

Will static
> be safely dissipated?

If you use suppressors, or have the antenna grounded to this ground
directly.
>
> And by the way, I am used to the term "ground" as being the negative (or
> less positive) part of a circuit. How does the earth ground actually
> protect?

It doesn't. You are just making an easy and a low resistance path to
complete the big circuit in the sky.
You are controlling the strike to what you want it to do, rather than
the other way around. You need a very good ground rod connection at the
base of the antenna. Thats 75% of the whole deal. Fail that, and you
will likely have problems.
>
> I am in South Florida, where wind and lightning are real concerns.
> Grandpa was an electrician, always taught us to have utmost respect for
> elecricity.

Lightning will surely bite you in the rear if ignored. Your area about
the same as mine.. MK
--
http://web.wt.net/~nm5k

301. Re: DX-390 External Antenna Jack - Caution

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 08:35:52 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3ACD7FE8.60A4@wt.net>
Source record: 166655

CW wrote:
After installing the antenna as
> previously described, I have had no problem in several years. If you have
> any questions that I might be able to help with, send me an email.
> --
> CW
> KC7NOD
> www.kc7nod.20m.com

I just now saw your post after posting mine...You've got about the same
idea I do. I think going to ground with the antenna, and feeding with
coax the safest route. Makes it much easier to the install the other
stuff if needed. MK
--
http://web.wt.net/~nm5k

302. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 08:46:11 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3ACD8253.355C20FB@spam.me.not>
Source record: 166650

That borders on TMI, Bill. ::grin::

Glad to see you haven't lost your sense of Humor while I was gone. Good
to be back, and thanks for taking the implied joke as it was intended.

-SSB

Bill Aycock wrote:

> I think so, but the only one I know well does not have thick skin.
>
> Bill
>
> Sideband wrote:
> >
> > Heh... Are Kegal's related to Dicfers?
> >
> > -SSB
> >
> > Bill Aycock wrote:
> >
> > > Sideband wrote:
> > > >
> > > > What's a Kegal notice?
> > > >
> > > > -SSB
> > > >
> > >
> > > Very little- they have very thick skin.
> > > Bill

303. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 09:52:23 UTC
From: 2w8ji@akorn.net
Message-ID: <3acd8e8a.561133123@news.accessunited.com>
Source record: 166651

On Thu, 5 Apr 2001 21:13:38 -0600 (CST), richardharrison@webtv.net (Richard Harrison) wrote:

>The gaps between the teeth let the magnetic field through without >opposition and the gaps can be very small indeed.if the plate is thin.

If you read what most people are saying, the time-varying electic field can not be taken to zero by the shield without also taking the time-varying magnetic field to zero.

What really happens is the "Faraday shield" reradiates the time-varying field to the other side. In doing so, it changes the balance of the system.

In essence, the shield becomes a coupling device between the primary and secondary. The Faraday shield can not sort "noise" from "good signals", nor does it eliminate respoonse to time-varying electric fields.

It does not change the field impedance of a small loop even a few loop diameters away, except it adds a little loss to the system. Its only large effect is a change in the balance of the system.

Everyone agrees on this, except Richard.

73 Tom

304. Re: Antennas and Static charge!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 10:01:51 UTC
From: 2w8ji@akorn.net
Message-ID: <3acd91b1.561940280@news.accessunited.com>
Source record: 166652

On Fri, 06 Apr 2001 06:16:41 GMT, R E Heath <re.heath@sympatico.ca>
wrote:

>I too would like to hear of a simple solution to this problem. I'm using
>a multiband dipole, a 128 ft flattop with ladderline down to my Johnson
>Matchbox. I installed home made spark gaps at the balanced terminals on
>the Matchbox. The really bad times for static buildup on the flattop are
>usually near the beginning of a period of precipitation, either rain or
>snow (I believe I understand the reason for this particular behavior).
>The spark gaps prevent the previous flashover somewhere inside the
>Matchbox. However, my receiver is essentially unusable until the
>discharges cease. Anything I've tried so far to bleed off the charge has
>burned up.

A 50,000-100,000 ohm ten watt wire wound resistor will work as a
bleeder.

It will have a very high impedance across the HF region, and the
resistance is low enough to bleed off the "charge" that collects on
the antenna and feedline.

In a balanced antenna, use two, one from each wire to ground.

While this will stop the voltage difference between the feedline and
earth, it will NOT stop the hissing or whining noise that comes from
corona discharge. There is no way to stop that, except to lower the
antenna or install an obect that is higher than the antenna nearby to
distort the electric field between the earth and clouds.

It also is not lightning protection.

73 Tom

305. Re: Antennas and Static charge!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 11:26:36 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9ak91b$hr7$1@neptunium.btinternet.com>
Source record: 166656

Just connect a few 100-kilohm, 1-watt resistors in series from any
RF low-voltage point to ground.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

DeniGm3skn <deni@gm3skn.fsnet.co.uk> wrote in message
news:9aihfl$b8g$1@news5.svr.pol.co.uk...
> Looking for a recommended method of continuous bleeding of static
charge
> from my antennas, (NOT a spark gap please) and NOT looking for
lightning
> protection. I am going to operate portable with a kite lifted
wire worked
> against a counterpoise. I have done this before and was plagued
with static
> shocks and very concerned about zapping my Rx front end or worse!
I know it
> is possible to use a bleed resistor of say 50k ? or perhaps a
choke to
> provide a leakage path to earth, but is there a recommended
method someone
> has used?
> I would also like to incorporate a static bleed system into my
home
> antennas, I just hate to hear the clicking noise of that static
charge
> flashing over somewhere!
> What do you use?
> Do modern transceivers have any form of static protection on
their antenna
> inputs?
> --
> 73, Deni GM3SKN Shetland Islands UK
> K2 1188 Fists 2817 ARS 827 ARCI 10659
> _ _ .. .. _ _
>
>
>

306. Re: J-pole feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 12:24:21 UTC
From: glc1173@aol.com
Message-ID: <20010406082421.06310.00001488@ng-ba1.aol.com>
Source record: 166659
Body handling: HTML body converted to readable text

Russell wrote:
>I have just built an all copper J-pole for 2 >meters. I was wondering
>what is the best thing to feed it with. I >have a run of about 30-40 feet.
>It will be in an attic so weatherproofness >is not needed.

RG-58 coax. It's both a good match - and for that short a distance, losses
are acceptable - and it's a lot easier to get from downstairs into an attic
than RG-8 would be.
N4GSV,
Matt
~~~~~~~~~~~~~~~~~~~~
Dissident news - plus immigration, gun rights, nationwide weather
ALAMANCE INDEPENDENT:
official newspaper of the Vast Right Wing Conspiracy
~~~~~~~~~~~~~~~~~~~~

307. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 12:36:37 UTC
From: fractenna@aol.com
Message-ID: <20010406083637.10832.00000516@ng-mn1.aol.com>
Source record: 166660

>Seems to me that the worst thing us RRAA dwellers can do to ourselves
>is even respond to the assholes' posts, he's another Lenny Anderson
>type like we have over in RRAP. We need to work hard and restrain
>ourselves from hitting the "reply" button and not feed them any rant
>fodder else they'll never go away. Considering that both are only in
>the Ham newsgroups to attract posts and generate retorts at any cost.
>>
>w3rv
>
>

I have to agree with you on this. Responding to someone who impersonates someone else only encourages them more. Same with people who make outrageous statements about false illegal activities by a company, false claims about antennas and sales of antennas, and foolish stories about grasshoppers. What's all this have to do with an antenna newsgroup?

73
Phil
de N1ZKT

308. TH3-MK3 specs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 12:45:28 UTC
From: krishna kumar <kumarkrishna.REMOVEME@mindspring.com>
Message-ID: <3ACDBA68.4DBC3792@mindspring.com>
Source record: 166661

Hi there,
I would like to get some specs from the users of the above beam.
Esp, i want the following info.

Boom Length
Turning radius
Length of largest element
wind loading.

what about the availability of replacement components from Hy-gain.?
Nothing seen on their website.

I have someone planning on selling one along with a Ham-M rotor and i
am want to buy it.
I plan to roof mounting it and i need the specs before i can make a
decision.

I have browsed the older threads about comparison on the
cushcraft,mosley and hy-gain performance.

I primarily am used to the wire antennas and i want to put up a beam. I
am not a whole
lot experienced in beam install/tune/operate, since i have never done
this before. But
i would like to learn and get there.

Any help with information is greatly appreciated.

Thanks
krishna(w4/vu2vku)

(NOTE - as always, please remove the "NOSPAM" from my email address when
replying direct.)

309. Re: J-pole feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 13:07:26 UTC
From: Gene <webmaster@zylay.com>
Message-ID: <3ACDBF8E.1125A3E6@zylay.com>
Source record: 166662

LOLOL

Sounds like a steal :)

I'd like to take you up on that, but someone else emailed me with an
offer of $15.00/hundred ft.....comparable to Ham Radio Outlet :)

W6RCecilA wrote:
>
> Gene wrote:
> > I use 450-ohm ladderline (about $15.00/ft) ...
>
> Hey Gene, I've got some to spare on which I'll give you a better
> price than that. How does $10.00/ft sound? :-)
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

310. Re: Ford F-250 Diesel Interference on 40 Mtrs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 13:32:42 UTC
From: Jim Rodenkirch <rodenkir@spawar.navy.mil>
Message-ID: <9akgrp$h63$1@newpoisson.nosc.mil>
Source record: 166663

I'll be back to y'all shortly.

Tom: are you subscribed to Ford's auto/truck owner web site? Also, are you familiar with the Power Stroke Registry group? Just curious if you'd persued those avenues prior to your comment about no responsiveness.
Regards, Jim R.

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3accaf33.503949606@news.accessunited.com...
> On Thu, 5 Apr 2001 12:39:59 -0400, "Jim Rodenkirch"
> <rodenkir@spawar.navy.mil> wrote:
>
> >I noticed Tom's (W8JI) response to you where he mentions that Ford was
not
> >responsive. Don't know what communications paths he took where they were
> >not responsive but I'll dig around a little.
>
> Please dig around and let me know if you have better luck with a
> response.
>
> I would like to suppress my truck's noise further, especially on 160
> meters.
>
> 73 Tom

311. Re: J-pole feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 14:02:33 UTC
From: cj697@freenet.buffalo.edu
Message-ID: <GBDJ0A.IHI@freenet.buffalo.edu>
Source record: 166665

> Russell wrote:
> >I have just built an all copper J-pole for 2 >meters. I was wondering
> >what is the best thing to feed it with. I >have a run of about 30-40 feet.
> >It will be in an attic so weatherproofness >is not needed.
>
> RG-58 coax. It's both a good match - and for that short a distance, losses
> are acceptable - and it's a lot easier to get from downstairs into an attic
> than RG-8 would be.
> N4GSV,
> Matt

I have built several "plumbers delight" j-poles, and I always had good luck feeding them with coax. My current one is fed with RG-8, with a "pig tail" of RG-58 coming off the antenna. Also, consider coiling about 5 turns of the feedline at the antenna. While I haven't had to do it with all my antennas, I do it now because it simplifies matching them (Here's the story: I built the current j-pole, but it wouldn't match properly and was VERY sensitive to nearby objects. Since I sometimes use my 2 meter antennas portable, this wasn't acceptable. I coiled the feedline about 3 inches from the feedpoint and approximately 3 inches in diameter with six turns. The antenna stopped being location sensitive and matched great. I did this out of "instinct". Why did it work?).

--

Real men use flintlocks... In the rain.
---

312. Yahoo! News Story - Power Outage Knocks Out AOL E-Mail

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 14:19:05 UTC
From: refertofriend@reply.yahoo.com
Message-ID: <200104061419.f36EJ3527203@mail.mailgate.org>
Source record: 166664

```
Billy Cheeks (williarsch@nandomail.com) has sent you a news article
------------------------------------------------------------
Personal message:

Alas, not permanently.

Power Outage Knocks Out AOL E-Mail
http://dailynews.yahoo.com/htx/ap/20010405/tc/aol_1.html

============================================================
Yahoo! News http://dailynews.yahoo.com/

--
Posted from bulk4.yahoo.com [204.71.203.167]
via Mailgate.ORG Server - http://www.Mailgate.ORG
```

313. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 14:29:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ACDD2DA.8B3DEA51@IEEE.org>
Source record: 166637

Tom W8JI wrote:
> Even if (magically) four elevated radials near earth make a good
> ground system, they certainly cause other problems.

Fortunately or unfortunately, they are not near earth. They are at
the same height as my 20m-10m rotatable dipole.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

314. Re: Ford F-250 Diesel Interference on 40 Mtrs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 14:57:04 UTC
From: 2w8ji@akorn.net
Message-ID: <3acdd81c.579969987@news.accessunited.com>
Source record: 166666

On Fri, 6 Apr 2001 09:32:42 -0400, "Jim Rodenkirch"
<rodenkir@spawar.navy.mil> wrote:

>I'll be back to y'all shortly.
>
>Tom: are you subscribed to Ford's auto/truck owner web site? Also, are you
>familiar with the Power Stroke Registry group? Just curious if you'd
>persued those avenues prior to your comment about no responsiveness.
>Regards, Jim R.
>

I asked my frieds in engineering at Ford who to contact, that person
was non-responsive.

I obtained another number from the dealer, that person never
responded.

I e-mailed a person who was mentioned on internet, never heard
anything back.

No, I didn't join any power-stroke groups. There might not have been
any in 1995.

315. Re: Antennas and Static charge!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 15:04:01 UTC
From: 2w8ji@akorn.net
Message-ID: <3acdd8d2.580152745@news.accessunited.com>
Source record: 166667

On Fri, 06 Apr 2001 02:49:20 -0500, Mark Keith <nm5k@wt.net> wrote:

>Seems to me a gas tube device would be about as good as anything, but
>I'm just guessing. Don't take my word for it.

A gas tube is useless. The impedance varies too much (so RF voltage
will get too high) and it does not "drain" the charge buildup that
causes arcs.

Gas tubes are almost worthless for protecting receivers anyway.

And yes, the Johnson Matchbox is link coupled...but that has nothing
to do with the problem because there is no path to ground to bleed the
very tiny charging current of the antenna.

73 Tom

316. Re: Lightning protection...again

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 15:04:08 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3acddb27$0$12819$bbae4d71@news.net-link.net>
Source record: 166569

What happens to all the current that passes into your radio before the voltage gets high enough to "jump the gap" on your spark plugs? Likely enough high current will pass to fry your radio before it is shunted to ground. There are better ways. I would explore them and not use spark plugs. Best way is to disconnect out side and plug the antenna directly to ground.
Kai-Uwe Hoefs, DL1AH wrote in message <9aii0eqfr1@ac1.ewetel.de>...
>I use a pair of spark plugs which lead energy to the ground if voltage is
>high enough (e.g. at lightning) just before the ladderline enters the house.
>
>> I am in South Florida, where wind and lightning are real concerns.
>> Grandpa was an electrician, always taught us to have utmost respect for
>> elecricity.
>
>He was definitely right.
>
>73, Kai
>
>

317. Re: TVI the TV Dishs?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 15:06:15 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <6nmrct4dmejtmimha1c52aqs26r0qlu8ol@4ax.com>
Source record: 166668

My 2-meter/440 vertical is about 10 feet from my DSS dish, and about
30 degrees off the DSS receive axis. Running 50-watts. No
interference whatsoever.

Dick - W6CCD

On Fri, 6 Apr 2001 02:17:20 -0400, "Standing Stone & Morning Cloud"
<macadi@qn.net> wrote:

>I am hoping to put up 2 Meter and possibly 430-440 beams. I am thinking
>vertical and horizontal on both bands. I cannot go up more than 40 to 45
>feet due to restrictions here. The next door neighbor has Direct TV. I
>have no experience around these. Am I going to interfere with his dish
>reception? All advice appreciated.
>
>Mac, N8EYE
>

318. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 15:14:00 UTC
From: Christopher Trask <ctrask@primenet.com>
Message-ID: <9akmfo$2uq$1@nnrp2.phx.gblx.net>
Source record: 166570

Bill Aycock <baycock@hiwaay.net> wrote:

: Sideband wrote:
: >
: > What's a Kegal notice?
: >
: > -SSB
: >

: Very little- they have very thick skin.

Perhaps he meant "kugel". I see those all the time, but they're
not that big a deal that it warrants a public posting.

Chris

,----------------------. High Performance Mixers and
/ What's all this \ Amplifiers for RF Communications
/ extinct stuff, anyhow? /
\ _______,--------------' Chris Trask / N7ZWY
_ |/ Principal Engineer
oo\ Sonoran Radio Research
(__)\ _ P.O. Box 25240
\ \ .' `. Tempe, Arizona 85285-5240
\ \ / \
\ '" \ IEEE Member #40274515
. ( ) \
'-|)__| :. \ Email: ctrask@primenet.com
| | | | \ '. http://www.primenet.com/~ctrask
c__; c__; '-..'>.__

Graphics by Loek Frederiks

319. Re: Lightning protection...again

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 15:21:20 UTC
From: 2w8ji@akorn.net
Message-ID: <3acdda93.580601537@news.accessunited.com>
Source record: 166571

On Thu, 05 Apr 2001 14:59:28 -0500, Randon Loeb
<rloebusenet@cticonsulting.net> wrote:

<snip>

You will get a lot of answers, but the only SAFE thing to do is to disconnect the antenna where it enters the building during storms or when not in use.

Spark gaps (especially spark plugs, which almost always have internal gaps and/or resistors) and gas tubes are next to worthless, because virtually all lightning damage is a current that loops through the system from "ground to ground" rather than a differential current from antenna to ground at the radio. They also fire at much too high a voltage, several hundred volts or more (likovolts in the case of a spark plug).

I do not have a single gas tube in my installation, and I have MILES of feedlines and antenna spead out over a large area. I don't even disconnect the feedlines, there are simply too many of them. I rely on good grounding techniques, and use MOV's on power lines and telco lines.

The path is almost always radio system ground to power line ground.

Unplug your radio and disconnect the feedline OUTSIDE the house, and you will be very safe.

If you don't want to do that, then feed the antenna against a ground system (a few ground rods a spaced five feet apart are OK for listening to SW) with coax and run coaxial cable to the point where the power line enters your house.

GROUND the coax shield to the power line safety ground. It does not hurt to add a few more ground rods connected to the power line ground rod, and you should also coil up the coax in several turns maybe a foot in diameter before grounding it.

After the coax grounds there, bury the coax along the house for some distance to the entrance point and use a coil of several turns of coax outside the house before entering.

Even with all that, it is still a good idea to disconnect the radio from the power line and the feedline when not using it.

What this does is make sure the antenna and the power line have a path OUTSIDE your house if lightning hits either one, so the current does not loop through your house..

73 Tom

320. Re: Radio Shack Antenna Rotors?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 15:48:20 UTC
From: George McCouch <geomac@hopkinsville.net>
Message-ID: <geomac-E63BCE.10482006042001@news.onemain.com>
Source record: 166572

In article <Z3ay6.20120$aP5.1893656@newsread2.prod.itd.earthlink.net>,
"John Sicotte" <jsicotte@nospam.earthlink.net> wrote:

> I know. I know. No REAL ham would ever buy anything from Radio Shack -
> right? But put your prejudice aside for just one moment. All I have is an
> 11-element 2-Meter beam. So do I really need anything bigger or stronger
> than a Radio Shack TV antenna rotor? Let's be honest now!
>
> Thanks,
> John
> N7MTB

John,

RS rotors used to be made by Channel Master, I don't know if they still
are. I have a Channel Master that has been in use for 15 years turning
a Wilson System 3 tribander and an 11 element Cushcraft 2 meter beam
on a 38 foot tower. The rotor is mounted inside the tower which helps.
The only problem I have is that the rotar windmills somewhat in high
winds. It has never broken and is very reliable even in sub zero
weather. Not too bad for a less than $100 rotor. If the RS rotor is made
by Channel Master and has steel gearing (not plastic, RS sold those
also, and they are pretty much junk), and you can mount it inside your
tower, it should work ok. It is not a Ham IV, but it does the job for me.

73
George
W3GEO

321. Re: K4WGE: William Ewald

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 16:05:05 UTC
From: kb7qhc@home.com
Message-ID: <3acde5a7.910794953@news.seanet.com>
Source record: 166574

On Thu, 05 Apr 2001 23:20:23 -0400, Sideband <sideband@spam.me.not>
wrote:

>Hrm.
>
>I wasn't aware that "legitimate" meant exactly the same thing as "legal"
>
>I see alot of the same "I know exactly what you were thinking, despite what you
>wrote" attitude that Fractenna envinced in the olden days... I'm so glad he hasn't
>changed.. I haven't laughed this hard in a long time...
>
>::grin::
>
>73's
>-SSB
>

Hi OM,

Legitimate? This suggests the author has problems with the right of
inheritance and the proof of familial ties.

It is only legal insofar as challenges go to court to petition for a
legacy.

However, herr doktor's claim to rights has in the past proven to be
insubstantial when it comes to CHALLENGES. And as for legalities,
that has been a continuing embarrassment of impotency for him (hence
the return to the problem of rights of inheritance).

Of course the outward manifestation of this short coming is called
fractal envy. You will observe this behavior when herr doktor
compares his fractal with another and immediately proclaims his is
better. We all note the contradiction here in that better is
invariably meant to be smaller. The conflict that arises from this
dichotomy results in the aggressive behavior we so often observe.

73's
Richard Clark, KB7QHC

322. Re: Radials and DX-A sloper

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 16:11:35 UTC
From: George McCouch <geomac@hopkinsville.net>
Message-ID: <geomac-2824E6.11113506042001@news.onemain.com>
Source record: 166573

In article <3ac8fbe8.13770223@news.usfamily.net>,
enigma_y_2000@yahoo.com (Bob) wrote:

> HI,
>
> Has anyone done RF field or RF line current measurments on an Alpha
> Delta DX-A sloper. If so, what was the result. Did the addition of
> radials increase the radiation of this antenna?
>
> Thanks,
>
> Bob

Bob,

I am not an antenna expert like Cecil and some of the others here but I do use half slopers for 160, 80, 40, and 30 meters. In my installation the slopers run from the top of a 38 foot tower at various angles to convenient tie down points. The end of the slopers are all over 7 feet above the ground. The tower has a large tribander on it as well as an 11 element two meter antenna. The coax shield is grounded to the tower itself. I have always heard that the antennas on top of the tower act as elevated radials in a half sloper setup. The swr as measured in the shack will vary from 1.5 / 1 (40 meters) to almost 3 /1 (80 meters) bandwidth on 160 ad 2/1 points is about 20khz. I use a tuner and get what I consider pretty good results with the system, meaning I can work everything I can hear. (maybe hearing is another story :))

I do know that running slopers off of trees or poles and having a wire dropped down the pole to a ground rod does not elicit good performance, at least in my installations on various field day operations.

Although I have not made any field strength mesaurments, I did put in a ground radial system in the yard and connected it to the tower and found that performance on the slopers seemed to improve. I then put the radial system on a relay that could connect or dis-connect the radials from the shack. When I disconnected them I noticed that the SWR varied a bit and I had to touch up the antenna tuner I use. I also asked stations on the air to compare signals with and without the radial system attached to the tower. Many said I sounded louder with the system connected and some even told me they could see it on the S meter. Some said there was no difference, and a few told me that I did not sound as good with the radials attached.

I would be interested in what you find out as I have considered replacing my sloper farm with the DX-A. 4 wires vs one is attractive but

I am not sure that you really would get the same performance.

Just my opinion.

73

George
W3GEO

323. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 16:17:08 UTC
From: kb7qhc@home.com
Message-ID: <3acee955.911736197@news.seanet.com>
Source record: 166575

On 06 Apr 2001 12:36:37 GMT, fractenna@aol.com (Fractenna) wrote:

>
>I have to agree with you on this. Responding to someone who impersonates
>someone else only encourages them more. Same with people who make outrageous
>statements about false illegal activities by a company, false claims about
>antennas and sales of antennas, and foolish stories about grasshoppers. What's
>all this have to do with an antenna newsgroup?
>
>73
>Phil
>de N1ZKT

herr doktor,

I see you enjoyed the tale of li'l grasshoppa. This morality tale
should be re-visited on many occasions as you approach this summer's
events. You been taking your aspirin?

On the lighter side, I see you are a stalwart fan of antenna only
discussion. Let's start right here with an announcement honoring
Steve Best for winning the FRACTAL CHALLENGE last year.

For an antenna fan, the discussion of how six (6) challengers wipped
your entry would be a full and productive thread of antenna-only
discussion.

Of course, if you wish (what with the tender wounds of the ego still
fresh), you may wait until that summer event where you can be
surrounded with your peers as that same evidence is revealed.
:-)

My preference is that we do it right here, how's about you?

73's
Richard Clark, KB7QHC

324. Adding to start of an OziExp track

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 16:22:46 UTC
From: Paul Ferguson <Paul.Ferguson@pobox.com>
Message-ID: <rvqrctchblnkioj65gp4pb26tm66m6moha@4ax.com>
Source record: 166576

I am using version 3.85 of OZiExplorer (registered version). I have a need to add a couple of track points to the beginning of my track. What is the easiest way to do this?

I see how to add points after a given point, but I want a new starting track point for the track. I want to end up with one track so that I can Replay the track using Track Control.

I have looked thru the Help but still am missing something.

It would be nice to be able to drag an existing track point to a new location on the map, but I do not see a way to do this.

Paul Ferguson

325. Re: Adding to start of an OziExp track

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 16:49:09 UTC
From: Paul Ferguson <Paul.Ferguson@pobox.com>
Message-ID: <9qsrct44omoali9olifbbr47nragdig5su@4ax.com>
Source record: 166577

Sorry - I am sure my post makes no sense here. I meant to post this to another newsgroup.

Paul

326. Loops

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 16:52:33 UTC
From: aduffy@sprint.ca
Message-ID: <3ACDF450.512C3887@sprint.ca>
Source record: 166579
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Hi All,

Any one have an idea what % I should adjust the diameter of the loop to compensate for the effects of using 4.5" copper strips in place of 3/4" copper pipe in the main loop? And would it be advisable to construct the drive loop of the same material

---
73, Tony

VA3ATD, London, ON

327. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 17:47:51 UTC
From: QSB@QRM-QRN.net
Message-ID: <slrn9cs0a4.oed.QSB@animas.frontier.net>
Source record: 166582

Who is this "Magic Guy" you folks are nattering about, and
where is the URL where he sells "wire lengths"?

HIHI
Jonesy
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | frontier.net | DM68mn SK

328. Re: DX-390 External Antenna Jack - Caution

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 17:52:57 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3ACE0279.BBC675D1@cticonsulting.net>
Source record: 166578

CW wrote:
>
> You have received some good advice, now I will throw in a little. As to your
> idea of grounding the antenna. No. That will short the antenna to ground
> rendering it (almost) useless.

Can you explain this point further? You are saying that if the antenna
is connected to the grounding rod, then voltage changes in antenna will
dissipate to the earth? This seems to make sense to me, but contradicts
other instructions. Basically now I am very confused...
Have others meant that the antenna should be connected to grounding rod
when not in use, disconnected when in use? Is it the feed line that is
grounded to the rod normally?

329. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 18:04:44 UTC
From: Rick Scott <kf7qz@yahoo.com>
Message-ID: <3ACE053C.B6D0B0D1@yahoo.com>
Source record: 166586

Everybody ignore fraky

this is his annual (or semi or is it monthly now) Im gonna sue you post.

Rick KF7QZ

330. Re: Loops

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 18:14:53 UTC
From: atkes@imap1.asu.edu
Message-ID: <9al12t$630$1@news.asu.edu>
Source record: 166584
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

aduffy@sprint.ca wrote:
: Hi All,

: Any one have an idea what % I should adjust the diameter of the loop to
: compensate for the effects of using 4.5" copper strips in place of 3/4"
: copper pipe in the main loop? And would it be advisable to construct the
: drive loop of the same material

: ---
: 73, Tony

I have an applet at http://fermi.la.asu.edu/w9cf/equiv/ that will
calculate the approximate equivalent diameter of a rectangular cross
section conductor. It has links to the theory if you want to do the
calculation yourself. You will have to measure the thickness as well
as the width of the copper strip. You can then either model it with an
antenna modeling code or, if the loop is small, use the inductance
formula for the shape of your loop.

73 Kevin w9cf

331. Re: Radials and DX-A sloper

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 18:32:10 UTC
From: George McCouch <geomac@hopkinsville.net>
Message-ID: <geomac-715013.13321006042001@news.onemain.com>
Source record: 166585

In article <3ACEA452.B2F76235@IEEE.org>, W6RCecilA
<Cecil.A.Moore@IEEE.org> wrote:

> George McCouch wrote:
> > I am not an antenna expert like Cecil ...
>
> I hope that's a joke. If you could see the shape my 40m vertical
> is in at the moment, you wouldn't label me an expert.

Cecil,

Read in another post that you had a run in with a nail... Ouch!
Hope it does not hurt too much.
I read all your stuff and have learned a bunch.

George

332. Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 18:47:12 UTC
From: Brady Palmquist <bgpalmq@primenet.com>
Message-ID: <tcs3pgsgliuq23@corp.supernews.com>
Source record: 166587

Looking for a 10 meter no radial vertical to mount on a mast.

Thinking the Solarcon A-99 might be good. I see no negative comments
about it. Wondering what anyone has experienced.
How about the ground plane kit? Does it help that much?
I'd rather not use one if I can get by.

73
Brady
K0UC

333. New material appears to defy teh laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 18:56:02 UTC
From: Doug Matulis <doug.matulis@docsense.com>
Message-ID: <3ace1158$0$5349@wodc7nh6.news.uu.net>
Source record: 166588

WASHINGTON (Reuters) - Experiments on a newly created composite material have shown that it bends microwaves passing through it in a direction that seems to defy the laws of physics, scientists said on Thursday, in a discovery that could help in making more advanced lenses and antennas.

The composite, made of fiberglass and copper, caused microwaves shot through it to bend in an opposite direction than the laws of physics predict, making it the first material to have a ``negative index of refraction,'' physicists said in a study appearing in the journal Science.

Electromagnetic radiation -- such as light and microwaves -- passing through ordinary materials is deflected in the same direction, giving those materials a ``positive index of refraction,'' they said. An example is the way light bends when it passes from air to water.

The composite could be useful in developing better antennas and other technology for the cellular communications industry, said physicist Sheldon Schultz, who created the material along with colleagues David Smith and Richard Shelby at the University of California at San Diego.

Although the composite cannot focus visible light, Schultz said he hopes that obstacle can be overcome in the future.

Physicist John Pendry of London's Imperial College has said that a material with a ``negative refraction'' would make possible the construction of a lens capable of focusing light to limits not currently achievable.

http://dailynews.yahoo.com/h/nm/20010405/sc/material_dc.html

334. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 19:30:10 UTC
From: kb7qhc@home.com
Message-ID: <3ace1549.922988036@news.seanet.com>
Source record: 166589

On Fri, 6 Apr 2001 18:04:44 GMT, Rick Scott <kf7qz@yahoo.com> wrote:

>Everybody ignore fraky
>
>this is his annual (or semi or is it monthly now) Im gonna sue you post.
>
>
>Rick KF7QZ

Hi Rick,

I'm among those number - so one would believe if they could trust the disseminations from fraudtenna. Ehh. All we get are promises and complaints of not talking about antennas. Talk about disappointment.

Yet when push comes to shove, the discussion of antennas is the last topic of consideration from herr doktor. Especially when those antennas are either his ground warmers or his loser of the FRACTAL CHALLENGE. Poor herr doktor was going to sue me for pointing out that his wonder antenna, the k2, was nearly deaf. He claimed he lost business on that particular revelation. fraudtenna must have round heels given it layed over so easily.

If herr doktor is so committed to this topic, then we should see more contribution. To date, his actual productivity has been one or two in as many years. In remarkable contrast, more have been published by other sources (which of course brings us back to those dead lists and issues of illegitimacy).

herr doktor, for years, has skirted the issues of how and why (this of course would preclude invention and future profit if he did AND if he actually could answer the question). When these questions were posed, they were met with exactly the response you conclude above.

All should note that the threats of "possible legal action" have declined considerably (at least 0.001 dB). These impotent threats were recognized as posturing many years ago as you observe.

73's
Richard Clark, KB7QHC

335. Re: New material appears to defy teh laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 19:56:01 UTC
From: kb7qhc@home.com
Message-ID: <3acf1b26.924489255@news.seanet.com>
Source record: 166590

On Fri, 6 Apr 2001 13:56:02 -0500, "Doug Matulis"
<doug.matulis@docsense.com> wrote:

>WASHINGTON (Reuters) - Experiments on a newly created composite material
>have shown that it bends microwaves passing through it in a direction
>that seems to defy the laws of physics, scientists said on Thursday, in
>a discovery that could help in making more advanced lenses and antennas.
>
>The composite, made of fiberglass and copper, caused microwaves shot
>through it to bend in an opposite direction than the laws of physics
>predict, making it the first material to have a ``negative index of
>refraction,'' physicists said in a study appearing in the journal
>Science.
>
>Electromagnetic radiation -- such as light and microwaves -- passing
>through ordinary materials is deflected in the same direction, giving
>those materials a ``positive index of refraction,'' they said. An
>example is the way light bends when it passes from air to water.
>
>The composite could be useful in developing better antennas and other
>technology for the cellular communications industry, said physicist
>Sheldon Schultz, who created the material along with colleagues David
>Smith and Richard Shelby at the University of California at San Diego.
>
>Although the composite cannot focus visible light, Schultz said he hopes
>that obstacle can be overcome in the future.
>
>Physicist John Pendry of London's Imperial College has said that a
>material with a ``negative refraction'' would make possible the
>construction of a lens capable of focusing light to limits not currently
>achievable.
>
>http://dailynews.yahoo.com/h/nm/20010405/sc/material_dc.html
>
>

Hi Doug,

I followed your link above to find much the same material. It looks
like whoever wrote it is either not very knowledgeable or they miss
ascribed the qualities(or both).

As the index of refraction is frequently referenced to air or vacuum
(for good reason) and that value is 1.00 (or nearly so); most
substance evidence values that are higher. It would be rare to find

one less than 1.00 (or nearly so), but our correspondent claims "negative" values.

Just what are the implications? In our own arena, it would equate to a transmission line with a negative dielectric. Or more to the matter, an antenna placed into a negative media (-377 Ohms?).

New Physics indeed! SWR is now to be reckoned with this to reveal a negative value? I can see the new advertising claims of the vendors: "With Negative Media used, our Antennas don't Radiate - they Suck!"

This wasn't a topic related to Fractal Electromagnetics (sic) was it?

73's
Richard Clark, KB7QHC

336. Re: New material appears to defy teh laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 20:16:43 UTC
From: QSB@QRM-QRN.net
Message-ID: <slrn9cs918.m2c.QSB@animas.frontier.net>
Source record: 166591

This 'material' wasn't first posted on April 1 -- was it?

On Fri, 06 Apr 2001 19:56:01 GMT, Richard Clark scribbled:
>On Fri, 6 Apr 2001 13:56:02 -0500, "Doug Matulis"
><doug.matulis@docsense.com> wrote:
>
>>WASHINGTON (Reuters) - Experiments on a newly created composite material
>>have shown that it bends microwaves passing through it in a direction
>>that seems to defy the laws of physics, scientists said on Thursday, in
>>a discovery that could help in making more advanced lenses and antennas.
>>
>>The composite, made of fiberglass and copper, caused microwaves shot
>>through it to bend in an opposite direction than the laws of physics
>>predict, making it the first material to have a ``negative index of
>>refraction,'' physicists said in a study appearing in the journal
>>Science.
>>
>>Electromagnetic radiation -- such as light and microwaves -- passing
>>through ordinary materials is deflected in the same direction, giving
>>those materials a ``positive index of refraction,'' they said. An
>>example is the way light bends when it passes from air to water.
>>
>>The composite could be useful in developing better antennas and other
>>technology for the cellular communications industry, said physicist
>>Sheldon Schultz, who created the material along with colleagues David
>>Smith and Richard Shelby at the University of California at San Diego.
>>
>>Although the composite cannot focus visible light, Schultz said he hopes
>>that obstacle can be overcome in the future.
>>
>>Physicist John Pendry of London's Imperial College has said that a
>>material with a ``negative refraction'' would make possible the
>>construction of a lens capable of focusing light to limits not currently
>>achievable.
>>
>>http://dailynews.yahoo.com/h/nm/20010405/sc/material_dc.html
>>
>>
>
>
>Hi Doug,
>
>I followed your link above to find much the same material. It looks
>like whoever wrote it is either not very knowledgeable or they miss

>ascribed the qualities(or both).
>
>As the index of refraction is frequently referenced to air or vacuum
>(for good reason) and that value is 1.00 (or nearly so); most
>substance evidence values that are higher. It would be rare to find
>one less than 1.00 (or nearly so), but our correspondent claims
>"negative" values.
>
>Just what are the implications? In our own arena, it would equate to
>a transmission line with a negative dielectric. Or more to the
>matter, an antenna placed into a negative media (-377 Ohms?).
>
>New Physics indeed! SWR is now to be reckoned with this to reveal a
>negative value? I can see the new advertising claims of the vendors:
>"With Negative Media used, our Antennas don't Radiate - they Suck!"
>
>This wasn't a topic related to Fractal Electromagnetics (sic) was it?
>
>73's
>Richard Clark, KB7QHC

--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | frontier.net | DM68mn SK

337. Re: Simple 10m & 80m Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 20:22:31 UTC
From: cj697@freenet.buffalo.edu
Message-ID: <GBE0LK.o6@freenet.buffalo.edu>
Source record: 166593

> Followup to: [3]newsgroup(s)
> Does anyone have any simple plans for 10m and 80m antennas? Space is
> somewhat limited so that is my primary concern....
>
> Pete

Try a G5RV, and fold it so that it looks like a 'Z' from the top, or put it in an inverted V configuration. You will need a tuner to match it, but that isn't a big deal.

I have had good luck with the 2 G5RV's I have built. I currently use one at my home.

If space is REALLY at a premium, consider a mobile HF antenna and accept that you aren't going to put out a huge signal on 80 meters.

--

Real men use flintlocks... In the rain.
---

338. Re: Sun Spots This Weekend

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 20:22:36 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ACE258C.EC551003@toast.net>
Source record: 166592

Jay Martin wrote:

> Most activity within the past 10 years..
>
> Check out www.nasa.gov
>
> Jay

There's a timely article in the current Scientific American called "The Fury of Space Storms". It doesn't deal with radio directly, but it's interesting.

john

339. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 21:07:44 UTC
From: Bart Rowlett <BHRowlett@west.raytheon.com>
Message-ID: <3ACE3020.D79CF583@west.raytheon.com>
Source record: 166594

"William E. Sabin" wrote:
>
> Attached is a copy of a post of March 19. It says everything that I believe
> regarding this subject. It is sensible, it agrees with every basic principle and
> every reference that I am aware of and, in short, it just feels right. I have
> been through fire and brimstone on this general subject over a period of several
> years (off and on). I have a lot of confidence in it and I really and truly am
> not going to get into any more haggling about it. It does not coincide exactly
> with opinions that one or two others have expressed, but that is OK.

I suspect a large part of the disagreement is a consequence of the
diversity in technical backgrounds among the participants of this
thread. These posts are typically limited to a few hundred words and
are reliant on the context established earlier in the thread.
Unfortunately, the context, and even the working definitions of
specific words, is sometimes ambiguous due to the multiple posters and
sub threads.

Ideally everyone would at least be using the same dictionary but even
that's difficult due to the multiple systems of units employed in
different fields using electromagnetics.

> An open-circuited conductor is just that, and the fact that it is hollow doesn't
> change one cotton picking thing.

I believe it is universally acknowledged that RF current is
constrained to flow along the surface of a good conductor. The
existence of an interior surface allows for the possibility of a
current on the internal conductor surface which couldn't otherwise
exist. One way to excite such an internal surface current is by the
introduction of a coaxial current carrying center conductor.

> I believe three things with respect to the electrically minuscule coaxial Faraday
> shield that is being considered:
>
> 1) The net, or composite, RF E field at any specific very small location X in a
> good conductor is the sum of induced EMF and electric fields due to charges (free
> electrons) at that location X. In a perfect conductor that sum is zero. In copper
> it is extremely close to zero. In a nonconductor it is not true, in a good
> conductor it is true. The free electrons make *all* the difference.

I assume the term 'composite E field' refers to the total electric
field at some point in space.
I think you are saying that if an external electric field were
applied, then charges redistribute such that the electric field
generated by the uneven charge distribution would precisely cancel the

applied field everywhere within the conductor. The charges are not
mobile in an insulator and therefore are not able to move in a way to
cancel the applied field. Therefore conductors behave differently from
insulators to applied electric fields.

> 2) A net current (flow of charges) does not flow in an open-circuit conductor of
> any kind, solid or hollow. Reason: if the composite E field is zero, then the
> composite current in *any* direction is zero.

When external (time varying) fields are applied, the charges in the
conductor must redistribute themselves to result in cancellation of
the electric field internal to the conductor. The resulting flow of
charges is by definition, a conduction current, and is responsible for
both dissipation losses (Joule heating) and a circulating magnetic
field component which encircles the current. The redistribution of
the charges (on the conductor surface) influences the electric field
external to the conductor.

> As the inducing field changes EMF
> at location X, the charges at location X adjust so that E=0. But this
> readjustment is strictly "local" at X.

How are you defining the term EMF? I have always seen EMF defined as
the integral around a closed loop of the inner (dot) product of the
electric field and the differential length. What do you mean by
"local" at X?

> 3) The inside of the coax is at the same potential as the outside at location X.

This brings up some very interesting questions which fortunately are
not relevant to the small shielded loop under discussion.

> Copper is a *very* good conductor through its thickness. There is *no* skin
> effect at location X through the braid between the two surfaces. I can't imagine
> how the notion that there is ever got started.

Are you saying that at RF frequencies, charges are free to move
radially _through_ the shield?

> Tom W8JI wrote:
>
> > The time-varying fields can NOT pass through a conductor several
> > skin depths thick. They get to the inside of the loop by "spilling
> > over" the cut in the shield.
>
> Beg to differ on this one. The field does not reach the inside by a current
> "spilling over the edge" and
> back along the inside surface. This "loop-current-over-the-open end" fallacy has
> been floating around for
> quite a few years.

At RF frequencies, the skin effect limits current flow in conductors
to the region very near the surface. If there is current flowing in

the inner conductor (pickup loop), then there must be an equal and
opposite current flowing along the inner surface of the shield. If
such a current did not exist, then a magnetic field would exist inside
the conducting shield in accordance with Ampere's law. Such a time
varying field cannot exist. Therefore an equal and opposite current
must flow on the inside of the shield so that the magnetic field in
the region between the inside and outside surfaces of the shield is
zero.

Obviously there are consequences of charges 'piling up' at the ends of
the loop conductor. One consequence is an electric field is developed
which is concentrated in the vicinity of the gap in the shield. This
electric field induces a conduction current in the outside of the
shield in the manner you described earlier. The current flowing on
the outside of the shield is nearly equal in magnitude and direction
to the current in the inner conductor (pickup loop).

> It is also not true that an EM wave cannot be transmitted *through* a Faraday
> shield. It happens all the
> time.

Electromagnetic transfer of energy requires both an electric and
magnetic field simultaneously exist. The power density and direction
is given by the Poynting vector, E cross H. Clearly the power density
must be zero everywhere inside of a perfect conductor because both E
and H are zero. Therefore the energy must somehow flow 'around' the
shield. I highly recommend anyone learning electromagnetic principles
take the time to sketch the fields and trace the 'flow' of Poynting
vector. Such an analysis is a real eye opener for most students of
electromagnetics!

> Skin effect does not operate to prevent this coupling from the outside to the
> inside. At any particular
> location on the shield, there is no skin effect between the outside and the
> inside, measured directly
> through (perpendicular to the surface) the thickness of the shield, which is an
> excellent conductor.

Are you saying it is possible to have a current flowing radially from
the inside to outside surface of the shield? Such a current would
require the existence of both an electric, and magnetic field, inside
the conductor which you agree is impossible.

> Skin effect doesn't work like that, it only works for a current that is flowing
> along the surface, not
> directly through the thickness.

The so called skin effect is a consequence of the fact that a time
varying current cannot exist internal to a good conductor but can
exist on the surface.

> Also, a net current does not flow along the
> length of the outer surface

> for the simple reason that it is open-circuited, just like any other conventional
> transformer, which is
> exactly what we are talking about here.

[redundant stuff deleted for brevity]

> There is a simple and interesting way to see what is going on along the length of
> the Faraday shield.
> Imagine that the shield is composed of a very large number of very small
> segments. Within each segment
> there are two things 1) an induced EMF created by the incoming wave and 2) a
> charge distribution due to
> electrons. These two fields cancel each other so that the "net composite" E field
> within that tiny
> segment is zero, just as it's supposed to be. But because of the charges, each
> segment is like a small
> open-circuited battery. The total voltage is the sum of these many individual
> voltages. And because the
> net E field in each segment is zero, and because the shield is open-circuited,
> there is *no* net current
> flow along the surface.

Since the electric field is everywhere zero inside the conductor, the
sum (integral) from one end to the other must equal zero. This means
any two points along the wire are at the _same_ electric potential
(voltage). The entire EMF is developed across the gap and is
associated with the uneven charge distribution required to maintain
zero electric field in the conductor.
>
> Now suppose the incoming EM wave suddenly reverses direction. Within each tiny
> segment the induced EMF
> and the charge arrangement both quickly reverse directions. The zero net E field
> is maintained at each
> and every location. This reversal occurs "locally" and there is no "sloshing" of
> electrons (current flow)
> from one end of the shield to the other.

Are you saying the polarity of the charges accumulated on each
imaginary segment reverses from segment to segment? If so, then an
electric field would exist at the boundaries between segments, which
is impossible because there are no insulating gaps between segments.
Otherwise, there must be a net transfer of charge from one end of the
loop to another. In other words, charge "sloshes" from one end to the
other.

> The EMF and charge distribution are both
> *uniform* along the
> length.

Charge definitely accumulates near the ends of the shield. The
existence of an electric field _across_ the gap is evidence of such a
charge distribution.

> Is there any dissipation in the copper due to these reversals? Yes, there is a
> small dissipation within
> each tiny segment due to the reorientations of electrons within that segment. In
> other words, an
> open-circuit transformer winding will dissipate a very small power due to high
> frequency cycling within
> each of the many tiny segments.

The current which flows in the shield is perfectly ordinary conduction
current. The conduction current 'charges' the capacitance of the gap
and is made continuous by the incorporation of the fictitious
displacement current flowing across the gap.

bart
wb6hqk

340. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 21:26:25 UTC
From: richardharrison@webtv.net
Message-ID: <14972-3ACE3481-77@storefull-112.iap.bryant.webtv.net>
Source record: 166595

Tom, W8JI wrote:
"What really happens is the "faraday Shield" reradiates the time-varying field to the other side."

Any effective grounded shield stops an electric field. If that same electrostatic shield has no discontinuities it allows eddy currents which by Lenz`s law stop the magnetic field too. The shield works just like the can around an i-f transformer. It lets nothing in or out.

Cut slots to eliminate the eddy currents, and the shield doesn`t stop the magnetic field. All the Ancients agree on this. These old experts were right.

Best regards, Richard Harrison, KB5WZI

341. MFJ-4035 35 amp Power Supply

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 21:52:29 UTC
From: Chuck Costa <cvcosta@home.com>
Message-ID: <xUqz6.7686$4L4.861298@news1.frmt1.sfba.home.com>
Source record: 166596

MFJ -4035 35 amp power supply. Less than a year old. Not a scratch on it.
This is the one with the 19lb transformer. Solid power Supply. $125
Including shipping.

--
Chuck Costa - K6CVC
k6cvc@bigfoot.com

342. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 22:11:03 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3ACE3EF7.7619CA0B@hiwaay.net>
Source record: 166599

Fractenna wrote:
>
> I have to agree with you on this. What's
> all this have to do with an antenna newsgroup?
>
> 73
> Phil
> de N1ZKT

More than ANYTHING from either "Phil" or "Chip" in the last two (three?-more?) years.

Can anyone locate any technical output from this screenname in the recent (up to two years) past?

I dont remember any.

Bill

343. Re: TVI the TV Dishs?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 23:20:08 UTC
From: Floyd Sense <sentek@sprintmail.com>
Message-ID: <lasz6.10469$Kr1.877419@newsread1.prod.itd.earthlink.net>
Source record: 166600

I have my 50 watt 2 meter station beam 15 feet above my dish, and my HF beam at 1 KW out just a5 feet above that. Never a peep on the satellite channels.

K8AC
Floyd Sense - Angier, NC
"Standing Stone & Morning Cloud" <macadi@qn.net> wrote in message news:3acd5f02@news.qn.net...
> I am hoping to put up 2 Meter and possibly 430-440 beams. I am thinking
> vertical and horizontal on both bands. I cannot go up more than 40 to 45
> feet due to restrictions here. The next door neighbor has Direct TV. I
> have no experience around these. Am I going to interfere with his dish
> reception? All advice appreciated.
>
> Mac, N8EYE
>
>
>

344. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 23:24:31 UTC
From: John in Australia <hrbe@dingoblue.net.au>
Message-ID: <3ace5063$0$25466$7f31c96c@news01.syd.optusnet.com.au>
Source record: 166601

Well I have heard of "Kegel Exercises", women use them to help them with an incontinence problem!!

John in Australia

"Sideband" <sideband@spam.me.not> wrote in message news:3ACD0DE7.802DC521@spam.me.not...
> What's a Kegal notice?
>
> -SSB
>
> Chipn1ir wrote:
>

345. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 23:37:26 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ACE5336.98111FB2@mwci.net>
Source record: 166602

Bart Rowlett wrote:

> snip everything,

I believe that my evaluation of this particular problem, as I stated it, is correct and I do not wish or intend to change anything. It was carefully thought out, and I stand by it. It is good (a lot better than you say it is).

Your opinion, of course, is your business, and that's fine.

However, your attempt to *trash* just about every sentence, using arcane and contrived arguments, doubletalk and baloney is not the least bit impressive or commendable as far as I am concerned. In your comments I see deliberate misinterpretations of statements that should be crystal clear to just about anyone. I ask myself "what game are we playing here?"

I think I know a wrecking crew when I see one.

I'm sure you are impressive to some others. That, of course, is their business, and that's fine too. I am not nearly as impressed as they may be.

My favorite way to *terminate* with certain individuals, as necessary, is to just say:

"go fly a kite".

Bill W0IYH

346. Re: TVI the TV Dishs?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 23:41:38 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3ACE5432.746D65A2@dialpoint.net>
Source record: 166606

My antennas are about the same distance and no problems on Direct TV. I run about 50 watts FM and 400 on ssb on 2 meters, 100 watts on 432 and 150 watts on 6 meters. The end of the lowband antenna is only about 20 feet from the dish and use an Icom 706 for the low bands. There should not be any interferance as the dish operates about 12 ghz and I think it downconverts from about 900 to 1200 mhz on the feed to the receiver in the house. The cable going to the house is normally 100% foil shielded and beter.

Standing Stone & Morning Cloud wrote:
>
> I am hoping to put up 2 Meter and possibly 430-440 beams. I am thinking
> vertical and horizontal on both bands. I cannot go up more than 40 to 45
> feet due to restrictions here. The next door neighbor has Direct TV. I
> have no experience around these. Am I going to interfere with his dish
> reception? All advice appreciated.
>
> Mac, N8EYE

347. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 23:45:30 UTC
From: fractenna@aol.com
Message-ID: <20010406194530.25665.00003058@ng-cs1.aol.com>
Source record: 166603

>
>Fractenna wrote:
>>
>> I have to agree with you on this. What's
>> all this have to do with an antenna newsgroup?
>>
>> 73
>> Phil
>> de N1ZKT
>
>More than ANYTHING from either "Phil" or "Chip" in the last two (three?-
>more?) years.
>
>Can anyone locate any technical output from this screenname in the
>recent (up to two years) past?
>
>I dont remember any.
>
>Bill
>

A shame that your advancing age airbrushes the details. Or shall we absorb yet another myth?

Too many grasshoppers?

73
Phil de
N1ZKT

348. J-pole feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-06 23:45:41 UTC
From: Russell Van Hees <Rvanhees@tamu.edu>
Message-ID: <9aj0c1fuk1@news.tamu.edu>
Source record: 166632

Howdy all,
I have just built an all copper J-pole for 2 meters. I was wondering what is the best thing to feed it with. I have a run of about 30-40 feet. It will be in an attic so weatherproofness is not needed. I have been told that I can feed it with 300 ohm twin lead for low loss. I plan on using it with my HTX-202 so I will be only using 5 watts. Do I just attach the twin lead to the antenna and then to a bnc connector and then tune it or am I missing something.
Thanks,

--
From--Russell Van Hees KD5NPM
Email- Rvanhees@tamu.edu
Webpage- Http://members.nbci.com/Rwv2055

349. Re: Antennas and Static charge!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 00:04:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ACE599C.4329AFA8@IEEE.org>
Source record: 166657

R E Heath wrote:
> I too would like to hear of a simple solution to this problem. I'm using
> a multiband dipole, a 128 ft flattop with ladderline down to my Johnson
> Matchbox.

I thought Johnson Matchboxes were link-coupled.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

350. Re: J-pole feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 00:07:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ACE5A27.72804717@IEEE.org>
Source record: 166658

Gene wrote:
> I use 450-ohm ladderline (about $15.00/ft) ...

Hey Gene, I've got some to spare on which I'll give you a better
price than that. How does $10.00/ft sound? :-)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

351. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 00:14:42 UTC
From: richardharrison@webtv.net
Message-ID: <14972-3ACE5BF2-99@storefull-112.iap.bryant.webtv.net>
Source record: 166610

Wes, N7WS wrote:
"Why? What if your "radiator of opportunity" is another loop?"

Wes` questions are from March 28. I was looking through old postings for signs..

The advantage in S/N, if any, is in the near field of the noise source and doesn`t rely on the type of antenna, but only on the ability to remove the electric field and respond only to the magnetic field. This advantage relies on existence of places in the near field of a noise source where the electric field of the noise is stronger than its magnetic field. This is due to a difference in the decay rates of the reactive electric and reactive magnetic fields. Rejecting only the electric field could improve S/N in those locations. The advantage would be small and occasional. A true Faraday shield can remove only the electric wave component of a wave, so if there happened to be an advantage to be gained by responding only to the magnetic field component of the wave, the Faraday shield might deliver that small advantage.

Best regards, Richard Harrison, KB5WZI

352. Re: Loops

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 00:16:12 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9alm4b$r2k$1@plutonium.btinternet.com>
Source record: 166604
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Dear Tony of London, Ontario.

There are two diameters of consequence - the main loop diameter and the diameter of conductor forming the main loop. Let's not confuse the two.

It does not make sense to adjust the main loop diameter to compensate for any changes in loop conductor diameter.

The larger the diameter of the main magloop the more efficient it will be. Efficiency increases very rapidly with loop diameter. For a loop of given diameter it also increases very rapidly, and at the same rate, with frequency.

Slightly increasing the diameter of the main loop will result in a slightly smaller tuning capacitor setting for the same frequency. Think of the loop as an inductance - a one turn coil.

But changing the diameter only of the loop conductor will have an insignificant effect on tuning capacitance.

The larger the diameter of the main loop conductor the lower the loss resistance. Doubling its diameter halves the power loss for the same current. So a larger diameter loop conductor results in a desirable improvement in radiatiating efficiency with a neglible change in the required tuning capacitance for the same frequency (which is of little consequence anyway).

Varying the overall diameter of the coupling loop only has the same effect as varying the inductance or capacitance in an ordinary antenna tuner. It is just a part of the impedance matching arrangements to a 50-ohm transmitter. The conductor diameter of the coupling loop need be no greater than the inner conductor of the coax cable which feeds it. Just looking at it is enough to convince anybody that the current in the coupling loop is the same as in the inner coaxial wire. The coupling loop can be constructed of a length of wire thick enough to be self-supporting. Only its length or overall diameter is of consequence. Then forget about it !

Download program MAGLOOP4. It will tell you everything electrically you need to know about magloops. It models tuned loops with circumferences up to 1/2-wavelength at which length the tuning capacitor falls to zero pF.

AT RF, THE EQUIVALENT DIAMETER OF A THIN STRIP OF COPPER IS HALF OF ITS WIDTH. Just enter that value in program MAGLOOP4. Download in a few seconds. Not zipped up. Run immediately. User friendly.

The program will show you the modest improvement in signal strength to be gained by using a 4.5 inch wide copper strip in place of a 3/4" copper pipe. The strip is equivalent to a 2" diameter pipe but will be much less mechanically stable than a pipe of that diameter.

Important:- unless the loop is kept well above ground to reduce ground-induced loss, the full benefit of changing from thin tube to wide strip will not be realised. Program MAGLOOP4 will also show you that.

'Tis a fact, a magloop is the most efficient of all antennas when it has to confined to a small space not too near the ground.

But no doubt you will gain more satisfaction by doing your own experiments.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****
Tony asked -
>
> Any one have an idea what % I should adjust the diameter of the loop to
> compensate for the effects of using 4.5" copper strips in place of 3/4"
> copper pipe in the main loop? And would it be advisable to construct the
> drive loop of the same material

353. Re: J-pole feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 00:29:17 UTC
From: kg4ggx@aol.com
Message-ID: <20010406202917.16389.00000728@ng-fl1.aol.com>
Source record: 166605

Because the coil of coax acts as a rf choke decoupling the feed line from the antenna. Coax is an unbalanced feed line, and the J-pole is balanced . The coil of coax is in effect a 1 to 1 balun. Just as with a dipole, it sometimes helps to use a balun to decouple the coax from the antenna. Not always necessary, but sometimes helps.
73 Rob

354. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 00:36:59 UTC
From: richardharrison@webtv.net
Message-ID: <14973-3ACE612B-29@storefull-112.iap.bryant.webtv.net>
Source record: 166609

Tom, W8JI wrote:
"If a person considers the shield on a loop passes the time varying magnetic field and "culls out" the electric field, he will run into conflicts between the real world and his understanding."

If a person encloses an antenna with a real Faraday shield, that antenna will continue to communicate with the world outside the shield. The Faraday shield will indeed short out the electric field but its loss is instantaneous as the electric field is quickly recreated by the surviving magnetic field.

Best regards, Richard Harrison, KB5WZI

355. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 00:37:30 UTC
From: Cortland Richmond <Cortland.Richmond@usa.alcatel.com>
Message-ID: <3ACE614A.9F28DE5F@usa.alcatel.com>
Source record: 166607

I am going to try and make up a remote detector to look at voltage on, and current in, the interior of a loop's shield. I may have to make the shield out of pierced aluminum sheet so as to see the meters.

The results should be interesting.

I doubt that there is an equal and opposite current flowing on the nearby shield to the current in a shielded loop; the loop is a low impedance, but the shield is an open circuit and thus a very high impedance. Such current in a high impedance would require many times the voltage present on the loop to be present on the shield, which circumstances would require more power than was applied to the loop to be present on the shield.

Cortland

Richard Harrison wrote:

> Tom, W8JI wrote:
> "What really happens is the "faraday Shield" reradiates the time-varying
> field to the other side."
>
> Any effective grounded shield stops an electric field. If that same
> electrostatic shield has no discontinuities it allows eddy currents
> which by Lenz`s law stop the magnetic field too. The shield works just
> like the can around an i-f transformer. It lets nothing in or out.
>
> Cut slots to eliminate the eddy currents, and the shield doesn`t stop
> the magnetic field. All the Ancients agree on this. These old experts
> were right.
>
> Best regards, Richard Harrison, KB5WZI

356. Re: Lightning protection...again

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 00:38:51 UTC
From: w1rfi@aol.com
Message-ID: <20010406203851.27643.00002206@ng-fj1.aol.com>
Source record: 166608

>Thanks again for all the help regarding an appropriate SW antenna, I'm
>sure I'll have more questions when I start to set up a ham rig.
>BUT, I am still not at all confident that I understand how to safely
>protect myself and radio from lightning and static. Normally one can
>just use trial and error, but I'd rather not learn that way in this case
>;-)

ARRL has some info on lightning protection at:

http://www.arrl.org/tis/info/lightning.html

It contains links to Polyphaser and other good sources of info and parts.

73,
Ed Hare, W1RFI
ARRL Lab

357. Re: Loops

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 00:51:34 UTC
From: Cortland Richmond <Cortland.Richmond@usa.alcatel.com>
Message-ID: <3ACE6496.7C3809B@usa.alcatel.com>
Source record: 166611
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Reg Edwards wrote:

> 'Tis a fact, a magloop is the most efficient of all antennas when it
> has to confined to a small space not too near the ground.

Johnson and Jasik (if I recall correctly) mention an efficient, small loop antenna formed of metal .02 wavelength across into a loop .02 wavelength in diameter. Resonance is achieved by turning the ends of the sheet so they are parallel to each other and act as a capacitor.

I haven't tried it, but it might be an interesting evening project. If I have remembered the dimensions properly, a ten meter loop could fit in a 8 inch cube. That's why I doubt my memory is correct; it sounds far too good to be true!

Cortland
ka5s

358. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 00:56:51 UTC
From: 2w8ji@akorn.net
Message-ID: <3ace6517.616066274@news.accessunited.com>
Source record: 166612

On Fri, 6 Apr 2001 19:14:42 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Wes, N7WS wrote:
>"Why? What if your "radiator of opportunity" is another loop?"
>
>Wes` questions are from March 28. I was looking through old postings for
>signs..
>
>The advantage in S/N, if any, is in the near field of the noise source
>and doesn`t rely on the type of antenna, but only on the ability to
>remove the electric field and respond only to the magnetic field. This
>advantage relies on existence of places in the near field of a noise
>source where the electric field of the noise is stronger than its
>magnetic field. This is due to a difference in the decay rates of the
>reactive electric and reactive magnetic fields.

This is shameful Richard.

73 Tom

359. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 01:21:10 UTC
From: Ed Cregger <nuke663jlm@vei.net>
Message-ID: <tcsqntsuch5hca@corp.supernews.com>
Source record: 166613

The antenna is a good one. The groundplane kit is a waste of
money. Enjoy.
--
Ed Cregger, NM2K
nuke663jlm@vei.net

*Remove the "nuke" for correct email address

"Brady Palmquist" <bgpalmq@primenet.com> wrote in message
news:tcs3pgsgliuq23@corp.supernews.com...
>
>
> Looking for a 10 meter no radial vertical to mount on a
mast.
>
> Thinking the Solarcon A-99 might be good. I see no
negative comments
> about it. Wondering what anyone has experienced.
> How about the ground plane kit? Does it help that much?
> I'd rather not use one if I can get by.
>
> 73
> Brady
> K0UC

360. Re: New material appears to defy teh laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 01:28:28 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3ACE6D3C.BE00A32A@hiwaay.net>
Source record: 166615

Careful reading of this will show that it is full of Pseudo-scientific blather. No scientist would use some of the phrases in this. "bend in an opposite direction" -- to what? The paragraph beginning "Electromagnetic radiation",, actually says nothing, but in a way intended to sound profound. Mentioning a composite of "fiberglass and Copper" is very non-technical, because fiberglass is, itself, a composite. It's like saying "a mixture of a mixture and something else".

A close look ("analysis") using the common rules of english will show that this is pretty juvenile. The recent "Grasshoppa" material was so superior to this that there is no comparing the two, for skill of the authors.

Bill

Doug Matulis wrote:
>
> WASHINGTON (Reuters) - Experiments on a newly created composite material
> have shown that it bends microwaves passing through it in a direction
> that seems to defy the laws of physics, scientists said on Thursday, in
> a discovery that could help in making more advanced lenses and antennas.
>
> The composite, made of fiberglass and copper, caused microwaves shot
> through it to bend in an opposite direction than the laws of physics
> predict, making it the first material to have a ``negative index of
> refraction,'' physicists said in a study appearing in the journal
> Science.
>
> Electromagnetic radiation -- such as light and microwaves -- passing
> through ordinary materials is deflected in the same direction, giving
> those materials a ``positive index of refraction,'' they said. An
> example is the way light bends when it passes from air to water.
>
> The composite could be useful in developing better antennas and other
> technology for the cellular communications industry, said physicist
> Sheldon Schultz, who created the material along with colleagues David
> Smith and Richard Shelby at the University of California at San Diego.
>
> Although the composite cannot focus visible light, Schultz said he hopes
> that obstacle can be overcome in the future.
>
> Physicist John Pendry of London's Imperial College has said that a
> material with a ``negative refraction'' would make possible the
> construction of a lens capable of focusing light to limits not currently
> achievable.

>
> http://dailynews.yahoo.com/h/nm/20010405/sc/material_dc.html

361. TUBES RCA 1625 FS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 01:31:49 UTC
From: fox <cfox007@bellsouth.net>
Message-ID: <3ACE6E05.6F6B87B@bellsouth.net>
Source record: 166614
Cross-posted to: rec.radio.swap,rec.radio.amateur.equipment,rec.radio.cb,rec.radio.amateur.antenna

I have 9- 1625 tubes all test good full output.

email with b/o
chris ni4l

362. Re: High Power HF Antenna Suplliers?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 02:31:53 UTC
From: Rory Davis <n7cr@bellsouth.net>
Message-ID: <B_uz6.4364$be.68089@news1.atl>
Source record: 166616

TCI/BR
http://www.tcibr.com

"Philip de Cadanet" <phil@invest.fsbusiness.co.uk> wrote in message
news:wE4kRlAFJMz6Ewvb@invest.fsbusiness.co.uk...
> , Richard Harrison <richardharrison@webtv.net> writes
> >Philip de Cadanet wrote:
> >Grainger Associates
> >
> >Granger Associates was bought by DSC in Dallas maybe 15 years ago, I was
> >issued DSC stock in trade for my Granger stock. I sold it. That proved
> >to be the right trade.
> It's good to be forewarned.
>
> Thanks Richard.
>
> Any other HF LPA manufacturers in the US or Canada ?
>
> (((73)))
>
> Phil G4ZOW

363. Re: TH3-MK3 specs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 02:45:56 UTC
From: thompson@mindspring.com
Message-ID: <9alv3m$fd3$1@slb5.atl.mindspring.net>
Source record: 166617

Boom is 14'
> Boom Length 5 sq feet don't know the other specs.

> what about the availability of replacement components from Hy-gain.?
> Nothing seen on their website.

You can get parts from MFJ/Hy-gain. I have new parts from late last year.
>
> I have someone planning on selling one along with a Ham-M rotor and i
> am want to buy it.
> I plan to roof mounting it and i need the specs before i can make a
> decision.

This will be a good first beam. Its only down a db or so from the bigger
Th7/Th11. The ham I got this one from had it mounted on
a short rohn tower on his balcony. Works on the Roof top towers too.
Ham -M is overkill but will give yoy plenty of rotor.
> krishna(w4/vu2vku)
>

I have a manual if you want a copy.

73 Dave K4JRB
Norcross, GA 30092

364. WTB AEA 2 M Isopole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 02:49:35 UTC
From: thompson@mindspring.com
Message-ID: <9alv9l$u3g$1@slb1.atl.mindspring.net>
Source record: 166519

I have a Isopole that took a lightening hit and am looking for a replacement. Price and condition in e-mail direct to me.

Thanks 73 Dave K4JRB
thompson@mindspring.com

365. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 02:54:06 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3ACE814E.707A6CF9@hiwaay.net>
Source record: 166618

Actually, the airbrush is still capable of pretty close work, even at 74. I clearly remember the first query I made to Chip, back on the antenna reflector (do YOU remember?- that was one of the lists you were banned from?) I asked for the relationship between the Fractal dimensions and Frequency. It was obviously not the same as the common wave-length formulas, so- I asked.

You told me, in essence, that I was too ignorant to understand what a fractal was, and then used some crap about "Genetic Algorithms" to obscure the issue. All I got from that was that you (Chip, et al) didn't know either, and you had to cut and try, until something worked.

How is your airbrush? still spitting out pseudo-science?

Bill-W4BSG

Fractenna wrote:
>
> >
> >Fractenna wrote:
> >>
> >> I have to agree with you on this. What's
> >> all this have to do with an antenna newsgroup?
> >>
> >> 73
> >> Phil
> >> de N1ZKT
> >
> >More than ANYTHING from either "Phil" or "Chip" in the last two (three?-
> >more?) years.
> >
> >Can anyone locate any technical output from this screenname in the
> >recent (up to two years) past?
> >
> >I dont remember any.
> >
> >Bill
> >
>
> A shame that your advancing age airbrushes the details. Or shall we absorb yet
> another myth?
>
> Too many grasshoppers?
>
> 73

> Phil de
> N1ZKT

366. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 03:43:47 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9am2dj$j0j$0@208.207.71.161>
Source record: 166520

Rick Scott wrote:
>
> Everybody ignore fraky
>
> this is his annual (or semi or is it monthly now) Im gonna sue you post.

I thought that was anal....

367. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 03:46:20 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9am2ic$j0j$1@208.207.71.161>
Source record: 166521

Bill Aycock wrote:
>
> Fractenna wrote:
> >
> > I have to agree with you on this. What's
> > all this have to do with an antenna newsgroup?
> >
> > 73
> > Phil
> > de N1ZKT
>
> More than ANYTHING from either "Phil" or "Chip" in the last two (three?-
> more?) years.
>
> Can anyone locate any technical output from this screenname in the
> recent (up to two years) past?
>
> I dont remember any.

That would be because there hasn't been any...

368. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 03:48:52 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9am2n4$j0j$2@208.207.71.161>
Source record: 166522

Sideband wrote:
>
> What's a Kegal notice?

Uh, that signifies draft instead of bottled...

369. Inverted L as 1/2 wave

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 04:10:16 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <lqwz6.90724$Ok4.7192563@news1.rdc1.ct.home.com>
Source record: 166523

Pardon the elementary nature of this post..

I've been playing with Reg's DOS programs trying to come with a low band antenna for 160/80 and 40 meters. So far I've come up with a 40-meter dipole feed with 1/4 wave of 450-ohm ladder line. I also intend to feed the antenna in a T configuration, running as a 1/4 wave end fed on 160, and a 1/2 wave on 80 meters.

I assume the 1/2 wave gives a relatively high DX angle, vs. what a 1/4 wave would provide. But, how do things 'even out' in the real world given the extremely high efficiency of the halfwave due to less dependence on the radial system? I would have a hard time installing a radial system for a 1/4 wave that would come close to the efficiencies with a 1/2 wave radiator. Any ideas how I could squeeze a 30 meter dipole into this mess?

Pete

--

370. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 04:57:01 UTC
From: fractenna@aol.com
Message-ID: <20010407005701.25627.00002687@ng-cs1.aol.com>
Source record: 166526

>Actually, the airbrush is still capable of pretty close work, even at
>74. I clearly remember the first query I made to Chip, back on the
>antenna reflector (do YOU remember?- that was one of the lists you were
>banned from?) I asked for the relationship between the Fractal
>dimensions and Frequency. It was obviously not the same as the common
>wave-length formulas, so- I asked.
>
>You told me, in essence, that I was too ignorant to understand what a
>fractal was, and then used some crap about "Genetic Algorithms" to
>obscure the issue. All I got from that was that you (Chip, et al) didn't
>know either, and you had to cut and try, until something worked.
>
>How is your airbrush? still spitting out pseudo-science?
>
>Bill-W4BSG
>
>Fractenna wrote:
>>
>> >
>> >Fractenna wrote:
>> >>
>> >> I have to agree with you on this. What's
>> >> all this have to do with an antenna newsgroup?
>> >>
>> >> 73
>> >> Phil
>> >> de N1ZKT
>> >
>> >More than ANYTHING from either "Phil" or "Chip" in the last two (three?-
>> >more?) years.
>> >
>> >Can anyone locate any technical output from this screenname in the
>> >recent (up to two years) past?
>> >
>> >I dont remember any.
>> >
>> >Bill
>> >
>>
>> A shame that your advancing age airbrushes the details. Or shall we absorb
>yet
>> another myth?
>>
>> Too many grasshoppers?

>>
>> 73
>> Phil de
>> N1ZKT
>

I stand by my comment.

Look--you can't even tell who wrote this post! Even when it has my name and call.

Incredible.

73
Phil
de N1ZKT

371. Re: Back to 11 Meters.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 05:16:52 UTC
From: earle@dfs-web.net.au
Message-ID: <3acea21c.23478011@news.idx.com.au>
Source record: 166524
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.space,rec.radio.cb,rec.radio.scanner,rec.radio.shortwave,rec.radio.swap

My God are full of yourself or what.

Maybe you need to sit down and have a look at yourself.

Maybe its not the people on the radio it is YOU!!!!!!!!

If this is all you have to bitch about you really need to have a good
hard look at yourself.

On Sun, 11 Mar 2001 07:40:46 GMT, Funny-0RG@arrl.org (ARRL) wrote:

>I left CB radio 19 years ago when I got my novice ticket. It felt good
>communicating with people that knew what they were doing and were proud of
>their accomplishments in getting licensed. Over the past year things have
>gotten shitty on the bands and operators are stupid. It sounds just like the
>CB I left 20 years ago except that the rig's readout is showing a ham
>frequency. To bad there isn't a better radio service I can go to now that the
>bands are full of idiots. Thanks FCC, Thanks ARRL, I'm back to 11 meters in
>the middle of a ham band.
>
>
>

372. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 05:17:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ACEA2F3.EFD18A9F@IEEE.org>
Source record: 166580

Christopher Trask wrote:
>
> : > What's a Kegal notice?

> Perhaps he meant "kugel".

Maybe a Kegal notice in only valid in Kigali?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

373. Re: Radials and DX-A sloper

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 05:23:30 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ACEA452.B2F76235@IEEE.org>
Source record: 166581

George McCouch wrote:
> I am not an antenna expert like Cecil ...

I hope that's a joke. If you could see the shape my 40m vertical
is in at the moment, you wouldn't label me an expert.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

374. Re: Back to 11 Meters.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 05:23:45 UTC
From: earle@dfs-web.net.au
Message-ID: <3acea44e.24039736@news.idx.com.au>
Source record: 166525
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.space,rec.radio.cb,rec.radio.scanner,rec.radio.shortwave,rec.radio.swap

What a goose.

On Sun, 11 Mar 2001 07:40:46 GMT, Funny-0RG@arrl.org (ARRL) wrote:

>I left CB radio 19 years ago when I got my novice ticket. It felt good
>communicating with people that knew what they were doing and were proud of
>their accomplishments in getting licensed. Over the past year things have
>gotten shitty on the bands and operators are stupid. It sounds just like the
>CB I left 20 years ago except that the rig's readout is showing a ham
>frequency. To bad there isn't a better radio service I can go to now that the
>bands are full of idiots. Thanks FCC, Thanks ARRL, I'm back to 11 meters in
>the middle of a ham band.
>
>
>

375. Re: High Power HF Antenna Suplliers?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 07:00:30 UTC
From: Philip de Cadanet <phil@invest.fsbusiness.co.uk>
Message-ID: <cT6f0BAOsrz6Ew7D@invest.fsbusiness.co.uk>
Source record: 166527

Rory,

>TCI/BR
>http://www.tcibr.com
Just the kind of company I was looking for!

Many thanks

Phil G4ZOW

376. Re: Back to 11 Meters.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 08:28:29 UTC
From: Eamon Skelton <Xnospam@oceanfree.net>
Message-ID: <d3jma9.2od.ln@localhost.localdomain>
Source record: 166528
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.space,rec.radio.cb,rec.radio.scanner,rec.radio.shortwave,rec.radio.swap

The Duke wrote:

> What a goose.

Why do we have to be burdened with this cross-posted shite
on: rec.radio.amateur.space ?

Followup set to: alt.flame

Ed. EI9GQ.
--
Remove 'X' to reply by mail.
http://www.qsl.net/ei9gq

Linux 2.4.2

377. Re: New material appears to defy teh laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 10:10:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ACEE77E.FE5D0CE9@IEEE.org>
Source record: 166597

Richard Clark wrote:
> SWR is now to be reckoned with this to reveal a negative value?

Is it still the lower the better? Minus infinity?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

378. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 10:16:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ACEE8E2.7C0A2156@IEEE.org>
Source record: 166598

Bart Rowlett wrote:
> I suspect a large part of the disagreement is a consequence of the
> diversity in technical backgrounds among the participants of this
> thread.

Hey Bart, off the subject, but since I didn't get a response to my
April 1st posting, do you believe in the nonlocality of reality?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

379. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 12:05:28 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3ACF0288.2D1AE79B@hiwaay.net>
Source record: 166529

I KNEW you didn't understand English- "YOU" is a collective noun, and by that, I mean any who use the "Fractenna" screen name. It was that name that was banned- I also remember Chip using Phils name to protest the banning.

The whole world knows that the use of the sig for Phil on posts from Fractenna is just a Ploy. I know- it has been explained ad-nausium, that many use that name- the truth is not quite as you explain it.

Bill-W4BSG

Fractenna wrote:
>
> Look--you can't even tell who wrote this post! Even when it has my name and
> call.
>
> Incredible.
>
> 73
> Phil
> de N1ZKT

380. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 13:08:39 UTC
From: k3bu@aol.com
Message-ID: <20010407090839.15725.00000442@ng-cq1.aol.com>
Source record: 166530

TROLL, TROLL, TROLL from Assahole

keep feeding him, them, freaka fracs

381. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 13:09:29 UTC
From: fractenna@aol.com
Message-ID: <20010407090929.08285.00002750@ng-mn1.aol.com>
Source record: 166531

>I KNEW you didn't understand English- "YOU" is a collective noun, and by
>that, I mean any who use the "Fractenna" screen name. It was that name
>that was banned- I also remember Chip using Phils name to protest the
>banning.
>
>The whole world knows that the use of the sig for Phil on posts from
>Fractenna is just a Ploy. I know- it has been explained ad-nausium, that
>many use that name- the truth is not quite as you explain it.
>
>Bill-W4BSG
>
>Fractenna wrote:
>>
>> Look--you can't even tell who wrote this post! Even when it has my name and
>> call.
>>
>> Incredible.
>>
>> 73
>> Phil
>> de N1ZKT
>
There is no collective you. I wrote it. C H E C K Y O U R G L A S S E S P R E S
C R I P T I O N .

It's all a conspiracy if we listen to you . And everything new in science is
pseudo science. You just like to bait everyone here to get a rize outta them.
Just look at your comments on the negative refraction stuff.

What other evidence do we need?

I see you are enjoying your december years:-)

Just don't forget your medication:-)

73
Phil
de N1ZKT

382. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 13:18:59 UTC
From: fractenna@aol.com
Message-ID: <20010407091859.08309.00002499@ng-mn1.aol.com>
Source record: 166532

>TROLL, TROLL, TROLL from Assahole
>
>keep feeding him, them, freaka fracs
>

You forgot the last line--

'So I can try to make trouble sending copies to people:-)'

Yuriii!!!!

WEEE!

73
Phil
de N1ZKT

383. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 13:28:42 UTC
From: k1bqt@aol.com
Message-ID: <20010407092842.08941.00002541@ng-mo1.aol.com>
Source record: 166534

Hi Bill--

A little spelling lesson is in order here:

Kegel Notices are instruction sheets offered by doctors or nurse practioners to benefit adult patients who either pee their pants at inopportune times or leave sexual partners yawning with sprawled disinterest.

Kegal Notices are nasty little threats issued by doctors through their nurse practitioners to benefit no one--including themselves.

Rick K1BQT

384. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 13:29:30 UTC
From: "W.G. Ewald" <wgewald@att.net>
Message-ID: <qq5uctkoljdtb6kt01h590q440ug0idbss@4ax.com>
Source record: 166533

Does this have anything to do with improper kegal exercises?

385. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 13:39:46 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9an571psa1@neptunium.btinternet.com>
Source record: 166535

An isolated straight conductor in the near field of an antenna can be modelled as a secondary tuned circuit coupled to an RF generator via a primary tuned circuit. The primary and secondary circuits will each have a value of Q and there will be a coefficient of coupling due to mutual inductance and capacitance.

The coefficient of coupling between the tuned circuits will be small unless the secondary is intended to be, say, a reflecting element. And even then the coupling coefficient need not be greater than the 'critical' value at which the primary and secondary currents are approximately equal when both circuits are resonant.

Nobody worries about the power lost in a reflecting element. Or even in the radiating element. So no-one need worry about the power lost in a guy wire even if it is resonant.

The principal effect of a guy wire (or any nearby phone lines) is to distort the radiation pattern. In most amateur HF installations (multi-band dipole, inverted-L, etc) the radiation pattern can only be described as randomly multi-directional in both vertical and horizontal planes. The effects of a guy wire leave the pattern description unchanged.

So don't allow a guy wire of any length to pass through your 10m multi-element beam. On the other hand there's nothing you can do about your neighbour's house, complete with power lines, phone lines and copper plumbing system being in the way of a desirable DX direction.

If one of your antenna guys is of almost resonant length running crudely in parallel with antenna elements, and you have a worrying disposition, you will obtain relief by inserting an insulator about half way along it. If the input impedance of the system remains unchanged by the insertion then you will at least have learned something.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

386. Re: New material appears to defy teh laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 14:26:30 UTC
From: Paul <pvanasse@mail.direcpc.com>
Message-ID: <5sZz6.36645$m8.352596@news.direcpc.com>
Source record: 166499

This sounds like the Laser Antenna article in April 2001 QST.

387. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 14:38:39 UTC
From: richardharrison@webtv.net
Message-ID: <28059-3ACF266F-13@storefull-111.iap.bryant.webtv.net>
Source record: 166536

Tom, W8JI wrote:
"This is shameful Richard."

What is shameful?

I said that the near-field reactive energy which never becomes part of the far-field has different decay rates for its electric and magnetic components.

It does.

So, two quantities varying at different rates may have the same value at an intersection of strengths but have differing values elsewhere.

A signal or noise in the far-field has equal electric and magnetic components.

An antenna located in the near-field of a noise source (most noise is local), but in the far-field of a signal source (most signals come from afar), can improve signal to noise ratio when the receiver is located in an area where the noise`s electric-field component is predominant, by eliminating the receiving antenna`s sensitivity to the electric field.

A true Faraday shield grounds out the electric field and lets the magnetic field pass.

Tom offers no explanation or expert testimony to the contrary. He only declares that a Faraday shield can`t "cull out" the electric field. All the experts say that Faraday shield is used for "culling out" the electric field and carefully explain the mechanism.

Tom needs to explain how the experts have erred to have any credibility.

Best regards, Richard Harrison, KB5WZI

388. s-band dish helix feed?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 14:46:23 UTC
From: Lee <devnull@cfl.rr.com>
Message-ID: <3LFz6.46359$z4.8710738@typhoon.tampabay.rr.com>
Source record: 166537
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.space

How many turns should a helix be to give a -10 db beam width of 90? So far all I've been able to find are formulas for -3 db beamwidths.

I've been given a Sony SAN-18S2 DSS dish which I'm going to try to use for AO40 on S-band. I'm building a helix feed for it and am stumped trying to figure out how many turns I need to properly illumenate the dish. Since it is an offset fed dish, I measured the angle from the top to the bottom as 90 degrees when viewed from the old feed horn location. Measuring from side to side was also 90 degrees. Based on what I've read so far I would want a feed with a -10 db beamwidth of 90 degrees.

The dish dimensions are 473mm (18 5/8 inch) wide and 538mm (21 3/16 inch) high.

Thanks,
Lee-KU4OS

389. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 14:53:22 UTC
From: richardharrison@webtv.net
Message-ID: <28059-3ACF29E2-14@storefull-111.iap.bryant.webtv.net>
Source record: 166538

Bill Sabin wrote:
"go fly a kite"

The story goes that Ben Franklin told Mrs. Franklin that he was in dire need of a little new key. Mrs. Franklin responded: "Go fly a kite".

Ben found the key, flew the kite, discovered electricity, and the rest is history.

Best regards, Richard Harrison, KB5WZI

390. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 15:23:53 UTC
From: 2w8ji@akorn.net
Message-ID: <3acf2e1c.667366875@news.accessunited.com>
Source record: 166539

On Sat, 7 Apr 2001 09:38:39 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Tom needs to explain how the experts have erred to have any credibility.
>
>Best regards, Richard Harrison, KB5WZI

I'm sure the "experts" all agree, while there are some physics on this newsgroup argued (like Bill's thinking that time-varying magnetic fields pass through conductors several skin depths thick), evenry single person EXCEPT YOU agrees on what happens in the system.

While I. like Roy, think the use of the word "electrostatic" is poor when Terman (and others) describe direct capcitive coupling, we all know what he means.

It appears to be only you, as far as I can tell reading everything, who thinks the Farday shield takes the time-varying electric field to zero. It also appers to be only you (with the exception of Courtland, who is wondering) who thinks the shield on a loop changes the field impedance of the loop any distance from the loop.

Certainly we all develop mindsets from time to time, but I would hope after ten respected people tried to explain this to you one would get through.

It is not just ME who disagrees with you Richard, it is everyone. Even Terman.

73 Tom

391. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 15:30:03 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <e6buct8bibbvcb4i9mcd353c8o15hdq29e@4ax.com>
Source record: 166540

On Sat, 7 Apr 2001 09:38:39 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Tom, W8JI wrote:
>"This is shameful Richard."
>
>What is shameful?
>
>I said that the near-field reactive energy which never becomes part of
>the far-field has different decay rates for its electric and magnetic
>components.
>

Hi Richard,

Responding to the perceived rather than (the less than) explicit shame?

Well, either way....

But as to the quote beyond shame. There I would offer that Roy provided a touchstone to this near-field (of noise or otherwise) when he pointed out that it was largely controlled by the size of the radiator.

True, most noise is local; but being local does not necessarily qualify it as being near-field. In fact as this noise comes from appliances of one sort or another, and sustained by house wiring (a presumption of course, but one that liberally supports the argument); there is little reason to believe that the neighborhood's noise finds us in its near-field.

The genesis of this thread was in the 160M or BCB end of the spectrum where the conspiracy of wavelength and practical dimension would suggest that no house is within any other house's near-field for noise at these wavelengths. Hence, if there is any perceived benefit of shielding from disparities of noise and signal differentiable as near-field; then it is a benefit that is lost on 99.9% of those who build a shielded loop for that benefit alone. The remaining 0.1% could as easily ask the wife to turn off her hair dryer (well, maybe not - there is a market for shielded loops afterall).

73's
Richard Clark, KB7QHC

392. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 16:10:12 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9ane54hsb0@208.206.142.107>
Source record: 166541

Bill Aycock wrote:
>
> I KNEW you didn't understand English- "YOU" is a collective noun, and by
> that, I mean any who use the "Fractenna" screen name. It was that name
> that was banned- I also remember Chip using Phils name to protest the
> banning.
>
> The whole world knows that the use of the sig for Phil on posts from
> Fractenna is just a Ploy. I know- it has been explained ad-nausium, that
> many use that name- the truth is not quite as you explain it.

Not only that- he, yet again, use obfuscation to dodge having to give a
real answer, which by now it is clear to all, he doesn't have, either.

393. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 16:12:49 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9anea1hsb1@208.206.142.107>
Source record: 166542

Fractenna wrote:
>
everything new in science is
> pseudo science.

No, not everything, but for sure there is a percentage of scams in
science as elsewhere. Can you identify one? The rest of the readership
here can.

394. Re: High Power HF Antenna Suplliers?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 16:18:35 UTC
From: Rory Davis <n7cr@bellsouth.net>
Message-ID: <N5Hz6.3848$al2.231333@news2.atl>
Source record: 166543

http://www.andrew.com/catonline

Andrew sells Granger HF antennas

73
Rory N7CR

"Philip de Cadanet" <phil@invest.fsbusiness.co.uk> wrote in message
news:cT6f0BAOsrz6Ew7D@invest.fsbusiness.co.uk...
> Rory,
>
> >TCI/BR
> >http://www.tcibr.com
> Just the kind of company I was looking for!
>
> Many thanks
>
> Phil G4ZOW

395. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 16:24:57 UTC
From: richardharrison@webtv.net
Message-ID: <18291-3ACF3F59-9@storefull-113.iap.bryant.webtv.net>
Source record: 166544

Richard Clark wrote:
"True, most noise is local; but being local does not necessarily qualify it as being near-field."

Right on target. I was careful to say in areas where the reactive field capacitive (electric field) energy is predominant, a small advantage may be obtained from a true Faraday shield.

The first posts in this thread concerned a new MFJ shielded loop. I was unable to find the new loop on MFJ`s website. I think it may be a ferrite-core loop as those might be easier to sell and ship.

For me the argument is: Faraday shields work.

Best regards, Richard Harrison, KB5WZI

396. Re: New material appears to defy teh laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 17:45:35 UTC
From: dennis@wawa.juniper.net
Message-ID: <9anjnv$27p6$1@heap.juniper.net>
Source record: 166546

Richard Clark <kb7qhc@home.com> wrote:
>I followed your link above to find much the same material. It looks
>like whoever wrote it is either not very knowledgeable or they miss
>ascribed the qualities(or both).
>
>As the index of refraction is frequently referenced to air or vacuum
>(for good reason) and that value is 1.00 (or nearly so); most
>substance evidence values that are higher. It would be rare to find
>one less than 1.00 (or nearly so), but our correspondent claims
>"negative" values.

Richard,

I read the article, and it turns out that "negative index of refraction" is exactly what they meant.

If e is the permittivity and m is the permeability of a material then

1/sqrt(em)

is the velocity of a propagating EM wave in the material and

n = sqrt(em)/sqrt(e0m0)

where e0 and m0 are the free space values, is the index of refraction. The index of refraction is obviously the reciprocal of the velocity factor, so materials with an index of refraction less than 1 should indeed be rare. Note that square roots can have positive or negative values, you have to choose based on other considerations.

Apparently a Russian theoretician in the 1960's noticed that Maxwell's equations were quite happy to predict propagating waves through materials where both e and m were negative, since their product was still positive. He found, however, that he had to choose the negative of the square root above for energy to be conserved. This indeed gives you a negative index of refraction. Snell's law, i.e.

n1 sin(a1) = n2 sin(a2)

tells you what happens to the angle of refraction if you let one of the indices of refraction be negative. This entirely theoretical, nonexistant material had all sorts of other weird properties.

What the article says is that researchers at UCSD constructed a material with negative e and m at X band frequencies, measuring the index of refraction to be -2.7 at 10.5 GHz using Snell's law above.

They also measured teflon at the same frequency to verify the apparatus, getting +1.4 which apparently matches theory. Though calling it a "material" is a bit odd, it was actually fiber glass circuit board substrate with patterns plated on both sides in copper, constructed in the form of a honey comb.

>Just what are the implications? In our own arena, it would equate to
>a transmission line with a negative dielectric. Or more to the
>matter, an antenna placed into a negative media (-377 Ohms?).

I don't know, would it or would the signs cancel again? I would have thought that it meant the wave would end up propagating backwards, defying causality, but one of the articles explains that this isn't true, though they use the distinction between group velocity and phase velocity to explain this and this only confused me more. The implication was that, while e and m are normally material "constants", varying only slowly with frequency, in this case it was more like a resonance phenomenon occuring, with e and m varying wildly with frequency and with just one narrow band exhibiting the negative index of refraction,

>New Physics indeed! SWR is now to be reckoned with this to reveal a
>negative value? I can see the new advertising claims of the vendors:
>"With Negative Media used, our Antennas don't Radiate - they Suck!"

I don't know about that either, though it was mentioned that the Doppler effect would be reversed in the material. We'll have to wait to see if there is anything useful that can be done with this.

Dennis Ferguson

397. Re: Tape measure element effective spacing

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 17:57:26 UTC
From: Russell Van Hees <Rvanhees@tamu.edu>
Message-ID: <9al03med1@news.tamu.edu>
Source record: 166583

You might take a look here
http://home.att.net/~jleggio/projects/rdf/tape_bm.htm

Larry Benko <benko@aztek-eng.com> wrote in message
news:3ACCC978.541F6CF3@aztek-eng.com...
> I know the tape measure effective length topic has been discussed
> previously but the effective spacing issue is not mentioned. I am
> building a few tape measure yagi antennas for direction finding on 2m.
> I am using "heavy duty" steel tape which is 1" wide (slightly curved)
> and about .02" thick and made of some very magnetic steel alloy. The
> elements will be mounted with the flat of the tape measure material
> in line with the yagi elements. The boom will made of fiberglass
> or PVC. What would be the best way to model it in EZNEC? The element
> widths are an appreciable fraction of the element spacing (~10%).
> From previous posts I believe the effective diameter of this material
> would be somewhere near .4". Should I ignore the element width to
> element spacing or is there something I should do to compensate for it?
> Would the permeability and resivitivy be different that ordinary mild
> steel?
>
> Thanks,
> Larry Benko, W0QE

398. Feed coax for long wire ant.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 18:26:37 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3ACF5BDD.9696F433@cticonsulting.net>
Source record: 166545

Hopefully will get the antenna up this weekend:
1. For the coax feed, what is more appropriate for simple long wire ant., 300,75, or 50 ohm? Or go with whatever is cheapest and available? The plug will go into the 3.5mm ANT jack on a DX-390.

Thanks.

399. Re: Feed coax for long wire ant.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 18:33:53 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <l4Jz6.91618$Ok4.7270956@news1.rdc1.ct.home.com>
Source record: 166547

For a truly random length of wire being used for HF reception, you will find your feedpoint impedance varying dramatically as the antenna length varies betweens odd and even multiples of a quarter wavelength. At even multiples (1/2 wavelengths) the antenna feedpoint will become an extremely high impedance. Using any length of coax will result in very high losses due to the shunting action of the coax line's inherent capacitance.

Your most effective approach would be to route the longwire directly to the receiver input--after passing through an appropriate lightning protection device outside of the dwelling, and some sort of disconnect switch/grounding system inside of the house. The problem here is the internal RFI generated by home appliances will cause problems.

If you must use a short length of feedline, use the highest impedance twinlead or open ladder line you can find. The antenna "side" of the twinlead would connect to your radio's center pin, the twinlead side with no antenna would go to the outside, or ring, of the jack.

Even better yet, on second thought, you 'd be best to use a coax feed, with the longwire terminated a 9:1 balun outside of the house, with the braid grounded to a lightning rod at that point. I'd also suggest a simple shunt balun (20 or so feet of coax wound into a coil) after the ground rod to further decouple the feedline from the antenna. The balun will serve to lessen the adverse effects over the wide impedance excursions. There are webpages showing how to construct these antennas and how to wind your own balun. Alpha Delta also sells similar antennas. Try a post to rec.radio.shortwave and I am sure someone there has benchmarked the URL for the homebrew version of the antenna system.

Best of luck

Pete

"Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message news:3ACF5BDD.9696F433@cticonsulting.net...
> Hopefully will get the antenna up this weekend:
> 1. For the coax feed, what is more appropriate for simple long wire
> ant., 300,75, or 50 ohm? Or go with whatever is cheapest and
> available? The plug will go into the 3.5mm ANT jack on a DX-390.
>
> Thanks.

400. Re: Feed coax for long wire ant.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 18:48:10 UTC
From: CW <cmagers@sprynet.com>
Message-ID: <9annou$9ob$1@slb7.atl.mindspring.net>
Source record: 166549

If you are going to use a coax feed, the transformer "balun" is the way to
go. See my site. BTW, I use 75 ohm coax with this setup.
--
CW
KC7NOD
www.kc7nod.20m.com
"Peter J. Bertini" <commquart@home.com> wrote in message
news:l4Jz6.91618$Ok4.7270956@news1.rdc1.ct.home.com...
> For a truly random length of wire being used for HF reception, you will
> find your feedpoint impedance varying dramatically as the antenna length
> varies betweens odd and even multiples of a quarter wavelength. At even
> multiples (1/2 wavelengths) the antenna feedpoint will become an extremely
> high impedance. Using any length of coax will result in very high losses
> due to the shunting action of the coax line's inherent capacitance.
>
> Your most effective approach would be to route the longwire directly to
the
> receiver input--after passing through an appropriate lightning protection
> device outside of the dwelling, and some sort of disconnect
switch/grounding
> system inside of the house. The problem here is the internal RFI
generated
> by home appliances will cause problems.
>
> If you must use a short length of feedline, use the highest impedance
> twinlead or open ladder line you can find. The antenna "side" of the
> twinlead would connect to your radio's center pin, the twinlead side with
> no antenna would go to the outside, or ring, of the jack.
>
> Even better yet, on second thought, you 'd be best to use a coax feed,
> with the longwire terminated a 9:1 balun outside of the house, with the
> braid grounded to a lightning rod at that point. I'd also suggest a
simple
> shunt balun (20 or so feet of coax wound into a coil) after the ground rod
> to further decouple the feedline from the antenna. The balun will serve
to
> lessen the adverse effects over the wide impedance excursions. There are
> webpages showing how to construct these antennas and how to wind your own
> balun. Alpha Delta also sells similar antennas. Try a post to
> rec.radio.shortwave and I am sure someone there has benchmarked the URL
for
> the homebrew version of the antenna system.
>
> Best of luck

>
> Pete
>
> "Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
> news:3ACF5BDD.9696F433@cticonsulting.net...
> > Hopefully will get the antenna up this weekend:
> > 1. For the coax feed, what is more appropriate for simple long wire
> > ant., 300,75, or 50 ohm? Or go with whatever is cheapest and
> > available? The plug will go into the 3.5mm ANT jack on a DX-390.
> >
> > Thanks.
>
>

401. Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 18:55:54 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <_oJz6.687911$U46.21438121@news1.sttls1.wa.home.com>
Source record: 166550

I have read the "Faraday Shield Antenna" thread, and I have studied the responses from members of the two schools of thought regarding skin effect and the properties of electrically dynamic elements. One school believes that a current will loop around a coaxial shield in a continuous path made when skin effect splits the shield into inner and outer conductors (the loop-over camp). The other school (the transparent camp) believes no loop occurs, but that the shield is transparent to transverse electrical fields. The two predictions lead to different results that should yield to experimental verification.

I will suggest an experiment and then predict the results each camp will expect from the experiment.

The apparatus will be a dipole of any length which consist of two elements, a center element and
an outer element which completely surrounds the inner element, except at the ends. The separation
between the inner and outer elements is 0.2 inch, and the central conductor is 10 gage wire. The
thickness of the outer element is adequate to allow skin effect to be completely established on
both inner and outer sides. Thus, the dimensions are a little larger than those of RG-8. The
elements are in free space unaffected by any nearby objects. At the center of the inner element
we will place a nifty new micro transceiver with auto tuning. The frequency under consideration
can be any frequency having a wavelength which is very long compared to the 1/4 inch spacing, say 29 Mhz or less.

What will each camp predict for the electrical characteristics seen by the transceiver?

On transmit, the loop-over folks will predict that an unbalanced current will flow the entire length of the outside of the shield. This occurs because the current on the inner element creates an opposing
current on the inside of the outer element which is held on the inside by skin effect. When this
current reaches the end of the outer element, it folds over the shield and flows down the outside of the outer element, held outside by skin effect. The two inner currents are balanced and cancel, they can't radiate anyway because the skin effect confines all electrical effects to the inside of the shield. The outside however, is free to radiate and will be an effective radiator somewhat akin to an end loaded center fed dipole.

The transparent shield camp will predict that no separate current will flow on the outside of the outside element. Instead a current flowing on the inner element will generate an equal and opposite current on the outer element. The fields of two currents will nearly cancel each other thus radiation can occur only to the extent that the current in the outer element lags the current on the inner element. This will be small indeed at 28 Mhz. Thus the efficiency of any antenna built this way would be very low.

The difference between the two predictions should be easily detected when the impedance
calculation is compared to actual observed readings.

An observation can be made that three separate current paths are described by the loop-over
folks. The current paths are longer than the current paths predicted by the transparent camp so the current presumably has more resistance to flow and will have increased losses. The difference in
predicted losses should be detectable experimentally.

On receive, the situation is somewhat different. The loop-over folks will predict that the system
is just the reverse of the transmit situation. Efficiency will remain high.

The transparent camp will beg to differ, predicting that the efficiency will remain very low. On
receive they would explain, the current on the inner element flows IN PHASE with the current on
the outer element. The magnitude of the current flowing on the inner element is very small
because most of the current flows on the much larger outer element. The effect is somewhat
similar to the impedance transformation which is observed when a large element was placed near
a small driven element (the older ARRL Antenna Book's had charts for this). Efficiency is low
only because the outer element effectively shorts or bypasses the currents away from the inner element.

The two camps will predict a much different observed signal strength level from any external signal source. This difference should be easily observed.

Now the thread discussion was mostly about a circular loop so we may want to consider that
the straight loop could be bent into a circle but not connected to form a continuous loop. Both
camps will agree that the loop will be much less efficient than the straight version assuming that an
equal length of material is used in each comparable situation.

Can we do a real world experiment such as this? Of course. We could replace the futuristic
transceiver with a very carefully balanced and attached twin wire feed line, make the appropriate

adjustments for ground effects, and run the test. When some enterprising amateur reports the
results, we will know more about the art of radio.

Please comment on anything in this posting.

Have a good day all,

Roger, W7WKB

402. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 18:59:24 UTC
From: 2w8ji@akorn.net
Message-ID: <3acf6096.680290284@news.accessunited.com>
Source record: 166551

On Sat, 7 Apr 2001 11:24:57 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Richard Clark wrote:
>"True, most noise is local; but being local does not necessarily qualify
>it as being near-field."
>
>Right on target. I was careful to say in areas where the reactive field
>capacitive (electric field) energy is predominant, a small advantage may
>be obtained from a true Faraday shield.
>
This was covered LONG long ago, when everyone agreed that with a loop diameter or two a shield can have a meaningful influence.

I think it should be pointed out that the noise from a hairdryer plugged into a power line is NOT electric field dominant, and is not very likely at all to be capacitive coupled to the loop.

The noise is the result of transients introduced into the low or modest impedance power lines, and is largely CONDUCTED to the area of the loop on power lines. Since the impedance of the conducting media is low, it is more likely magnetic field dominant or directly coupled through unbalance in the system.

The power line operated hair dryer is a very poor example, as are all other line operated devices. Better examples of electric field dominant sources are corona discharges from the area of the loop itself, or perhaps hand-held battery power devices with internal sparks.

It would help if you consider the "antenna" or coupling mechanism of the noise source, and what the impedance of that "antenna" or coupling mechanism is.

By far. most noise sources of man made noise are modest to low field impedances near the media that propagates them.

Of course the impedance of the field impedance changes with distance, if it is a high impedance near the source it becomes a low impedance a modest distance away, and a low impedance source becomes a high impedance a modest distance away.

About 1/10th wavelength or so from a small loop (shielded or not), it is a high field impedance system. At the same distance from a short dipole, it become a low field impedance....so the magnetic field dominates.

All the shield in a "shielded loop" really does is change system
balance, and add a tiny bit of loss.

73 Tom

403. Re: Feed coax for long wire ant.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 19:14:54 UTC
From: 2w8ji@akorn.net
Message-ID: <3acf63d4.681119990@news.accessunited.com>
Source record: 166552

On Sat, 07 Apr 2001 13:26:37 -0500, Randon Loeb
<rloebusenet@cticonsulting.net> wrote:

>Hopefully will get the antenna up this weekend:
>1. For the coax feed, what is more appropriate for simple long wire
>ant., 300,75, or 50 ohm? Or go with whatever is cheapest and
>available? The plug will go into the 3.5mm ANT jack on a DX-390.

Again you will get all kinds of advice, so be careful.

Since this is a receiving-only application...you do not need to be worried about antenna impedance. Your proimary concern is lightning, and the safest thing you can do other than moving the wire away from the house is to use coax that os grounded to the utility line ground before entering the house, and using some other protection schemes for common-mode current that were already outlined.

Remember no matter what you hear, most damage comes from ground loops through the equipment. The antenna either tries to ground to the power line (and telco/CATV) through the radio...or vice versa.

There isn't a lightning gap device made that helps that problem. That why it is code to ground the power and telephone and CATV lines all to one common ground, yet CATV line (being coaxial) do NOT need a lightning arrestor!

Virtually any receiver has more gain than necessary even with a very bad mismatch between the antenna and the feedline.

Just feed the antenna with 50 or 75 ohm feedline, routing it and grounding it as described in another thread, and disconnect it from the radio and the radio from the outlet when not being used. It is, of couse, best to disconnect the feedline at the entrance point but you will be nearly perfectly safe with common point grounding.

I have a 300 foot tower, a 200 foot tower,and several large antennas over 100 feet in the air. I have miles and miles of coax and antennas spread out over a very large area, and because I ground everything correctly using shielded cables I don't have to disconnect a thing...and there isn't a single gas tube or lightning arrestor in my system any place.

Of course it is smarter to unhook things, and I would do that if I did't have dozens and dozens of connections to unhook.

Coax will be fine for your application, stay away from balanced or single wire lines until you are ready to transmit.

73 Tom

404. Re: New material appears to defy teh laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 19:17:36 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <papuctoc1hqac6kkdfc3lr6cmohcovl4nj@4ax.com>
Source record: 166553

On 7 Apr 2001 17:45:35 GMT, dennis@wawa.juniper.net (Dennis Ferguson)
wrote:

>
> n = sqrt(em)/sqrt(e0m0)
>
>where e0 and m0 are the free space values, is the index of
>refraction. The index of refraction is obviously the reciprocal
>of the velocity factor, so materials with an index of refraction
>less than 1 should indeed be rare. Note that square roots can
>have positive or negative values, you have to choose based on
>other considerations.
>

Hi Dennis,

You have been quite responsive, thank you.

However, for the quote above, it seems this introduces "imaginary"
concepts rather than negative possibilities.

1.2 SWR + 1.55 jSWR ?

The description of the fiberglass and so on:
>Though
>calling it a "material" is a bit odd, it was actually fiber glass
>circuit board substrate with patterns plated on both sides in copper,
>constructed in the form of a honey comb.

This is simply the conventional description for an artificial
dielectric and has been commonly employed for more than 50 years.
There is nothing described that answers where the minus sign comes
from.

I did an alta-vista search with the names of the two researchers and
found exactly ONE page. A death registry for family tree researchers.

73's
Richard Clark, KB7QHC

405. Re: New material appears to defy teh laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 19:24:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9anpir$g9i$1@slb5.atl.mindspring.net>
Source record: 166554

Group:

[snip]
> Apparently a Russian theoretician in the 1960's noticed that
> Maxwell's equations were quite happy to predict propagating waves
> through materials where both e and m were negative, since their
> product was still positive. He found, however, that he had to
> choose the negative of the square root above for energy to be
> conserved. This indeed gives you a negative index of refraction.
> Snell's law, i.e.
>
> n1 sin(a1) = n2 sin(a2)
>
> tells you what happens to the angle of refraction if you let one of the
> indices of refraction be negative. This entirely theoretical,
> nonexistant material had all sorts of other weird properties.
>
> What the article says is that researchers at UCSD constructed a
> material with negative e and m at X band frequencies, measuring the
> index of refraction to be -2.7 at 10.5 GHz using Snell's law above.
> They also measured teflon at the same frequency to verify the
> apparatus, getting +1.4 which apparently matches theory. Though
> calling it a "material" is a bit odd, it was actually fiber glass
> circuit board substrate with patterns plated on both sides in copper,
> constructed in the form of a honey comb.
>
> >Just what are the implications? In our own arena, it would equate to
> >a transmission line with a negative dielectric. Or more to the
> >matter, an antenna placed into a negative media (-377 Ohms?).
[snip]

Negative index of refreaction is a perfectly fine concept and mathematically consistent result.

All of these "results" are mathematically valid since they do satisfy all of Maxwell's equations. The mathematics is irrefutable!

So too do "imaginary Resistance and imaginary resistors" satisfy Maxwell's equations, see earlier posts to this NG by myself. i.e. Resistors with impeance Z = jR are perfectly valid and consistent with James Clerk Maxwell's celebrated equations.

As to the physical "reality" of such devices and/or materials that satisfy Maxwell's equations mathematically but are not generally found within our common experience... well that's another thing.

Just because "something" can be shown to be a "solution" to a set of partial differential equations doesn't mean it is "real".

On the other hand, many of these "strange", "weird" or "anomolous" solutions to Maxwell's equations can be posed and questions asked as to the possibility of their existence. That is one of the ways that new things are discovered.

In fact for some of these things which don't seem to occur naturally, man can often simulate them approximate them to some extent.

For instance "imaginary resistors" jR can be closely approximated, at great expense, over finite but small frequency ranges, certainly jR is simple to create over a vanishingly small or infinitesimal frequency range, a common reactance can do that, it's just that no one has yet found a way to create imaginary resistance which operates from DC to daylight.

Similarily it is entirely possible that the UCSD scientists have "created" a material which exhibits a negative index of refraction over some finite frequency range. I for one have no problem with that, it's believable.

As to phase delay, group delay, phase velocity, group velocity etc... there again it has long been known that over finite ranges of observable independent variables it is possible to create negative group delay, etc...

I have synthesized all pass networks constructed of simple coils and capacitors which were deliberately designed to exhibit negative group delay over small but finite frequency ranges... "group delay" is the negative derivative of the phase angle of impedance with respect to frequency and it has units of time. i.e. group delay = - d(Phi(f))/df. If one integrates the group delay with respect to frequency you end up with the phase characteristic again. If you observe small "groups" of narrow band wavelets or pulses traveling through a network they "seem" to be delayed by an amount of time equal to the local group delay. Neat, you can watch this on an oscilloscope for instance.

In fact over those small frequency ranges these "networks" seem to be anti-causal. That is the narrow band "pulses" that you send into the network with negative group delay seem to come out before they are applied. However if you look at the pulses in a much wider band you see that they do not.

Illusions? No! It's "reality". Just "unusual".

I think the scientists at UCSD were/are just demonstrating a similar pheonomena or "illusion".

Why not cut them some slack?

-Peter K1PO

406. Re: Feed coax for long wire ant.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 19:55:46 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <6hKz6.91800$Ok4.7279015@news1.rdc1.ct.home.com>
Source record: 166555

Tom, W8JI wrote:

> spread out over a very large area, and because I ground everything
> correctly using shielded cables I don't have to disconnect a
> thing...and there isn't a single gas tube or lightning arrestor in my
> system any place.
>
As would be done by the ground rod after the balun as suggested, and I'd also add a coaxial arrestor at that point But, I am missing something here....

Tom, how do you avoid tranverse voltages induced onto coaxial feed dipoles? Grounding the shields would only provide common-mode protection. Every broadcast station I've worked at had lightning gaps at the tower bases, and they were also certainly otherwise "well grounded".

> Of course it is smarter to unhook things, and I would do that if I
> did't have dozens and dozens of connections to unhook.

I use a common ground window on all lines entering the shack, with appropriate arrestors to suppress tranverse differential voltages between the shield and center conductor; including my power or Telco lines to limit both common and tranverse mode spikes..

>coax will be fine for your application, stay away from balanced or
> single wire lines until you are ready to transmit.
>

Whoa Tom, I can remember as teenager trying to sub have you ever substituted RG-58 and a ten meter whip on my AM car radio antenna. It really sucked. Depending on his coax length, I'd still go with the balun approach to minimize the higher impedance swings, and include a balun to decouple unwanted signals picked up and reradiated by the braid.

>remember no matter what you hear, most damage comes >rom ground loops
>hrough the equipment. The antenna either tries to ground >o the power
> the (and telco/CATV) through the radio...or vice versa.

I've often wondered about the claims made for the grounding bars I see advertised every month, along with the "braided" grounding straps for connecting to the equipment. Providing a lightning path through my gear is the last thing I want to do, other than for electrical safety reasons regarding AC leakage currents.

> 73 Tom

73

Pete

407. Re: Feed coax for long wire ant.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 20:03:01 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <VnKz6.91802$Ok4.7279984@news1.rdc1.ct.home.com>
Source record: 166556

"Peter J. Bertini" <commquart@home.com> wrote in message news:6hKz6.91800$

Let's try this paragraph again since I hit the 'send' key too early:

Change:

Whoa Tom, I can remember as teenager trying to sub have you ever
substituted RG-58 and a ten meter whip on my AM car radio antenna

To:

Whoa Tom, I can remember as teenager trying to sub RG-58 and a ten
meter whip on my AM car radio antenna. It really sucked

408. Re: K4WGE: William Ewald

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 20:16:21 UTC
From: Gerald Schmitt <kk5yy@arrl.net>
Message-ID: <mnsuct4dqglk6s04h2tdmkiel61f4k5uuu@4ax.com>
Source record: 166557

Mr. or Dr. Ewald,

Do not let this festering mass of pond scum disturb you. Based on the
writing style and threats implied, one has to conclude that this
missive was in reality penned by the apparently mentally ill Nathan
Cohen his own personal self.

Using a person's name and/or callsign as a subject line are classic
ploys of Herr Doktor Dipstick as we refer to Nathan locally.
This shoots a pretty big hole in his pathetic attempt to delude
us that Phil is posting this crap.

Didn't someone say something about a theoretical court order?

On 03 Apr 2001 23:22:09 GMT, fractenna@aol.com (Fractenna) wrote:

>William Ewald sent from his work office at the EPA in Research Triangle Park,
>North Carolina---
>
>>> Don't either of them believe in integrity?
>
>> I sure do! Being around a pioneer in a major new technology you
>> have to have that attitude William! (William is K4WGE by the way).
>
> Your cheerleading for Cohen isn't necessarily integrity.
>
>LOOKS LIKE I UNDERSTAND MY MOTIVATION (caps for ease of response) :-)
>
>
>>Integrity isn't something you display here though William. According to my
>>e-mail you had two new posts on the so-called "defunct e-list". So you say it
>>is defunct publicly and privately participate in it.
>
> Any reasonable person would conclude that 5 messages in the first
>quarter of 2001 approaches extinction. When the last message was
>posted in February, and my response were rejected, I concluded that
>fractalantennas was defunct. Just an observation, not a lapse of
>integrity.
>
>YOUS ASSERTED IT IS DEFUNCT IN ORDER TO DISCOURAGE OTHERS FROM USING IT. AND
>YET THE SAME DAY YOU POST TWICE!
>
>HOW CAN SOMETHING BEING USED BE DEFUNCT? ANSWER: IT'S NOT (caps for ease of
>response:-)) IF YOU DON"T LIKE IT THEN DON'T USE IT. EASY, DON'T YOU THINK?
>
>> I also checked with the moderator and he says you tried to post

>> twice last week. Your posts were rejected because they were
>> personal replies to an individual and not of general interest to
>> the membership.
>
> How would the membership make a judgment about interest if it
>doesn't see the messages?
>
>
>THE MEMBERSHIP DOESN'T MAKE THE DECISION. THE MODERATOR DOES. I CHECKED WITH
>HIM. YOU CAN CONTACT YAHOO GROUPS AND COMPLAIN IF YOU LIKE. BE SURE TO SHOW
>THEM THE REJECTED POSTS WHICH ARE RESPONSES FOR ONE PERSON. THEN BE PREPARED TO
>EXPLAIN WHY 300 PLUS OTHERS WOULD BENEFIT FROM THIS RESPONSE. BE PREPARED TO
>DEMONSTRATE THAT YOUR REJECTED POSTS WERE TOTALLY WITHIN THE PURVIEW OF THE
>LIST.
>
>ALSO WHY THE MODERATOR SHOULD HAVE TO DEAL WITH COMPLAINTS FROM OTHER MEMBERS
>JUST BECAUSE YOU WANTED TO SEND A SINGLE PERSON AN EMAIL ON THE LIST(caps for
>ease of response:-))
>
>
>Could I not infer from arbitrarily
>rejected posts that the list was defunct?
>
>NOT ARBITRARY.
>
>Why did the moderator not
>respond to the individual himself?
>
>BECAUSE HE ASSUMED YOU HAVE THE SMARTS TO SEND PERSON TO PERSON EMAILS RATHER
>THAN COPYING 300 PLUS OTHERS ON IT.
>
>> Sticking to fair and accomodating rules. That's integrity.
>
> The rules of fractalantennas are as fair and accommodating as
>those of the Red Queen.
>
>YOU ARE ENTITLED TO YOUR OPINION. YOU ARE NOT ENTITLED TO LIE AND PASS
>INCORRECT INFO TO DEFAME SUCH AS BELOW (from your earlier post as quoted)....
>
>
> If the moderator either has not enough time
>to be a moderator, or needs such complete control that almost
>nothing is posted, then the list is dead.
>
>> Making public and bizarre accusations that a ramping-up company is
>> illegal is not.
>
> Did I say FAS is illegal?
>
>

>YES. YOU SAID:
>
>*****
>"Specifically, "Phil" shills for "Chip" about the latter's
>defunct e-list, claiming it's viable, and we're to believe Fractal
>Antenna Systems is a legitimate operation."
>*****
>
>
>
> No, I said there was less at its
>website than meets the eye.
>
>READ WHAT YOU SAID.
>
>> Apparently there is quite a bit gathered about your operation
>> there William. Integrity means not giving libelious and malicious
>> persons the satisfaction of a response.
>
>
>> 73
>> Phil
>> de N1ZKT
>
> Who is being libelled? Who is being malicious? I merely question
>your puffery.
>
>NO YOU CHARACTERIZE A VIABLE AND ABOVE BOARD BUSINESS AS NOT LEGITIMATE. THAT
>IS WHAT YOU SAID.
>
> If you want fractalantennas to be viable, do something more
>proactive than claiming that it is.
>
>WILLIAM GIVEN YOUR JOB FOR THE EPA I TRUST YOU ARE IN A BETTER POSITION TO
>'CLEAN UP YOUR OWN ACT' (caps for ease of response).
>
>73
>Phil
>de N1ZKT
>
>
>
>
>
>
>

409. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 20:16:27 UTC
From: 2w8ji@akorn.net
Message-ID: <3acf6e9e.683882980@news.accessunited.com>
Source record: 166558

Hi Roger,

Actually I think you'll find Wes, Reg, Bart, Roy, Kevin, Ian, and myself all agree that current can not pass through a conductor several skin depths thick. While Bill agrees with most of our conclusions, he views the magnetic and electric fields as somehow penetrating the conductor....I don't quite follow the exact concept.

Roy Lewallen tried your approah and sent me a chunk of coax to measure, but unfortunately it was at ten MHz and the coax was only a few inches long.

The measurements DID show an increase in loss resistance when the shield was slipped over the center conductor, but unfortuately parasitic resistances dominated the results so it was impossible to match the theory numbers.

I tried a different test. I constructed a large fixture from copper and placed a current carrying conductor several inches long just a fraction of an inch or so away from the wall at the middle. The return path was a few inches further away.

The wall was about two feet square.

I built a "sniffer" for a RF millivolt meter from a small loop and a small dipole.

When I measured the magnetic field with the small loop, it was lowest directly in the center of the wall even though that was opposite the conductor. The current (magnetic field) was largest at the edges of the wall, and could clearly be traced as it spilled over the wall at each side. The electric field was very low, but that was true at every place in the system parallel to the wall. It was maximum between the conductor and the wall, but was roughly proportional to current at every place.

One of the devices I worked on was a small loop antenna used ion a medical application. Picture a deep frying pan with a pancake coil of heavy wire spaced a few inches off the pan bottom. The open end of the pan was placed near the patient,and held away by a molded plastic raised "lid".

I had to measure fields from that device.

It was no different with a Faraday shield than without one, except the Faraday shield allowed use of an UNbalanced assembly inside the loop housing. The Faraday shield, when properly constructed, balanced the

system and lessened detuning from proximity to patients. It did so WITHOUT changing the magnetic or electric fields a few inches away except for a very slight increase in loss. The loss increase was compensated by an improved pattern, so the net field at the desired point was the same or a bit better.

One key to making it work was the Faraday shield had to have every other wire grounded to the housing at opposite ends. There were something like 50-100 conductors each connected to a buss at opposite ends that was grounded at several points along the buss. The bulk of the electric field was moved to the very center of the shield that way, instead of being at the gap edge. This reduced current over the metal back housing housing, and made the loop tuning less senstive to resting on a patient (although it still moved quite a bit.

There really isn't much magic in this stuff. The folklore that a faraday shield can sort the electric field from the magnetic field in a time-varying wave is troubling, but it seems only one person in this discussion is stuck with that concept.

While Bill may disagree with the field penetrating a conductor, everyone (but one person) seems to agree on the rest of this.

73 Tom

410. Re: New material appears to defy the laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 20:56:52 UTC
From: "W.G. Ewald" <wgewald@att.net>
Message-ID: <mnvuctgc32dluhdjd3q1ms814bik7ibe95@4ax.com>
Source record: 166559

On Fri, 06 Apr 2001 20:28:28 -0500, Bill Aycock <baycock@hiwaay.net>
wrote:

>Careful reading of this will show that it is full of Pseudo-scientific
>blather. No scientist would use some of the phrases in this. "bend in an
>opposite direction" -- to what?

Sheldon Schultz

http://www-physics.ucsd.edu/fac_staff/profiles/ss.html

Selected Publications:

The Magnetization Reversal Mode for Individual Single-domain
Particles. With C. Salling, et al. J. Appl. Phys.75, 7989 (1994).

Measurement of Thermal Switching of the Magnetization of Single
Domain Particles. With M. Lederman, et al. J. Appl. Phys. 75, 6217
(1994).

A Scanning Near-field Optical Microscope for the Imaging of Magnetic
Domains in Optically Opaque Materials. With T.J. Silva, and D. Weller.
Appl. Phys. Letts., 65, 658 (1994).

Experimental and Theoretical Results for a Two-dimensional Metal
Photonic Band Gap Cavity. With D.R. Smith, et al. Appl. Phys. Letts.
65, 645 (1994).

Smith, D. R., Kroll, N., and Schultz, S., "Studies of a Metal
Photonic Band Gap Cavity", published in Proc. 3rd Workshop on Advanced
Accelerator Concepts, Lake Geneva, Fontana, Wisconsin, 12-18 June
1994, AIP Conf. Proc. 335, 761-76, (1995).

Silva, T. J., and Schultz, S., "A scanning near-field optical
microscope for imaging magnetic domains in reflection", published in
Rev. Sci. Instrum, 67 (3) 715-725 (1996).

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Rettori, C., Rao, D., Singley, J., Kidwell, D., Oseroff, S. B., Causa, M. T., Neumeier, J. J., McClellan, K. J., Cheong, S-W. , Schultz, S., "Temperature dependence of the ESR linewidth in the paramagnetic phase (T>Tc) of R1-xBzMnO3+d (R = La.,Pr; B = Ca, Sr)", accepted for publication in Phys. Rev. B, Feb (1997) issue.

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in J. Appl. Phys.

Pufall, M. R., Berger, A., and Schultz, S.: "Measurement of the scattered light magneto-optical Kerr effect from plasmon-resonant Ag particles near a magnetic film" to be published in Conf. Proc. of MMM'96 Atlanta 11/12-15/96 in J. Appl. Phys.

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411. Re: New material appears to defy the laws of physics - another link

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 21:07:03 UTC
From: "W.G. Ewald" <wgewald@att.net>
Message-ID: <6b0vctkcldppkhiu0eu47p747fahulhjff@4ax.com>
Source record: 166561

http://orpheus.ucsd.edu/cmrr/lhmedia/pressR.html

Notice it is to be published in Physical Review Letters in this announcement, not "Science".

"Composite materials like this are built on a totally new concept," said the two co-leaders of the UCSD team, Sheldon Schultz and David R. Smith, who announced their discovery at a news conference. "While they obey the laws of physics, they are predicted to behave totally different from normal materials and should find interesting applications."

The unusual property of this new class of materials is essentially its ability to reverse many of the physical properties that govern the behavior of ordinary materials. One such property is the Doppler effect, which makes a train whistle sound higher in pitch as it approaches and lower in pitch as it recedes. According to Maxwell's equations, which describe the relationship between magnetic and electric fields, microwave radiation or light would show the opposite effect in this new class of materials, shifting to lower frequencies as a source approaches and to higher frequencies as it recedes.

Similarly, Maxwell's equations further suggest that lenses that would normally disperse electromagnetic radiation would instead focus it within this composite material. This is because Snell's law, which describes the angle of refraction caused by the change in velocity of light and other waves through lenses, water and other types of ordinary material, is expected to be exactly opposite within this composite.

"If these effects turn out to be possible at optical frequencies, this material would have the crazy property that a flashlight shining on a slab can focus the light at a point on the other side," said Schultz. "There's no way you can do that with just a sheet of ordinary material."

He notes that the development of this new class of materials, which was financed by the National Science Foundation and the Department of Energy, is entirely consistent with the laws of physics and was predicted as a possibility in 1968 by a Russian theorist, V.G. Veselago. "But until now," Schultz adds, "no one had the material, so it couldn't be verified."

Underlying the reversal of the Doppler effect, Snell's law, and Cerenkov radiation (radiation by charged particles moving through a

medium) is that this new material exhibits a reversal of one of the "right-hand rules" of physics which describe a relationship between the electric and magnetic fields and the direction of their wave velocity.

The new materials are known by the UCSD team colloquially as "left-handed materials," after a term coined by Veselago, because they reverse this relationship. What that means is physically counterintuitive--pulses of electromagnetic radiation moving through the material in one direction are composed of constituent waves moving in the opposite direction.

The UCSD physicists emphasized that while they believe their new class of composites will be shown to reverse Snell's law, the specific composite they produced will not do so at visible-light frequencies. Instead, it is now limited to transmitting microwave radiation at frequencies of 4 to 7 Gigahertz-a range somewhere between the operation of household microwave ovens (3.3 Gigahertz) and military radars (l0 Gigahertz).

However, Schultz said the UCSD team will soon be attempting to verify that a composite constructed on similar principles will be able to focus and disperse microwaves in exactly the opposite manner as normal lenses. "We did not do this experiment yet," he said. "But this is what the equations predict. Physicists will understand that if our data presented in our paper are correct, given Maxwell's equations, then this will be the result."

The composite constructed by the UCSD team-which also consisted of Willie J. Padilla, David C. Vier, and Syrus C. Nemat-Nasser-was produced from a series of thin copper rings and ordinary copper wire strung parallel to the rings. It is an example of a new class of materials scientists call "metamaterials." "Even though it is composed of only copper wires and copper rings, the arrangement has an effective magnetic response to microwaves that has never been demonstrated before," said Schultz.

The idea for the new composite came from Smith, building on the work of John Pendry of Imperial College, London. In 1996, Pendry described a way of using ordinary copper wires to create a material with the property physicists call "negative electric permittivity." Electric permittivity--often referred to as the "dielectric constant"-is the response of a material to electromagnetic radiation.

"When you take a material like plastic, glass or sapphire and you shine microwaves onto it, you can characterize how the microwaves going through it will behave by a parameter called electric permittivity," explained Schultz. Most known materials in nature have a positive electric permittivity.

Pendry also recently suggested a way of using copper rings to make a material with negative magnetic permeability at microwave frequencies. Just about all of the magnetic materials in nature, those that respond to magnetic rather than electric fields, have what physicists call a "positive magnetic permeability."

What's unusual about the new class of materials produced by the UCSD team is that it simultaneously has a negative electric permittivity and a negative magnetic permeability, a combination of properties never before seen in a natural or man-made material

"And the interesting thing is that it's produced with no magnetic material," said Schultz. "It's all done with copper."

"The bottom line," said Smith, "is that this material-this metamaterial, at frequencies where both the permittivity and permeability are negative, behaves according to a left-handed rule, rather than a right-handed rule."

412. Overview of EMF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 21:07:16 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ACF8184.E82C0704@mwci.net>
Source record: 166560

The following discussion is traceable to Kraus "Electromagnetics" 1992 and to Skilling "Fundamentals of Electric Waves" 1948.

An RF electric circuit, in the practical world, is not a short circuit. Even a closed loop has reactance. Assume the loop is not movable. A time-changing H field induces a total EMF in the loop that is defined by Faraday's law. That is, the line integral around a complete closed path is the total EMF. The value of this total EMF is proportional to the rate of change of the flux encircled by the closed loop. This is the 1839 definition of Faraday's law.

Let the term Ee represent an electric field due to EMF.

If the path is not completely closed, but has a gap in which magnetically shielded items such as R, C and L components can be installed, then the induced Ee is determined as the line integral only along that part of the circuit that is coupled to the H field. The complete circuit may also contain other discrete sources of Ee such as generators and batteries. In a circuit it is incorrect to assume that Ee is due only to changing magnetic fields that are completely enclosed by the loop.

The circuit also consists of electric fields Ec due to charge distributions. These distributions reside in the wires and in the RLC components. Within the wires the charges at each point counterbalance induced Ee fields at that point in order to satisfy the requirement that the net E field at that point in a perfect conductor is zero.

It is necessary to understand one thing clearly. The only reason that the net E field at each location in the wire is zero is because of free electrons at that specific location, and not because of "lumps" of charge at some other location, for example at the ends of the conductor, that must "slosh" back and forth from one end to the other (fantastic!). The voltage that we measure with a voltmeter across the gap is due to the summation of all of the small increments of Ec along the length of the conductors. There is no other common sense explanation that can simultaneously satisfy the E = Ee + Ec = 0 requirement at every point on the wires. This sum of increments of Ec is identical to the negative sum of increments of Ee. This is true along any increment, no matter how small or large. As the H field oscillates, the

charges along each increment change magnitude and direction in order to keep E=0.

It is all done incrementally, where each small location draws upon the local pool of available free electrons. The end result is electrically equivalent to a current wave and a voltage wave that oscillate between the ends (assume a perfect open circuit at the gap). It is similar to a water trough, where each bit of water contributes its bit to the splashing of the waves against the end stops.

It is this sum of small Ec's, which is the negative sum of small Ee's (due to induction, generators, batteries, etc) that provides the voltage drop across, and the current through, the LCR components that bridge the gap in the wire path. The Ee's are involved only vicariously.

This circuit description satisfies Kirchhoff's voltage law, Faraday's law and Gauss's law (for electric fields) simultaneously around a "closed loop".

Bill W0IYH

413. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 21:09:53 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9anviv$8km$1@plutonium.btinternet.com>
Source record: 166564

Tom says -
> It is not just ME who disagrees with you Richard, it is everyone.
> Even Terman.
==========
Who is Terman ? Is he a disciple of the Goddess Eznec ?

Reg.

414. Re: New material appears to defy the laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 21:11:27 UTC
From: "W.G. Ewald" <wgewald@att.net>
Message-ID: <po0vct484gspgaeb5r10a32p9srtnc5vfm@4ax.com>
Source record: 166562

http://www.sciencenews.org/20000325/fob5ref.asp
Science News Online

http://jove.eng.yale.edu/pipermail/eas-info/2001/000054.html
Top Physics Stories

415. Re: High Power HF Antenna Suplliers?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 21:31:12 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3ACF871F.CE536902@haertig.com>
Source record: 166563

Kintronic Laboratories, Bluff City, Tenn.

Gray

Philip de Cadanet wrote:
>
> , Richard Harrison <richardharrison@webtv.net> writes
> >Philip de Cadanet wrote:
> >Grainger Associates
> >
> >Granger Associates was bought by DSC in Dallas maybe 15 years ago, I was
> >issued DSC stock in trade for my Granger stock. I sold it. That proved
> >to be the right trade.
> It's good to be forewarned.
>
> Thanks Richard.
>
> Any other HF LPA manufacturers in the US or Canada ?
>
> (((73)))
>
> Phil G4ZOW

--
Telecommunications Engineering
Gray Frierson Haertig & Assoc.
820 North River Street, Suite 100
Portland, Oregon 97227
503-282-2989
503-282-3181 FAX
gfh@haertig.com

416. Re: Are old TET beams any good ??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 21:31:49 UTC
From: jayvan <jayvan@jps.net>
Message-ID: <3ACF8745.F6CE8301@jps.net>
Source record: 166565

I also owned this antenna and had it up for 15 years. It performed extremely well. This Antenna spent several years up in the San Francisco Bay Area where it was exposed to high wind and salt air. The antenna was sprayed with clear Creylon paint which protected it from the salt air and the wind was not a problem. It performance was equivalent to the KLM-KT34 in my opinion. I wish you lived closer so I could talk you out of it.
Ka6otj

ETE wrote:

> I have an old (but still brand new in the box) TET HB43SP 4 elelment
> 20-15-10 meter beam made in Japan. I keep hearing that these were
> pretty good antennas till the Japanese owner died and the antenna
> company got sold to the Australians. It apparently uses dual driven
> elements. Any comments opinions on this old beam would be
> appreciated. I dont know whether to use it or sell it at the next
> ham fest. thanks. WB4JCY Please post to the newsgroup if you dont
> mind so others can read this. wb4jcy@arrl.net

417. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 21:37:40 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3ACF88A4.80919422@spam.me.not>
Source record: 166567

Makes me think the start of this whole thread was "canned"

-SSB

Dick Carroll wrote:

> Sideband wrote:
> >
> > What's a Kegal notice?
>
> Uh, that signifies draft instead of bottled...

418. Re: Severe Warning..... . 1852

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 21:38:31 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3ACF88D7.4E21C90D@spam.me.not>
Source record: 166566
Cross-posted to: rec.puzzles,rec.puzzles.crosswords,rec.pyrotechnics,rec.radio,rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.digital,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.homebrew

Hrm... seems to me it would be a BAD idea to hit that site....

-SSB

nqcncd@safety.net wrote:

> Security Alert.....
> For further information
> you must visit
> http://www.evidence-eliminator.com/go.shtml?A654833
> puboldrehucpfmelqpyxxwujexttipkulnswlzgpqrrgchlwunqiiq

419. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 22:16:34 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ACF91C2.7015F8F1@mwci.net>
Source record: 166568

Tom W8JI wrote:

> Hi Roger,
>
> Actually I think you'll find Wes, Reg, Bart, Roy, Kevin, Ian, and
> myself all agree that current can not pass through a conductor several
> skin depths thick. While Bill agrees with most of our conclusions, he
> views the magnetic and electric fields as somehow penetrating the
> conductor....I don't quite follow the exact concept.

The thing that is involved is not the penetration of surface current into the copper (no problem about that). I published an article on that subject.

(please read carefully before jumping onto your keyboards)

The issue is a voltage difference between two directly opposite points on the inner and outer surfaces of the shield. For this voltage difference there is no skin effect *through the thickness of the shield*. Because the impedance *through* the shield for this voltage difference at this point is very small, even at RF, a very large current would flow between the surfaces which would reduce this voltage difference to zero. The two surfaces would be "clamped" together, voltage-wise.

For independent or even related waves flowing on the two *surfaces* there is no guarantee that this kind of voltage difference *between the surfaces* problem will not occur.

Because of this problem, it is impossible to assume that a transverse voltage difference will not destroy the so-called "skin effect isolation". For true independence the two surfaces must also be independent voltage-wise as well as current-wise.

Keep in mind the following: At each point on the inside, and at the corresponding point on the outside, there is a voltage, measured with respect to the ground reference point. There is absolutely no guarantee whatsoever that those two voltages, as the result of two waves, have the same value. If they are even a few millivolts different, the game is over. Copper, take away the skin effect, is a marvelous conductor.

The entire skin effect isolation concept is a "loser", big time and from the get-go. It is one more bit of Ham Radio baggage that needs to be put out at the curb. It has been hanging around for many years and has unfortunately become part of the culture.

I have a demonstration idea that I will write up that I believe will clarify this matter.

Bill W0IYH

420. Re: New material appears to defy the laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 22:24:20 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3ACF9394.5BD56AA4@hiwaay.net>
Source record: 166469

I was in error in part of my post- there appears to be a real
announcement, and a real article in Science.
I retract a PART of what I wrote. However- I will defend a part also;
The writing of that article was abismally BAD- I stabd by my objection
to "Bend in an opposite direction" because there was no referent.

The article quoted was awful- and the choice of "Negative index of
refraction" must be a miss-application, according to the physical (NOT
mathematical) definition of the Index. I know that Square roots give
both positive and negative roots, but , as someone else said, it is
often the case that only one root has real application.
Index of refraction is a measure of the effect of the change in
wavelength of a wave as it crosses a boundary between two media. if the
wave path is not normal to the media boundary, the vector changes.
This can be treated many ways with mathematical tools, but the physical
reality of the change, measured as functions of the entry and departure
angles, allows no negatives- the index is a simple ratio of similar
measurements. Many things can be shown by mathematical manipulation, but
that does not change reality.

I suspect that the article was a cobled-up, hasty effort by someone who
did not reall ubderstand the published material he was cribbing from.

I want to read the real source of this material, not poorly done trash
like the one posted.

Bill
"W.G. Ewald" wrote:
>
> On Fri, 06 Apr 2001 20:28:28 -0500, Bill Aycock <baycock@hiwaay.net>
> wrote:
>
> >Careful reading of this will show that it is full of Pseudo-scientific
> >blather. No scientist would use some of the phrases in this. "bend in an
> >opposite direction" -- to what?
>
> Sheldon Schultz
>
> http://www-physics.ucsd.edu/fac_staff/profiles/ss.html
>
> Selected Publications:
>
> The Magnetization Reversal Mode for Individual Single-domain
> Particles. With C. Salling, et al. J. Appl. Phys.75, 7989 (1994).
>

> Measurement of Thermal Switching of the Magnetization of Single
> Domain Particles. With M. Lederman, et al. J. Appl. Phys. 75, 6217
> (1994).
>
> A Scanning Near-field Optical Microscope for the Imaging of Magnetic
> Domains in Optically Opaque Materials. With T.J. Silva, and D. Weller.
> Appl. Phys. Letts., 65, 658 (1994).
>
> Experimental and Theoretical Results for a Two-dimensional Metal
> Photonic Band Gap Cavity. With D.R. Smith, et al. Appl. Phys. Letts.
> 65, 645 (1994).
>
> Smith, D. R., Kroll, N., and Schultz, S., "Studies of a Metal
> Photonic Band Gap Cavity", published in Proc. 3rd Workshop on Advanced
> Accelerator Concepts, Lake Geneva, Fontana, Wisconsin, 12-18 June
> 1994, AIP Conf. Proc. 335, 761-76, (1995).
>
> Silva, T. J., and Schultz, S., "A scanning near-field optical
> microscope for imaging magnetic domains in reflection", published in
> Rev. Sci. Instrum, 67 (3) 715-725 (1996).
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> individual ferromagnetic sub-micron cylinders", (INTERMAG'95 San
> Antonio TX April 18-21, 1995)Published in IEEE Trans. Magn 31, #6,
> 3793-3795 (1995).
>
> Lederman, D., Vier, D. C., Mendoza, D., Santamaria, J., Schultz, S.,
> and Schuller, Ivan K., "A novel detection method of new
> superconductors", Applied Phys. Letters, 66, 3677 (1995).
>
> Smith, D. R., Kroll, N., and Schultz, S., "Design consideration for a
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> 6/18-30/95 Heraklion, Crete, Greece.
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> ordering temperature La1-xCaxMnO3+d", accepted by Phys.Rev. B-1, 8/96.
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> two-dimensional photonic band structure of the square lattice with
> dielectric cylinders", published in J. of Appl. Phys. 79, 582-594
> (1996).
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> Tonucci , R. J. "Preparation and quantitative magnetic studies of
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> DB-05), published in J. Appl. Phys.79 (8) 5303-5306, (1996).
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> using a magneto-resistive head as the sensing element", (MMM'95
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> 6067-6069 (1996).
>
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> Contact Recording and Diagnostics with a Raster-Scanned MR Head",
> published in Proc. INTERMAG'96, IEEE Trans. Mag. 32, #5, 3410-12
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> Schultz, S., "Temperature dependence of the ESR linewidth in the
> paramagnetic phase (T>Tc) of R1-xBzMnO3+d (R = La.,Pr; B
> = Ca, Sr)", accepted for publication in Phys. Rev. B, Feb (1997)
> issue.
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> 6/96.
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> microscopy (SMRM): imaging with a MR head", to be published in Conf.
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> "Fabrication and characterization of nanoscale arrays of nickel
> columns" to be published in Conf. Proc. of MMM'96 Atlanta 11/12-15/06
> in J. Appl. Phys.
>
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> particles near a magnetic film" to be published in Conf. Proc. of
> MMM'96 Atlanta 11/12-15/96 in J. Appl. Phys.
>
> Yamamoto, S. Y., Schultz, S., Zhang, Yun, and Bertram. H. Neal,
> "Scanning magnetoresistance microscopy (SMRM) as a diagnostic for high
> density recording", to be published in Proc. of TMRC'96 in IEEE Trans
> Mag. (1996).
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> Lake Tahoe, CA
>
> Li, Derun, Kroll, N., Smith, D. R., Schultz, S., and Wang., H.
> "Wake-field studies on photonic band gap accelerator cavities",
> accepted for publication in the Proceedings of the Advanced
> Accelerator Concepts Workshop, 10/12-18/96, Granlibakken
> Conf. Center, Lake Tahoe, CA

421. Speaking of insulated guys...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 22:35:44 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3acf963d.14026602@news.aepnet.com>
Source record: 166470

In the "Magic guy wire lengths" thread, On Tue, 3 Apr 2001 21:37:23 -0400,
"Frank Donovan" <donovanf@erols.com> wrote:

>Rudy,
>
> You should always use an insulator within a few feet of a guyed tower.
>It should be just far enough away so that a climber's head can't hit it
>(an insulator makes a much bigger "target" for the climber's head
>than the guy wire alone).

To which I commented:

"I have to ask... why?"

I haven't received a good (or any answer) to that question and currently my Rohn 45 fold-over has four guys at the 22' height that are solidly connected to the tower.

However, I am considering shunt feeding this thing on 40 and 80 meters so I would have to insulate them.

While I would never compromise safety for the sake of a few bucks, I do have in my possession (and can get more) some insulators removed from power line service.

My electric power is provided by a cooperative that I understand is a member of a larger association. Apparently some years ago, the association, or at least my cooperative, was sold a bill of goods and bought thousands of epoxy-coated insulators for their distribution lines. In the Arizona sunshine these degrade until they develop significant leakage current. (I understand that some have caught fire.)

As they are removed, they become available as giveaways. I have dissected one of these and they are constructed as follows:

The overall length is about 19".
The two ends are forged aluminum with holes that accept 5/8" diameter pins.
The structural insulator is a 3/4" fiberglass rod about 15" long.
There are ten 3 1/4" diameter epoxy "ribs" molded over the fiberglass rod.
There is forged into the aluminum the designation "Test 10K" which the power company guy says is the tensile strength rating.

My question for the group: Anyone see a problem with using them in my guy wires, other than they're going to look "different"?

Wes Stewart N7WS

422. Re: New material appears to defy teh laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-07 23:58:29 UTC
From: dennis@wawa.juniper.net
Message-ID: <9ao9j5$g3b$1@heap.juniper.net>
Source record: 166471

Richard Clark <kb7qhc@home.com> wrote:
>dennis@wawa.juniper.net (Dennis Ferguson) wrote:
>
>>
>> n = sqrt(em)/sqrt(e0m0)
>>
>>where e0 and m0 are the free space values, is the index of
>>refraction. The index of refraction is obviously the reciprocal
>>of the velocity factor, so materials with an index of refraction
>>less than 1 should indeed be rare. Note that square roots can
>>have positive or negative values, you have to choose based on
>>other considerations.
>>
>
>However, for the quote above, it seems this introduces "imaginary"
>concepts rather than negative possibilities.
>
>1.2 SWR + 1.55 jSWR ?

The square root of a positive value is real value, it is just that
the real value may either be positive or negative. Other
considerations force the choice of the positive square root
when e and m are both greater than zero, and the negative square
root when they're both less than zero.

An imaginary index of refraction can apparently occur in
materials where e<0 and m>0, or e>0 and m<0. Such materials
don't support EM wave propagation, however, and are reflective
rather than refractive.

>The description of the fiberglass and so on:
>>Though
>>calling it a "material" is a bit odd, it was actually fiber glass
>>circuit board substrate with patterns plated on both sides in copper,
>>constructed in the form of a honey comb.
>
>This is simply the conventional description for an artificial
>dielectric and has been commonly employed for more than 50 years.
>There is nothing described that answers where the minus sign comes
>from.

They apparently come from the microstructures printed on the circuit
boards. The boards had split ring structures on one side and fine
wires on the other, repeated over and over. These appeared that
they could be sized to be electrically resonant at about the wavelength

they were using, though the scale was unclear and they could have been smaller than this. They also talked about electronic and magnetic "plasma" frequencies for the structures as well. I understand what the electronic plasma frequency is for optics, more or less, but I would have had to read the references to figure out how this was relevant at microwave frequencies.

>I did an alta-vista search with the names of the two researchers and
>found exactly ONE page. A death registry for family tree researchers.

There are three names on the paper, R. A. Shelby, D. R. Smith and S. Schultz. If it is still like it was when I was in school, two of them might be the graduate students who did the actual work and one the professor who got the DARPA grant. It wouldn't surprise me if a couple of them weren't well known. Also fractals weren't used for anything, so it didn't sound all that implausible.

Dennis Ferguson

423. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 00:19:46 UTC
From: richardharrison@webtv.net
Message-ID: <21205-3ACFAEA2-26@storefull-114.iap.bryant.webtv.net>
Source record: 166473

Reg wrote:
"Tom says - it is not just ME who disagrees with you Richard, it is everyone. Even Terman.

Who is Terman? Is he a disciple of Goddess Eznec?"

I haven`t seen Tom`s message yet, but often his postings aren`t available on my screen for many hours after replies to them have appeared.

Anything posted by me or anyone else contrary to Terman has almost zero chance of being correct. Terman got it right before publication.

Reg jests. Many famous authors are Terman`s disciples.

Frederick Emmons Terman was President of the Institute of Radio Engineers in the early 1930`s. Terman was Professor of Electrical Engineeriig and Dean of the School of Engineering at Stanford University.

Terman didn`t write his books unassisted. He pressed the faculty at Stanford into cooperation in his publications. Terman recognizes their help on the title pages.

Terman recognized the value to Stanford in allowing and promoting some of Stanford`s unused land for an industrial park when some alumni wanted to start new ventures. It was Terman who invented Silicon Valley.

Best regards, Richard Harrison, KB5WZI

424. Re: New material appears to defy the laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 00:21:44 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3ACFAF18.A221BDD@hiwaay.net>
Source record: 166472

William-
I appreciate the many references, including the long list of
publications by one of the Authors.

However, I have not found any reference to "negative Index of
Refraction" in any of them. I still think that was a jumbled up mess
from a reporter, and a poor one, rather than from any of the real
authors of the scientific papers. The reporter seems to have grabbed
some catchy phrases out of thin air, rather than stick to the work,
which is exciting enough without puffery.

The work is very interesting, and we can probably expect some
surprizing real applications. (new, fundamental discoveries usually give
results not immediately apparent)

My objection is, and has been, to the poor reporting, not to the work,
or to the possibilities it offers.

Bill-W4BSG

"W.G. Ewald" wrote:
>
> http://www.sciencenews.org/20000325/fob5ref.asp
> Science News Online
>
> http://jove.eng.yale.edu/pipermail/eas-info/2001/000054.html
> Top Physics Stories

425. Re: Speaking of insulated guys...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 00:39:15 UTC
From: richardharrison@webtv.net
Message-ID: <22093-3ACFB333-1@storefull-111.iap.bryant.webtv.net>
Source record: 166474

Wes Stewart, N7WS wrote:
"Anyone see a problem with using them (19-inch insulators with forged ends) in my guy wires other than they are going to look different?"

Yes! The guy insulator is normally a ceramic egg in compression. If crushed, the guy slakens but remains intact. An insulator in tension has no remaining guy hook-up if the insulator fails. This is no big deal for antenna wires, but a tower falling is a much bigger deal.

Best regards, Richard Harrison, KB5WZI

426. Re: Speaking of insulated guys...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 00:50:23 UTC
From: richardharrison@webtv.net
Message-ID: <18401-3ACFB5CF-1@storefull-112.iap.bryant.webtv.net>
Source record: 166477

Wes Stewart, N7WS wrote:
"I have to ask why? (insulate within a few feet of a guyed tower)

The reason for guy breakup insulators is to prevent deformation of the antenna`s radiation pattern. Loss in the guys as elements in the radiation system are usually small. Insulating the guy wire near the tower lessens coupling and reduces re-rediation by the guy as a result.

Best regards, Richard Harrison, KB5WZI

427. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 01:02:01 UTC
From: 2w8ji@akorn.net
Message-ID: <3acfb7ea.702649271@news.accessunited.com>
Source record: 166476

On Sat, 7 Apr 2001 22:09:53 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Tom says -
>> It is not just ME who disagrees with you Richard, it is everyone.
>> Even Terman.
>==================================
>Who is Terman ? Is he a disciple of the Goddess Eznec ?
>---
>Reg.

Terman was a man Reg, human like all of us.

Like most of us, he relied on others to fill in the areas where his
knowlege was lacking.

His stuff is pretty good, as are most team efforts. The bad
information mostly comes from people who work alone, and who don't
consider other people's input.

73 Tom

428. Re: Speaking of insulated guys...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 01:10:35 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3ACFBA8B.3ABE1C58@haertig.com>
Source record: 166475

Fiberglass rod guy insulators operating under tension are pretty common practice in the broadcast industry. Failure is not unknown, but with periodic inspection failure rate is acceptable in the industry and to most applicable building authorities.

Ceramic has a very poor tensile strength but very high compression strength, hence the interlocking loop arrangement is a necessity of the design. That this is also a failsafe arrangement, is just an added feature. The very largest ceramic guy insulators do not have a failsafe design. Some, nearly the size of a Volkswagen beetle, were recently installed here in Portland on a new 1000' DTV tower located in the midst of an AM array.

Fiberglass, on the other hand, has a very high tensile strength and poor compression strength.

Gray

Richard Harrison wrote:
>
> Wes Stewart, N7WS wrote:
> "Anyone see a problem with using them (19-inch insulators with forged
> ends) in my guy wires other than they are going to look different?"
>
> Yes! The guy insulator is normally a ceramic egg in compression. If
> crushed, the guy slakens but remains intact. An insulator in tension has
> no remaining guy hook-up if the insulator fails. This is no big deal for
> antenna wires, but a tower falling is a much bigger deal.
>
> Best regards, Richard Harrison, KB5WZI

--
Telecommunications Engineering
Gray Frierson Haertig & Assoc.
820 North River Street, Suite 100
Portland, Oregon 97227
503-282-2989
503-282-3181 FAX
gfh@haertig.com

429. Re: New material appears to defy teh laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 01:48:43 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <73gvct0i7p0of91agdki118122tobc4jj6@4ax.com>
Source record: 166478

On 7 Apr 2001 23:58:29 GMT, dennis@wawa.juniper.net (Dennis Ferguson)
wrote:

>The square root of a positive value is real value, it is just that
>the real value may either be positive or negative. Other
>considerations force the choice of the positive square root
>when e and m are both greater than zero, and the negative square
>root when they're both less than zero.
>

Hi Dennis,

I'm having trouble with:
>The square root of a positive value is real value
which really says nothing new but to only bridge to:
>it is just that
>the real value may either be positive or negative.
sqrt(pv) = |rv|

This is not an identity, it is simply a forced argument. For one, it
does not show cause for rv being negative, it merely allows it. It
begs the question: from whence rv arrived that would allow a negative
evaluation?

Your observation of:
>An imaginary index of refraction can apparently occur in
>materials where e<0 and m>0, or e>0 and m<0. Such materials
>don't support EM wave propagation, however, and are reflective
>rather than refractive.
>
could be the argument for a conjugate mirror. Although conjugate
mirrors have been built for pulsed light, they don't exist for steady
light.

Here's one for the group:
What would you see if you looked into a conjugate mirror?

73's
Richard Clark, KB7QHC

430. Re: New material appears to defy the laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 02:04:40 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3ACFC738.4F100B3C@hiwaay.net>
Source record: 166479

It is interesting that the real author of the real work, Schulz, says :
> "While they obey the
> laws of physics, they are predicted to behave totally different from normal materials and should find interesting
> applications."

It was only the idiot reporter of the "news" article that said, as the thread notes,:
"> New material appears to defy the laws of physics"

Oh Lord- save us from the media!

Bill-W4BSG

"W.G. Ewald" wrote:
>
> http://www.sciencenews.org/20000325/fob5ref.asp
> Science News Online
>
> http://jove.eng.yale.edu/pipermail/eas-info/2001/000054.html
> Top Physics Stories

431. Re: s-band dish helix feed?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 02:13:37 UTC
From: Dale Parfitt <parinc@GTE.net>
Message-ID: <3ACFC8E6.8BC813C@GTE.net>
Source record: 166480
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.space

Lee wrote:

> How many turns should a helix be to give a -10 db beam width of 90? So far
> all I've been able to find are formulas for -3 db beamwidths.
>
> I've been given a Sony SAN-18S2 DSS dish which I'm going to try to use for
> AO40 on S-band. I'm building a helix feed for it and am stumped trying to
> figure out how many turns I need to properly illumenate the dish. Since it
> is an offset fed dish, I measured the angle from the top to the bottom as 90
> degrees when viewed from the old feed horn location. Measuring from side to
> side was also 90 degrees. Based on what I've read so far I would want a
> feed with a -10 db beamwidth of 90 degrees.
>
> The dish dimensions are 473mm (18 5/8 inch) wide and 538mm (21 3/16 inch)
> high.
>
> Thanks,
> Lee-KU4OS

I would not think a helix would be the most efficient feed. Got to W1GHZ home page and look at the different circular waveguide feeds. Most offset dishes have a high F/D (0.6- 0.7) and can be efficiently fed with these feeds.

Dale W4OP

432. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 02:47:33 UTC
From: richardharrison@webtv.net
Message-ID: <25057-3ACFD145-9@storefull-118.iap.bryant.webtv.net>
Source record: 166483

Now that Terman has been reintroduced, I`ll requote him from his 1955 "Electronic and Radio Engineering" page 38:
"Electrostatic Shielding" -

"Electrostatic shielding is obtained by enclosing the space to be shielded by a conducting surface. Accordingly, the magnetic and conducting shields for magnetic flux lines discussed above also serve as electrostatic shields. However, fairly effective electrostatic shielding can be obtained by a metal mesh made of any good to fair electrical conductor, which would be a rather poor shield for magnetic flux.

It is possible to shield electrostatic flux without simultaneously affecting the magnetic field by surrounding the space to be shielded with a conducting cage that is made in such a way as to provide no low-resistance path for the flow of eddy currents, while at the same time offering a metallic terminal upon which electrostatic flux lines can terminate." (This is the Faraday shield)

The above is true at 10 Hz and also true at 100 MHz. It is true at all frequencies in between. When Terman said conductingt shields for magnetic flux lines in the discussion above he had previously said: "Magnetic shields can be used for shielding alternating fields as well as d-c fields. In particular, they find extensive use at audio and power frequencies, particularly 60 cycles, where conducting shields (copper or aluminum) would have to be excessively thick to be effective." (These magnetic shields Terman speaks of, contain ferro-magnetic materials because of excessive skin depth in copper or aluminum at audio frequencies and the excessive thickness of these non-magnetic materials which would be required for effective shielding at low frequencies.)

Terman says that permalloy is quite effective as an r-f shield, better than copper or aluminum, but costs more. Terman says permalloy shields: "At these higher frequencies (r-f) they act as conducting shields, but because of their high permeability have less skin depth." (Copper or aluminum have shallow enough skin depth at r-f for effective shielding using relatively thin material.)

Best regards, Richard Harrison, KB5WZI

433. Re: Feed coax for long wire ant.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 02:58:50 UTC
From: 2w8ji@akorn.net
Message-ID: <3acfc8a9.706937345@news.accessunited.com>
Source record: 166481

On Sat, 07 Apr 2001 19:55:46 GMT, "Peter J. Bertini"
<commquart@home.com> wrote:

>Tom, how do you avoid tranverse voltages induced onto coaxial feed dipoles?
>Grounding the shields would only provide common-mode protection. Every
>broadcast station I've worked at had lightning gaps at the tower bases, and
>they were also certainly otherwise "well grounded".

I have lightning gaps at my tower bases also Peter, since they are
hundreds of feet tall. They get used quite often.

They are set just wider than the peak RF voltage will jump.

None of my dipoles or any other antennas have gaps. What good would
they do? If they let a kilovolt out, they will let more than a
kilovolt back in. There is no way any receiver will take that.

I do disconnect the center conductor with relays, since all
transmitting antennas go through a few RCS-8V's on the way to the
house.

My receiving antennas all drive preamplfiers, and they easily stand
the voltage impact during strikes even through the lines are connected
and have zero protection other than shield grounding.

>I use a common ground window on all lines entering the shack, with
>appropriate arrestors to suppress tranverse differential voltages between
>the shield and center conductor; including my power or Telco lines to limit
>both common and tranverse mode spikes..

OK. I have some MOV's on my power line and telco at the entrance. They
were here when I moved in.

>Whoa Tom, I can remember as teenager trying to sub have you ever
>substituted RG-58 and a ten meter whip on my AM car radio antenna. It
>really sucked. Depending on his coax length, I'd still go with the balun
>approach to minimize the higher impedance swings, and include a balun to
>decouple unwanted signals picked up and reradiated by the braid.

It depends on his ANTENNA length. He was talking about a reasonable
size longwire close to the earth, the mismatch is nothing like an 8
foot whip...and most of your problem was probably the car radio
anyway!

Old tube-type car radios ran the antenna into a very high impedance
input, and depended on the low capacitance cable to resonate the front
tuned circuit.

You had more worries than mismatch, because you seriously detuned the front end. My IC-706 works Ok connected through ten feet of RG-8X to a ten meter whip on 160 meters....for receiving. It gets me right into external noise when I use the preamp.

>I've often wondered about the claims made for the grounding bars I see
>advertised every month, along with the "braided" grounding straps for
>connecting to the equipment. Providing a lightning path through my gear is
>the last thing I want to do, other than for electrical safety reasons
>regarding AC leakage currents.

Common point grounding is a must. I use 3 inch wide flashing along my desk, everything, including the power line and feedlines, grounds there. It connects to the fuse box and the power line service ground. I have a buried #4 solid wire around the house that connects to everything entering the house and the TV tower.

Where my feedlines enter the "yard area", about 100 feet or so from the house, I have a copper flashing buss that everything grounds to. It has copper pipes driven through it and silver soldered to it along it's length, as well as buried radials. The fields for transmitting antennas have maybe 100 or 200 thousand feet of buried radials.

The sum of my lightning damage has been a few 2N3055's that send control voltages out the remote receiving antenna switching systems.

MOV's, even low voltage MOV's, were useless. I'd lose one transistor per storm. I cured the transistor failures with clamping diodes (6 amp 100 volt) that dump the voltage into a big electrolytic for positive pulses, and to ground for negative.

Now I have zero failures, except for the occasional vaporized matching transfomer or termination at the end of a Beverage when a tree near an antenna gets whacked. Even if that happens, none of my shack stuff fails.

434. Loose R7 Base Section - HELP!!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 02:59:30 UTC
From: roland@geter.org
Message-ID: <3acfd4fd.147701962@news.earthlink.net>
Source record: 166482
Cross-posted to: rec.radio.amateur.antenna,rec.amateur.radio.equipment,rec.radio.swap

The top section of my R7 base section has a very sloppy fit for the
first aluminum tubing. I've removed the loose pop rivet and am
looking for some kind of epoxy, tape, shim, etc. to fill the space
before I re-rivet the assembly. Anybody else solve this problem?
73's
Roland S Geter Sr - WB6LNA
Scottsdale AZ 85253-4421

435. Re: \\\\\\\\\\|||||||||||||||||||| Warning |||||||||||||||||||////////// . 586

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 03:42:14 UTC
From: Pyro Doug <":)"@disneyworld.com>
Message-ID: <3ACFDBF4.FE7043CE@disneyworld.com>
Source record: 166484
Cross-posted to: rec.puzzles,rec.puzzles.crosswords,rec.pyrotechnics,rec.radio,rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors

For starters this would be an excellent way to spread a virus to wipe a hard drive clean! So why trust you? anyone doing
illegal activity or at least dumb enough to store it on the Hard Drive instead of an encrypted CD deserves to get caught!
but the best thing to do is pop the cover and slam the HD with a hammer! thats that. I don't even keep the screws in the
back holding the mid-towers case since I am always upgrading CD-ROM's, Video Cards etc., as they get faster and cheaper! so
take this wasteful spam crap somewhere else, didn't you know pyro's are the most intelligent people on the face of the
earth?

PD

p.s. a self exploding device could easily be made by using whatever for the trigger and Boom, no more HD! just as fast as
the police can say, "Police we have a Warrant!"...If the information was of something of very classified importance like
what computer hackers get from our own defense department. other than that who really cares what porno sites can be traced,
my wife busted me many years ago before I learned how to clear the Documents folder which shows last pictures or Doc's
looked at! funny now but not then!

PD

uwjnkt@privacy5.com wrote:

> Every click you make on Windows 98 Start Menu
> is logged and stored for ever on a hidden encrypted database within your own computer?
> Frightening records of both your online and off-line activity are being stored on your computer.....thats not fair
>
> Your family or the authorities are now able find out what sites you surfed?
>
> You cannot delete thes files without.....
> http://www.evidence-eliminator.com/go.shtml?A657156
>
> You need to check this program out.....
> stgzcvbssutxhusdnsitmmgkuixdjklkinludjlkwqhecxzoldssdxclxvosfzkmmsmlwzulfgtv

436. Re: New material appears to defy the laws of physics - another link

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 03:53:53 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <irnvctkaqhll3cru1qha2qbaccu67l3ttm@4ax.com>
Source record: 166485

On Sat, 07 Apr 2001 21:07:03 GMT, W.G. Ewald <wgewald@att.net> wrote:

>
> "If these effects turn out to be possible at optical frequencies,
>this material would have the crazy property that a flashlight shining
>on a slab can focus the light at a point on the other side," said
>Schultz. "There's no way you can do that with just a sheet of ordinary
>material."
>

Hi All,

These folk have less sense than research money. The "next" step is to
build the working model (which at these frequencies is infinitely
easier) to prove the first step's theories (easily the most improbable
given the poor PR job evidenced above).

73's
Richard Clark, KB7QHC

437. Re: Loops

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 04:08:13 UTC
From: richardharrison@webtv.net
Message-ID: <25057-3ACFE42D-14@storefull-118.iap.bryant.webtv.net>
Source record: 166486

Reg jested with me on the identity of F.E. Terman. I`ll jest with Reg on what I thnk is only a faux pas in wording. Reg forewarned to pay attention to which diameter was being considered, the conductor, or the loop. Being exceptionally dull as some would attest, I still read Reg`s statement the wrong way.

Reg wrote:
"The larger the diameter of the main loop conductor the lower the loss resistance."

How can you lower the "loss resistance" of a loop by increasing its perimeter?

I believe that the reduced loss would be due to increased radiation resistance not to lower loss resistance with a bigger loop. I know Reg means "Use a bigger conductor to reduce loss in the loop'. that just wasn`t my first impression on reading the message.

Best regards, Richard Harrison, KB5WZI

438. FA: Premier RD-98 - 17" 2M/440 flexible antenna w/BNC New!!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 04:32:29 UTC
From: ravenfalls@aol.com
Message-ID: <20010408003229.27550.00002303@ng-fj1.aol.com>
Source record: 166487

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1228557016

View my webpage:
http://www.azradio.8k.com

Please reply with any questions directly.

Thx,

Joe

439. Re: New material appears to defy the laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 04:50:22 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <dcovctgsm82jmtepausdulkkm0ev61gpr9@4ax.com>
Source record: 166488

On Sat, 07 Apr 2001 21:07:03 GMT, W.G. Ewald <wgewald@att.net> wrote:

>
> The unusual property of this new class of materials is essentially
>its ability to reverse many of the physical properties that govern
>the behavior of ordinary materials. One such property is the
> Doppler effect, which makes a train whistle sound higher in pitch
>as it approaches and lower in pitch as it recedes.

> Similarly, Maxwell's equations further suggest that lenses that
>would normally disperse electromagnetic radiation would instead
>focus it within this composite material.
>
> "If these effects turn out to be possible at optical frequencies,
>this material would have the crazy property that a flashlight shining
>on a slab can focus the light at a point on the other side,"
>
> Underlying the reversal of the Doppler effect, Snell's law, and
>Cerenkov radiation (radiation by charged particles moving through a
>medium)

Hi All,

The points above, heavily editorialized to free them of baroque theory reveal what may be observed or "seen." The evidence of our eyes, that is. Here we come into what may be a parlor trick, or confirmation of belief.

I would make one simple observation of these observables. How do they differ in the results that may accrue of media of less than 1.00 dielectric constant? (Instead of being described as a negative dc.) All should note that there is absolutely no reference above that is a negative connotation.

I point out the last quote above as being significant to this enterprise. It is a rather poor rendition of Cerenkov radiation, which is the optical emission found at the wavefront presented between the radiation traversing a medium slower than an electrical transmission could traverse it.

Say what?

There are conductive crystals (I think the literature W.G. has proffered contains such examples) where a pulse of light shining through the crystal travels slower than a similar conductive pulse would. The consequence of this disparity is the creation of a blue hued wave front called "cerenkov radiation."

I would suggest this is the model for their composite. I cannot speculate further....

73's
Richard Clark, KB7QHC

440. FA: Premier RD-78 - 15" 2M/440 antenna w/BNC New!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 04:53:06 UTC
From: ravenfalls@aol.com
Message-ID: <20010408005306.27521.00002409@ng-fj1.aol.com>
Source record: 166489

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1228560217

View my webpage:
http://www.azradio.8k.com

Please reply with any questions directly.

Thx,

Joe

441. Re: Antennas and Static charge!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 05:36:09 UTC
From: R E Heath <re.heath@sympatico.ca>
Message-ID: <3ACFF84A.8996A5D9@sympatico.ca>
Source record: 166490

Tom W8JI wrote:
>
> On Fri, 06 Apr 2001 06:16:41 GMT, R E Heath <re.heath@sympatico.ca>
> wrote:
>
> >I too would like to hear of a simple solution to this problem. I'm using
> >a multiband dipole, a 128 ft flattop with ladderline down to my Johnson
> >Matchbox. I installed home made spark gaps at the balanced terminals on
> >the Matchbox. The really bad times for static buildup on the flattop are
> >usually near the beginning of a period of precipitation, either rain or
> >snow (I believe I understand the reason for this particular behavior).
> >The spark gaps prevent the previous flashover somewhere inside the
> >Matchbox. However, my receiver is essentially unusable until the
> >discharges cease. Anything I've tried so far to bleed off the charge has
> >burned up.
>
> A 50,000-100,000 ohm ten watt wire wound resistor will work as a
> bleeder.
>
> It will have a very high impedance across the HF region, and the
> resistance is low enough to bleed off the "charge" that collects on
> the antenna and feedline.
>
> In a balanced antenna, use two, one from each wire to ground.
>
> While this will stop the voltage difference between the feedline and
> earth, it will NOT stop the hissing or whining noise that comes from
> corona discharge. There is no way to stop that, except to lower the
> antenna or install an obect that is higher than the antenna nearby to
> distort the electric field between the earth and clouds.
>
> It also is not lightning protection.
>
> 73 Tom

Thanks Tom. Some years ago I'd tried both resistors and small inductors,
a pair in each case. I chose the values to have minimal effect on the
tuning. I think the resistors were half watt - I reasoned that should
handle the small current nicely and I was likely right. Most likely the
current couldn't bleed off quickly enough during periods of rapid charge
accumulation and high voltage finally fried the resistors. Once the
first flashover took place, the ultimate end was assured. The failure of
the small inductors is not as easy to explain although I think their
forms may have been high value resistors and there's room for suspicion

there. I'd thought of trying some beefier wire wounds but was somewhat weary of the whole thing and knew that spark gaps would work.

I'm quite sure your suggestion will work and will give it a try when the spark gap flashovers, corona and smell of ozone get to me one of these days! There are days however, when I rather enjoy the pyrotechnics!

Thanks.

Bob

442. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 06:37:01 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD0070D.E20B6200@IEEE.org>
Source record: 166548

Dick Carroll wrote:
>
> Fractenna wrote:
> >
> > everything new in science is pseudo science.
>
> No, not everything, but for sure there is a percentage of scams in
> science as elsewhere. Can you identify one? The rest of the readership
> here can.

Well, not the entire rest of the readership. You have proven yourself to
be close-minded about anything new be it good or bad. Folding is an ancient
method of putting antennas in a small space. Is it too much of a stretch
for your mind to comprehend that there may exist a most efficient folding
method and, more likely than not, that particular fold will be a fractal?
Mother Nature seems to have discovered fractals billions of years ago - why
haven't you?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

443. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 07:58:27 UTC
From: Cortland Richmond <ka5s@earthlink.net>
Message-ID: <3AD0192D.8783D487@earthlink.net>
Source record: 166491

Richard Harrison wrote:

> Tom, W8JI wrote:
>
> ... Cut slots to eliminate the eddy currents, and the shield doesn`t stop
> the magnetic field. ...

In a previous message, I doubted that the current in the shield of a shielded
loop is equal to the current in the loop, as its circuit is of much higher impedance than the loop; if equal current were present, this would require more power on the shield than is applied to a loop within it, violating the principle of conservation of energy.

In order to have the same current, a shield must have a circuit impedance close to that of the loop it shields. This occurs only if the loop terminals are
open-circuited themselves or if the shield is shorted at the gap. That is not
the condition of use; when the loop is open circuited, or when the shield is

short circuited, the loop neither radiates nor receives.

It is a required condition for the cancellation of the magnetic field due to a
current, that there be an equal and opposite current in the concentric conductor. Because there is an open circuit in the shield, that cannot happen
in a shielded loop. If we apply an RF current to the loop, it is not matched by
an equal and opposite current in the shield , which has no path through which that current may flow. The loop then radiates a field due to current flowing in it.

Unless we give up on reciprocity, a loop which can radiate, can also receive.

Cortland

444. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 08:24:12 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9ap77c$g36$0@208.207.71.164>
Source record: 166492

W6RCecilA wrote:
>
> Dick Carroll wrote:
> >
> > Fractenna wrote:
> > >
> > > everything new in science is pseudo science.
> >
> > No, not everything, but for sure there is a percentage of scams in
> > science as elsewhere. Can you identify one? The rest of the readership
> > here can.
>
> Well, not the entire rest of the readership. You have proven yourself to
> be close-minded about anything new be it good or bad.

Oh, yeah, I'm the guy who insists that radiotelegraphy is a quite valid
means of basic radio communications, in fact THE basic means of
radiocommunications, regardless of whatever else exists (A fact well
proven by 100 years of continuous usage) and you just can't stand it.
Therefore you must paint me as the most retrograde sort of Luddite who
automatically hates new things, whatever the truth.
I think your viewpoint has been clearly established. It is unsurprising
to see you leap to the assistance of Fraudtenna. Anything to slam CW and
anyone who sjupports it.

Folding is an ancient
> method of putting antennas in a small space. Is it too much of a stretch
> for your mind to comprehend that there may exist a most efficient folding
> method and, more likely than not, that particular fold will be a fractal?

Indeed! And our boy wonder won't, nay, CAN'T point to a single fact
which would offer to show where his folded "invention" has any of the
superior attributes he appears to claim for it, rather he belittles
everyone who asks as idiots and stupid because they don't instinctively
know it already! You'd leap onto such a offkey bandwagon just to prod an
old CW supporter? Your dislike for the mode is palpable!

> Mother Nature seems to have discovered fractals billions of years ago - why
> haven't you?

Fractals are fractals. Antennas are antennas. Fraudtenna is fraudulant.
So, evidently, are you.

445. Re: Lightning protection...again

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 08:37:44 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9ap80ohou0@208.207.71.164>
Source record: 166493

Tom W8JI wrote:
>
> On Thu, 05 Apr 2001 14:59:28 -0500, Randon Loeb
> <rloebusenet@cticonsulting.net> wrote:
>
> <snip>
>
> You will get a lot of answers, but the only SAFE thing to do is to
> disconnect the antenna where it enters the building during storms or
> when not in use.
>
> Spark gaps (especially spark plugs, which almost always have internal
> gaps and/or resistors) and gas tubes are next to worthless, because
> virtually all lightning damage is a current that loops through the
> system from "ground to ground" rather than a differential current from
> antenna to ground at the radio. They also fire at much too high a
> voltage, several hundred volts or more (likovolts in the case of a
> spark plug).
>
> I do not have a single gas tube in my installation, and I have MILES
> of feedlines and antenna spead out over a large area. I don't even
> disconnect the feedlines, there are simply too many of them. I rely on
> good grounding techniques, and use MOV's on power lines and telco
> lines.
>
> The path is almost always radio system ground to power line ground.
>
> Unplug your radio and disconnect the feedline OUTSIDE the house, and
> you will be very safe.
>
> If you don't want to do that, then feed the antenna against a ground
> system (a few ground rods a spaced five feet apart are OK for
> listening to SW) with coax and run coaxial cable to the point where
> the power line enters your house.
>
> GROUND the coax shield to the power line safety ground. It does not
> hurt to add a few more ground rods connected to the power line ground
> rod, and you should also coil up the coax in several turns maybe a
> foot in diameter before grounding it.
>
> After the coax grounds there, bury the coax along the house for some
> distance to the entrance point and use a coil of several turns of coax
> outside the house before entering.
>

> Even with all that, it is still a good idea to disconnect the radio
> from the power line and the feedline when not using it.
>
> What this does is make sure the antenna and the power line have a path
> OUTSIDE your house if lightning hits either one, so the current does
> not loop through your house..
>

While researching lightning at work I learned that a 6 foot steel radio equipment cabinet can develop over 10,000 volts drop across it during a lightning strike that enters the building. You just don't have much of a chance of fending off that sort of threat to your gear if the lightning gets inside.
By far the best protective schemes are as Tom says. Keep it outside if at all
possible and if not, have provisions previously made to keep all grounds at the same potential by common point grounding.

Dick

446. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 09:05:39 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad028f4.731591720@news.accessunited.com>
Source record: 166494

On Sun, 08 Apr 2001 07:58:27 GMT, Cortland Richmond
<ka5s@earthlink.net> wrote:

>In a previous message, I doubted that the current in the shield of a
>shielded
>loop is equal to the current in the loop, as its circuit is of much higher
>impedance than the loop; if equal current were present, this would require
>more power on the shield than is applied to a loop within it, violating the
>principle of conservation of energy.

You are missing, and will probably continue to miss, a key point.

The shield has almost perfect mutual coupling to the inner conductors.
It has the SAME impedance as a transfomer secondary would have with a
tuns ratio equal to the shield-to-center winding turns ratio.

This occurs because the INSIDE of the shield is driven by the inner
winding, and it is in parrale with the outside of the shield because
of the gap.

Look in almost ANY solid state amp with broadband transformers, and
you will see transformers made that way.

>In order to have the same current, a shield must have a circuit impedance
>close to that of the loop it shields. This occurs only if the loop terminals
>are
>open-circuited themselves or if the shield is shorted at the gap. That is
>not
>the condition of use; when the loop is open circuited, or when the shield is
>
>short circuited, the loop neither radiates nor receives.

Nonsense. You are ignoring coupling between the shield and the inner
winding.

73 Tom

447. Re: Antennas and Static charge!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 09:08:09 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad02a09.731869150@news.accessunited.com>
Source record: 166495

On Sun, 08 Apr 2001 05:36:09 GMT, R E Heath <re.heath@sympatico.ca>
wrote:

>Thanks Tom. Some years ago I'd tried both resistors and small inductors,
>a pair in each case. I chose the values to have minimal effect on the
>tuning. I think the resistors were half watt - I reasoned that should
>handle the small current nicely and I was likely right. Most likely the
>current couldn't bleed off quickly enough during periods of rapid charge
>accumulation and high voltage finally fried the resistors. Once the
>first flashover took place, the ultimate end was assured. The failure of
>the small inductors is not as easy to explain although I think their
>forms may have been high value resistors and there's room for suspicion
>there. I'd thought of trying some beefier wire wounds but was somewhat
>weary of the whole thing and knew that spark gaps would work.

You don't want chokes because they are always resonant someplace you
don't want when big enough to bypass high impeance lines and handle
any current.

Wire wound resistors are great for this application.

73 Tom

448. Re: Loops

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 09:13:00 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad02adb.732079261@news.accessunited.com>
Source record: 166496
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

On Fri, 06 Apr 2001 17:51:34 -0700, Cortland Richmond
<Cortland.Richmond@usa.alcatel.com> wrote:

>Reg Edwards wrote:
>
>> 'Tis a fact, a magloop is the most efficient of all antennas when it
>> has to confined to a small space not too near the ground.
>
>Johnson and Jasik (if I recall correctly) mention an efficient, small
>loop antenna formed of metal .02 wavelength across into a loop .02
>wavelength in diameter. Resonance is achieved by turning the ends of the
>sheet so they are parallel to each other and act as a capacitor.
>
>I haven't tried it, but it might be an interesting evening project. If I
>have remembered the dimensions properly, a ten meter loop could fit in a
>8 inch cube. That's why I doubt my memory is correct; it sounds far too
>good to be true!

Small loops are NEVER as efficient as people postulate because there
are many sources of losses that are ignored, and the radiation
resistance is so low.

Connections are critical, and the capacitor design is critical. So is
conductor loss.

Unless the antenna is jammed up against lossy ground or used on
multile bands, you are often much better off with a short dipole.

73 Tom

449. modifation`

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 11:22:34 UTC
From: herbc@thezone.net
Message-ID: <3ad049ef.8791551@news.thezone.net>
Source record: 166224

```
i need the modification for the ft10
hand held radio for the fiont of the radio not the insige
do u have or know where i can get it a goood site if so
emal me asap thanks.

email asap thanks

vo1um eddie
```

450. Re: Loops

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 12:07:08 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9apk5gbvk1@uranium.btinternet.com>
Source record: 166497

Richard Harrison wrote -
> Reg jested with me on the identity of F.E. Terman. I`ll jest with Reg on
> what I thnk is only a faux pas in wording. Reg forewarned to pay
> attention to which diameter was being considered, the conductor, or the
> loop. Being exceptionally dull as some would attest, I still read Reg`s
> statement the wrong way.
>
> Reg wrote:
> "The larger the diameter of the main loop conductor the lower the loss
> resistance."
>
> How can you lower the "loss resistance" of a loop by increasing its
> perimeter?
>
> I believe that the reduced loss would be due to increased radiation
> resistance not to lower loss resistance with a bigger loop. I know Reg
> means "Use a bigger conductor to reduce loss in the loop'. that just
> wasn`t my first impression on reading the message.
==========

Rich, with two loops each with two diameters I don't think the English language can eliminate the ambiguity. This is a case of one picture being worth a 1000 words. In my loop programs I avoid the problem by referring to loop perimeter. It is ironic that Tony's loop does not have a conductor diameter - it has a conductor width.

By the way, I do like your choice of the word 'jest'. Seems to be falling out of fashion on this side of the Atlantic. Was it Shakespeare who made it popular ?

Reg

451. Re: Loops

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 12:37:44 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9apluj$e6q$1@plutonium.btinternet.com>
Source record: 166498
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Tom wrote -
> Small loops are NEVER as efficient as people postulate because
there
> are many sources of losses that are ignored, and the radiation
> resistance is so low.
>
> Connections are critical, and the capacitor design is critical.
So is
> conductor loss.
==========
In addition to conductor, capacitor and ground proximity losses,
what are the other many sources you refer to ?

Reg.

452. Re: Loops

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 14:14:39 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad071ae.750212675@news.accessunited.com>
Source record: 166501
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

On Sun, 8 Apr 2001 13:37:44 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Tom wrote -
>> Small loops are NEVER as efficient as people postulate because
>there
>> are many sources of losses that are ignored, and the radiation
>> resistance is so low.
>>
>> Connections are critical, and the capacitor design is critical.
>So is
>> conductor loss.
>==========================
>In addition to conductor, capacitor and ground proximity losses,
>what are the other many sources you refer to ?
>----
>Reg.

Connections are a major source of loss, and you still can not ignore
what goes on in media around the loop.

453. Re: \\\\\\\\\\|||||||||||||||||||| Warning |||||||||||||||||||////////// . 586

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 14:25:23 UTC
From: Bis Wichy <wd0hco@ev1.net>
Message-ID: <3ad074d0_2@newsa.ev1.net>
Source record: 166502
Cross-posted to: rec.puzzles,rec.puzzles.crosswords,rec.pyrotechnics,rec.radio,rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors

I got a Mac. You PAY a little more.

But you get a much better machine without the hassles.

Honestly, you bought a cheap asian PC and Windoz
- go take your whining elsewhere and STOP spamming news groups.

YOU TWIT!

PS The Canadian Armed Forces, The Government of Germany and Israel no longer use Windows due to the stolen security certificates and rumors that NSA has the backdoor codes.

Besides, If your innocent, then you don't have anything to worry about.

You ARE innocent, aren't you ???? :^ O

454. Re: s-band dish helix feed?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 14:46:13 UTC
From: Lee <devnull@cfl.rr.com>
Message-ID: <VQ_z6.3915$Qi6.410907@typhoon.tampabay.rr.com>
Source record: 166503
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.space

"Dale Parfitt" <parinc@GTE.net> wrote in message
news:3ACFC8E6.8BC813C@GTE.net...
>
>
> Lee wrote:
>
> > How many turns should a helix be to give a -10 db beam width of 90? So
far
> > all I've been able to find are formulas for -3 db beamwidths.
> >
> > I've been given a Sony SAN-18S2 DSS dish which I'm going to try to use
for
> > AO40 on S-band. I'm building a helix feed for it and am stumped trying
to
> > figure out how many turns I need to properly illumenate the dish. Since
it
> > is an offset fed dish, I measured the angle from the top to the bottom
as 90
> > degrees when viewed from the old feed horn location. Measuring from
side to
> > side was also 90 degrees. Based on what I've read so far I would want a
> > feed with a -10 db beamwidth of 90 degrees.
> >
> > The dish dimensions are 473mm (18 5/8 inch) wide and 538mm (21 3/16
inch)
> > high.
> >
> > Thanks,
> > Lee-KU4OS
>
> I would not think a helix would be the most efficient feed. Got to W1GHZ
home
> page and look at the different circular waveguide feeds. Most offset
dishes have
> a high F/D (0.6- 0.7) and can be efficiently fed with these feeds.
>
> Dale W4OP
>
Hi Dale,

I looked at the circuilar feeds. At 2401 MHz I came up with a wave guide
6.65 inches across to get the required beamwidth. Someone in another forum
responded with the formula n=8400/BW^2*Pitch to give the number of turns for

a -10db beamwidth at a given pitch in wavelengths. Using 1 inch PVC with 1 inch spacing gives a pitch of .19. Plugging in the formula I get 5.5 turns.

I also have found a formula in another section of W1GHZ's book that relates the -3db beam width and -10 db beam width.
BW3db=A*SQRT(3/Taper). For a -10 db beam width of 90 degrees you'd have a 3db beamwidth of 49.3 degrees.

49.3=90*SQRT(3/10)

I got the idea of using a helix feed from reading several reports from others who had good results with it. I'd also just finished building the 16 turn helix on K5OE's web site, http://members.aol.com/k5oe/ and had enough material left over to build the dish feed. I also like the fact that I can mount the down converter directly at the feed to the dish/helix.

I've got the feed built but the mounting isn't working out quite like I thought it would. Once I get it mounted I'll try comparing the dish with the 16 turn helix.

73's,
Lee-KU4OS

455. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 14:49:03 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9aptov$d1k$0@208.206.142.79>
Source record: 166504

W6RCecilA wrote:
>
> There are fractal antennas being used now, Dick. They exist. They perform
> according to the laws of physics.

Ya don't say! Anyone who can read knows that. As well as some facts
about them NOGT brought forthby Fraudtenna. So why do you support his
position in the face of the evidence presented here?

That you deny their existence and feel
> that they perform worse than the laws of physics predict is just more
> of your delusional thinking. Reality exists, Dick, and doesn't perform
> according to your feelings.

You're quickly losing your grip on it.

456. Re: Inverted L as 1/2 wave

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 15:00:06 UTC
From: kelly@nospam.dvol.com
Message-ID: <3acfe581.84754429@news2.dvol.com>
Source record: 166505

On Sat, 07 Apr 2001 04:10:16 GMT, "Peter J. Bertini"
<commquart@home.com> wrote:

>Pardon the elementary nature of this post..
>
>I've been playing with Reg's DOS programs
>
He programs with Pasca. They do run nicely in DOS windows.
>
> trying to come with a low band
>antenna for 160/80 and 40 meters. So far I've come up with a 40-meter
>dipole feed with 1/4 wave of 450-ohm ladder line. I also intend to feed the
>antenna in a T configuration, running as a 1/4 wave end fed on 160, and a
>1/2 wave on 80 meters.
>
I've been trying to sketch your antenna in my head and I'm completely
confused. Check me: You have a 40m dipole (70 feet long) fed in the
center with a quarter wave length of ladder line (35 feet)?? That
would be a total of 3/4 wavelength worth of wire on 40m, 3/8 of a
wavelength of wire on 80m and 0.188 wavelength on 160. I doan get it.

>
>I assume the 1/2 wave gives a relatively high DX angle, vs. what a 1/4 wave
>would provide. But, how do things 'even out' in the real world given the
>extremely high efficiency of the halfwave due to less dependence on the
>radial system? I would have a hard time installing a radial system for a
>1/4 wave that would come close to the efficiencies with a 1/2 wave radiator.
>
An inverted L is usually considered a half-wave end fed wire half of
which is vertical and half of which is horizontal on it's lowest
frequency of operation. The feedpoint impedances are huge which
minimizes the need for radials. I've had 80m inverted Ls and I can
attest to the fact that they work really well on both 80 and 40. 65
feet up vetically and 65 feet horizontally with a simple ground rod at
the tuner. But they were terrible antennas on 160. A 160m inverted L
would require 270 feet of wire to be a decent antenna without radials.
???
>
>Any ideas how I could squeeze a 30 meter dipole into this mess?
>
>
>Pete
>
w3rv

457. mount ant on Jeep?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 15:08:23 UTC
From: al <ke4nu@hotmail.com>
Message-ID: <RErA6.159$6v3.1231@newsfeed.slurp.net>
Source record: 166339

Got a jeep wrangler, just wondering if anyone out there has mounted a vhf/uhf antenna on one. How and where would be nice too. Looks like a control head should mount well inside the jeep. any ideas let me know please..73..Alan

458. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 15:15:08 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AD0807C.DBA24E22@toast.net>
Source record: 166506

Tom W8JI wrote:

> Hi Roger,
>
> Actually I think you'll find Wes, Reg, Bart, Roy, Kevin, Ian, and
> myself all agree that current can not pass through a conductor several
> skin depths thick. While Bill agrees with most of our conclusions, he
> views the magnetic and electric fields as somehow penetrating the
> conductor....I don't quite follow the exact concept.
>
> Roy Lewallen tried your approah and sent me a chunk of coax to
> measure, but unfortunately it was at ten MHz and the coax was only a
> few inches long.
>
> The measurements DID show an increase in loss resistance when the
> shield was slipped over the center conductor, but unfortuately
> parasitic resistances dominated the results so it was impossible to
> match the theory numbers.
>
> I tried a different test. I constructed a large fixture from copper
> and placed a current carrying conductor several inches long just a
> fraction of an inch or so away from the wall at the middle. The return
> path was a few inches further away.
>
> The wall was about two feet square.
>
> I built a "sniffer" for a RF millivolt meter from a small loop and a
> small dipole.
>
> When I measured the magnetic field with the small loop, it was lowest
> directly in the center of the wall even though that was opposite the
> conductor. The current (magnetic field) was largest at the edges of
> the wall, and could clearly be traced as it spilled over the wall at
> each side. The electric field was very low, but that was true at every
> place in the system parallel to the wall. It was maximum between the
> conductor and the wall, but was roughly proportional to current at
> every place.
>
> One of the devices I worked on was a small loop antenna used ion a
> medical application. Picture a deep frying pan with a pancake coil of
> heavy wire spaced a few inches off the pan bottom. The open end of the
> pan was placed near the patient,and held away by a molded plastic
> raised "lid".
>

> I had to measure fields from that device.
>
> It was no different with a Faraday shield than without one, except the
> Faraday shield allowed use of an UNbalanced assembly inside the loop
> housing. The Faraday shield, when properly constructed, balanced the
> system and lessened detuning from proximity to patients. It did so
> WITHOUT changing the magnetic or electric fields a few inches away
> except for a very slight increase in loss. The loss increase was
> compensated by an improved pattern, so the net field at the desired
> point was the same or a bit better.
>
> One key to making it work was the Faraday shield had to have every
> other wire grounded to the housing at opposite ends. There were
> something like 50-100 conductors each connected to a buss at opposite
> ends that was grounded at several points along the buss. The bulk of
> the electric field was moved to the very center of the shield that
> way, instead of being at the gap edge. This reduced current over the
> metal back housing housing, and made the loop tuning less senstive to
> resting on a patient (although it still moved quite a bit.
>
> There really isn't much magic in this stuff. The folklore that a
> faraday shield can sort the electric field from the magnetic field in
> a time-varying wave is troubling, but it seems only one person in this
> discussion is stuck with that concept.
>
> While Bill may disagree with the field penetrating a conductor,
> everyone (but one person) seems to agree on the rest of this.

Since you already have that fixture, it might be interesting to apply a fast-rise pulse to one side, and look at the first and second sides of the plate with a dual channel scope (with equal length probes). If the high-change-rate stuff has to go around the edges, there should be about a 4 ns. delay in the pulse metered at the back side. If it went through the plate, there would be no measurable difference.

john

459. WTB: spreaders for open wire line

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 15:21:28 UTC
From: k9sqg@aol.com
Message-ID: <20010408112128.09123.00002474@ng-mm1.aol.com>
Source record: 166507

Anybody have any new old stock open wire spreaders? Johnson made them and perhaps others. Interested in 2 inch, 4 inch, and 6 inch.

73s,

Evan

460. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 15:48:34 UTC
From: Donaly <dtdonaly@pacbell.net>
Message-ID: <3AD08851.6AD2@pacbell.net>
Source record: 166513

Cortland Richmond wrote:
>
> I am in fact assuming that there IS coupling between the loop and the shield,
> considered as transformer windings. I am saying, yes, indeed, its possible that
> the voltage across the shield gap is the same as the loop terminal voltage. Then
> I ask, "What is the consequence of this as far as the fields each one-turn
> winding creates?"
>
> It seems you are confusing a winding wth a circuit.
>
> In a transformer, if the secondary is open circuited, when you apply voltage to a
> primary, you'll have the same voltage across any identical windings' terminals.
> But the current in the primary won't be replicated in such a secondary. A finite
> current will flow in the primary, while an infinitesimal current will flow in the
> secondary. This is normal operation for a transformer.
>
> Current can only flow from a winding if the circuit is completed. In this case,
> it is completed to the tune of perhaps a megohm. Assuming one ohm windings, with
> 1 amp applied to the one of them -- the primary -- then for a 1 amp current to
> flow in the secondary, a votlage of 1 MV must be present, and a power of 1
> megawatt.
>
> We only applied 1 volt at one amp, or one watt. Where did the other 999,999 watts
> come from?
>
> Cortland
>

In an ideal transformer, or even a very good one, where the
coupling between the primary and the secondary is good,
the output impedance has an influence on the input impedance.
In a one to one transformer, the input impedance will be the output
impedance. This is basic circuit theory, which neglects the
influence of the dimensions of circuit components in its analysis.
In the case of antennas, length is an important parameter that
allows a piece of wire to have a current, even though
its ends aren't connected. I believe you may want to rethink
your ideas about current in the shield of a shielded loop, Cortland.

Tom Donaly KA6RUH

461. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 16:20:03 UTC
From: Cortland Richmond <ka5s@earthlink.net>
Message-ID: <3AD08EBE.9CCEEA96@earthlink.net>
Source record: 166508

I am in fact assuming that there IS coupling between the loop and the shield, considered as transformer windings. I am saying, yes, indeed, its possible that the voltage across the shield gap is the same as the loop terminal voltage. Then I ask, "What is the consequence of this as far as the fields each one-turn winding creates?"

It seems you are confusing a winding wth a circuit.

In a transformer, if the secondary is open circuited, when you apply voltage to a primary, you'll have the same voltage across any identical windings' terminals. But the current in the primary won't be replicated in such a secondary. A finite current will flow in the primary, while an infinitesimal current will flow in the secondary. This is normal operation for a transformer.

Current can only flow from a winding if the circuit is completed. In this case, it is completed to the tune of perhaps a megohm. Assuming one ohm windings, with 1 amp applied to the one of them -- the primary -- then for a 1 amp current to flow in the secondary, a votlage of 1 MV must be present, and a power of 1 megawatt.

We only applied 1 volt at one amp, or one watt. Where did the other 999,999 watts come from?

Cortland

Tom W8JI wrote:

> On Sun, 08 Apr 2001 07:58:27 GMT, Cortland Richmond
> <ka5s@earthlink.net> wrote:
>
> >In a previous message, I doubted that the current in the shield of a
> >shielded
> >loop is equal to the current in the loop, as its circuit is of much higher
> >impedance than the loop; if equal current were present, this would require
> >more power on the shield than is applied to a loop within it, violating the
> >principle of conservation of energy.
>
> You are missing, and will probably continue to miss, a key point.
>
> The shield has almost perfect mutual coupling to the inner conductors.
> It has the SAME impedance as a transfomer secondary would have with a
> tuns ratio equal to the shield-to-center winding turns ratio.
>
> This occurs because the INSIDE of the shield is driven by the inner
> winding, and it is in parrale with the outside of the shield because
> of the gap.

>
> Look in almost ANY solid state amp with broadband transformers, and
> you will see transformers made that way.
>
> >In order to have the same current, a shield must have a circuit impedance
> >close to that of the loop it shields. This occurs only if the loop terminals
> >are
> >open-circuited themselves or if the shield is shorted at the gap. That is
> >not
> >the condition of use; when the loop is open circuited, or when the shield is
> >
> >short circuited, the loop neither radiates nor receives.
>
> Nonsense. You are ignoring coupling between the shield and the inner
> winding.
>
> 73 Tom

462. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 16:48:10 UTC
From: richardharrison@webtv.net
Message-ID: <22093-3AD0964A-18@storefull-111.iap.bryant.webtv.net>
Source record: 166511

Tom, W8JI wrote:
"---everyone (but one person) seems to agree on the rest of this."

Truth is not the result of a vote. Green frogs following a rain does not mean it rained green frogs. Making a number of staterments and declaring everyone agrees is almost certainly wrong. Someone disagrees with something.

Here is what I now believe about a conventional shielded loop by the numbers so that an area of disagreement can be identified and resolved.

Imagine a conventional single turn coaxial loop, the center conductor driven by a generator.

1) The generator pumps current through the short loop.

2) The shield is grounded opposite a break.

3) The r-f shield is several skin thicknesses deep and disallows radial current to penetrate the shield.

4) Current that the generator pumps through the short loop induces opposite and almost equal current in the inner surface of the shield pipe.

5) Where does the induced current current on the inside surface of the shield pipe go? The shield break does not allow this current to continue around the interior of the shield.

6) The voltage across the shield gap is almost the same as the generator voltage. There is a continuation of the inside surface on the outside surface of the shield around the butt ends of the shield pipe.

7) The outer surface of the shield becomes the small loop antenna.

8) As a receiving antenna, the path direction reverses everywhere. Rciprocity rules.

Best regards, Richard Harrison, KB5WZI

463. Re: Inverted L as 1/2 wave

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 16:52:54 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <GH0A6.93700$Ok4.7433272@news1.rdc1.ct.home.com>
Source record: 166509

"Brian Kelly, w3rv" <kelly@nospam.dvol.com> wrote in message
news:3acfe581.84754429@news2.dvol.com...
> On Sat, 07 Apr 2001 04:10:16 GMT, "Peter J. Bertini"
> <commquart@home.com> wrote:
>
> >
> I've been trying to sketch your antenna in my head and I'm completely
> confused. Check me: You have a 40m dipole (70 feet long) fed in the
> center with a quarter wave length of ladder line (35 feet

Tower is 65 feet, so feedline would be nearly 1/4 wave on forty; which
would really only work if I had enough height for 1/2 wave of ladder line.
Looks it will have to be coaxial feed.

>
> >
>> >
> An inverted L is usually considered a half-wave end fed wire half of
> which is vertical and half of which is horizontal on it's lowest
> frequency of operation.

I thought the most common inverted Ls used 1/4 wavelengths; wouldn't 1/2
wave place the high current point at the transistion point between
horizontal and vertical polarization? Or, would that have some benefits for
short range communications?

The feedpoint impedances are huge which
> minimizes the need for radials. I've had 80m inverted Ls and I can
> attest to the fact that they work really well on both 80 and 40. 65
> feet up vetically and 65 feet horizontally with a simple ground rod at
> the tuner. But they were terrible antennas on 160. A 160m inverted L
> would require 270 feet of wire to be a decent antenna without radials.
> ???
> >
The plan was a 1/4 wave T on 160, coax feed dipole for 40, and 1/2 wave T
on 80, all operating against the best radial system I could manage, which
would be marginal.
> >
> >
> >Pete
> >
> w3rv

464. Re: WTB: spreaders for open wire line

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 16:54:12 UTC
From: LB <l.s.booth@worldnet.att.net>
Message-ID: <UI0A6.13332$IJ1.1133987@bgtnsc05-news.ops.worldnet.att.net>
Source record: 166510

I am interested also, am considering using 1/2" Lexan rod that is available
and fairly cheap from local plastics distributor. The question is do you
slot or drill the rods? And how best to lock wire in place?

"K9SQG" <k9sqg@aol.com> wrote in message
news:20010408112128.09123.00002474@ng-mm1.aol.com...
> Anybody have any new old stock open wire spreaders? Johnson made them and
> perhaps others. Interested in 2 inch, 4 inch, and 6 inch.
>
> 73s,
>
> Evan

465. FA: CDR Model TR-44 antenna rotator system

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 17:56:28 UTC
From: BH <nbc_redx@hotmail.com>
Message-ID: <3AD0988C.2C6652B6@hotmail.com>
Source record: 166512

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1228640288

466. Antenna Parasitics Question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 18:20:47 UTC
From: Jack Malone <malonej@c2i2.com>
Message-ID: <td1b04hbck0d3e@corp.supernews.com>
Source record: 166514

We know that a coax fed horiz. dipole should be fed at a right angle so the shield won't become a parasitic, but what about a 1/2 wave vertical mounted antenna. Can it be center fed with the coax running 5" from & parallel to the bottom element of the dipole without the coax shield becoming a parasitic? The dipole will be mounted on PVC pipe with wooded dowel rods inside it for stiffness.
Any comments are welcome.
--
73's
Jack, W7EJJ
w7ejj@arrl.net

467. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 18:40:20 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad0af7d.141432@news.accessunited.com>
Source record: 166515

On Sun, 08 Apr 2001 09:05:39 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:

>On Sun, 08 Apr 2001 07:58:27 GMT, Cortland Richmond
><ka5s@earthlink.net> wrote:
>
>>In a previous message, I doubted that the current in the shield of a
>>shielded
>>loop is equal to the current in the loop, as its circuit is of much higher
>>impedance than the loop; if equal current were present, this would require
>>more power on the shield than is applied to a loop within it, violating the
>>principle of conservation of energy.
>

In an attempt (I know this is probably a vain attempt) to dispell the
myth that the shield has a low impedance while the center conductor
does not, I stuck a loop together out of some 1" copper water pipe I
use for ground rods. It was in 3.3 foot lengths...so the loops was
about 3.3 foot on a side, close to earth, and vertical.

I measured it with a 32-bit A/D conversion prototype analyzer...which
is probably not perfect but should be close. Here's what I got on 1.8
MHz with a square loop:

Tubing alone less than 1 ohm j40 across gap

#16 wire about the same shape measured about 1 ohm j68

#16 wire placed inside tubing just over 1 ohm j43

#16 wire inside tubing (open circuit) with tubing gap measured showed
1 ohm j40 across the tubing gap

Same test #16 wire shorted, over 1 ohm j5

Same test (shield gap measured) #16 wire resonanted-- over 4000 ohms
(overflow on meter)
Same configuration but inner wire measured and shield resonanted
--over 4000 ohms

So much for the shield having a low impedance.

Same configuration with center resonated and loaded with a 50 ohm
resistor shield gap measured about 52 ohms j2.

Same configuration with shield resonated and loaded with 50 ohm
resistor and center wire measured--- center wire measures about 54
ohms j0.

Gosh, the loop behaves exactly like a transformer! The shield and center conductor have about the same impedance.

Woops. There goes the "low impedance shield" theory.
The shield acts just like the center conductor, and vice versa. All the shield does is change the system balance...and become the actual antenna that couples to the outside world.

73 Tom

468. Re: WTB: spreaders for open wire line

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 19:04:19 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3AD0B634.BBEC95F7@haertig.com>
Source record: 166516

Using 1/2" round lexan stock, make a 3/16" deep tangential slot, about 1/2" from each end of the spacer. That is, instead of putting the slots in the end of the rod, put them in the sides of the rod, about 1/2" from each end. The slots should be parallel and on the same side (not end) of the rod.

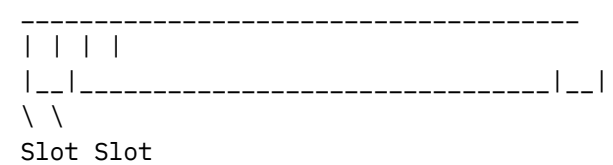
With the slots on upside of the rod, lay the feeder wire in the slot and take a 2" piece of #14 soft copper wire and middle it around the bottom of the rod rod immediately adjacent to the outboard side of the feeder wire and. The two ends of the tie wire should be pointing straight up on either side of the rod. Take each loose ends of the tie wire and bend it over the adjacent feed wire. This leaves the two ends pointing straight down. Using a pair of lineman's pliers twist the two ends together in a pigtail on the bottom of the rod. Use the pliers to leverage the slack out of the tie wire as you twist it tight against the rod. Trim the pigtail to a neat length using the cutters on the lineman's pliers.

You can also use small black wire ties to do the same thing, but I think the copper wire will last longer, and can be pulled tighter.

It is helpful to have the feeder wires under a bit of tension wile doing this.

For those that have done concrete work, this is identical to a saddle tie used to tie perpendicular pieces of rebar together.

Gray



--
Telecommunications Engineering
Gray Frierson Haertig & Assoc.
820 North River Street, Suite 100
Portland, Oregon 97227
503-282-2989
503-282-3181 FAX
gfh@haertig.com

469. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 19:05:22 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad0b0c3.467314@news.accessunited.com>
Source record: 166517

On Sun, 08 Apr 2001 16:20:03 GMT, Cortland Richmond
<ka5s@earthlink.net> wrote:

>I am in fact assuming that there IS coupling between the loop and the shield,
>considered as transformer windings. I am saying, yes, indeed, its possible that
>the voltage across the shield gap is the same as the loop terminal voltage. Then
>I ask, "What is the consequence of this as far as the fields each one-turn
>winding creates?"

The voltages are equal with a one turn center and a one turn shield.
You can step the impedance up or down with the turns ratio, but it has
no consequence except for the impedance presented at the ceneter
conductor. Since the shield is the antenna, the field impedance
remains the same as a one turn loop.

Of course the field impedance of a ten turn loop of a given diameter
remains the same as a one turn loop also, so nothing really changes
except loss and what the receiver might see for impedance.

>In a transformer, if the secondary is open circuited, when you apply voltage to a
>primary, you'll have the same voltage across any identical windings' terminals.
>But the current in the primary won't be replicated in such a secondary. A finite
>current will flow in the primary, while an infinitesimal current will flow in the
>secondary. This is normal operation for a transformer.

You are forgetting WHERE the source of energy is. The source of energy
is NOT at the ceneter conductor on receiving, it is all aruond the
loop.

You are claiming the IMPEDANCE of the shield is low, and the impedance
of the center is high. That can not be, because those impedances
always are the same in a 1:1 turns ratio loop.

>Current can only flow from a winding if the circuit is completed.

It is completed by the inside of the shield, which is isolated from
the outside by the skin depth. The reason the inside of the shield is
a finite impedance is because it is loaded by the center conductor.
When you draw the current flows on paper, it all makes perfect sense.

The external electromagnetic field excites a voltage across the gap in
the loop shield. That voltage is also across the inside of the shield,
which is isolated by the skin depth. That voltage sets up a voltage
across the gap in the center conductor. If you load that voltage,
current flows in the center conductor. An equal but opposite current
flows on the inside of the shield. That causes and equal but opposite
currrent to flow on the outside of the shield.

The reverse would occur on transmitting.

As I say, look at a regular coaxial transformer in a solid state amplifier. If you load the primary with 5 ohms per turn and tune it to resonance, the secondary impedance is 5 ohms per turn OPEN or NOT.

You can easily measure that. What on earth makes people think that impedance is infinite, when you can stick a meter across the thing and measure it?

Consider a parallel conductor transformer. What happens when you terminate one winding, and measure the other in a 1:1 transformer? What happens when you resonate one winding, and measure the impedance of the other?

This really isn't that complicated, unless you believe magnetic fields can pass right through the shield like it isn't there. If you believe that the shield is unaffected by what goes on inside, you'll never grasp how the loop actually works. It will all be magic.

Get a later copy of Reference Data for Radio Engineers and read what it says about loops.

There really was a wealth of infomation in the posts here, and I'm whipping a dead horse. I can't afford any more time if people can't take the time to read what Roy, Reg, Bart, Kevin, and others explained. The problem appears to be clinging to the misplaced view a time-varying magnetic field can pass through a conductor several skin depths thick.

Sorry, it just does no no good to repeat the same thing 50 times.

73 Tom

470. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 19:12:29 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad0b6b2.1986667@news.accessunited.com>
Source record: 166518

On Sun, 8 Apr 2001 11:48:10 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Tom, W8JI wrote:
>"---everyone (but one person) seems to agree on the rest of this."
>
>Truth is not the result of a vote.

When one person disagrees with me, I always look carefully at what I
think. I get other opinions no matter how sure I am.

When two respected people with different backgrounds disagree, I
really look hard at what I think.

When everyone disagrees with me and I have no way to prove I am right
except by repeating the same argument and quoting text, I really
rethink my view. If I can't agree, I do an experiment.

Quit claiming it is raining frogs Richard. It isn't.

73 Tom

471. Re: Antenna Parasitics Question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 19:16:30 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad0b843.2387582@news.accessunited.com>
Source record: 166419

On Sun, 8 Apr 2001 11:20:47 -0700, "Jack Malone" <malonej@c2i2.com>
wrote:

>We know that a coax fed horiz. dipole should be fed at a right angle so the
>shield won't become a parasitic,

I'm not sure what you mean by "parasitic". If you mean the shield
affects pattern, it still can even if it does leave the antenna at
right angles because the antenna is balanced and the shield is not.

>but what about a 1/2 wave vertical mounted
>antenna. Can it be center fed with the coax running 5" from & parallel to
>the bottom element of the dipole without the coax shield becoming a
>parasitic? The dipole will be mounted on PVC pipe with wooded dowel rods
>inside it for stiffness.
>Any comments are welcome.

The shield would be very much a part of the radiating system in this
case, and the coax beyond the antenna would be acting like part of the
antenna.

73 Tom

472. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 19:18:11 UTC
From: Bart Rowlett <bart@wb6hqk.ampr.org>
Message-ID: <3AD0B973.D62F04A@wb6hqk.ampr.org>
Source record: 166420

"William E. Sabin" wrote:
>
> The thing that is involved is not the penetration of surface current into
> the copper (no problem about that). I published an article on that
> subject.
>
>
> The issue is a voltage difference between two directly opposite points on
> the inner and outer surfaces of the shield.

For insight on this topic I suggest taking a look Kevin's web page:

http://fermi.la.asu.edu/w9cf/skin/

In particular, study equation 13.

Note that the component of the conduction current density in the
direction normal to the surface is zero, and that the temporal phase
varies 360 degrees every skin depth.

In essence, the shield is many wavelengths thick in the radial
dimension. If you could devise a method to measure the voltage
difference (which I believe can't even be defined) between the inside
and outside of the shield, nothing constrains it to be zero.

bart
wb6hqk

473. Re: New material appears to defy the laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 19:22:30 UTC
From: "W.G. Ewald" <wgewald@att.net>
Message-ID: <roe1dt440qvmm9l62ntq1o1hbl1om2fe7q@4ax.com>
Source record: 166421

On Sat, 07 Apr 2001 19:21:44 -0500, Bill Aycock <baycock@hiwaay.net>
wrote:

>William-
>I appreciate the many references, including the long list of
>publications by one of the Authors.

I noticed that list showed no papers later than 1996, and some
either "in press" or "submitted" as early as 1994, with no publication
date.

>
>However, I have not found any reference to "negative Index of
>Refraction" in any of them. I still think that was a jumbled up mess
>from a reporter, and a poor one, rather than from any of the real
>authors of the scientific papers. The reporter seems to have grabbed
>some catchy phrases out of thin air, rather than stick to the work,
>which is exciting enough without puffery.
>
> The work is very interesting, and we can probably expect some
>surprizing real applications. (new, fundamental discoveries usually give
>results not immediately apparent)
>
>My objection is, and has been, to the poor reporting, not to the work,
>or to the possibilities it offers.
>
>Bill-W4BSG

The reporting was poor, indeed.

474. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 19:38:25 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD0BE31.B05A4710@mwci.net>
Source record: 166422

Here it is again for those who did not understand it the first time.

William E. Sabin wrote:

> Tom W8JI wrote:
>
> > Hi Roger,
> >
> > Actually I think you'll find Wes, Reg, Bart, Roy, Kevin, Ian, and
> > myself all agree that current can not pass through a conductor several
> > skin depths thick. While Bill agrees with most of our conclusions, he
> > views the magnetic and electric fields as somehow penetrating the
> > conductor....I don't quite follow the exact concept.
>
> The thing that is involved is not the penetration of surface current into
> the copper (no problem about that). I published an article on that
> subject.
>
> (please read carefully before jumping onto your keyboards)
>
> The issue is a voltage difference between two directly opposite points on
> the inner and outer surfaces of the shield. For this voltage difference
> there is no skin effect *through the thickness of the shield*. Because
> the impedance *through* the shield for this voltage difference at this
> point is very small, even at RF, a very large current would flow between
> the surfaces which would reduce this voltage difference to zero. The two
> surfaces would be "clamped" together, voltage-wise.
>
> For independent or even related waves flowing on the two *surfaces* there
> is no guarantee that this kind of voltage difference *between the
> surfaces* problem will not occur.
>
> Because of this problem, it is impossible to assume that a transverse
> voltage difference will not destroy the so-called "skin effect isolation".
> For true independence the two surfaces must also be independent
> voltage-wise as well as current-wise.
>
> Keep in mind the following: At each point on the inside, and at the
> corresponding point on the outside, there is a voltage, measured with
> respect to the ground reference point. There is absolutely no guarantee
> whatsoever that those two voltages, as the result of two waves, have the
> same value. If they are even a few millivolts different, the game is over.
> Copper, take away the skin effect, is a marvelous conductor.
>
> The entire skin effect isolation concept is a "loser", big time and from

> the get-go. It is one more bit of Ham Radio baggage that needs to be put
> out at the curb. It has been hanging around for many years and has
> unfortunately become part of the culture.
>
> I have a demonstration idea that I will write up that I believe will
> clarify this matter.
>
> Bill W0IYH

475. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 20:18:12 UTC
From: richardharrison@webtv.net
Message-ID: <22092-3AD0C784-87@storefull-111.iap.bryant.webtv.net>
Source record: 166424

Tom, W8JI wrote:
"There really isn`t much magic in this stuff. The folklore that a Faraday shield can sort the electric field from the magnetic field in a time varying wave is troubling, but it seems only one person in this discussion is stuck with that concept."

All the ancient experts I`ve consulted are stuck with the same concept.

Tom offers no support for his idea. The Ancients all explained their ideas.

I`ll repeat information given by Charles E. Dean, of the Hazeltine Corporation in Keith Henney`s "Radio Engineering Handbook". It`s found around page 794. This isn`t verbatim because I`m beginning to remember the stuff now, and don`t have the book right here.

Dean says that it is possible to improve the noise performance of the ordinary radio loop antenna. Dean says to mount the loop in a vertical plane. Add an electrostatic shield to the loop. Such a shield stops lines of electric force that otherwise would reach the antenna. Such a shield carries little or no circulating current, so the magnetic field is not affected. One construction is to have numerous parallel wires joined in comblike fashion to a common ground lead at one end and open at the other end.

Dean says that since interference from electrical appliances in the vicinity of the receiver is propagated with a predominant electric field component, a shielded loop will rediuce the effect of such disturbances.

Dean advised interested readers to refer to the design and explanation of a rotatable shielded loop given by Stanford Goldman in "A Shielded Loop for Noise Reduction in Broadcast Reception" , "Electronics", October, 1938, pp. 20-22.

Dean is clearly of the opinion that the Electric Field can be "culled out" of the combined radio signal, as are Terman and others.

I reposted this from notes, but invite anyone to go to the original Keith Henney book for the exact writing.

Best regards, Richard Harrison, KB5WZI

476. Correction: Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 20:41:35 UTC
From: Bart Rowlett <bart@wb6hqk.ampr.org>
Message-ID: <3AD0CCFF.3DEF78B4@wb6hqk.ampr.org>
Source record: 166423

Bart Rowlett wrote:

> For insight on this topic I suggest taking a look Kevin's web page:
>
> http://fermi.la.asu.edu/w9cf/skin/
>
> In particular, study equation 13.
>
> Note that the component of the conduction current density in the
> direction normal to the surface is zero, and that the temporal phase
> varies 360 degrees every skin depth.
^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^

I should have said:

Note that the component of the conduction current density in the
direction normal to the surface is zero, and that the temporal phase
is retarded one radian with every skin depth.

> In essence, the shield is many wavelengths thick in the radial
> dimension. If you could devise a method to measure the voltage
> difference (which I believe can't even be defined) between the inside
> and outside of the shield, nothing constrains it to be zero.

Sorry about that.

bart
wb6hqk

477. Re: s-band dish helix feed?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 20:52:31 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3AD0CF8F.D6909940@dialpoint.net>
Source record: 166425
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.space

While I have not tried it, reports from other hams state that the PVC pipe the helix is wrapped around distorts the formular for the helix and unless adjusted for this it may not work as calculated. The PVC while not conductive (or whatever) to microwaves its dielectric constant is high and distorts the formulars.

> I looked at the circuilar feeds. At 2401 MHz I came up with a wave guide
> 6.65 inches across to get the required beamwidth. Someone in another forum
> responded with the formula n=8400/BW^2*Pitch to give the number of turns for
> a -10db beamwidth at a given pitch in wavelengths. Using 1 inch PVC with 1
> inch spacing gives a pitch of .19. Plugging in the formula I get 5.5 turns.
>
> I also have found a formula in another section of W1GHZ's book that relates
> the -3db beam width and -10 db beam width.
> BW3db=A*SQRT(3/Taper). For a -10 db beam width of 90 degrees you'd have a
> 3db beamwidth of 49.3 degrees.
>
> 49.3=90*SQRT(3/10)
>
> I got the idea of using a helix feed from reading several reports from
> others who had good results with it. I'd also just finished building the 16
> turn helix on K5OE's web site, http://members.aol.com/k5oe/ and had enough
> material left over to build the dish feed. I also like the fact that I can
> mount the down converter directly at the feed to the dish/helix.
>
> I've got the feed built but the mounting isn't working out quite like I
> thought it would. Once I get it mounted I'll try comparing the dish with
> the 16 turn helix.
>
> 73's,
> Lee-KU4OS

478. Re: New material appears to defy the laws of physics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 21:33:33 UTC
From: dennis@wawa.juniper.net
Message-ID: <9aqlfd$13bn$1@heap.juniper.net>
Source record: 166426

Richard Clark <kb7qhc@home.com> wrote:
>I would make one simple observation of these observables. How do they
>differ in the results that may accrue of media of less than 1.00
>dielectric constant? (Instead of being described as a negative dc.)
>All should note that there is absolutely no reference above that is a
>negative connotation.

Richard,

If dielectric constant is the same as index of refraction, then I think it goes like this. If (n > 1) then the EM wavefronts move in the direction ExH at a velocity less than the speed of light in free space. If (0 < n < 1) then the EM wavefronts move in the direction ExH at a velocity greater than the speed of light in free space. If (n < 0) then the wavefronts move in the direction opposite ExH. That is, the wavefronts move in the direction opposite to the energy flow. This is why, for example, the Doppler effect is reversed.

Here is a quote from the paper in Science:

Although all known naturally occurring materials exhibit positive indices of refraction, the possibility of materials with negative refractive index has been explored theoretically (1) and the conclusion presented that such materials did not violate any fundamental physical laws. These materials were termed "left-handed" (LHM), and it was further shown that some of the most fundamental electromagnetic properties of an LHM would be opposite to that of ordinary "right-handed" materials (RHM), resulting in unusual and nonintuitive optics.

I assume "left-handed" refers to the direction of wavefront movement with respect to the orientation of the E and H field vectors, since the normal direction of wavefront motion is determined by the right-hand rule. Here is another quote from the article:

These structures use split ring resonators to produce negative magnetic permeability over a particular frequency region (5) and wire elements to produce negative electric permittivity in an overlapping frequency region (6). When the permittivity, e, and permeability, m, of a material are simultaneously negative, one must choose the negative root of the index of refraction given by n = +/- sqrt(em/e0m0) (e0 and m0 are the free-space permittivity and permeability, respectively) (1, 2, 7).

The references for the choice of the negative value, which you've asked about several times, are

1. V. G. Veselago, Sov. Phys. Usp. 10, 509 (1968).
2. J. B. Pendry, Phys. Rev. Lett. 85, 3966 (2000).
7. D. R. Smith and N. Kroll, Phys. Rev. Lett. 85, 2933 (2000).

As I mentioned before, a separate article in the same issue of Science indicated that the choice of the negative sign for the index of refraction is necessary for (e<0, m<0) material to be energy conserving. You'll need to dig up the references to find out why that is.

They mention "negative index-of-refraction", or "negative refractive index", about 10 separate times in the article. I think they really mean it.

Dennis Ferguson

479. Cushcraft ATB 34 Tribander

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 22:10:30 UTC
From: Gary Gleim <garyg@madnet.net>
Message-ID: <9aqnkl$k1b$1@news.yosemite.net>
Source record: 166427

I have just taken down a Cushcraft ATB 34 in working order. I will sell for parts. What can you use?
garyg@madnet.net

480. Re: Cushcraft ATB 34 Tribander

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 22:28:13 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AD0E5FD.DCD9E0A6@hiwaay.net>
Source record: 166428

how much for the whole thing?
Bill-W4BSG

Gary Gleim wrote:
>
> I have just taken down a Cushcraft ATB 34 in working order. I will sell for
> parts. What can you use?
> garyg@madnet.net

481. Re: \\\\\\\\\\|||||||||||||||||||| Warning |||||||||||||||||||////////// . 586

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 23:45:40 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <EK6A6.59865$XV.14670297@news3.rdc1.on.home.com>
Source record: 166429
Cross-posted to: rec.puzzles,rec.puzzles.crosswords,rec.pyrotechnics,rec.radio,rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors

the best is you actually believe that

--
Rob St.Denis

Security Officer - Securworks Protection Services Inc.
/---\
| Cell (613)296-0094 |
| Email: fzxdude@yahoo.ca |
| Home Page: http://robstdenis.home.dhs.org |
\---/
"Pyro Doug" <":)"@disneyworld.com> wrote in message
news:3ACFDBF4.FE7043CE@disneyworld.com...
> For starters this would be an excellent way to spread a virus to wipe a
hard drive clean! So why trust you? anyone doing
> illegal activity or at least dumb enough to store it on the Hard Drive
instead of an encrypted CD deserves to get caught!
> but the best thing to do is pop the cover and slam the HD with a hammer!
thats that. I don't even keep the screws in the
> back holding the mid-towers case since I am always upgrading CD-ROM's,
Video Cards etc., as they get faster and cheaper! so
> take this wasteful spam crap somewhere else, didn't you know pyro's are
the most intelligent people on the face of the
> earth?
>
> PD
>
> p.s. a self exploding device could easily be made by using whatever for
the trigger and Boom, no more HD! just as fast as
> the police can say, "Police we have a Warrant!"...If the information was
of something of very classified importance like
> what computer hackers get from our own defense department. other than that
who really cares what porno sites can be traced,
> my wife busted me many years ago before I learned how to clear the
Documents folder which shows last pictures or Doc's
> looked at! funny now but not then!
>
> PD
>
> uwjnkt@privacy5.com wrote:
>
> > Every click you make on Windows 98 Start Menu
> > is logged and stored for ever on a hidden encrypted database within your

own computer?
> > Frightening records of both your online and off-line activity are being
stored on your computer..........thats not fair
> >
> > Your family or the authorities are now able find out what sites you
surfed?
> >
> > You cannot delete thes files without.........
> > http://www.evidence-eliminator.com/go.shtml?A657156
> >
> > You need to check this program out.....
> >
stgzcvbssutxhusdnsitmmgkuixdjklkinludjlkwqhecxzoldssdxclxvosfzkmmsmlwzulfgtv
>

482. Re: \\\\\\\\\\|||||||||||||||||||| Warning |||||||||||||||||||////////// . 586

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 23:46:29 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <pL6A6.59867$XV.14669036@news3.rdc1.on.home.com>
Source record: 166430
Cross-posted to: rec.puzzles,rec.puzzles.crosswords,rec.pyrotechnics,rec.radio,rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors

Actually ... CAF does use windows ... so do RCMP and CSIS ...

--
Rob St.Denis

Security Officer - Securworks Protection Services Inc.
/--\
| Cell (613)296-0094 |
| Email: fzxdude@yahoo.ca |
| Home Page: http://robstdenis.home.dhs.org |
\--/
"Bis Wichy" <wd0hco@ev1.net> wrote in message
news:3ad074d0_2@newsa.ev1.net...
> I got a Mac. You PAY a little more.
>
> But you get a much better machine without the hassles.
>
> Honestly, you bought a cheap asian PC and Windoz
> - go take your whining elsewhere and STOP spamming news groups.
>
> YOU TWIT!
>
>
> PS The Canadian Armed Forces, The Government of Germany and Israel no
longer
> use Windows due to the stolen security certificates and rumors that NSA
has
> the backdoor codes.
>
> Besides, If your innocent, then you don't have anything to worry about.
>
> You ARE innocent, aren't you ???? :^ O
>

483. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 23:48:56 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <IN6A6.59871$XV.14676144@news3.rdc1.on.home.com>
Source record: 166431

well if you dont mind the environment life of 3 yrs ... not to mention the
ground plane kit falls apart every time theres a wind ...

--
Rob St.Denis

Security Officer - Securworks Protection Services Inc.
/--\
| Cell (613)296-0094 |
| Email: fzxdude@yahoo.ca |
| Home Page: http://robstdenis.home.dhs.org |
\--/
"Brady Palmquist" <bgpalmq@primenet.com> wrote in message
news:tcs3pgsgliuq23@corp.supernews.com...
>
>
> Looking for a 10 meter no radial vertical to mount on a mast.
>
> Thinking the Solarcon A-99 might be good. I see no negative comments
> about it. Wondering what anyone has experienced.
> How about the ground plane kit? Does it help that much?
> I'd rather not use one if I can get by.
>
> 73
> Brady
> K0UC

484. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-08 23:59:40 UTC
From: Cortland Richmond <ka5s@earthlink.net>
Message-ID: <3AD0FA79.32844ACA@earthlink.net>
Source record: 166432

I'll test this on a shielded loop I have (EMCO 6511). It has five turns, is 54 cm in diameter, and is rated for operation from 20 Hz through 5 MHz. If what you and Tom are saying holds true, I can expect its input impedance to be very high; approximately that of the open circuited shield gap. Have I understood correctly what you are saying?

Cortland

Donaly wrote:

> In an ideal transformer, or even a very good one, where the
> coupling between the primary and the secondary is good,
> the output impedance has an influence on the input impedance.
> In a one to one transformer, the input impedance will be the output
> impedance. This is basic circuit theory, which neglects the
> influence of the dimensions of circuit components in its analysis.
> In the case of antennas, length is an important parameter that
> allows a piece of wire to have a current, even though
> its ends aren't connected. I believe you may want to rethink
> your ideas about current in the shield of a shielded loop, Cortland.
>
> Tom Donaly KA6RUH

485. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 00:04:43 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <v07A6.694732$U46.21676810@news1.sttls1.wa.home.com>
Source record: 166433

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:22093-3AD0964A-18@storefull-111.iap.bryant.webtv.net...
(snip part)
> Here is what I now believe about a conventional shielded loop by the
> numbers so that an area of disagreement can be identified and resolved.
>
> Imagine a conventional single turn coaxial loop, the center conductor
> driven by a generator.
>
> 1) The generator pumps current through the short loop.
>
> 2) The shield is grounded opposite a break.
>
> 3) The r-f shield is several skin thicknesses deep and disallows radial
> current to penetrate the shield.
>
> 4) Current that the generator pumps through the short loop induces
> opposite and almost equal current in the inner surface of the shield
> pipe.
>
> 5) Where does the induced current current on the inside surface of the
> shield pipe go? The shield break does not allow this current to continue
> around the interior of the shield.

The current may just stop here?

This can be approached incrementally. Let's begin by assuming the shield is too thin to have any appreciable skin effect. We will then get some current at the shield midpoint, and some voltage but no current at the cut in the shield. The current and voltage in the shield will be in balance with the
driving loop but 180 degrees out of phase.

We can now add a incremental thickness to the shield so we have a beginning of skin effect. Nothing will change regards the current or voltage
except some additional area has been added for the current to flow through and presumably the ohmic resistance is slightly lower. The total energy transferred into the shield should not change except for the change in ohmic resistance.

We can now add a few more increments of thickness so that we have as much thickness as is needed to have a nearly fully developed skin effect. The ohmic
resistance should have lowered some more, but we should not expect

additional
lowering of resistance. The total energy transfered from loop to shield
should
be unchanged.

We can add some more increments of shield thickness but what happens?
I think your suggestion is that a short circuit develops on the outside of
the
conductor but if that happened, how could we get the driving voltages that
we observe on the secondary of a transformer (which is what a sleeve would
be if we wanted to make a transformer)? Is it possible that the resultant
currents and voltages we observed in the thin shield are identical for the
thick shield because, while magnetic forces would not reach the outside of
the shield, capacitive forces COULD reach the ends of the outside shield
layer
and thus counter any possible short circuit provided by the outside of the
shield?

>
> 6) The voltage across the shield gap is almost the same as the generator
> voltage. There is a continuation of the inside surface on the outside
> surface of the shield around the butt ends of the shield pipe.

>
> 7) The outer surface of the shield becomes the small loop antenna.
>
> 8) As a receiving antenna, the path direction reverses everywhere.
> Rciprocity rules.
>
> Best regards, Richard Harrison, KB5WZI
>

A nice description Richard.

73, Roger, W7WKB

486. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 00:15:18 UTC
From: richardharrison@webtv.net
Message-ID: <22092-3AD0FF16-104@storefull-111.iap.bryant.webtv.net>
Source record: 166434

I wrote:
"The advantage in S/N, if any, is in the near field of the noise source and doesn`t rely on the type of antenna but only on the ability to remove the electric field and respond to the magnetic field (only).

Tom responded: "This is shameful Richard."

Well, one or more of the Ancients make similar observations.

W.N, Christiansen writes in the "Radiotron Designer`s Handbook": "(Loop aerials)---if shielded or balanced with respect to earth, they are less sensitive to inductive interference from nearby sources of r-f noise. The reason for this is that a balanced or shielded loop responds to the magnetic component of the field of an aerial, whereas the capacitive type aerial responds to the electric component. In the radiation field, these two components are equal and are mutually dependent. In the immediate vicinity of an aerial they are not equal, and the electric component increases more rapidly than does the magnetic field as one approaches the aerial. Hence in the vicinity of a radiation source of r-f noise, a loop aerial will pick up less energy than will a vertical aerial." Christiansen estimates the shielded loop`s advantage may extend 50 yards from a noise source in the a-m broadcast band.

Where is Tom`s evidence? Who knows what a loop in a bedpan proves?

Best regards, Richard Harrison, KB5WZI

487. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 00:54:54 UTC
From: richardharrison@webtv.net
Message-ID: <4340-3AD1085E-144@storefull-115.iap.bryant.webtv.net>
Source record: 166437

Cortland Richmond wrote:
"You have been saying for some time now that one can`t separate magnetic and electric fields anyway. If true, one could never tell what their ratio was to each other.

Tom, W8JI responded:
"I`ve never said that. I said you can not separate the time-varying magnetic field from the time-varying electric field....you take one to zero...the other goes to zero."

Tom is senselessly playing with words. He knows or should know that in this discussion "time-varying" should be understood. The subject is r-f. The words electric and magnetic can be used just as well without the "time-varyng" baloney. We are not discussing bar-magnets and static electric charges.

Most of the old experts don`t clutter their writing with the "time-varying" garbage. Tom seems to have decided to cover them with baloney if he can`t dazzle them with brilliance.

Best regards, Richard Harrison, KB5WZI

488. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 00:56:41 UTC
From: Mike <km6ab@pacbell.net>
Message-ID: <3AD108C9.BBDA6EC4@pacbell.net>
Source record: 166436

For years SGC has pushed using the largest practical wire for the radiating element of their tuners, especially #6. I don't believe their fantastic claims of gain with #6 wire but have always wanted to do a comparison of sizes like #22, #12 and something really fat. Anyone out there got time on their hands to set up an HF test like this?

489. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 01:24:18 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad10afc.23567917@news.accessunited.com>
Source record: 166439

On Mon, 09 Apr 2001 00:04:43 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:

>The current may just stop here?

No, it continues on the opposite wall that is isolated by the skin
depth..

What happens is simple.

Imagine a generator exciting the loop.

The generator drives the inner loop, it causes a voltage difference
across the gap in that inner wire, and a current flows in that wire.

Since that wire is enclosed in a shield, it induces a differential
current in the inside surface of that shield. That current flows the
opposite way as the inner loop.

At the gap in the shield, a voltage (which in a single turn loop is
equal to the voltage acorss the gap in the inner conductor) appears.
Since that gap is common to both the inside and outside of the shield
it excites the outside of the shield.

The current on the outside of the shield flows tha same direction as
the original current, it is free to flow that way because the skin
depth of the shield isolates those two surfaces.

(This is EXACTLY like the effect on coaxial lines, where common mode
current on the outside of the line can flow independently from the
direction of current inside the shield of the line.)

What actually happens in a single turn shielded loop is the voltage
across the gap of the inner conductor EXACTLY equals the voltage
across the gap in the outer conductor.

The current is the same also.

That is how the field "gets past" the shield.

73 Tom

490. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 01:24:31 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9ar30f$id5$0@208.206.142.100>
Source record: 166438

W6RCecilA wrote:
>
> Dick Carroll wrote:
> >
> > W6RCecilA wrote:
> > > There are fractal antennas being used now, Dick. They exist. They perform
> > > according to the laws of physics.
> >
> > Ya don't say! Anyone who can read knows that.
>
> Then why did you imply that fractal antennas are a "scam"? They are
> not a scam. They obey the laws of physics.

Just like wet noodles and green trees will act as antennas. So what? If Freaktenna has an explanation of his highflown assertions he could give it. He doesn't and he won't, the claims of superior performance are vapor. He won't even give an explanation of what he's asserting. Smokescreens all the way. You DO like smokescreens, don't you Cecil?

491. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 02:04:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD118A9.6CF1D639@IEEE.org>
Source record: 166500

Dick Carroll wrote:
> Oh, yeah, I'm the guy who insists that radiotelegraphy is a quite valid
> means of basic radio communications, in fact THE basic means of
> radiocommunications, regardless of whatever else exists (A fact well
> proven by 100 years of continuous usage) and you just can't stand it.

You have me confused with someone else. Besides speech being more basic
to Homo Sapiens than Morse code, I agree with your statement. The only
real disagreement you and I have about CW is whether Morse code preservation
should be supported by a governmental affirmative action program or not.

> I think your viewpoint has been clearly established. It is unsurprising
> to see you leap to the assistance of Fraudtenna. Anything to slam CW and
> anyone who sjupports it.

My viewpoint is that I agree with you on CW operation and disagree with
you on Morse code testing. I didn't realize that pointing out that fractal
antennas might have something to offer is support in particular of Fractenna
or a general slam against CW. Why, exactly, is CW related to fractal antennas?

> W6RCA wrote: Folding is an ancient
> > method of putting antennas in a small space. Is it too much of a stretch
> > for your mind to comprehend that there may exist a most efficient folding
> > method and, more likely than not, that particular fold will be a fractal?
>
> Indeed! And our boy wonder won't, nay, CAN'T point to a single fact
> which would offer to show where his folded "invention" has any of the
> superior attributes he appears to claim for it, rather he belittles
> everyone who asks as idiots and stupid because they don't instinctively
> know it already! You'd leap onto such a offkey bandwagon just to prod an
> old CW supporter? Your dislike for the mode is palpable!

I am merely pointing out some errors in your posting. That doesn't imply
that I support Fractenna's actions or claims. Saying that fractal antennas
perform according to the laws of physics has nothing to do with CW. You
seem to slip in and out of delusional thought patterns.

> > Mother Nature seems to have discovered fractals billions of years ago - why
> > haven't you?
>
> Fractals are fractals. Antennas are antennas. Fraudtenna is fraudulant.
> So, evidently, are you.

There are fractal antennas being used now, Dick. They exist. They perform
according to the laws of physics. That you deny their existence and feel
that they perform worse than the laws of physics predict is just more

of your delusional thinking. Reality exists, Dick, and doesn't perform
according to your feelings.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

492. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 02:05:35 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <gv52dt0aiur4glsgn85i9gab1lkv1of0ed@4ax.com>
Source record: 166442

Okay, Your posting perked my interest so ran a model of a 40-meter
dipole at ï¿½-wavelength above ground.

Using #16 copper wire the maximum gain (according to NEC) 7.43 dBi and
using #6 copper wire the gain was 7.52 dBi.. A wopping 0.09 dB :-)

Danny
K6MHE

On Sun, 08 Apr 2001 17:56:41 -0700, Mike <km6ab@pacbell.net> wrote:

>For years SGC has pushed using the largest practical wire for the
>radiating element of their tuners, especially #6. I don't believe their
>fantastic claims of gain with #6 wire but have always wanted to do a
>comparison of sizes like #22, #12 and something really fat. Anyone out
>there got time on their hands to set up an HF test like this?

493. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 02:27:54 UTC
From: Donaly <dtdonaly@pacbell.net>
Message-ID: <3AD11E2A.407E@pacbell.net>
Source record: 166448

Cortland Richmond wrote:
>
> I'll test this on a shielded loop I have (EMCO 6511). It has five turns, is 54 cm in
> diameter, and is rated for operation from 20 Hz through 5 MHz. If what you and Tom
> are saying holds true, I can expect its input impedance to be very high; approximately
> that of the open circuited shield gap. Have I understood correctly what you are saying?
>
> Cortland
>

Hi Cortland,
you might want to find out first what the shield gap
impedance really is. It's true that there is a gap, but there is
also the inner conductor capacitively coupled to both sides of it.
You, of course are free to assume what you want, but I've found that
the best course for me is to assume very little and let the measurements
tell me what's happening. If you find that Tom and I have an
imperfect understanding of what's going on I hope you tell us so we
can amend our thinking.

73

Tom Donaly KA6RUH

494. Re: WTB: spreaders for open wire line

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 02:47:53 UTC
From: dan <danlx@execpc.com>
Message-ID: <3ad12204$0$12823$272ea4a1@news.execpc.com>
Source record: 166441

On Sun, 08 Apr 2001 12:04:19 -0700, Gray Frierson Haertig
<gfh@haertig.com> wrote:

>
>Using 1/2" round lexan stock, make a 3/16" deep tangential slot, about
>1/2" from each end of the spacer. That is, instead of putting the slots
>in the end of the rod, put them in the sides of the rod, about 1/2" from
>each end. The slots should be parallel and on the same side (not end)
>of the rod.
>
>With the slots on upside of the rod, lay the feeder wire in the slot and
>take a 2" piece of #14 soft copper wire and middle it around the bottom
>of the rod rod immediately adjacent to the outboard side of the feeder
>wire and. The two ends of the tie wire should be pointing straight up
>on either side of the rod. Take each loose ends of the tie wire and
>bend it over the adjacent feed wire. This leaves the two ends pointing
>straight down. Using a pair of lineman's pliers twist the two ends
>together in a pigtail on the bottom of the rod. Use the pliers to
>leverage the slack out of the tie wire as you twist it tight against the
>rod. Trim the pigtail to a neat length using the cutters on the
>lineman's pliers.
>
>You can also use small black wire ties to do the same thing, but I think
>the copper wire will last longer, and can be pulled tighter.
>
>It is helpful to have the feeder wires under a bit of tension wile doing this.
>
>For those that have done concrete work, this is identical to a saddle
>tie used to tie perpendicular pieces of rebar together.
>
>
>Gray
>
>
>
> _____________________________________
> | | | |
> |__|_____________________________|__|
> \ \
> Slot Slot

Hi all
That will work but wouldn't it be easier to drill a hole 1/2 inch in
from each end that is just slightly smaller than the wire you plan to
use and then slot/notch the material to the hole. That allows you to

force/snap the wire into the hole and the rod should stay where you
put it.
Good luck

Dan

I've rambled enough, back to the rocking chair. ZZZZZZZZZ

Remove left x for a direct reply.

495. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 03:05:53 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ar8vucp1@slb4.atl.mindspring.net>
Source record: 166443

Tom:

I agree, Tom has it right.

The dynamics of this situation are similar to thedynamics in the support of common mode and differential mode currents and voltages on coaxial cable transmission lines.

The currents and voltages on the inside and the outside of the coaxial shield are supported on different physical "modes". These separate physical modes respond to separate input excitation and have separate output observables. The modes can also be cross coupled by common impedances/structures so that excitation applied to the differential mode can be coupled to the common mode and vice versa.

Small flaws or iregularities in the physical symmetry of the structures then lead to difficulties in evaluating the cross coupling between modes. For instance what happens if a series of small holes are drilled through the coaxial shield, i.e. a "leaky" coaxial cable is used? Now the physical situation is not quite so simple as with a pure symmetry and often the quantitative evaluations of the effects are not easy to obtain analytically. The cross coupling in most practical situations can most often only be quantified by numerical methods such as the method of moments "MOM" or so-called finite element methods of solving partial differential equations. Once the solution is found and "shown" it usually becomes "obvious".

It seems that in physical systems with rectangular symmetry, e.g. with parallel wire transmission lines, the common and differential modes which can be separately excited and observed are more easily interperted and visualized in a gross sense by analysts since the physical structures tend to be physically "intuitive" and have analogs in our daily life in rectangular coordinate systems. For example the "location" of "ground" and of the "end of the universe" with respect to the system is often immediately apparent in rectangular coordinates.

While in cylindrically and spherically symmetric systems, the differential modes and common modes, are often less obvious and not as intuitive since our daily experience is not generally with those co-ordinate systems and the location of "ground" or of the "end of the universe" with respect to these system is not immediately apparent.

To help me think about these things, I usually revert to a "dual system" view...

It's useful to think of all physical systems as having two inputs, a differential mode input "ud" and a common mode input "uc" and two outputs, a differential mode output "yd" and a common mode output "yc". All physical

systems then have four characteristic transfer functions, a common mode transfer function, call it Tc, a differential mode transfer function, call it Td, and two cross mode transfer functions, Tcd and Tdc. They are all then related by:

yd = Td ud + Tcd uc
yc = Tdc ud + Tc uc

In coaxial systems yc might represent the signals on the outside of the the coaxial shield, while yd represents the signals on the inside of the coaxial shield. If Tcd or Tdc are zero then the two signals are essentially unrelated or unobservable from the other mode. And differential inputs will not excite common mode outputs and vice versa.

i.e. in perfectly symmetric coaxial systems Tcd and Tdc are zero.

If the physical symmetry is broken say by drilling holes or placing slots in the coaxial shield or by breaking the shield at a particular point then one introduces cross coupling between the modes... and excitation of one mode will also cause excitation of the other and both modes may support correlated signals simultaneously.

The analysis of the structures and the quantitative determination of Tcd and Tdc are not often easy... as the old saying goes...

"The devil is in the details".

For those inclined to "drive" computer simulations there are several good MOM programs on the market that can provide numerical answers and drawings of field patterns etc... for "em" problems like these. They are usually advertised in IEEE Spectrum and other such professional magazines... However their cost is prohibitive for amateur use.

-Peter K1PO

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ad10afc.23567917@news.accessunited.com...
> On Mon, 09 Apr 2001 00:04:43 GMT, "Roger Sparks" <sparksrc@home.com>
> wrote:
>
> >The current may just stop here?
>
> No, it continues on the opposite wall that is isolated by the skin
> depth..
>
> What happens is simple.
>
> Imagine a generator exciting the loop.
>
> The generator drives the inner loop, it causes a voltage difference
> across the gap in that inner wire, and a current flows in that wire.
>
> Since that wire is enclosed in a shield, it induces a differential

> current in the inside surface of that shield. That current flows the
> opposite way as the inner loop.
>
> At the gap in the shield, a voltage (which in a single turn loop is
> equal to the voltage acorss the gap in the inner conductor) appears.
> Since that gap is common to both the inside and outside of the shield
> it excites the outside of the shield.
>
> The current on the outside of the shield flows tha same direction as
> the original current, it is free to flow that way because the skin
> depth of the shield isolates those two surfaces.
>
> (This is EXACTLY like the effect on coaxial lines, where common mode
> current on the outside of the line can flow independently from the
> direction of current inside the shield of the line.)
>
> What actually happens in a single turn shielded loop is the voltage
> across the gap of the inner conductor EXACTLY equals the voltage
> across the gap in the outer conductor.
>
> The current is the same also.
>
> That is how the field "gets past" the shield.
>
> 73 Tom

496. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 03:12:40 UTC
From: richardharrison@webtv.net
Message-ID: <8768-3AD128A8-112@storefull-117.iap.bryant.webtv.net>
Source record: 166445

Roger, W7WKB wrote:
"The current must stop here?"

The shield current can`t cross the insulator in the shield except for some displacement current through the small capacitance at the insulator. Someone in this thread called displacement current imaginary since electrons are not flowing through the gap. Only the electrostatic force is exercised through the space when the dielectric is a vacuum. By that token, I suppose radio waves in a vacuum are imaginary too, but they work just fine.

Current is stopped by impedance and there is no real impedance to current wrapping around the butt ends of the insulator gap in the loop shield.

The center of the loop is grounded, but that is no problem because the voltage at the loop`s midpoint would be forced to zero anyway.

Roger then wrote:
"This can be approached incrementally. Let`s begin by assuming the shield is too thin to have any appreciable skin effect."

That would complicate things fast. Resistance would rise. Currents from both directions would flow in the outer surface of the shield if there were enough conductance for the induced current on the inner surface to reach the gap in the shield and make a turn or be reflected. Radiation would drop from reduced effective current. A lot of factors would be involved in determining radiation from the loop. It`s a great problem for the eager idle. I think I`d rather start work on my tax return.

Best regards, Richard Harrison, KB5WZI

497. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 04:08:58 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <uBaA6.15224$IJ1.1194924@bgtnsc05-news.ops.worldnet.att.net>
Source record: 166446

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AD1BA22.D85F2187@IEEE.org...

> I'm not talking about the fractenna claims. I'm talking about the physics
> of fractal antennas. Given a certain volume for an antenna that must be
> folded into that volume, IMO there's a good chance that the most efficient
> folding method will be a fractal pattern. It's no smokescreen. You are
> simply trying to discredit all fractal antennas thus throwing out the baby
> with the bath water.
> --
> http://www.mindspring.com/~w6rca
>
>

As you stated previously, fractal antennas do obey the laws of physics - all of them. There is nothing new here in that regard. The other fact is that they behave no differently than any other antenna with a bent wire geometry - as more wire is added to the antenna, while maintaining the same "volume", the resonant frequency decreases, the resonant resistance decreases, the resonant bandwidth decreases and the resonant efficiency decreases. These are the performance trade-offs associated with lowering of resonant frequency in this manner. Additionally, the performance of the fractal antenna is more a function of the increase in wire length than the fractal geometry. The self similar fractal geometry is insignificant in determining the antenna behavior, ie. the lowering of resonant frequency, the resonance compression and multi-band behavior. Fractal antennas will not necessarily provide "optimum" performance. They just perform similarly to thousands of other possible geometry configurations.

All that "fractals" do in the design of linear wire antennas is provide a mathematical tool to create the geometry.

Steve VE9SRB

498. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 04:18:22 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD1380E.4F4D@wt.net>
Source record: 166447

W6RCecilA wrote:

>
> I'm not talking about the fractenna claims. I'm talking about the physics
> of fractal antennas. Given a certain volume for an antenna that must be
> folded into that volume, IMO there's a good chance that the most efficient
> folding method will be a fractal pattern. It's no smokescreen. You are
> simply trying to discredit all fractal antennas thus throwing out the baby
> with the bath water.

The only thing to me, is almost any folding pattern you come up with could be called a fractal if it's symmetrical. I consider a dipole as a form of a fractal if both sides are equal length. So almost any fancy symmetrical design could be claimed as such. Note the "fractal challenge" and note the "apparaent" winners designs. They were just random doodling according to what I understand, but if they are symmetrical, I would still consider them a fractal of sorts. There is no real set shape or form needed to qualify as a fractal the way I see it as long as they are symmetrical. I consider an old UHF bowtie TV antenna as a form of fractal. MK

--
http://web.wt.net/~nm5k

499. Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 04:22:24 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3AD13900.E5FD5836@cticonsulting.net>
Source record: 166444
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Some of you may be following my questions regarding setting up a longwire antenna for shortwave listening on a dx-390. At this point, based on all I've heard:
1. I have set up a plastic PVC pole on the house, next to a window, so it extends about a foot above the roof of the house. A suspended wire will run from there to a 6' fence in the back yard. According to pythagorean theorem, should be about 46' in length, top height about 30', give or take.

I intend to at least start by trying the following:

2. I have not done any wiring yet, but here is the plan:

a)50ohm coax center wire will connect to antenna. The other end of the coax will go to a grounding block outside, which allows the coax shield to feed to a rod in the earth. I assume that in the case of lightning, the lightning will jump to the shield and follow that path to earth. I still have a concern though, with regards to a "ground loop" that seems to be mentioned. Basically that there should not be grounds at different potentials? The rod I am thinking to place will be 30' or so from the fuse box in the garage, which is where I assume the ground for that is. Should these be connected together? Should I just run a single burried wire from this new rod to the utilities ground? Does the ground loop even apply to this case? Given that the lowest point of the antenna is 4-5' above ground, would lightning just jump to the ground there?

b)The coax will come inside and feed into a static discharge circuit that someone had posted on their site, which allows high voltages to bleed off through a resistor and/or neon lamp an then to ground (the block described above), normal feeds passing through a .01uF capacitor to the center of the antenna jack.

3. When not in use, i put the jack out the window, as this is very easy for me to do. assuming i don't forget. I was thinking in the case of lightning strike, the lightning follows the antenna wire to the coax shield, and then to the earth (good)....and/or through my radio to the house wiring (bad)? unit powered by a DC transformer connected to the AC line makes no difference? What if I just power the radio with rechargable batteries?

I think that this setup will address safety issues of static and lightning. I want to resolve the ground loop issue though. As to properly tuning the antenna, this remains to be seen. My assumption is that this 46' line will have to be tons better than the internal antenna

for all bands. As to whether it is operating at peak efficiency for any particular band, well that's a project for another day. I can experiment with differnt feeds and balun and other isolation and impedence matching devices, but right now I'd be happy with a general purpose antenna.

I know to those of you following my questions it may seem that I'm hung up on this lightning issue, but after reading the stuff on the polyphaser site, its made me pretty darn paranoid, so I hope you'll all bear with me.

Thanks again.

500. Wire Yagi tuning

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 04:47:53 UTC
From: Richard Karlquist <rick@area.com>
Message-ID: <Z9bA6.4566$ix4.3578661@news1.rdc1.sfba.home.com>
Source record: 166449

I am interesting in building a wire Yagi, but am concerned about how to model the insulators on the ends of the wires. I am wondering if I can model the self-resonant frequency of each element in free space (without the other elements) and then experiementally trim each element to its correct resonant frequency. Would this give me an equivalent Yagi? What is the best way to trim the resonant frequency of the elements: shorten the length or insert a series capacitor at the center? Basically, I am wondering how correct is the notion that two elements with the same free standing self resonant frequency will perforn identically in a Yagi regardless of element diameter, taper, end insulators, boom mounting plates, etc. Seems like it might be true for practical purposes. Any opinions?

Rick Karlquist N6RK

501. Re: Radio Shack Antenna Rotors?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 05:04:01 UTC
From: njradiodude@aol.com
Message-ID: <20010409010401.27488.00002964@ng-mj1.aol.com>
Source record: 166450

Hi John, I've used RadioShack TV rotators for over 20 years. Back in the day, I had an 11m (but of course, no real ham would ever admit to starting out on 11m) 3-element horizontal yagi. Right now, that rotator is my Field Day/mountaintop spinner. I currently use a RS rotator to spin an A3 that I've had up since 1988. Five years ago, I started in 2m and 432mHz DXing, and bought a new RS rotator for a 13-element 2m and a 22-element 432 yagi (stacked). I have been lucky. High winds (at times nearing 80mph during a tropical storm or two) and ice storms, none of them has gone off orientation (one yagi did because I failed to tighten it properly once) or froze-up in ice. I've been fortunate, I guess, but I have sung their praises on these NewsGroups over the past few years. How's that for honesty? I'm an old CBer, a former Graybander, and now a real ham since 1988 who hates spending more money than he has to.

73 and good luck.

Tom KB2FIK
NJRadioDude@aol.com
Bloomfield, New Jersey

502. FS: new 50 pf doorknob caps

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 05:22:19 UTC
From: k9sqg@aol.com
Message-ID: <20010409012219.15542.00002525@ng-fa1.aol.com>
Source record: 166452

Bought a grouping of 50 pf new doorknob caps. Have enough for my project needs and selling off the few that are excess. $3.50 each plus UPS shipping.

73s,

Evan

503. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 05:24:02 UTC
From: Ed Cregger <nuke663jlm@vei.net>
Message-ID: <td2hnb94uq4o50@corp.supernews.com>
Source record: 166451

Half wave end fed antennas (an end fed dipole) do not
utilize a ground plane. Forget the nonsense about a quarter
wave matching section and extra gain with a ground plane.
Sales hype for the uneducated.

Yes, the polyester resin finish doesn't last long without a
clear coat of paint. Krylon clear works just fine, but I
wouldn't bother applying it for a couple of years. Just be
sure to wear gloves when handling it later on, otherwise the
fibreglass in the palms of the hands syndrome can be very
annoying.

My A-99 is going on ten years of faithful service.
--
Ed Cregger, NM2K
nuke663jlm@vei.net

*Remove the "nuke" for correct email address

"Rob St.Denis" <tstdenis3160@home.com> wrote

> well if you dont mind the environment life of 3 yrs ...
not to mention the
> ground plane kit falls apart every time theres a wind ...

504. Re: Wire Yagi tuning

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 05:59:33 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AD14FC5.402D612F@oio.net>
Source record: 166453

Richard,
1. Modeling insulators? Why bother?
2. Why not do it like most other people do? Why should you
care what the 'self resonance' of a director is?
3. What is an 'equivalent yagi'?
4. The length of elements is the 'accepted' way of doing it.
Of course using a capacitor (as in a gamma match) will
work too, to a point.
5. I'd say your 'notion' is incorrect. Length, diameter, taper
does affect 'self resonance'.
6. I guess it just depends on how 'practical' you are... sorta.

'Doc

505. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 06:03:37 UTC
From: Ross Archer <dogbert@mindless.com>
Message-ID: <986796062.840432@sj-nntpcache-5>
Source record: 166454
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Randon Loeb <rloebusenet@cticonsulting.net> wrote in message
news:3AD13900.E5FD5836@cticonsulting.net...
> Some of you may be following my questions regarding setting up a
> longwire antenna for shortwave listening on a dx-390. At this point,
> based on all I've heard:
> 1. I have set up a plastic PVC pole on the house, next to a window, so
> it extends about a foot above the roof of the house. A suspended wire
> will run from there to a 6' fence in the back yard. According to
> pythagorean theorem, should be about 46' in length, top height about
> 30', give or take.

As an antenna goes, that sounds pretty good although perhaps too good
for a portable. If you experience serious overloading (spurious signals
and distorted signals that show up all over),
you may need to build a simple and inexpensive attenuator using a
simple carbon-composition variable resistor, but might as well wait
and see whether it's needed before worrying about that. Some locations
can handle well over 50 feet on most portables (I'm in one such location)
with no overload issues, while others can't.

>
> I intend to at least start by trying the following:
>
> 2. I have not done any wiring yet, but here is the plan:
>
> a)50ohm coax center wire will connect to antenna. The other end of the
> coax will go to a grounding block outside, which allows the coax shield
> to feed to a rod in the earth. I assume that in the case of lightning,
> the lightning will jump to the shield and follow that path to earth.

No, I wouldn't count on that at all. Any lightning impulse nearby will
pick up on your antenna wire and feed into your house over the center
conductor, unless the coax breaks down and shorts internally. I wouldn't
want to count on my coax to protect me.

Best bet is to short the center conductor where it enters the house, to your
grounding block during storms and periods when you're not listening in
storm season, so that the most direct path to ground isn't through your
house...

> I
> still have a concern though, with regards to a "ground loop" that seems
> to be mentioned. Basically that there should not be grounds at
> different potentials? The rod I am thinking to place will be 30' or so
> from the fuse box in the garage, which is where I assume the ground for

> that is. Should these be connected together? Should I just run a
> single burried wire from this new rod to the utilities ground? Does the
> ground loop even apply to this case? Given that the lowest point of the
> antenna is 4-5' above ground, would lightning just jump to the ground
> there?
>

I'm assuming your radio is either battery or adaptor powered, and has
no metallic case for ground? If so, I don't think you have to worry too
much about differences between the radio's ground and the antenna's.

>
> b)The coax will come inside and feed into a static discharge circuit
> that someone had posted on their site, which allows high voltages to
> bleed off through a resistor and/or neon lamp an then to ground (the
> block described above), normal feeds passing through a .01uF capacitor
> to the center of the antenna jack.

Sounds like an excellent idea. The capacitor also will block any DC
potential differences due to ground loops, in the off chance this is
a problem.
>
> 3. When not in use, i put the jack out the window, as this is very easy
> for me to do. assuming i don't forget. I was thinking in the case of
> lightning strike, the lightning follows the antenna wire to the coax
> shield, and then to the earth (good)....and/or through my radio to the
> house wiring (bad)? unit powered by a DC transformer connected to the
> AC line makes no difference? What if I just power the radio with
> rechargable batteries?

Safest of all is to be off the mains. I'm very fond of the rechargable
alkaline
cells like "Renewals" by Eveready. Their main advantage is they deliver the
full 1.5 volts that many radios need to operate at peak performance vs. the
1.2 volts of typical NiCads. Some radios (e.g. ATS909, YB400, Sony 7600G),
just don't work very well on NiCads.

The best part is there are now chargers that handle all three major
rechargeable technologies: NiCad, NiMH, and rechargable alkaline,
and auto-sense which you have and charge them up accordingly.
>
> I think that this setup will address safety issues of static and
> lightning. I want to resolve the ground loop issue though. As to
> properly tuning the antenna, this remains to be seen. My assumption is
> that this 46' line will have to be tons better than the internal antenna
> for all bands. As to whether it is operating at peak efficiency for any
> particular band, well that's a project for another day. I can
> experiment with differnt feeds and balun and other isolation and
> impedence matching devices, but right now I'd be happy with a general
> purpose antenna.

Probably the antenna you devised is as much antenna as you'll ever need.
Unless you want to specialize in super-faint DX on particular bands, with
a tabletop that can handle big signal inputs, you're probably doing more
than
enough already.

>
> I know to those of you following my questions it may seem that I'm hung
> up on this lightning issue, but after reading the stuff on the
> polyphaser site, its made me pretty darn paranoid, so I hope you'll all
> bear with me.

Better to be overcautious about lightning than not!

There was a guy, Crispy Cadaver, who didn't, and he burned his ash off. :)

>
> Thanks again.

506. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 06:09:11 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD15207.86D6D673@eznec.com>
Source record: 166456

W6RCecilA wrote:
>
> Dick Carroll wrote:
> >
> > W6RCecilA wrote:
> > > There are fractal antennas being used now, Dick. They exist. They perform
> > > according to the laws of physics.
> >
> > Ya don't say! Anyone who can read knows that.
>
> Then why did you imply that fractal antennas are a "scam"? They are
> not a scam. They obey the laws of physics. The most efficient folding
> method for folded antennas just may be a fractal pattern.
> --
> http://www.mindspring.com/~w6rca

It might be that the most efficient folding method is a fractal pattern, but the evidence I've seen points against it. Steve Best has submitted several non-fractal designs which are more efficient than Fractenna's MI2 loop for the same resonant frequency and outside dimensions. These designs are publicly available for comparison from ftp://eznec.com/pub/MI2 as EZNEC files and accompanying explanatory text files. Although Fractenna initially posed the "challenge" which prompted this comparison, Fractenna's only response to date has been numerous unsupported accusations and empty lawsuit threats, but absolutely no objective rebuttal of the evidence. So for now, it looks to me like the objective evidence is strongly against the postulate that the fractal design is the most efficient.

Roy Lewallen, W7EL

507. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 06:10:08 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AD15240.9990BE46@oio.net>
Source record: 166455
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Randon,
Before going to all that trouble, why not just run
the wire from the top of the PVC pipe to the center
pin of the antenna connector. Forget about the grounds,
lightning protectors etc. Most 'lightning protectors'
are worthless (too slow). Lightning isn't going to
'jump' from the center conductor to the shield, to the
ground rod. It will/can jump to the shield, but it's
also going to continue down the center conductor to
your rado right through that .01 capacitor like "corn
through a goose"!
'Doc

508. Re: 80 Meter Gama Match

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 06:12:41 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AD152D9.CF401071@oio.net>
Source record: 166457

Dean,
I wonder why you would want to feed an 80 meter dipole
with a gamma match?
'Doc

509. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 06:17:01 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD153DD.5485D874@eznec.com>
Source record: 166458

Indeed, if one considers all symmetrical antennas, including dipoles and rabbit ears, to be fractal, a great number of claims can be made for "fractal" designs. And I'd be much less surprised if a "fractal" antenna by this broad definition comes in first in a number of categories. But it certainly detracts from their novelty. In fact, by this definition, non-"fractal" antennas would be much more novel. First thing you know, we'll have a FractNotenna Inc applying for grants.

Roy Lewallen, W7EL

Mark Keith wrote:
>
> W6RCecilA wrote:
>
> >
> > I'm not talking about the fractenna claims. I'm talking about the physics
> > of fractal antennas. Given a certain volume for an antenna that must be
> > folded into that volume, IMO there's a good chance that the most efficient
> > folding method will be a fractal pattern. It's no smokescreen. You are
> > simply trying to discredit all fractal antennas thus throwing out the baby
> > with the bath water.
>
> The only thing to me, is almost any folding pattern you come up with
> could be called a fractal if it's symmetrical. I consider a dipole as a
> form of a fractal if both sides are equal length. So almost any fancy
> symmetrical design could be claimed as such. Note the "fractal
> challenge" and note the "apparaent" winners designs. They were just
> random doodling according to what I understand, but if they are
> symmetrical, I would still consider them a fractal of sorts. There is no
> real set shape or form needed to qualify as a fractal the way I see it
> as long as they are symmetrical. I consider an old UHF bowtie TV antenna
> as a form of fractal. MK
>
> --
> http://web.wt.net/~nm5k

510. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 06:48:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD15B3C.E59549BD@eznec.com>
Source record: 166459

Although a reasonable conclusion for a dipole, this is a different situation than a short antenna, which an SGC tuner is commonly used for. And there are other pitfalls in making a comparison like this, which I'll illustrate.

I modeled a 3 meter high vertical antenna over perfect ground, with zero wire loss, at 3.5 MHz. (Anyone with either the full or demo version of EZNEC can duplicate these results. They're not hard to calculate by hand, either.)

This lossless antenna has a gain of 4.77 dBi and a feedpoint resistance of 0.54 ohms. This doesn't represent the gain of any real antenna, but shows us what we'd get if we could accomplish the impossible task of making the antenna and ground completely lossless.

The same antenna made from #6 copper wire (with copper wire loss now included in the model) has a gain of 4.45 dBi and a feedpoint resistance of 0.58 ohms. So the loss due to the wire resistance is negligible. (Wire loss is the only loss in the model, so the change in gain can be solely attributed to it.)

Changing the wire to #22 copper drops the gain to 2.94 dBi, with a feedpoint resistance of 0.82 ohms. Whether the 1.8 dB drop in gain is significant depends on your point of view. Reg would say this is 1/3 of an "S-point" and of no consequence. "Kurt Sterba" of WorldRadio said recently that a signal difference of up to 18 dB wasn't important. Those of us who operate on the edge of readability, either from DXing or QRP operation, know that 1.8 dB can make the difference between a QSO and no QSO. But none of that matters. Reducing the wire size from #6 to #22 won't make a 1.8 dB difference in field strength, no matter what the computer model said.

Why not? The reason is that the resistance of the ground system and in the SGC tuner itself will be much greater than the 0.24 ohms increase caused by going from #6 to #22 wire, and will make the wire resistance change insignificant. The reactance of this antenna is about -1800 ohms, so if the SGC tuner contained an inductor with Q = 600 (which I'm sure is way overoptimistic), it would have a loss resistance of about 3 ohms. So just considering this additional factor, the loss resistance will go from 3.04 to 3.28 ohms when we change wire size. What's the difference in gain due to this change in loss resistance? Less than 0.3 dB. And when you factor in the ground loss and a more realistic tuner loss, it's even less.

So the conclusions are:

1. Going from #6 to #22 wire won't reduce your signal strength
noticeably, even with quite a short antenna.
2. Be careful what you model with the computer, and the conclusions you
draw from it. (Be sure to add the other loss resistances as a "load" at
the base of the antenna before drawing conclusions about the field
strength!)

Roy Lewallen, W7EL

Dan Richardson wrote:
>
> Okay, Your posting perked my interest so ran a model of a 40-meter
> dipole at ï¿½-wavelength above ground.
>
> Using #16 copper wire the maximum gain (according to NEC) 7.43 dBi and
> using #6 copper wire the gain was 7.52 dBi.. A wopping 0.09 dB :-)
>
> Danny
> K6MHE
>
> On Sun, 08 Apr 2001 17:56:41 -0700, Mike <km6ab@pacbell.net> wrote:
>
> >For years SGC has pushed using the largest practical wire for the
> >radiating element of their tuners, especially #6. I don't believe their
> >fantastic claims of gain with #6 wire but have always wanted to do a
> >comparison of sizes like #22, #12 and something really fat. Anyone out
> >there got time on their hands to set up an HF test like this?

511. Re: Wire Yagi tuning

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 07:01:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD15E31.B04B6165@eznec.com>
Source record: 166460

I don't know how to model the end insulators, but you could probably answer your last question fairly quickly. Start with a model of a Yagi. (NBSYagi.EZ would be a good choice if you use EZNEC.) Run a calculation and save the pattern. Delete all the elements exept one of the parasitic elements. (I'd use the first director or perhaps the reflector, since these are most tightly coupled to the driven element.) Move the source to the element that's left. Find the resonant frequency of this element by doing a frequency sweep. Then change the element diameter and adjust its length until it has the same resonant frequency as before. Go back to the Yagi model and substitute this new element for the old one, and compare the pattern with the original.

I don't believe that making an element self-resonant at the same frequency is sufficient to guarantee the same performance in a Yagi. The reason is that the self-resonant frequency is of no direct consequence; what's really important is the current magnitude and phase at the operating frequency. If you have a very thin element, the current magnitude and phase will change more between the self-resonant and operating frequencies than for a fat element. So even if they have the same self-resonant frequency, they'll have different currents at the operating frequency, hence different performance. On the other hand, I also suspect that elements having the same self-resonant frequency will perform nearly the same if their diameters aren't too much different. So adjusting the self-resonant frequency would probably be a valid way to correct for small differences due to such things as end insulators or wire insulation. I don't have any direct experience with this, though, so will gladly defer to those who do.

Roy Lewallen, W7EL

Richard Karlquist wrote:
>
> I am interesting in building a wire Yagi, but am concerned about how to
> model the insulators on the ends of the wires. I am wondering if I can
> model the self-resonant frequency of each element in free space (without the
> other elements) and then experiementally trim each element to its correct
> resonant frequency. Would this give me an equivalent Yagi? What is the
> best way to trim the resonant frequency of the elements: shorten the length
> or insert a series capacitor at the center? Basically, I am wondering how
> correct is the notion that two elements with the same free standing self
> resonant frequency will perforn identically in a Yagi regardless of element
> diameter, taper, end insulators, boom mounting plates, etc. Seems like it
> might be true for practical purposes. Any opinions?
>
> Rick Karlquist N6RK

512. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 07:10:20 UTC
From: Porky <Tim@nospam.5by9.co.uk>
Message-ID: <medA6.2683$Fm4.835203@news2-win.server.ntlworld.com>
Source record: 166461
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Best prevention is to just unplug the antenna during a storm.

I had a mate who did just that, but left the antenna plug laying
on the floor, the lightning did strike, and resulted in a discharge
from his plug to the central heating radiator nearby. It blew a
hole in the radiator and flooded his house.

So, even when unplugged, make sure the end of your coax goes
somewhere safe.

Rgds
Tim

"'Doc" <w5lz@oio.net> wrote in message news:3AD15240.9990BE46@oio.net...
>
>
> Randon,
> Before going to all that trouble, why not just run
> the wire from the top of the PVC pipe to the center
> pin of the antenna connector. Forget about the grounds,
> lightning protectors etc. Most 'lightning protectors'
> are worthless (too slow). Lightning isn't going to
> 'jump' from the center conductor to the shield, to the
> ground rod. It will/can jump to the shield, but it's
> also going to continue down the center conductor to
> your rado right through that .01 capacitor like "corn
> through a goose"!
> 'Doc

513. Re: 80 Meter Gama Match

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 08:28:27 UTC
From: ryeburn@sfu.caz
Message-ID: <ryeburn-0904010128270001@a3a05603.sympatico.bconnected.net>
Source record: 166462

In article <u991dtkot4aben0ktspb0cpo78ng9kcal4@4ax.com>, deanl@bigfoot.com wrote:

> Anyone done any work on a Gama Match on a 80 meter
> wire dipole antenna?

Yes. Several of us at W8LT (The Ohio State University ARC) did just this in the late 1950s and early 1960s. I worked a Brazilian (if I remember correctly the call was PY4AXN, but I won't bet on it because it was about 40 years ago!) on about 3500.1 kHz late one afternoon a couple of hours before sunset with the thing (driven by a little 'ole highly modified BC610). He answered my CQ. Everyone in the shack at the time said he must be a pirate, probably 10 miles away. They believed it when the QSL card came a couple of weeks later. Doing this sort of thing too much rather than working on my dissertation probably delayed my math Ph.D. about a year.

> Also what spacing should I use between the driven element and
> the reflector?

Driven element? Reflector? You said dipole. Our reflector was some very moist ground about 25 feet below the dipole, and about 5 feet higher than the nearby Olentangy River. (Not the best design for low angle radiation, but it put out a strong short skip signal.) We could leave the final amplifier power supply of the 610 turned off and still work people around the state with the fraction of a watt it put out due to imperfect neutralization and/or whatever gain an amplifier like that had with zero volts on the plate.

What we used for the gamma match was a length of RG8/U drooping from the center of the antenna (where the coax feedline connected, shield to centerpoint of the flattop wire and inner conductor to one conductor of the added drooping length of RG8/U) with the other conductor at the other end of the drooping section tied to the flattop some distance out from center. So the drooping section was both the "gamma rod" and the tuning capacitor. I forget whether the feedline connected to the inner conductor of the drooping coax and the braid at the other end connected to the flattop off center, or it was the other way around, but I remember it made a difference and only one of those two ways worked well. By choosing the right amount of droop, the right length of drooping coax, and the right off-center connection point (two of these will determine the third) we could get a good match. We could tweak the thing then by slightly adjusting the length of the entire flattop (keeping it symmetrical of course).

We found that gamma-matched dipoles on 80 and 40 had consideraby broader acceptable SWR curves than dipoles fed with coax directly, or fed with coax with a coiled-up section of coax up at the antenna center as a balun. Whether that was just loss, or something real, I do not know. But the BC610 never burned out the RG8/U in the gamma match or the RG8/U feedline, so I suspect at least some of it was real. We used the BC610 at the CW end of the band, and occasionally some people used it for ancient modulation on the Ohio phone net frequency, and the same antenna was used at other times by other people with a homebrew push-pull linear (a pair of Eimac 450THs if I remember correctly!) for SSB up near 4 MHz. That monster put out even more power than the BC610, and it didn't burn the antenna system up either. Getting a single antenna that would work acceptably over the 3.5-4.0 MHz range was one of the reasons we played with the gamma match.

David, ex-W8EZE a long, long time ago

--
David or Jo Anne Ryeburn
ryeburn@sfu.caz
To send e-mail, remove the letter "z" from this address.

514. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 08:53:49 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad17614.50988032@news.accessunited.com>
Source record: 166463

On Sun, 8 Apr 2001 19:54:54 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>
>Most of the old experts don`t clutter their writing with the
>"time-varying" garbage. Tom seems to have decided to cover them with
>baloney if he can`t dazzle them with brilliance.
>
>Best regards, Richard Harrison, KB5WZI

There is a HUGE difference in behavior of time-varying and static
fields.

If a person does not understand that, he will have real problems
understanding how anything related to fields acts in the real world.

73 Tom

515. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 09:15:49 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad17957.51822782@news.accessunited.com>
Source record: 166464
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

On Sun, 8 Apr 2001 23:03:37 -0700, "Ross Archer"
<dogbert@mindless.com> wrote:

>> a)50ohm coax center wire will connect to antenna. The other end of the
>> coax will go to a grounding block outside, which allows the coax shield
>> to feed to a rod in the earth. I assume that in the case of lightning,
>> the lightning will jump to the shield and follow that path to earth.
>
>No, I wouldn't count on that at all. Any lightning impulse nearby will
>pick up on your antenna wire and feed into your house over the center
>conductor, unless the coax breaks down and shorts internally. I wouldn't
>want to count on my coax to protect me.

The bulk of lightning damage is common mode damage as the lightning
follows the cables. Whith shielded cables, the bulk of energy is
OUTSIDE the shield.

That is why, if you look, you will see the CATV cables that run all
around the city and connect to your TV have the shields grounded
through grounding blocks and nothing else.

This case is a little different because of the antenna, but simply
disconnecting the feedline from the radio would be enough. That should
ALWAYS be done. Once that is done, it doesn't matter one bit of the
center of the cable is grounded to the shield or not.

>Best bet is to short the center conductor where it enters the house, to your
>grounding block during storms and periods when you're not listening in
>storm season, so that the most direct path to ground isn't through your
>house...

The grounding block takes care of the path through the house. Shorting
the cable is a waste of time.

>> still have a concern though, with regards to a "ground loop" that seems
>> to be mentioned. Basically that there should not be grounds at
>> different potentials? The rod I am thinking to place will be 30' or so
>> from the fuse box in the garage, which is where I assume the ground for
>> that is. Should these be connected together? Should I just run a
>> single burried wire from this new rod to the utilities ground? Does the
>> ground loop even apply to this case?

Ground loops ALWAYS apply, because they are the most common cause of
damage. The COAX should run to the utility ground and be grounded
there to the utility ground. It should enter the house after that
point.

In the Atlanta Georgia are there were several house fires because a
company installing satellite antennas was NOT bringing the feedline to
the utility ground and grounding the shield at that point to the same
ground as the utility company.

>> Given that the lowest point of the
>> antenna is 4-5' above ground, would lightning just jump to the ground
>> there?

Doubtful, and it it is doubtful lighting will ever strike the antenna
in the first place. If it does, the gap between the shield and center
of the cable will not allow much voltage difference. That is where it
will arc, since it is much less than an inch.

>I'm assuming your radio is either battery or adaptor powered, and has
>no metallic case for ground? If so, I don't think you have to worry too
>much about differences between the radio's ground and the antenna's.

That is VERY poor advice. Battery adaptors have only a few kilkovolts
breakdown voltage, and having a platic case offers little or no
protectuion to the system. Actually, having a plastic case makes
things much WORSE because it ensures all lightning currents flow
through the INSIDE of the radio.

>> b)The coax will come inside and feed into a static discharge circuit
>> that someone had posted on their site, which allows high voltages to
>> bleed off through a resistor and/or neon lamp an then to ground (the
>> block described above), normal feeds passing through a .01uF capacitor
>> to the center of the antenna jack.

That's nice, but it won't really protect anything.

>Sounds like an excellent idea. The capacitor also will block any DC
>potential differences due to ground loops, in the off chance this is
>a problem.

Anything they say is OK. Seriously, that will all do nothing for
nearby lightning strikes. But if it makes you feel better, use it.
Just don't depend on it.

Grounding and lead routing are the most important things.

>> 3. When not in use, i put the jack out the window, as this is very easy
>> for me to do. assuming i don't forget. I was thinking in the case of
>> lightning strike, the lightning follows the antenna wire to the coax
>> shield, and then to the earth (good)....and/or through my radio to the
>> house wiring (bad)? unit powered by a DC transformer connected to the
>> AC line makes no difference? What if I just power the radio with
>> rechargable batteries?
>
>Safest of all is to be off the mains. I'm very fond of the rechargable
>alkaline
>cells like "Renewals" by Eveready. Their main advantage is they deliver the
>full 1.5 volts that many radios need to operate at peak performance vs. the

>1.2 volts of typical NiCads. Some radios (e.g. ATS909, YB400, Sony 7600G),
>just don't work very well on NiCads.

The safest thing is proper grounding. The next step is unhooking the
feedline where it enters the building.

>> I know to those of you following my questions it may seem that I'm hung
>> up on this lightning issue, but after reading the stuff on the
>> polyphaser site, its made me pretty darn paranoid, so I hope you'll all
>> bear with me.

Polyphasor has decent advice. I'd stay away from personal Web pages.
There is no technical review on Internet. Anyone can say anything.

73 Tom

516. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 10:22:31 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3ad18d6a_1@news.cybertours.com>
Source record: 166465
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

(Snip)I assume that in the case of lightning, YOU ARE ASSUMING WAY
TOO MUCH, and I'm with Doc do away with the coax you don't need it!!
> the lightning will jump to the shield and follow that path to earth. I
> still have a concern though, with regards to a "ground loop" that seems
> to be mentioned. Basically that there should not be grounds at
> different potentials? The rod I am thinking to place will be 30' or so
> from the fuse box in the garage, which is where I assume the ground for
> that is. Should these be connected together? Should I just run a
> single burried wire from this new rod to the utilities ground? Does the
> ground loop even apply to this case? Given that the lowest point of the
> antenna is 4-5' above ground, would lightning just jump to the ground
> there?
>
>
> b)The coax will come inside and feed into a static discharge circuit
> that someone had posted on their site, which allows high voltages to
> bleed off through a resistor and/or neon lamp an then to ground (the
> block described above), normal feeds passing through a .01uF capacitor
> to the center of the antenna jack.
>
> 3. When not in use, i put the jack out the window, as this is very easy
> for me to do. assuming i don't forget. I was thinking in the case of
> lightning strike, the lightning follows the antenna wire to the coax
> shield, and then to the earth (good)....and/or through my radio to the
> house wiring (bad)? unit powered by a DC transformer connected to the
> AC line makes no difference? What if I just power the radio with
> rechargable batteries?
>
> I think that this setup will address safety issues of static and
> lightning. I want to resolve the ground loop issue though. As to
> properly tuning the antenna, this remains to be seen. My assumption is
> that this 46' line will have to be tons better than the internal antenna
> for all bands. As to whether it is operating at peak efficiency for any
> particular band, well that's a project for another day. I can
> experiment with differnt feeds and balun and other isolation and
> impedence matching devices, but right now I'd be happy with a general
> purpose antenna.
>
> I know to those of you following my questions it may seem that I'm hung
> up on this lightning issue, but after reading the stuff on the
> polyphaser site, its made me pretty darn paranoid, so I hope you'll all
> bear with me.
>

> Thanks again.

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.247 / Virus Database: 120 - Release Date: 4/6/01

517. Re: Inverted L as 1/2 wave

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 10:32:54 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3ad18fda_1@news.cybertours.com>
Source record: 166466

"Peter J. Bertini" <commquart@home.com> wrote in message
news:GH0A6.93700$Ok4.7433272@news1.rdc1.ct.home.com...
>
> "Brian Kelly, w3rv" <kelly@nospam.dvol.com> wrote in message
> news:3acfe581.84754429@news2.dvol.com...
> > On Sat, 07 Apr 2001 04:10:16 GMT, "Peter J. Bertini"
> > <commquart@home.com> wrote:
> >
> > >
> > > I've been trying to sketch your antenna in my head and I'm completely
> > > confused. Check me: You have a 40m dipole (70 feet long) fed in the
> > > center with a quarter wave length of ladder line (35 feet
>
> Tower is 65 feet, so feedline would be nearly 1/4 wave on forty; which
> would really only work if I had enough height for 1/2 wave of ladder line.
> Looks it will have to be coaxial feed.
>
> >
> > > >
> >> > An inverted L is usually considered a half-wave end fed wire half of
> > > which is vertical and half of which is horizontal on it's lowest
> > > frequency of operation.
>
> I thought the most common inverted Ls used 1/4 wavelengths; wouldn't 1/2
> wave place the high current point at the transistion point between
> horizontal and vertical polarization? Or, would that have some benefits
for
> short range communications?
>
> The feedpoint impedances are huge which
> > minimizes the need for radials. I've had 80m inverted Ls and I can
> > attest to the fact that they work really well on both 80 and 40. 65
> > feet up vetically and 65 feet horizontally with a simple ground rod at
> > the tuner. But they were terrible antennas on 160. A 160m inverted L
> > would require 270 feet of wire to be a decent antenna without radials.
> > ???
> > >
> The plan was a 1/4 wave T on 160, coax feed dipole for 40, and 1/2 wave
T
> on 80, all operating against the best radial system I could manage, which
> would be marginal.
> > >
> > >

> > >Pete
> > >
> > w3rv
An Inverted L can be either 1/4 wave or Half wave have used both to good effect here over the years.. though a Half wave wire does not require alot of radials , they do help with ground loss even on a 1/2 wave wire. My favorite inverted L for the low bands is a 3/8 wave for 160M about 170 feet long , and with tuner it works great on 160 , 80, and pretty fair on 40 m also .

73 dave kc1di

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.247 / Virus Database: 120 - Release Date: 4/6/01

518. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 11:10:19 UTC
From: fractenna@aol.com
Message-ID: <20010409071019.27480.00003015@ng-mj1.aol.com>
Source record: 166467

>As you stated previously, fractal antennas do obey the laws of physics - all
>of them. There is nothing new here in that regard. The other fact is that
>they behave no differently than any other antenna with a bent wire
>geometry - as more wire is added to the antenna, while maintaining the same
>"volume", the resonant frequency decreases, the resonant resistance
>decreases, the resonant bandwidth decreases and the resonant efficiency
>decreases. These are the performance trade-offs associated with lowering of
>resonant frequency in this manner. Additionally, the performance of the
>fractal antenna is more a function of the increase in wire length than the
>fractal geometry. The self similar fractal geometry is insignificant in
>determining the antenna behavior, ie. the lowering of resonant frequency,
>the resonance compression and multi-band behavior. Fractal antennas will
>not necessarily provide "optimum" performance. They just perform similarly
>to thousands of other possible geometry configurations.
>
>All that "fractals" do in the design of linear wire antennas is provide a
>mathematical tool to create the geometry.
>
>Steve VE9SRB
>

Some people feel they have to play bit parts in Kuhn's paradigm comedy. But
those parts end up as forgotten chaff.

I've gathered lotsa info here and this will be incredibly useful. Or rather
incredibly predictable. Totally expected. The copy of Kuhn is dog eared. I'll
pass it along.

Some people just can't be quiet. Others find patience and being good observers
rewards in themselves.

Maybe there is time for steve best to write to all the ee departments who have
students presenting fractal antenna projects this spring (just as a sample) and
have them filled in on the fraud. Why believe thier results after all? Or
anyone elses?

Maybe there is still time for steve to call his buddies in lexington and have
them cancel the fractal antenna short course?
Isn't he running the fractal session? Or is he?

Hmmmmm:-)?

Excuse me. I have a whole bunch of fractal antennas to cable up. A unique
solution. The only solution that meets the customer's needs.

They sure came back nicely from this outsourcer:-)

73
Phil
de N1ZKT

519. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 12:00:20 UTC
From: "Mark S. Holden" <msholden@ct2.nai.net>
Message-ID: <3AD1A454.F3779221@ct2.nai.net>
Source record: 166468
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

'Doc wrote:

> Randon,
> Before going to all that trouble, why not just run
> the wire from the top of the PVC pipe to the center
> pin of the antenna connector. Forget about the grounds,
> lightning protectors etc. Most 'lightning protectors'
> are worthless (too slow). Lightning isn't going to
> 'jump' from the center conductor to the shield, to the
> ground rod. It will/can jump to the shield, but it's
> also going to continue down the center conductor to
> your rado right through that .01 capacitor like "corn
> through a goose"!
> 'Doc

Eliminating coax seems like a marvelously bad idea.

It will "improve" reception of RFI from things like lamp dimmers, VCR's
and computer monitors inside his house.

520. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 12:16:08 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9as923$57e$1@uranium.btinternet.com>
Source record: 166369

Take one 40 meter dipole.

Radiation resistance = 73 ohms

#16 copper Loss resistance = 1.696 ohms Efficiency = 97.73%

#6 copper Loss resistance = 0.5367 ohms Efficiency = 99.27%

Improvement = a whopping 0.068 dB

That NEC program seems to be in the right ball park..

--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

Dan Richardson wrote
> Okay, Your posting perked my interest so ran a model of a
40-meter
> dipole at -wavelength above ground.
>
> Using #16 copper wire the maximum gain (according to NEC) 7.43
dBi and
> using #6 copper wire the gain was 7.52 dBi.. A wopping 0.09 dB
:-)
>
> Danny
> K6MHE
>
>
> On Sun, 08 Apr 2001 17:56:41 -0700, Mike <km6ab@pacbell.net>
wrote:
>
> >For years SGC has pushed using the largest practical wire for
the
> >radiating element of their tuners, especially #6. I don't
believe their
> >fantastic claims of gain with #6 wire but have always wanted to
do a
> >comparison of sizes like #22, #12 and something really fat.
Anyone out
> >there got time on their hands to set up an HF test like this?

>

521. complete novice - AM antenna help

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 12:18:14 UTC
From: ttmh <rdc86@dial.pipex.com>
Message-ID: <3ad1a88b$0$15028$cc9e4d1f@news.dial.pipex.com>
Source record: 166370

HELP ! downloaded this ng and almost gave up after the first few threads came up, (complex or WHAT!) pls can someone point me in the correct direction.

Am looking for an AM antenna for a denon tuner sitting in the kitchen. The "balanced loop" (2-terminal ends) tuner is 2m long (unwound it to see) and is useless at picking up fivelive on 909. The only spec with the tuner says it has 20uV sensitivity (and it measures 0.35k on my ohmeter). is there anything else I can use? and who sells them?. (The fm coax is plugged in to a spare (unconnected up top) coax tv aerial wire and works brilliantly.)

thanks.

would appreciate emailed replies as this ng is way outta my league!

Tim Hale
rdc86@dial.pipex.com.nospam
sheffield, uk.

522. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 12:23:55 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD1A9DB.B35B7BB2@mwci.net>
Source record: 166371

Here is some more info regarding shielding by skin effect.

In a coax, at any location, there is no voltage difference between the inside of the braid and the outside of the braid. Also, along the length of the braid, with respect to longitudinal voltages, there is no voltage difference between the inside and outside. This should be obvious (it is).

In the normal mode of transmission, at any instant of time (freeze the action), in addition to the voltage *between* the coax conductors, there is a *longitudinal* voltage drop along the length of the line. This longitudinal voltage drop is (ideally) identical on the braid and on the center wire.

Now assume that a common mode current has been added on the outside of the braid. Current never flows unless there is a voltage drop, so the common mode current is also associated with its own common mode longitudinal voltage drop along the braid. This longitudinal voltage drop is also forced to occur on the inside of the braid.

Now define a path inside the coax. Start at point X on the center wire, go up to point Y (a normal longitudinal volt change), then across to Y on the braid (a certain differential voltage), down the braid to X (here we have the sum of the normal longitudinal drop and the longitudinal drop due to the common mode), and then across to X on the center wire (a certain differential voltage).

Because of the common mode voltage, the voltage between center wire and braid has been modified by the value of the common mode voltage. That is, the common mode voltage has been converted to a differential voltage, some of it at point X and the rest of it at point Y.

Unless something else happens we have a very bad situation in which the undesired common mode signal interferes with the desired differential mode signal.

Something else does happen. The common mode signal on the braid is electromagnetically coupled to the center wire, and the conversion of common mode to differential mode is greatly reduced by this action. This reduction is further greatly enhanced by a choke balun on the coax. The choke

balun greatly increases common mode impedance on the braid and also on the center wire, and this greatly reduces common mode to differential mode conversion.

This is the way that the interior of the coax is "shielded" from the common mode. Skin effect has nothing to do with it. Sure, the skin effect separates the currents, but it does not separate the longitudinal voltages, therefore skin effect has nothing to do with preventing the conversion of common mode to differential mode, which is the shielding that we're after. If we want better shielding, we should use a balun.

********** Appendix **********

The common mode current on the outside creates a magnetic field that lies *entirely* outside the coax. So how can there be electromagnetic coupling to the center wire, as I have claimed? If we look at the inside surface of the braid we see a common mode voltage. This means that there is a common mode array of electric charges on that surface. These charges project an electric field into the region between the braid and center wire. This electric field is longitudinal (parallel to the center wire). It then finds its way electromagnetically to the center wire. We now have the coupling that we want. RF electric fields create electromagnetic coupling just as easily as magnetic fields. In a normal coax the braid and center wire are always tightly coupled to each other in this manner, assuring near equality of longitudinal voltages.

Bill W0IYH

523. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 12:39:52 UTC
From: Bill Meacham <NOSPAMexray@coqui.net>
Message-ID: <3AD1AD98.ADD7C582@coqui.net>
Source record: 166372
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

KC1DI wrote:
>
> (Snip)I assume that in the case of lightning,

With the typical modern shortwave set, I'd worry more about static buildup than lightning. You can get enough of a static charge to zap the front end in many radios during a snowstorm, an oncoming t'storm, or a lightning strike a mile away.
It seems you have somewhat addressed that issue. There's nothing you can do about a direct strike hitting your antenna...that's very rare and damage to the radio will be the least of your worries should that happen.
Stay focused on the best way to completely disconnect the antenna, toss the coax out the window when not in use, and you'll be in the safest situation. The ground blocks, etc will help for minor surges, etc, but don't rely on them for real protection. Don't abandon the idea of a decent ground system, because there are benefits in antenna operation too.
And don't overlook the obvious - unplug the radio during a storm. A damaging surge via the power is much more likely.

Bill Meacham
Vieques, PR

524. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 12:51:18 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD1B046.B8AD59C3@IEEE.org>
Source record: 166435

Dick Carroll wrote:
>
> W6RCecilA wrote:
> > There are fractal antennas being used now, Dick. They exist. They perform
> > according to the laws of physics.
>
> Ya don't say! Anyone who can read knows that.

Then why did you imply that fractal antennas are a "scam"? They are
not a scam. They obey the laws of physics. The most efficient folding
method for folded antennas just may be a fractal pattern.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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525. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 13:19:27 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9ascoq$867$1@uranium.btinternet.com>
Source record: 166373

A change in AWG of 10 gauges, ie., from #16 to 10#, results in a change of diameter of Sqrt(10) = 3.16 times.

Since current flows only on the wire surface the RF resistance also reduces by 3.16 times.

RF resistance of copper wire at 20 degrees C is, very simply, -

Sqrt(MHz) / 12 / (Diameter in mm) ohms per metre.

The loss resistance of a 1/2-wave dipole referred to the centre feedpoint is exactly 1/2 of the end-to-end RF resistance of the wire.

It turns out that the efficiency of a 1/2-wave dipole actually increases with the frequency band. It really is high at 2 meters.

Provided the radiation resistance is known, radiating efficiency can be found more accurately in a few seconds with a pocket calculator than with any number-crunching computer program. The same applies to very short fat antennas but, as Roy points out, with very short antennas the loss is unavoidably transferred to a matching network of some sort, and to the ground.

But with magloops, not only can the conductor diameter be increased almost indefinitely, no matching network is required other than the low loss, small diameter coupling loop. And no RF ground connection is needed. Thus the magloop is the most efficient of all small antennas. Maxwell permitting - is there a magloop somewhere inside the CFA ?

--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

Reg Edwards <g4fgq.regp@btinternet.com> wrote in message
news:9as923$57e$1@uranium.btinternet.com...
> Take one 40 meter dipole.
>
> Radiation resistance = 73 ohms
>
> #16 copper Loss resistance = 1.696 ohms Efficiency = 97.73%
>

> #6 copper Loss resistance = 0.5367 ohms Efficiency = 99.27%
>
> Improvement = a whopping 0.068 dB
>
> That NEC program seems to be in the right ball park..
>
> --
> **********
> Regards, Reg, G4FGQ
> Free radio design & modelling software
> http://www.btinternet.com/~g4fgq.regp
>
> **********
>
> Dan Richardson wrote
> > Okay, Your posting perked my interest so ran a model of a
> 40-meter
> > dipole at -wavelength above ground.
> >
> > Using #16 copper wire the maximum gain (according to NEC) 7.43
> dBi and
> > using #6 copper wire the gain was 7.52 dBi.. A wopping 0.09 dB
> :-)
> >
> > Danny
> > K6MHE
> >
> >
> > On Sun, 08 Apr 2001 17:56:41 -0700, Mike <km6ab@pacbell.net>
> wrote:
> >
> > >For years SGC has pushed using the largest practical wire for
> the
> > >radiating element of their tuners, especially #6. I don't
> believe their
> > >fantastic claims of gain with #6 wire but have always wanted
to
> do a
> > >comparison of sizes like #22, #12 and something really fat.
> Anyone out
> > >there got time on their hands to set up an HF test like this?
> >
>
>

526. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 13:25:08 UTC
From: Barry D <x123x123@yahoo.com>
Message-ID: <UKiA6.188162$A6.42320396@news4.rdc1.on.home.com>
Source record: 166374

Looking for a 10 meter no radial vertical to mount on a mast.
Thinking the Solarcon A-99 might be good. I see no negative comments
about it. Wondering what anyone has experienced.
How about the ground plane kit? Does it help that much?
I'd rather not use one if I can get by.

73
Brady
K0UC

I've had one up for 3 years now no problems. I have never bothered with the
ground kit. For the money it seems to be ok. I first had mine mounted on a
30' foot pole bracketed against the house and it stayed up for two years
that way no probs. I can hear RS 12/13 no problems, some hams say it can be
used for 6 meteres also but have never tried it.

73
Barry D

527. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 13:32:33 UTC
From: Donaly <dtdonaly@pacbell.net>
Message-ID: <3AD1B9F1.3EA9@pacbell.net>
Source record: 166388

W6RCecilA wrote:
>
>
> Fractal math is a whole relatively new branch of mathematics. If a
> folding pattern can be defined with a mathematical equation, we know
> what fractal equations/processes look like. Any antenna generated using
> a fractal equation/process could surely be defined as a fractal antenna.
>
> Fractal iterations using computer modeling software would probably zero
> in on the most efficient method of folding an antenna given a certain
> set of boundary conditions. It doesn't have to be a hit or miss situation
> any more.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

How do you know there is a best method of folding an antenna
given a certain set of boundary conditions, Cecil? Suppose there
are two good methods, or an infinite number, what then?

Tom Donaly KA6RUH

528. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 13:33:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD1BA22.D85F2187@IEEE.org>
Source record: 166440

Dick Carroll wrote:
>
> W6RCecilA wrote:
> > Then why did you imply that fractal antennas are a "scam"? They are
> > not a scam. They obey the laws of physics.
>
> Just like wet noodles and green trees will act as antennas. So what? If
> Freaktenna has an explanation of his highflown assertions he could give
> it. He doesn't and he won't, the claims of superior performance are
> vapor. He won't even give an explanation of what he's asserting.
> Smokescreens all the way. You DO like smokescreens, don't you Cecil?

I'm not talking about the fractenna claims. I'm talking about the physics of fractal antennas. Given a certain volume for an antenna that must be folded into that volume, IMO there's a good chance that the most efficient folding method will be a fractal pattern. It's no smokescreen. You are simply trying to discredit all fractal antennas thus throwing out the baby with the bath water.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

529. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 13:58:33 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad1ba7e.68505148@news.accessunited.com>
Source record: 166380
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

On Mon, 09 Apr 2001 08:39:52 -0400, Bill Meacham
<NOSPAMexray@coqui.net> wrote:

>With the typical modern shortwave set, I'd worry more about static
>buildup than lightning. You can get enough of a static charge to
>zap the front end in many radios during a snowstorm, an oncoming
>t'storm, or a lightning strike a mile away.

A simple resistor from the antenna to ground will eliminate charge buildup. A 47,000 ohm 1/2 watt resistor would be fine. There is no current at all involved. Virtually all receivers have such protection internally, or have a dc path through a shunt coil.

For induced voltages, which you may be mixing in with static buildup, you have a problem. They can reach potentials of thousands of volts.

While clamping the line with a neon bulb is better than nothing, only a fool would depend on that. That system worked fine with tube-type front ends, but it is not so good with semiconductors. If a receiver input transistor or FET is subjected to 60 volts before the neon bulb fires, small semiconductors are toast anyway. The series capacitor generally does nothing to help, and can actually in some cases make the problem worse. It freely passes the transient that occurs when the bulb fires, and can even form a voltage doubler with the neaon lamp (or gas tube).

Gas tubes used in transmitting lightning arrestors are a laugh for protecting solid-state receivers.

For receivers, a pair of back-to-back higher current diodes like 1N4007's across the feeedline will clamp the antenna at .7 volts. They normally fail shorted, but the smartest thing is to simply unhook the antenna unless you have some compelling reason to use it during incliment weather when lightning is snapping or likely to occur.

>It seems you have somewhat addressed that issue. There's nothing
>you can do about a direct strike hitting your antenna...that's
>very rare and damage to the radio will be the least of your
>worries should that happen.

In Atlanta GA, during one storm alone, there were THREE houses set on fire because a local dish installer was not grounding the shield of the feedline to the service entrance ground.

Indeed the chances of a direct strike are rare, but a nearby-strike can be a real hazzard IF you have ground loops through the building.

Code requires that all utilities and CATV lines be grounded to a common ground at the entrance for very good reason.

Proper grounding not only greatly helps for nearby strikes, it greatly reduces the risk of all damage because most lighting damage is common mode damage that flows between utilities and other grounds.

That is why Telco, CATV ,and the power mains all share the same ground. The dish installer in Atlanta out of ignorance was not grounding his equipment to that point.

>Stay focused on the best way to completely disconnect the antenna,
>toss the coax out the window when not in use, and you'll be in the
>safest situation. The ground blocks, etc will help for minor
>surges, etc, but don't rely on them for real protection. Don't
>abandon the idea of a decent ground system, because there are
>benefits in antenna operation too.

A good ground system is a good idea, IF it is handled correctly.

73 Tom

530. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 14:31:24 UTC
From: richardharrison@webtv.net
Message-ID: <13392-3AD1C7BC-192@storefull-113.iap.bryant.webtv.net>
Source record: 166382

Bill Sabin wrote:
"In coax, at any location, there is no voltage difference between the inside of the braid and the outside of the braid."

Coax cable is shielded cable. A good shield does not allow penetration. It totally repels r-f.
Energy inside the cable is contained. Energy outside the cable is excluded. No arcane explanation will change that simple fact which nearly everybody has experienced. Skin effect is credited as the cause of shield effectiveness.

Best regards, Richard Harrison, KB5WZI

531. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 14:36:47 UTC
From: ag4hq@aol.com
Message-ID: <20010409103647.13201.00006068@ng-fi1.aol.com>
Source record: 166381

Thicker wire in a dipole does not increase gain, but does increase bandwidth.

Mark
AG4HQ

532. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 15:02:47 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD1CF17.C4C1B0B6@mwci.net>
Source record: 166383

Richard Harrison wrote:

> Bill Sabin wrote:
> "In coax, at any location, there is no voltage difference between the
> inside of the braid and the outside of the braid."
>
> No arcane explanation will change that simple fact which
> nearly everybody has experienced. Skin effect is credited as the cause
> of shield effectiveness.

My explanation is not "arcane". It is basic EM principles, and nothing else. It is 100% correct.

Besides that, I have not asked you to believe anything, I am only telling what I know. What you believe is none of my business. I know what I believe, and if you have nothing but contempt for it, I think I can handle that OK.

Bill W0IYH

533. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 15:21:01 UTC
From: "Dennis P. Stahr" <irfutures@earthlink.net>
Message-ID: <xrkA6.1643$GB2.180155@newsread1.prod.itd.earthlink.net>
Source record: 166384

Thanks for all the comments. It did help as usual.

I have mounted the array with 16 gauge wire. It is a fan arrangement with the apex at about 5 feet above the peak of the roof. (remember, antenna restrictions). The ends run out to an 8 foot pole on each eave of the roof, and are about 1 foot 6 inches apart at that end, with the 20m ends about 2 feet off the roof ends.

The arrangement from top to bottom are: 15m, 12m, 10m, 17m then 20m. Not being too smart, I did this because I thought that if I went smallest to largest, i.e. 10m, 12m, 15m etc., that when I was on 20m the other dipoles would act as directors radiating the signal straight up... (told you, not too smart).

Anyway, the only one that has any decent SWR at this time is the 10m. I haven't had time to tune with the MFJ meter since I have to work on it when neighbors are gone. At this time I do notice a VERY narrow bandwidth on 10m. (about 400 kHz from 3:1 down to 1.3:1 back up to 3:1). I will be trying to tune it soon.

Don't know if anybody cares, but once completed, which may be a month or so because of business travel, I will post details of the installation along with the
measurements I ended up with, pictures of the array, and an Excel Worksheet with the graphs of the SWR I got on the meter.

Thanks again for all the comments!

Dennis - W6NYC

Can't find California Governor Gray "Duffus" Davis?.... Just look in the pocket of any power company executive, I'm positive you'll find him in there!

534. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 15:30:55 UTC
From: Mark Holden <msholden@ct2.nai.net>
Message-ID: <3AD1D5AF.B152B39E@ct2.nai.net>
Source record: 166385
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

W6RCecilA wrote:

> "Mark S. Holden" wrote:
> > Eliminating coax seems like a marvelously bad idea.
> > It will "improve" reception of RFI from things like lamp dimmers, VCR's
> > and computer monitors inside his house.
>
> My coax fed vertical is a lot noiser than my ladder-line fed dipole.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

Isn't a dipole antenna less susceptible to noise than a vertical?

Bear in mind this person is connecting a portable shortwave radio to a randomwire antenna that's 46 feet long. With the antenna starting on top of a 30 foot tall pole, the feed line is probably more than half the length of the antenna.

Using coax will shield the feed line from RFI within the house, and reduce the liklihood of overloading the radio.

Regards,

Mark

535. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 15:32:13 UTC
From: richardharrison@webtv.net
Message-ID: <22093-3AD1D5FD-113@storefull-111.iap.bryant.webtv.net>
Source record: 166387

I looked up coax in the 1970 edition of the ARRL Antenna Book. It says: "The current flowing on the inner conductor is balanced by an equal current flowing in the opposite direction on the inside surface of the outer conductor. Because of skin effect the current on the inner surface of the tube does not penetrate far enough to appear on the outer surface."

Seems to capture the situation in a nutshell.

I noticed three pages earlier, page 65 has a shielded loop for direction finding. The pipe around the loop is grounded at one end. This would probably be better grounded at the center, but it reveals to me that not all electrostatic shields are Faraday shields made of wires. They may not even be properly called Faraday shields, but the shield in this unbalanced loop is coupled the same as a loop shield grounded at its midpoint. Because the shield is grounded, it grounds the electric field.

Best regards, Richard Harrison, KB5WZI

536. Re: Inverted L as 1/2 wave

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 15:33:12 UTC
From: kelly@nospam.dvol.com
Message-ID: <3ad1d032.210379372@news2.dvol.com>
Source record: 166386

On Sun, 08 Apr 2001 16:52:54 GMT, "Peter J. Bertini"
<commquart@home.com> wrote:

>Tower is 65 feet, so feedline would be nearly 1/4 wave on forty; which
>would really only work if I had enough height for 1/2 wave of ladder line.
>Looks it will have to be coaxial feed.
>
Now I see where the problem is. You have some numbers twisted around a
bit Pete. A 1/4 wavelength on 40 is 33 feet, not 65 feet. Your tower
is about 1/2 wavelength tall on 40.
>>
>
>I thought the most common inverted Ls used 1/4 wavelengths; wouldn't 1/2
>wave place the high current point at the transistion point between
>horizontal and vertical polarization?
>
Yes, absolutely. In the case of an 80m L on your tower the vertical
portion would a 1/4 wavelength long at the 65 foot point then another
65 feet horizontally to another support.
>
And yes, the current max would be at the transition point. Which is
exactly what you want. The current max at the highest point in the
system is one of the beauties of an L. The last place you want the
current max is on the ground at the tuner. Even with a radial farm.
Plus with an L you get some vertical polarization.
>
It gets even better on 40. On 40 the 65 foot vertical portion becomes
a halfwave vertical which is a 3dB advantage over a 1/4 GP with
radials. Plus the horizontal portion makes it's contribution as
another half wave radiator.
>
There are obviously pattern issues involved and after I finally quit
talking about it and bite the wallet for the software one of my first
modeling exercises will be studying Ls.

> Or, would that have some benefits for
>short range communications?
>
My experience has been quite the opposite. I could barely grab one JA
multiplier on 40 with an elevated GP (base at 35 feet) on 40 in the
dx contests and I never did work a JA on 80 with my 135 foot open-wire
fed inverted vee from here on the east coast. Got the first 80m L
running and I ran JAs on both bands. Dramatic improvement on the
long-haul stuff.
>

>The plan was a 1/4 wave T on 160, coax feed dipole for 40, and 1/2 wave T
>on 80, all operating against the best radial system I could manage, which
>would be marginal.
>
A lot of it depends on how much real estate you have available. I
think you would find that an 80/40 L with the vertical run spaced
maybe 30 feet away from the tower would be a better antenna than the
dipole/T combination.
>
160 is a pain in the butt, you probably would be better off using a T
vs. the 80/40 L at least from the standpoint of ground losses. A 160
tee in your case would be 65 feet up vertically to the center of a 205
foot flattop. If you have the space I think you'd be better off with
an end-fed 1/2 wire, 65 feet up and 205 feet horizontal, a distorted L
configuration.
>
>> >Pete
>
w3rv

537. Re: Need an Elmer

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 15:40:35 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3ad28215_3@news3.prserv.net>
Source record: 166368

Reg:
Sorry, they're not available in the UK.
--
Crazy George
W5VPQ

Reg Edwards <g4fgq.regp@btinternet.com> wrote in message
news:9atjjhoaj1@uranium.btinternet.com...
> Nathan wrote -
> > this group seems to
> > have the best Elmers
> ======================
> You mean there are other elmers around somewhere ? Where ? Where
> ?
>
>
>

538. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 16:05:59 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AD1DDE7.B94DD2C0@spam.me.not>
Source record: 166389

Yep... He's still at it...

LMAO!

-SSB

Fractenna wrote:

> >As you stated previously, fractal antennas do obey the laws of physics - all
> >of them. There is nothing new here in that regard. The other fact is that
> >they behave no differently than any other antenna with a bent wire
> >geometry - as more wire is added to the antenna, while maintaining the same
> >"volume", the resonant frequency decreases, the resonant resistance
> >decreases, the resonant bandwidth decreases and the resonant efficiency
> >decreases. These are the performance trade-offs associated with lowering of
> >resonant frequency in this manner. Additionally, the performance of the
> >fractal antenna is more a function of the increase in wire length than the
> >fractal geometry. The self similar fractal geometry is insignificant in
> >determining the antenna behavior, ie. the lowering of resonant frequency,
> >the resonance compression and multi-band behavior. Fractal antennas will
> >not necessarily provide "optimum" performance. They just perform similarly
> >to thousands of other possible geometry configurations.
> >
> >All that "fractals" do in the design of linear wire antennas is provide a
> >mathematical tool to create the geometry.
> >
> >Steve VE9SRB
> >
>
> Some people feel they have to play bit parts in Kuhn's paradigm comedy. But
> those parts end up as forgotten chaff.
>
> I've gathered lotsa info here and this will be incredibly useful. Or rather
> incredibly predictable. Totally expected. The copy of Kuhn is dog eared. I'll
> pass it along.
>
> Some people just can't be quiet. Others find patience and being good observers
> rewards in themselves.
>
> Maybe there is time for steve best to write to all the ee departments who have
> students presenting fractal antenna projects this spring (just as a sample) and
> have them filled in on the fraud. Why believe thier results after all? Or
> anyone elses?
>
> Maybe there is still time for steve to call his buddies in lexington and have

> them cancel the fractal antenna short course?
> Isn't he running the fractal session? Or is he?
>
> Hmmmmm:-)?
>
> Excuse me. I have a whole bunch of fractal antennas to cable up. A unique
> solution. The only solution that meets the customer's needs.
>
> They sure came back nicely from this outsourcer:-)
>
> 73
> Phil
> de N1ZKT

539. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 16:13:57 UTC
From: kb7qhc@home.com
Message-ID: <3ad1debe.1171169492@news.seanet.com>
Source record: 166390

On Mon, 09 Apr 2001 07:51:18 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Dick Carroll wrote:
>>
>> W6RCecilA wrote:
>> > There are fractal antennas being used now, Dick. They exist. They perform
>> > according to the laws of physics.
>>
>> Ya don't say! Anyone who can read knows that.
>
>Then why did you imply that fractal antennas are a "scam"? They are
>not a scam. They obey the laws of physics. The most efficient folding
>method for folded antennas just may be a fractal pattern.

Hi Cecil,

You've followed a one-sided argument for too many years. Steve Best's
work of late has brushed away a lot of that myth.

True, fractals conform to physics (there is no choice really). They
also conform to the standard conventions we all recite here for a
multitude of antenna designs.

73's
Richard Clark, KB7QHC

540. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 16:25:54 UTC
From: kb7qhc@home.com
Message-ID: <3ad2e0b3.1171670613@news.seanet.com>
Source record: 166392

On 09 Apr 2001 11:10:19 GMT, fractenna@aol.com (Fractenna) wrote:

>
>Maybe there is time for steve best to write to all the ee departments who have
>students presenting fractal antenna projects this spring (just as a sample) and
>have them filled in on the fraud. Why believe thier results after all? Or
>anyone elses?
>

herr doktor!

You miss the point of publication and presentations (you've forgotten
the mechanics already?). Steve need not write to them all when the
IEEE will do that as a courtesy of publication. Too bad you are not
circulated in any but the amateur press. Vanity publication is good
for your spirits though.

In that regard you may feel cheered that your advice is being
followed. Something tells me that the shock of this summer will be
some's loss of innocence in regards to "fractal electromagnetics" and
that house of cards tumbling.

Oh, by the way, your spelling has taken a turn for the worse.

73's
Richard Clark, KB7QHC

541. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 16:27:14 UTC
From: Ed Cregger <nuke663jlm@vei.net>
Message-ID: <td3oissipbpjf5@corp.supernews.com>
Source record: 166391

Now you're telling me that a half wave end fed needs a counterpoise? Come on Cecil. You're going to confuse the troops. Tell that you are trying to change the radiation pattern of the vertical half wave end fed. The counterpoise serves no other function and is not needed for basic operation.
--
Ed Cregger, NM2K
nuke663jlm@vei.net

*Remove the "nuke" for correct email address

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AD264F3.17294E0E@IEEE.org...
> Ed Cregger wrote:
> > Half wave end fed antennas (an end fed dipole) do not
> > utilize a ground plane.
>
> Where is the counterpoise?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

542. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 16:37:03 UTC
From: kb7qhc@home.com
Message-ID: <3ad3e31b.1172286899@news.seanet.com>
Source record: 166393

On Mon, 09 Apr 2001 20:30:27 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>It's easy for a fractal expert to recognize a fractal mathematical process.

Name one.

>If an antenna can be described by a fractal equation, seems to me that is
>prima facie evidence that the antenna is a fractal.

Hi Cecil,

What you are arguing is that the special case dominates the general
simply because the special case can be described.

I can describe an LPDA as a log antenna, but that does not confer any
new physics or theory of electromagnetics on it. It doesn't even
place the award of efficiency on its mantle. If I can describe it as
log, does that remove the fractal label from it? If I describe it as
a fractal, does that remove the log label from it?

If we are simply naming antennas by their appearance (not too uncommon
in fact), then that sort of debases any notion of science beyond what
is cosmetic.

In more than 5 years, herr doktor has yet to show any correlation of
form to frequency (my own work is probably fraught with problems, but
it is miles ahead of his mumblings on the subject). We can probably
all agree that it is beyond the scope of his interest - but not his
claims.

73's
Richard Clark, KB7QHC

543. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 16:59:22 UTC
From: kb7qhc@home.com
Message-ID: <3ad4e59f.1172930184@news.seanet.com>
Source record: 166394

On Mon, 09 Apr 2001 20:27:40 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>Fractal iterations using computer modeling software would probably zero
>in on the most efficient method of folding an antenna given a certain
>set of boundary conditions. It doesn't have to be a hit or miss situation
>any more.

Hi Cecil,

If it were but only so.

The evidence of those designs offered over the years are obvious
examples of what is called "high-grading." That is, through the hit
or miss operations of considering many fractal forms, only those that
supported previously established "qualities" have been offered as
"winners" capable of taking on all "challengers."

I would point out that this ad-hoc "science" has been exposed by
Steve's FRACTAL CHALLENGE winners handily beating the masked champion.
This ad-hoc "science" has even been admitted to by the application of
genetic algorithms (another claim of bone fide that herr doktor cloaks
himself with - in contradiction to the obvious evidence of his being
wholly ignorant).

You make the mistake of just what self-similarity means. Too often
you omit the qualifier at all scales (or iterations). All antennas
are self-similar at one scale by definition - this distinction simply
points out the vacuity of the statement applied too loosely.

We can all agree that if fractals have any scientific merit, we have
been shielded from that discussion by herr doktor's lack of
participation with his insistence in preserving his commercial
interest. This activity has been recently described as a process of
"integrity." These same acts of integrity have often dominated ALL
fractal discussion to the exclusion of any technical consideration.

73's
Richard Clark, KB7QHC

544. Need an Elmer

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 17:00:56 UTC
From: Nathan Ciufo <nani@fuse.net>
Message-ID: <td3qpr86mess94@corp.supernews.com>
Source record: 166395

Greetings, and thanks in advance for your time in reading. I have a question that has nothing to do with an antenna, but this group seems to have the best Elmers on it. I am running a TS-430 with a matching DC power supply. I have a TR-7950 2 meter rig that I'm running off of the same supply. Anytime I have both rigs on, and I key the 2 meter rig, it "sounds" like it keys the 430 also, but it doesn't. There is an audible "click" sound, but it increases the brightness of the display on the 430. Any ideas as to whether or not this is safe, and/or if I have the 430 off, and use the 2 meter rig, is the 430 safe? Thanks and 73's, Nathan KA3MTT

545. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 17:29:31 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad1edcd.81642107@news.accessunited.com>
Source record: 166396

On Fri, 23 Mar 2001 01:08:15 -0600 (CST), richardharrison@webtv.net (Richard Harrison) wrote:

>Tom, W8JI wrote:
>"We all know (or should know) the shield does nothing to help S/N
>ratio....which is all the radio is concerned with."
>
>Another "expert" to weigh in on the side of the shielded loop is W.N.
>Christiansen, contributor of the "Aerials and Transmission Lines"
>section of F. Langford-Smith`s Radiotron Designer`s Handbook".
>
>He says: "The reason for this is that a balanced or shielded loop

There is the key phrase Richard ignores. "BALANCED or shielded" , not just shielded.

The author is smart enough to know all the shield does is help balance the system, reducing common mode coupling. A balanced loop is as good as a shielded loop, and a shielded loop with poor balance is a problem.

>responds to the magnetic component of the field of an aerial, whereas
>the capacitance type aerial responds to the electric component. In the
>radiation field they (E&H fields) are equal and mutually dependent. In
>the immediate vicinity of an aerial they are not equal, and the electric
>cxomponent increases more rapidly than does the magnetic field
>(component) as one approaches the aerial.

There the author is short sighted, or he assumes in the context of the text we know he is talking about antennas with high electric fields fringing out into space around the antenna. This is not the case with powerline operated devices, but is is the case with many open-ended antennas...like dipoles.

If you have a half-wave dipole connected to your hair-dryer, indeed the electric field is very strong near the ends of the dipole and indeed any loop antenna that is properly balanced will respond less.

>Hence in the vicinity of a
>radiation source of r-f noise, a loop aerial will pick up less (noise)
>energy than will a vertical aerial."

Maybe, maybe not. But in the general case it is true that verticals respond more to noise than loops when it is near-field noise.

But that isn't the discussion. Everyone from the very start agreed that when the noise is sourced very close to the loop the lop can be

less responsive. The issue disagreed is the role of the shield, and clearly that author is not saying anything but a "balanced or shielded loop".

>OK. In the near field, which depends on the size of the aerial (noise >radiator of opportunity), the electric component from a noise source is >larger than the magnetic component.

Sorry, that is not always the case....and is likely not often the case for devices coupled to power lines.

>So, in the near field of a noise
>source, an antenna which is more responsive to the magnetic field than >it is to the electric field will have a S/N advantage over an antenna >which responds equally to both components of the near field. This has >more to do with the size of the noise radiator than it does with the >size of the loop (so much for a distance of "a couple of loop >diameters").

Right. It has to do with the SIZE of the antenna radiating the noise. With power line operated devices, the antenna is huge. The impedance is low. The electric field is generally low or moderate.

>We have a whole pantheon of "experts" contradicting Tom`s declaration >that the electric field is "inseparable" from the magnetic field by the >shield around a loop antenna.

Actually I think you are going off on a tangent, and somehow thinking when he says "balanced or shielded loop" it means the shield has some magical property and the word "balanced" has no meaning.

He is also plainly talking about large antennas, possibly open-ended with wide areas of stru ong electric fields, that are radiating noise.

73 Tom

546. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 17:32:01 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad1f1c3.82656087@news.accessunited.com>
Source record: 166397

On Mon, 9 Apr 2001 10:32:13 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>all electrostatic shields are Faraday shields made of wires. They may >not even be properly called Faraday shields, but the shield in this >unbalanced loop is coupled the same as a loop shield grounded at its >midpoint. Because the shield is grounded, it grounds the electric field.
>
>Best regards, Richard Harrison, KB5WZI

This measurement proves otherwise:

In an attempt (I know this is probably a vain attempt) to dispell the myth that the shield has a low impedance while the center conductor does not, I stuck a loop together out of some 1" copper water pipe I use for ground rods. It was in 3.3 foot lengths...so the loops was about 3.3 foot on a side, close to earth, and vertical.

I measured it with a 32-bit A/D conversion prototype analyzer...which is probably not perfect but should be close. Here's what I got on 1.8 MHz with a square loop:

Tubing alone less than 1 ohm j40 across gap

#16 wire about the same shape measured about 1 ohm j68

#16 wire placed inside tubing just over 1 ohm j43

#16 wire inside tubing (open circuit) with tubing gap measured showed 1 ohm j40 across the tubing gap

Same test #16 wire shorted, over 1 ohm j5

Same test (shield gap measured) #16 wire resonanted-- over 4000 ohms (overflow on meter)
Same configuration but inner wire measured and shield resonanted --over 4000 ohms

So much for the shield having a low impedance.

Same configuration with center resonated and loaded with a 50 ohm resistor shield gap measured about 52 ohms j2.

Same configuration with shield resonated and loaded with 50 ohm resistor and center wire measured--- center wire measures about 54 ohms j0.

Gosh, the loop behaves exactly like a transformer! The shield and center conductor have about the same impedance at their gaps.

Woops. There goes the "low impedance shield" theory.
The shield acts just like the center conductor, and vice versa. All
the shield does is change the system balance...and become the actual
antenna that couples to the outside world.

73 Tom

547. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 17:38:34 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD1F39A.294E1284@IEEE.org>
Source record: 166398

Richard Clark wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >It's easy for a fractal expert to recognize a fractal mathematical process.
>
> Name one.

How about six? Barnsley, Devaney, Mandelbrot, Peitgen, Saupe, and Voss,
contributers to "The Science of Fractal Images", which is loaded with
fractal software algorithms.

> >If an antenna can be described by a fractal equation, seems to me that is
> >prima facie evidence that the antenna is a fractal.
>
> What you are arguing is that the special case dominates the general
> simply because the special case can be described.

I am NOT talking about the entire set of fractal antennas. I am talking
about a *SUBSET* of fractal antennas which can be described mathematically
using fractal algorithms. I don't see how one could argue that an antenna
described by a fractal algorithm is not a fractal antenna.
--
http://www.mindspring.com/~w6rca

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548. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 17:51:10 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD1F68E.D6A312C1@IEEE.org>
Source record: 166399

Donaly wrote:
> How do you know there is a best method of folding an antenna
> given a certain set of boundary conditions, Cecil? Suppose there
> are two good methods, or an infinite number, what then?

Fractal mathematics is the process of iteration. If I iterate folding
and converge on a localized best method of folding, then I can identify
a localized performance surface maximum. Given a certain set of boundary
conditions and enough computing power, an evaluation of all performance
surface maximum points within those boundary conditions, could be
performed carried to whatever resolution is specified.
--
http://www.mindspring.com/~w6rca

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549. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 17:58:58 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD1F862.9EF2C7E9@IEEE.org>
Source record: 166400

Richard Clark wrote:
> I would point out that this ad-hoc "science" has been exposed by
> Steve's FRACTAL CHALLENGE winners handily beating the masked champion.

Try looking forward instead of backwards. It is within the realm of
possibility now to hang a fractal antenna generation algorithm front
end on an NEC modeling package and allow the computer to iterate toward
maximum performance. No need for "ad-hoc science" any more. That many,
many people tried and failed to fly before Kitty Hawk didn't mean
that manned flight was impossible.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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550. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:03:26 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD1F96E.FAF0BCE7@mwci.net>
Source record: 166401

Richard Harrison wrote:

> I looked up coax in the 1970 edition of the ARRL Antenna Book. It says:
> "The current flowing on the inner conductor is balanced by an equal
> current flowing in the opposite direction on the inside surface of the
> outer conductor. Because of skin effect the current on the inner surface
> of the tube does not penetrate far enough to appear on the outer
> surface."

I agree with that, no problem.

When the coax is *properly* connected to a load that does not have a common mode current on the outside the return current flows on the inner surface. If you read my article again (may I kindly request that you look at it again more carefully?) you will see that I do understand the textbook operation of a coax. At the inner surface the mag field from the forward current in the center wire and the mag field at the inner surface of the braid due to the return current cancel each other so that mag field does not escape to the outside.

The problem is that a common mode current produces a common mode voltage on the braid. For every current there is a voltage. In this case the voltage is due to the inductance of the braid (not so much its resistance). If the braid is completely tied everywhere to a large ground plane, the common mode problem goes away.

This common mode voltage is transformer coupled to the center wire. The voltage that is coupled to the center wire matches, and therefore offsets, the common mode voltage quite well, but often not good enough. To improve the common mode rejection we use the choke balun.

My point is that the separation of normal current and common mode current due to skin effect on the outside of the braid (for the common mode current) does not improve the isolation. It is the balun that gets the job done.

Bill W0IYH

551. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:04:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD1F993.DD50E6EE@IEEE.org>
Source record: 166402

Richard Clark wrote:
> You've followed a one-sided argument for too many years. Steve Best's
> work of late has brushed away a lot of that myth.

It has no more been proven that non-fractal folded antennas are superior
to fractal folded antennas than it was proven that manned flight was
impossible at the turn of the last century.
--
http://www.mindspring.com/~w6rca

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552. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:09:21 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD1FAD1.446EAB85@IEEE.org>
Source record: 166403

Ed Cregger wrote:
> Now you're telling me that a half wave end fed needs a
> counterpoise? Come on Cecil. You're going to confuse the
> troops. Tell that you are trying to change the radiation
> pattern of the vertical half wave end fed. The counterpoise
> serves no other function and is not needed for basic
> operation.

Why would you assume that I am trying to tell you something
when all I did was ask a question? :-)

A half-wave vertical MUST be fed against something. That
something can be considered to be a generic counterpoise
be it ground or ground plane. Transmission lines are designed
to be two-wire lines with balanced currents. How do you balance
the current out of a floating coax braid?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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553. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:11:24 UTC
From: richardharrison@webtv.net
Message-ID: <15562-3AD1FB4C-232@storefull-114.iap.bryant.webtv.net>
Source record: 166410

Tom, W8JI wrote:
"There is a HUGE difference in behavior of time-varying and static fields."

Back for the n-th time to Terman 1955 page 38:
"It is possible to shield electrostatic flux wihout simultaneously affecting the magnetc field by surrounding the space to be shielded with a conducting cage that is made in such a way as to provide no low-resistance path for the flow of eddy currents, while at the same time offering a metallic terminal upon which electrostatic flux lines can terminate."

Electrostatic and magnetic are adjectives applicable to static and dynamic fields. But, Terman relates his observations to the flow of eddy currents. Eddy currents require a time-varying field, so in context, there is no need for more adjectives. In fact, excess words tire and confuse readers. Is that Tom`s purpose?

Electric and magnetic fields are not "inseparable".

Best regards, Richard Harrison, KB5WZI

554. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:15:28 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD1FC40.159E69A5@IEEE.org>
Source record: 166404
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Mark Holden wrote:
> Using coax will shield the feed line from RFI within the house, and reduce
> the liklihood of overloading the radio.

Why will coax shield common-mode currents any better than ladder-line?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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555. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:29:19 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD1FF7F.53947EF8@eznec.com>
Source record: 166405

No, as a first step in proving the assertion that a fractal design is the most efficient possible is to produce a fractal design that can't be beat by a few minutes of fiddling with the bends. It's an interesting conjecture that a fractal design will be the most efficient, but I've seen absolutely no evidence to support it. Have you? I don't agree that we should regard the premise as true without evidence, and until proven false by running an infinite number of computer iterations. That, to me, isn't science.

Roy Lewallen, W7EL

W6RCecilA wrote:
>
> Roy Lewallen wrote:
> >
> > W6RCecilA wrote:
> > > Then why did you imply that fractal antennas are a "scam"? They are
> > > not a scam. They obey the laws of physics. The most efficient folding
> > > method for folded antennas just may be a fractal pattern.
> >
> > It might be that the most efficient folding method is a fractal pattern,
> > but the evidence I've seen points against it. Steve Best has submitted
> > several non-fractal designs which are more efficient than Fractenna's
> > MI2 loop for the same resonant frequency and outside dimensions.
>
> But Roy, that is like proving there is no water on earth because one is
> standing in the middle of a desert. What is needed to provide any valid
> proof is a fractal based iterative program interfaced to an antenna
> modeling program that can run unattended for as long as necessary. An
> optimum fractal is not something that can be achieved by a human being
> sitting for a few hours at a table with a pencil and paper. It took
> Mother Nature billions of years to achieve hers.
> --
> http://www.mindspring.com/~w6rca
>
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556. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:33:13 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <JfnA6.697332$U46.21822099@news1.sttls1.wa.home.com>
Source record: 166406

THE DOUBLE SHIELDED COAX EXPERIMENT

Goal

To test how skin effect on a central conductor would affect the capacity reading of a short tubular coaxial line.

Description of equipment

37 1/2 inches of #14 stranded antenna wire
33 1/2 inches of 5/8 O.D. copper water pipe
33 1/2 inches of 11/16 O.D. iron/zinc conduit
33 inches of 1 inch I;D. copper pipe
PVC and PE pipe and tubing for insulation
Autek VA-1 RX vector analysis testing device

Description of experiment

The #14 wire and 1 inch copper pipe were the inner and outer elements of an unterminated coaxial line. The test frequency was 28.0 Mhz.
An unterminated piece of coax 33 inches long tested at 28 Mhz should show a capacitive reactance. If a conductive tube is placed between the inner and outer coaxial elements, then currents would flow on the middle tube proportional to the currents on the coaxial line. The currents would absorb energy, create a skin effect, and should change the capacity reading of the experiment.

The thickness of each material was as thick or thicker than the wire making up the shield of RG-8 coaxial line.

The test was performed under 3 conditions, no middle tube, a copper middle tube, and a iron middle tube. The insulating materials were the same in all test.

The results

Conditions Capacity R + J

No middle cond. 46 pf 55 - J122
Copper middle 47 pf 52 - J117
Iron/zinc middle 46 pf 52 - J121

Accuracy

The Autek instrument is accurate to about 3-4% typical, with accuracy going down to about 8% at 30 Mhz.

The insulating material was material available so the fit was not perfect. As a result, the central wire was not located exactly at the center of the

tubes.

Conclusion

The readings were nearly equal and did not show any clear trend. No importance should be attached to the differences in the readings observed because they were well within the accuracy range of the measuring device.

A conductive tube placed between two plates of a capacitor appears to be transparent to the electrical fields between the two plates.

Final comment

More experiments are needed before most of us can comfortably understand the role of skin effect as a shield.

73, Roger, W7WKB

557. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:38:20 UTC
From: Ed Cregger <nuke663jlm@vei.net>
Message-ID: <td408jnlpbtf1c@corp.supernews.com>
Source record: 166407

Umm, let's see, we make the lower half of the antenna
hollow, then we feed it in the center instead of the end.
But that's not an end fed half wave. I get your point.

You're right, I screwed up. But how does this apply to the
A-99 anyway?

I've never had one of these antennas apart, but it sure
works like a coaxial antenna. There, I've displayed my
ignorance for all to see. Please be so kind as to share your
knowledge with us (seriously).
--
Ed Cregger, NM2K
nuke663jlm@vei.net

*Remove the "nuke" for correct email address

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AD1FAD1.446EAB85@IEEE.org...
> Ed Cregger wrote:
> > Now you're telling me that a half wave end fed needs a
> > counterpoise? Come on Cecil. You're going to confuse the
> > troops. Tell that you are trying to change the radiation
> > pattern of the vertical half wave end fed. The
counterpoise
> > serves no other function and is not needed for basic
> > operation.
>
> Why would you assume that I am trying to tell you
something
> when all I did was ask a question? :-)
>
> A half-wave vertical MUST be fed against something. That
> something can be considered to be a generic counterpoise
> be it ground or ground plane. Transmission lines are
designed
> to be two-wire lines with balanced currents. How do you
balance
> the current out of a floating coax braid?
> --
> http://www.mindspring.com/~w6rca
>
>
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=-----

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=-----

558. So...what's a KEGAL?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:39:22 UTC
From: Ed Cregger <nuke663jlm@vei.net>
Message-ID: <td40aiglnm6t28@corp.supernews.com>
Source record: 166408

???

559. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:41:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD20263.E1E8E724@eznec.com>
Source record: 166409

Nor has it been proven that fractal folded antennas are superior to non-fractal ones (and likely it never will be). But the "optimized" fractal design produced by the most vocal of the fractal proponents has been bested (pun intended) by a non-fractal design. Until somebody comes up with a fractal design that beats Steve's creations, the evidence is against fractals for being the most efficient. We have here an infinite sized class of antennas (fractal) being compared with another infinite sized class (non fractal). Proving that there's one design from one class that beats all possible designs from the other class will likely be impossible. (Therefore, you're probably safe from being proven wrong if you claim that the most efficient design is fractal. Or if you claim that the most efficient design is non-fractal.) However, the superiority of the fractal method could be shown by producing a fractal design that no one is able to beat with a non-fractal design. The one attempt we've seen at this so far was a failure -- the design was quickly beat.

Roy Lewallen, W7EL

W6RCecilA wrote:
>
> Richard Clark wrote:
> > You've followed a one-sided argument for too many years. Steve Best's
> > work of late has brushed away a lot of that myth.
>
> It has no more been proven that non-fractal folded antennas are superior
> to fractal folded antennas than it was proven that manned flight was
> impossible at the turn of the last century.
> --
> http://www.mindspring.com/~w6rca
>
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560. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:49:40 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD20444.AA513479@IEEE.org>
Source record: 166412

Roy Lewallen wrote:
> No, as a first step in proving the assertion that a fractal design is
> the most efficient possible is to produce a fractal design that can't be
> beat by a few minutes of fiddling with the bends. It's an interesting
> conjecture that a fractal design will be the most efficient, but I've
> seen absolutely no evidence to support it. Have you?

Nature is chock full of fractal designs including our species. Fractals absolutely dominate evolution to such an extent that I wonder why antenna evolution wants to ignore fractals. When something is so dominant and we overlooked it for so long, it raises a red flag that we may not be as smart as we think. In so many fields, fractals yield the best performance in the least space that I don't think fractals can be dismissed without consideration in the field of limited-space antennas. We simply do not have sufficient knowledge yet to come to a be-all end-all conclusion.

> I don't agree that
> we should regard the premise as true without evidence, and until proven
> false by running an infinite number of computer iterations. That, to me,
> isn't science.

So anything not presently proven true will forever be false? That reminds me of the patent office manager who said, around 1900, that they might as well close the patent office because everything had already been discovered.

What isn't science is to dismiss the possibility that fractal antennas may have something unique to offer that we haven't discovered yet because so many people have their heads buried in the sands of time (or in other places where the sun don't shine. :-)

IMO, the jury is still out on fractal antennas. The surface has barely been scratched. What's wrong with keeping an open mind on the subject instead of dismissing it out of hand?
--
http://www.mindspring.com/~w6rca

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561. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:51:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD20494.1DA651DE@eznec.com>
Source record: 166411

In an email message, Bart Rowlett pointed out a factor I hadn't considered, but should have. The short antenna with larger diameter wire will have less reactance than one made with smaller wire. This will reduce the amount of inductance needed to match it, which will in turn reduce the tuner loss (assuming the inductor Q to remain more-or-less constant). In the examples I ran, the #6 wire antenna has a reactance of about -1800 ohms, and the #22 wire antenna a reactance of -2350 ohms. So the required inductance (and presumed loss resistance) will be about 30% greater if smaller wire is used. If the tuner's inductor is the sole loss in the system, the resulting gain difference will be about 1.2 dB between the two antennas. Ground system loss will dilute this.

Roy Lewallen, W7EL

Roy Lewallen wrote:
>
> Although a reasonable conclusion for a dipole, this is a different
> situation than a short antenna, which an SGC tuner is commonly used for.
> And there are other pitfalls in making a comparison like this, which
> I'll illustrate.
>
> I modeled a 3 meter high vertical antenna over perfect ground, with zero
> wire loss, at 3.5 MHz. (Anyone with either the full or demo version of
> EZNEC can duplicate these results. They're not hard to calculate by
> hand, either.)
>
> This lossless antenna has a gain of 4.77 dBi and a feedpoint resistance
> of 0.54 ohms. This doesn't represent the gain of any real antenna, but
> shows us what we'd get if we could accomplish the impossible task of
> making the antenna and ground completely lossless.
>
> The same antenna made from #6 copper wire (with copper wire loss now
> included in the model) has a gain of 4.45 dBi and a feedpoint resistance
> of 0.58 ohms. So the loss due to the wire resistance is negligible.
> (Wire loss is the only loss in the model, so the change in gain can be
> solely attributed to it.)
>
> Changing the wire to #22 copper drops the gain to 2.94 dBi, with a
> feedpoint resistance of 0.82 ohms. Whether the 1.8 dB drop in gain is
> significant depends on your point of view. Reg would say this is 1/3 of
> an "S-point" and of no consequence. "Kurt Sterba" of WorldRadio said
> recently that a signal difference of up to 18 dB wasn't important. Those
> of us who operate on the edge of readability, either from DXing or QRP
> operation, know that 1.8 dB can make the difference between a QSO and no
> QSO. But none of that matters. Reducing the wire size from #6 to #22

> won't make a 1.8 dB difference in field strength, no matter what the
> computer model said.
>
> Why not? The reason is that the resistance of the ground system and in
> the SGC tuner itself will be much greater than the 0.24 ohms increase
> caused by going from #6 to #22 wire, and will make the wire resistance
> change insignificant. The reactance of this antenna is about -1800 ohms,
> so if the SGC tuner contained an inductor with Q = 600 (which I'm sure
> is way overoptimistic), it would have a loss resistance of about 3 ohms.
> So just considering this additional factor, the loss resistance will go
> from 3.04 to 3.28 ohms when we change wire size. What's the difference
> in gain due to this change in loss resistance? Less than 0.3 dB. And
> when you factor in the ground loss and a more realistic tuner loss, it's
> even less.
>
> So the conclusions are:
>
> 1. Going from #6 to #22 wire won't reduce your signal strength
> noticeably, even with quite a short antenna.
> 2. Be careful what you model with the computer, and the conclusions you
> draw from it. (Be sure to add the other loss resistances as a "load" at
> the base of the antenna before drawing conclusions about the field
> strength!)
>
> Roy Lewallen, W7EL
>
> Dan Richardson wrote:
> >
> > Okay, Your posting perked my interest so ran a model of a 40-meter
> > dipole at ï¿½-wavelength above ground.
> >
> > Using #16 copper wire the maximum gain (according to NEC) 7.43 dBi and
> > using #6 copper wire the gain was 7.52 dBi.. A wopping 0.09 dB :-)
> >
> > Danny
> > K6MHE
> >
> > On Sun, 08 Apr 2001 17:56:41 -0700, Mike <km6ab@pacbell.net> wrote:
> >
> > >For years SGC has pushed using the largest practical wire for the
> > >radiating element of their tuners, especially #6. I don't believe their
> > >fantastic claims of gain with #6 wire but have always wanted to do a
> > >comparison of sizes like #22, #12 and something really fat. Anyone out
> > >there got time on their hands to set up an HF test like this?

562. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 18:55:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD20590.2F0A7099@IEEE.org>
Source record: 166413

Ed Cregger wrote:
>
> Umm, let's see, we make the lower half of the antenna
> hollow, then we feed it in the center instead of the end.
> But that's not an end fed half wave. I get your point.
>
> You're right, I screwed up. But how does this apply to the
> A-99 anyway?
>
> I've never had one of these antennas apart, but it sure
> works like a coaxial antenna. There, I've displayed my
> ignorance for all to see. Please be so kind as to share your
> knowledge with us (seriously).

Sorry, I have absolutely no knowledge of the A-99. All I know
is that an antenna must be fed against something.
--
http://www.mindspring.com/~w6rca

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563. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 19:09:00 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD208CC.42CCA537@IEEE.org>
Source record: 166414

Roy Lewallen wrote:
> Nor has it been proven that fractal folded antennas are superior to
> non-fractal (folded) ones (and likely it never will be).

I think the jury is still out. Would you agree? I believe in
keeping an open mind until the verdict is reached. Would you
agree?

> The one attempt we've
> seen at this so far was a failure -- the design was quickly beat.

If you had witnessed "one attempt" at manned flight in 1900, would
you have concluded that manned flight was impossible?
--
http://www.mindspring.com/~w6rca

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564. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 19:27:57 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AD20D3D.FD7E1671@bwcc.com>
Source record: 166415

Reg Edwards wrote:
> A change in AWG of 10 gauges, ie., from #16 to #10, results in a
> change of diameter of Sqrt(10) = 3.16 times.
Please clarify how 16 minus 10 equals 10?

565. Re: Need an Elmer

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 20:15:53 UTC
From: Zoran Brlecic <zbrlecic@earthlink.net>
Message-ID: <3AD218ED.8F0A461A@earthlink.net>
Source record: 166416

Nathan Ciufo wrote:

> I am running a TS-430 with a matching DC power
> supply. I have a TR-7950 2 meter rig that I'm running off of the same
> supply. Anytime I have both rigs on, and I key the 2 meter rig, it "sounds"
> like it keys the 430 also, but it doesn't. There is an audible "click"
> sound, but it increases the brightness of the display on the 430. Any ideas
> as to whether or not this is safe, and/or if I have the 430 off, and use the
> 2 meter rig, is the 430 safe?

I would get a voltmeter and measure the voltage on the p/s when the 2m rig is keyed. From what you're discribing, it is possible that the voltage rises due to who knows what type of weird loops. How well is this setup grounded?

73 ..... Zoran WA7AA

--
Support freedom of speech, or I'll kill you!

566. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 20:24:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD21A8F.B3C1CC64@eznec.com>
Source record: 166417

W6RCecilA wrote:
>
> Roy Lewallen wrote:
> > Nor has it been proven that fractal folded antennas are superior to
> > non-fractal (folded) ones (and likely it never will be).
>
> I think the jury is still out. Would you agree? I believe in
> keeping an open mind until the verdict is reached. Would you
> agree?

Absolutely. I'm eagerly awaiting evidence, provided by you or anyone else, that fractal designs have some inherent advantage over non-fractal designs.
>
> > The one attempt we've
> > seen at this so far was a failure -- the design was quickly beat.
>
> If you had witnessed "one attempt" at manned flight in 1900, would
> you have concluded that manned flight was impossible?

The argument you seem to be making is that we should assume that fractal antennas are inherently the most efficient until proven otherwise. And to doubt this is to be a short-sighted Luddite. Let me make my own proposal. I propose that pretzel shaped antennas will prove to be the most efficient. I have no proof, and any design I come up with has been beaten by a non-pretzel design. But if you don't agree with me and embrace my premise, you're short sighted and have no room in your narrow mind for the possibility that the pretzel design is really revolutionary. They laughed at Galileo, but they won't laugh at pretzels!

I'll leave this sort of foggy thinking to the conspiracy buffs and pseudo scientists. Sorry, I require evidence.

Roy Lewallen, W7EL

567. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 20:34:32 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9at68q$74j$1@uranium.btinternet.com>
Source record: 166418

Marl wrote -
> Thicker wire in a dipole does not increase gain, but does
increase bandwidth.
==========

Increasing the wire diameter from #16 to #6 in a 40 meter dipole, which increases diameter by 3.2 times and inceases weight by 10 times, increases the bandwidth by an un-noticeable 12 percent. Is it worth it ?

But increase wire diameter to SIX INCHES and the normal bandwidth is doubled. Now is THAT worth it ?

Reg.

568. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 20:45:00 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad21bfe.93468747@news.accessunited.com>
Source record: 166319

On Mon, 9 Apr 2001 13:11:24 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>
>Back for the n-th time to Terman 1955 page 38:
>"It is possible to shield electrostatic flux wihout simultaneously
>affecting the magnetc field by surrounding the space to be shielded
>with a conducting cage that is made in such a way as to provide no
>low-resistance path for the flow of eddy currents, while at the same
>time offering a metallic terminal upon which electrostatic flux lines
>can terminate."

1.) Electrostatic flux is not the same as the type of field
accompanying radition.

2.) If you take ANY time-varying flux to zero, all fields go to zero.

3.) The impedance of the shield is the same as the effective impedance
conductor inside the shield. Now you can use a multiple turn winding
inside, and in that case the shield will have a lower differential
mode impedance than the terminals inside, but the resulting field
impedance leaving the loop is the same in either case.

None of this is all that complex.

>Electrostatic and magnetic are adjectives applicable to static and
>dynamic fields. But, Terman relates his observations to the flow of eddy
>currents. Eddy currents require a time-varying field, so in context,
>there is no need for more adjectives. In fact, excess words tire and
>confuse readers. Is that Tom`s purpose?

No, but Terman seems to have confused you Richard. You are totally
lost.

I suggest you put Terman down, and go back to a book of basics of
fields. "Fundamentals of Electricity and Magnetism" by Authur Kip.

Page 440 in the second edition would be of particular value to you.
That area explains what Kevin and others have tried to explain to you.

>Electric and magnetic fields are not "inseparable".
>Best regards, Richard Harrison, KB5WZI

That is true, when they are not time-varying.

I can have a magnet in one hand, and its field will pass right through
a copper plate. I can have a cat in the other, and if I rub its fur on
a glass plate and then wrap the cat in foil the electrostatic field

will go to zero.

But if I have a time-varying magnetic field, it always must be accompanied by a time-varying electric field. There is now way to short one field out without taking the other field to zero.

Read some books on basics Richard, it may help you understand Terman.

73 Tom

569. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 20:49:53 UTC
From: KA9CAR <nospam@nospam.usa>
Message-ID: <9at78brem1@news.tribune.com>
Source record: 166320

I have mine mounted on an 18 foot pipe, with the coax routed inside the
mounting pipe. The pipe is side mounted to a wooden fence post. Works just
fine. I have not had any sun degradation problems in 5 years.
I bought it at radio shack. They have carefully eliminated all references
to the manufacturer, but the stainless steel hardware was stamped solarcon.

KA9CAR

Brady Palmquist <bgpalmq@primenet.com> wrote in message
news:tcs3pgsgliuq23@corp.supernews.com...
>
>
> Looking for a 10 meter no radial vertical to mount on a mast.
>
> Thinking the Solarcon A-99 might be good. I see no negative comments
> about it. Wondering what anyone has experienced.
> How about the ground plane kit? Does it help that much?
> I'd rather not use one if I can get by.
>
> 73
> Brady
> K0UC

570. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 21:08:24 UTC
From: kb7qhc@home.com
Message-ID: <3ad70346.1180521219@news.seanet.com>
Source record: 166321

On Mon, 09 Apr 2001 20:39:53 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>But Roy, that is like proving there is no water on earth because one is
>standing in the middle of a desert. What is needed to provide any valid
>proof is a fractal based iterative program interfaced to an antenna
>modeling program that can run unattended for as long as necessary. An
>optimum fractal is not something that can be achieved by a human being
>sitting for a few hours at a table with a pencil and paper. It took
>Mother Nature billions of years to achieve hers.

Hi Cecil,

As difficult as you project it to be to prove a negative - you would
be hard pressed to prove
>An optimum fractal is not something that can be achieved by a human being
is in fact achievable at all, by human or machine.

73's
Richard Clark, KB7QHC

571. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 21:10:12 UTC
From: richardharrison@webtv.net
Message-ID: <18402-3AD22534-109@storefull-112.iap.bryant.webtv.net>
Source record: 166324

Roger, W7WKB wrote:
"To test how slkin effect on a central conductor would affect the capacity reading of a short tubular coaxial line."

Skin effect limits the effective depth of most of the r-f current flowing in a conductor to a depth near the surface. Terman gives the skin depth in copper as: cm = 6.62 / square root of (f). At 1 MHz it is 0.0066 cm or 0.0026 in. At 28 MHz these values would be divided by 5.29, (the square root of 28) to give an effective skin depth of 0.00049 in.

The capacitance of a capacitor is directly proportional to the area of the plates and inversely proportional to the distance between the plates. In air or a vacuum the dielectric constant is very nearly (1). For other materials the capacitance of a capacitor is obtained by multiplying the value of an air capacitor by the dielectric constant of the insulating material between the plates. The formula for capacitance is:
C = 0.225 KA / S
C is in picofarads
K is the dielectric constant
A is the area of one of the plates in square inches
S is the spacing between the plates in inches
This works for a two-plate capacitor.

Skin effect is a vector thing which depends on the frequency and material. The traveling wave "drags its feet" along the surface and produces an axial component.

I am not sure what Roger is proving.

Best regards, Richard Harrison, KB5WZI

572. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 21:40:24 UTC
From: mbz07 <mbz07@lineone.net>
Message-ID: <td4b73kd3jqcbd@corp.supernews.co.uk>
Source record: 166322

> well if you dont mind the environment life of 3 yrs ... not to mention the
> ground plane kit falls apart every time theres a wind ...

I don't have the ground plane kit but mine is still alive after 6 years.....

mbz

573. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 21:43:26 UTC
From: mbz07 <mbz07@lineone.net>
Message-ID: <td4b74le7pahbe@corp.supernews.co.uk>
Source record: 166323

> A half-wave vertical MUST be fed against something. That
> something can be considered to be a generic counterpoise
> be it ground or ground plane. Transmission lines are designed
> to be two-wire lines with balanced currents. How do you balance
> the current out of a floating coax braid?

Oh the coax braid isn't floating, ever ripped one of these apart?

mbz

574. Forces between antennas in near zone

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 21:58:04 UTC
From: calmagorod <asps@mywebpages.com>
Message-ID: <3AD2306B.49F97BA6@mywebpages.com>
Source record: 166325

Subject: Forces between antennas in near zone

Discussions from sci.physics.electromag about mysterious e.m. forces
between antennas with momentum greather than p=E/c at a distance less
than 0.636 wavelenght

##################

Subject: G.Push and the so called *near zone*

In reference to a discussion on an electrodynamic interaction between
dipoles http://www.mywebpages.com/asps/sc23in.htm
in :
ï¿½ Newsgroups: sci.physics.electromag
ï¿½ From: gdpusch@NO.xnet.SPAM.com (Gordon D. Pusch)
ï¿½ Subject: Re: Ri: Non Newtonian Propulsion
ï¿½ Date: 13 Mar 2001 08:18:22 -0600
ï¿½ Organization: XNet Information Systems (Winstar)

G.Push ".." wrote:

.....cut..

"I.e., in the _NEAR FIELD ZONE_, via quasi-static fields, =NOT= E/M
waves.
E = pc applies to waves in the _FAR FIELD ZONE_, not quasi-static fields

in the the near field zone. You cannot transfer momentum this way to any

object more than a few wavelengths away without using waves instead of
quasi-static fields, in which case you are bound by E = pc. Are you
planning to build a pair of dipoles as big as the Earth ??? As big as
the entire Solar System ??? "

So it seems to me to understand that action reaction forces exist in the

near zone (for example) at 500MHz frequency too... and that it is not
necessary to do dipoles as big as solar system...

..cut....
"Near field zone means anything inside 2\pi wavelengths. Your antennae
are
both inside each other's near field zone. They are interacting primarily

via the quasi-static component of each other's fields."

So it seems to me to understand that near zone exist at 500 MHz
frequency
too, i.e. that in a zone near 0.636 wavelenght it is possible to

violate
the Einstein-Maxwell repulsive canopus E=p/c, i.e. attraction or
repulsion
greather than 2E/c (Asps dipoles are at a distance of 0.25 wavelenght)
in
the range of 0.636 wavelenght

"That says nothing
whatsoever about how much _NET_ impulse they can radiate away to
infinity,
i.e., now much _NET_ thrust your patented snake-oil gadget can produce.
Your _NET_ thrust is limited by p = E/c, because that's how much
momentum
an E/M wave carries off to infinity."

PNN needn't to radiate impulse to infinity...
All is as Push wishes. LOCALLY :
His words: "... the force on and reaction of a current-element against
the
E/M field
_IS_ local,.."
In other words the e.m. has no impulse when it DOESN'T interact with
the
material current (NOT displacement current)... it is impossible to
measure
the impulse of the e.m. fied with no interaction with the matter . And
this
happens for the canopus p=E/c too , i.e. E/c is a type of interaction
not
the sole interaction.

Subject: Forces between antennas in near zone

Discussions from sci.physics.electromag about mysterious e.m. forces
between antennas with momentum greather than p=E/c at a distance less
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the Einstein-Maxwell repulsive canopus E=p/c, i.e. attraction or
repulsion
greather than 2E/c (Asps dipoles are at a distance of 0.25 wavelenght)
in
the range of 0.636 wavelenght

"That says nothing
whatsoever about how much _NET_ impulse they can radiate away to
infinity,
i.e., now much _NET_ thrust your patented snake-oil gadget can produce.
Your _NET_ thrust is limited by p = E/c, because that's how much
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PNN needn't to radiate impulse to infinity...
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His words: "... the force on and reaction of a current-element against
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happens for the canopus p=E/c too , i.e. E/c is a type of interaction

not
the sole interaction.

E.Laureti

http://www.mywebpages.com/asps

##########################

Alan Boswell <alan.boswell@baesystems.com> wrote in message
3AD19398.35C87620@baesystems.com...
>
>
> asps wrote:
> >
> > "I.e., in the _NEAR FIELD ZONE_, via quasi-static fields, =NOT= E/M
waves.
> > E = pc applies to waves in the _FAR FIELD ZONE_, not quasi-static
fields
> > in the the near field zone.
> >
> > "Near field zone means anything inside 2\pi wavelengths. Your
antennae
are
> > both inside each other's near field zone. They are interacting
primarily
> > via the quasi-static component of each other's fields."
> >
>
>
> If the dipoles are interacting via near fields, the force on one
dipole
> is exactly balanced and cancelled by an equal and opposite force on
the
> other. There is not net force. Therefore, the only net force is
> E/c and "NNP" is a non-product, the same as "cold fusion".
> Alan

It is not a common opinion:
Roy McCommon (for example) (1) has the opinion that Maxwell theory
predict
forces between antennas

****
(1) From: Roy McCammon (rbmccammon@mmm.com)
Subject: Re: Maxwell's metaphysics: the displacement current does not
exist
Newsgroups: sci.physics.electromag
Date: 2000-11-28 07:30:10 PST

ï¿½ï¿½.snip...
The theory we commonly

refer to as Maxwell does predict forces between
antennas.

In the far field, I believe those forces are always
repulsive, but in the near field I believe you can
get attraction and repulsion depending on relative
phase of the antenna currents (which are influenced
by the terminal components).

****

(2) Why call near a zone that has the same momentum characteristics of
far
zone ?

(3) Experiments which demonstrate the existence of e.m. forces in the
near
zone (Nova Astronautica Vol.20 n.86 pp.1-20)

E.Laureti

http://www.mywebpages.com/asps

575. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 22:00:44 UTC
From: kb7qhc@home.com
Message-ID: <3ad92cec.1191183200@news.seanet.com>
Source record: 166326

On Mon, 09 Apr 2001 12:51:10 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Donaly wrote:
>> How do you know there is a best method of folding an antenna
>> given a certain set of boundary conditions, Cecil? Suppose there
>> are two good methods, or an infinite number, what then?
>
>Fractal mathematics is the process of iteration. If I iterate folding
>and converge on a localized best method of folding, then I can identify
>a localized performance surface maximum. Given a certain set of boundary
>conditions and enough computing power, an evaluation of all performance
>surface maximum points within those boundary conditions, could be
>performed carried to whatever resolution is specified.

Hi Cecil,

This is the same theoretical trap that herr doktor is prone to. In
past centuries it has been described as a poor carpenter blames his
tools.

What trap is that? Why software can solve the problem of course!

The most problematic part of this is that even in conventional
techniques one may encounter the problem of a local minima masking a
better optimization. (You have even made it part of your criteria -
doomed to failure by spec.) This is a very sophisticated problem that
software designers have been working with for years. It reaches into
the roots of basic, philosophical questions that are not the simple
algorithms that herr doktor would wish them to be.

The genetic algorithm is a prime example of one of the most
susceptible designs for this problem, herr doktor showed very little
comprehension of this serious problem - as a novice user he puts too
much faith where it is not warranted.

You, having bought into his fantasy, accepted this without to much
scrutiny. This is obvious by the last statement alone:
>Given a certain set of boundary
>conditions and enough computing power, an evaluation of all performance
>surface maximum points within those boundary conditions, could be
>performed carried to whatever resolution is specified.
This in fact is a recipe for disaster and is known as combinatorial
explosion. You might feel that you have fully qualified your
statement such that an answer is available; however, nothing is
further from reality. I don't care how powerful a computer you come

up with, there is not time enough in all creation to answer your speculation.

Oh, don't misinterpret me. I did not say you would never get an answer, simply you would not get the best one (or second best, or third best, or...).

73's
Richard Clark, KB7QHC

576. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 22:01:14 UTC
From: kb7qhc@home.com
Message-ID: <3ad82c10.1190963545@news.seanet.com>
Source record: 166327

On Mon, 09 Apr 2001 12:38:34 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>I am NOT talking about the entire set of fractal antennas. I am talking
>about a *SUBSET* of fractal antennas which can be described mathematically
>using fractal algorithms. I don't see how one could argue that an antenna
>described by a fractal algorithm is not a fractal antenna.

Hi Cecil,

More to the matter is describing a conventional antenna (easily
described in standard geometries) as a fractal for the sake of
claiming it provides proof of a fractal theory.

This last has been a rhetorical ploy used to no obvious rational basis
- probably because there is no rational basis for the claim that
fractals are different from conventional geometries. In fact, they
are not.

73's
Richard Clark, KB7QHC

577. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 22:21:40 UTC
From: Mark Holden <msholden@ct2.nai.net>
Message-ID: <3AD235F4.6202D71D@ct2.nai.net>
Source record: 166328
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

W6RCecilA wrote:

> Mark Holden wrote:
> > Using coax will shield the feed line from RFI within the house, and reduce
> > the liklihood of overloading the radio.
>
> Why will coax shield common-mode currents any better than ladder-line?

My original point was a grounded feed line was preferable to continuing the random wire straight into the house.

I imagine ladder line would also be effective at reducing local RFI since the signal would hit both lines with roughly equal strength.

Do you feel there is an advantage to ladder line over coax for receiving antennas? It does seem like you have your ladder line on the antenna I'd expect to be quieter anyway.

Two reasons I've never seriously considered ladder line are I can't buy it locally, and I'm told I'd have problems feeding it through my walls because they have aluminum backed insulation.

I am going to be putting another antenna a couple hundred feet away from the house this year, so if there is a significant advantage to ladder line for long runs on receiving antennas, I'd be interested in knowing more about it.

Most of the feed line for this antenna will be under ground, but I'm already planning on putting it in water tight PVC pipe.

But back to the original person who started this thread, I can't imagine him using ladder line to feed a portable radio.

Regards,

Mark

578. The First "Left-Handed" Material

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 22:26:21 UTC
From: "W.G. Ewald" <wgewald@att.net>
Message-ID: <rud4dt8idgh9mv75m1l59kgg5q0pbv2mei@4ax.com>
Source record: 166329

More about Sheldon Schulz, et al.:

" UC San Diego physicists have devised a composite material in which the effective electrical permittivity, and the magnetic permeability are both negative. This leads to bizarre optical properties. "

http://www.aip.org/physnews/graphics/html/composite.html

579. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 22:30:48 UTC
From: kb7qhc@home.com
Message-ID: <3ada3141.1192292646@news.seanet.com>
Source record: 166330

On Mon, 09 Apr 2001 12:58:58 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> I would point out that this ad-hoc "science" has been exposed by
>> Steve's FRACTAL CHALLENGE winners handily beating the masked champion.
>
>Try looking forward instead of backwards. It is within the realm of
>possibility now to hang a fractal antenna generation algorithm front
>end on an NEC modeling package and allow the computer to iterate toward
>maximum performance. No need for "ad-hoc science" any more. That many,
>many people tried and failed to fly before Kitty Hawk didn't mean
>that manned flight was impossible.

Hi Cecil,

:-) Most amusing.

You are denying the practice of ad-hoc science by replacing it with
ad-hoc software. Let me know when you have that package designed
because you stand to make a fortune with it rather than with the
successful fractals it might find. But in all reality, this genetic
algorithm (deliberately focused on fractals) would have missed the
more optimal winners of the FRACTAL CHALLENGE. (In other words,
software designed to fail by specification.)

You should try looking forward to Steve's winners (it was herr
doktor's offering that failed for lack of life and being stuck in the
past). Your arguments all smack of complacency confounded by reality
intruding with unsettling facts, especially this automated fractal
modeler. This unwarranted faith is a stretch that only the converted
could swallow (the rest have already been excommunicated from the
fraudtenna lists).

>That many,
>many people tried and failed to fly before Kitty Hawk didn't mean
>that manned flight was impossible.

It did mean that flying, by mimicking the actions of wing movement is.
Your analogy is strained too - good thing that the Wright brothers
were not confined to a similar rigid mentality that proposed in
advance that alternatives were unacceptable. Can you imagine the
Wright brothers arguing that the FLYING CHALLENGE was lost by a Boeing
747 simply because it was not described correctly by FOM? It is quite
obvious that the work of two bicycle manufacturers was more invested
with science than all the postings of herr doktor combined.

73's
Richard Clark, KB7QHC

580. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 22:33:43 UTC
From: kb7qhc@home.com
Message-ID: <3adb3847.1194090441@news.seanet.com>
Source record: 166331

On Mon, 09 Apr 2001 13:49:40 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>So anything not presently proven true will forever be false? That reminds
>me of the patent office manager who said, around 1900, that they might as
>well close the patent office because everything had already been discovered.
>

Hi Cecil,

No, as Roy points out - it proves NOTHING.

It is incumbent upon the offerer of a theory to provide a proof. It
is laughable (and common practice of fraudtenna) to propose and to
condemn those that dispose.

73's
Richard Clark, KB7QHC

581. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 22:36:06 UTC
From: kb7qhc@home.com
Message-ID: <3adc38d8.1194235359@news.seanet.com>
Source record: 166332

On Mon, 09 Apr 2001 13:04:03 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> You've followed a one-sided argument for too many years. Steve Best's
>> work of late has brushed away a lot of that myth.
>
>It has no more been proven that non-fractal folded antennas are superior
>to fractal folded antennas than it was proven that manned flight was
>impossible at the turn of the last century.

Hi Cecil,

I have seen half a dozen proofs posted right here by Steve. You have
yet to offer one counter proof. If we were to use that as the measure
of success, we would still be throwing rocks at birds instead of
soaring above them.

73's
Richard Clark, KB7QHC

582. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 22:38:13 UTC
From: k1bqt@aol.com
Message-ID: <20010409183813.08989.00003157@ng-mo1.aol.com>
Source record: 166333

> I think the jury is still out....I believe in keeping an open mind until the verdict is reached.<

A really interesting choice of phraseology, Cecil. With it, you seem to have captured the flavor of the entire Fractal debate. And, as Roy aptly suggests, an intreaging application of logic. Like saying that, although 35 years of lunar exploration hasn't revealed anything to date, the Moon COULD have some green cheese lurking on its surface somewhere! After all, we haven't explored every square inch, yet, have we??

Rick K1BQT

583. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 22:39:57 UTC
From: kb7qhc@home.com
Message-ID: <3add3972.1194389180@news.seanet.com>
Source record: 166334

On Mon, 09 Apr 2001 14:09:00 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Roy Lewallen wrote:
>> Nor has it been proven that fractal folded antennas are superior to
>> non-fractal (folded) ones (and likely it never will be).
>
>I think the jury is still out. Would you agree? I believe in
>keeping an open mind until the verdict is reached. Would you
>agree?
>
>> The one attempt we've
>> seen at this so far was a failure -- the design was quickly beat.
>
>If you had witnessed "one attempt" at manned flight in 1900, would
>you have concluded that manned flight was impossible?

Hi Cecil,

The jury is still out? You are in the wrong court room. Thankfully
you were not there as a consequence of a "possible legal action."

Your last statement is a paradox. Compared to the array of designs I
have offered (vastly outnumbering herr doktor), I can draw my own
conclusions without prompting.

73's
Richard Clark, KB7QHC

584. Re: The First "Left-Handed" Material

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 22:43:36 UTC
From: Dave Holford <holford@sympatico.ca>
Message-ID: <3AD23B1E.30D057A1@sympatico.ca>
Source record: 166335

Maybe it's just a poor choice of words, but "Left-Handed" sugar has been known for 20 - 25 years or more.

Dave

"W.G. Ewald" wrote:
>
> More about Sheldon Schulz, et al.:
>
> " UC San Diego physicists have devised a composite material in
> which the effective electrical permittivity, and the magnetic
> permeability are both negative. This leads to bizarre optical
> properties. "
>
> http://www.aip.org/physnews/graphics/html/composite.html

585. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 23:05:39 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <7frA6.698511$U46.21852453@news1.sttls1.wa.home.com>
Source record: 166336

"Richard Harrison" wrote
(snip some)
> I am not sure what Roger is proving.
>
> Best regards, Richard Harrison, KB5WZI
>

I wasn't sure either, but I did not see any sign of a skin effect in this experiment. Skin effect must occur because current had to go from the test device located at one end of the coaxial capacitor to the other end, with the most current at the feed point and least at the far end. I expected some change in resistance or capacity readings due to the energy that was stored in the skin effect loops, especially for the material that would have a ferro- magnetic response (the iron). No such change was noticed.

The possibility that skin effect acts to create such an effective shield so as to prevent the passage of the electric field as well as the magnetic field has been intimated but not really discussed in recent postings. This experiment seems to discount that possibility.

So Richard, nothing proved, just some experimental indications.

73, Roger, W7WKB

586. Re: The First "Left-Handed" Material

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 23:17:44 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD24318.FC9584B0@eznec.com>
Source record: 166337

I believe these sugars (e.g. fructose or "levulose" - literally "left sugar", as opposed to dextrose or "right sugar") are so called because they rotate the polarization of light in a counterclockwise direction, or to the left. Sucrose (common table sugar), a disacharride consisting of glucose and fructose, rotates the polarization clockwise. If split apart chemically or with an enzyme into its constituent simple sugars, it's known as "invert sugar", because the rotation is "inverted" to counterclockwise. But it's not apparent to me how this has any commonality with the property being discussed.

According to _Webster's Collegiate Dictionary_, "levulose" has been in the English language since 1871.

Roy Lewallen, W7EL

Dave Holford wrote:
>
> Maybe it's just a poor choice of words, but "Left-Handed" sugar has been
> known for 20 - 25 years or more.
>
> Dave
>
> "W.G. Ewald" wrote:
> >
> > More about Sheldon Schulz, et al.:
> >
> > " UC San Diego physicists have devised a composite material in
> > which the effective electrical permittivity, and the magnetic
> > permeability are both negative. This leads to bizarre optical
> > properties. "
> >
> > http://www.aip.org/physnews/graphics/html/composite.html

587. Not exactly

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 23:18:28 UTC
From: burt@innocent.com
Message-ID: <9atg04$sc3$1@news.netmar.com>
Source record: 166271

In article <20010401145544.08309.00001743@ng-mn1.aol.com>, Fractenna
<fractenna@aol.com> writes:>>Chip at Telecom City:
>>
>>http://www.telcomcity.com/anchor/PCC/Clients/Images/fracver2.JPG
>>
>
>A more recent pix is in April 2001 Sky and Telescope in a SETI article.
Even
>this outdated as he lost about 25 pounds since the beginning of the year.
>
>

Did he? He's almost as large as the Falstaffian Robert Hohlfeld here.

http://www.skypub.com/news/special/images/0104setifuture05.jpg

>>He's closest to camera. "Phil" is in the green shirt.
>>
>
>Not exactly.

Not exactly green? Or not exactly Phil? How about this one?

http://www.shavelibrarian.com/images/phil_clr_1_profile_rd.jpg

Phil Salkind http://www.wgbh.org/radio/saysyou/who/who.html#phil

Philip Salkind has finally parlayed his unbelievable mastery of the arcane
into a paying gig. He first met Richard across the bar at a health club
restaurant where Phil, an underemployed musician, was slinging chardonnay and
the occasional carrot juice while dazzling patrons with his television game
show prowess. Quick to notice talent in the raw and on the the cheap, Richard
hired Phil and thus began a collaboration that defines creative tension to
this day.

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NewsOne.Net prohibits users from posting spam. If this or other posts
made through NewsOne.Net violate posting guidelines, email abuse@newsone.net

588. Re: The First "Left-Handed" Material

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 23:38:16 UTC
From: kb7qhc@home.com
Message-ID: <3ad2449a.1197245528@news.seanet.com>
Source record: 166340

On Mon, 09 Apr 2001 16:17:44 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>I believe these sugars (e.g. fructose or "levulose" - literally "left
>sugar", as opposed to dextrose or "right sugar") are so called because
>they rotate the polarization of light in a counterclockwise direction,
>or to the left. Sucrose (common table sugar), a disacharride consisting
>of glucose and fructose, rotates the polarization clockwise. If split
>apart chemically or with an enzyme into its constituent simple sugars,
>it's known as "invert sugar", because the rotation is "inverted" to
>counterclockwise. But it's not apparent to me how this has any
>commonality with the property being discussed.
>
>According to _Webster's Collegiate Dictionary_, "levulose" has been in
>the English language since 1871.
>
>Roy Lewallen, W7EL
>

Hi Roy,

Actually this relates to the molecular construction of the sugar that
is strictly necessary for the proper assimilation of it as a food (has
to do with the hydro-carbon cyclicity). This is not to deny your
observations, but rather I learned of this in a physics class as the
possible proof of the universe being a non-mobius construction.

A mobius universe would lead a traveler to leave home as a right
hander (at the molecular level where such a fatal distinction exists)
and return (from the opposite direction) as a left hander who would
starve to death while eating formerly nutritious food.

Well, anyway, the poor writing of the PR allows for many improper
interpretations (and I might add that this may be the purpose of such
ambiguity).

These claims are incredibly lame. Instead of offering an observation
of one of these characteristics and allowing us to remark how out of
the ordinary it is, they simply state there are bizarre properties.
Of course, in their limited world, almost anything could qualify as
bizarre (given the quality of reporting).

73's
Richard Clark, KB7QHC

589. Re: The First "Left-Handed" Material

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-09 23:59:40 UTC
From: Jeff Campbell <jcampbell@ins-msi.com>
Message-ID: <3AD2470A.843011BD@ins-msi.com>
Source record: 166338

Which leads to the old joke about how human beings are better suited to
darwinian survival versus plants and animals as we can digest both
right- and left- handed sugars... that is, we are ambidextrose.

Jeff Campbell
n8wxs@arrl.net

Dave Holford wrote:
>
> Maybe it's just a poor choice of words, but "Left-Handed" sugar has been
> known for 20 - 25 years or more.
>
> Dave
>
> "W.G. Ewald" wrote:
> ?
> ? More about Sheldon Schulz, et al.:
> ?
> ? " UC San Diego physicists have devised a composite material in
> ? which the effective electrical permittivity, and the magnetic
> ? permeability are both negative. This leads to bizarre optical
> ? properties. "
> ?
> ? http://www.aip.org/physnews/graphics/html/composite.html

590. Re: The First "Left-Handed" Material

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 00:00:17 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AD24D11.C38B6CBC@bwcc.com>
Source record: 166341

Jeff Campbell wrote:
> Which leads to the old joke about how human beings are better suited to
> darwinian survival versus plants and animals as we can digest both
> right- and left- handed sugars... that is, we are ambidextrose.

Sounds cute. Also sounds like you just made it up.

591. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 00:01:51 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD24D6F.1351@wt.net>
Source record: 166342

W6RCecilA wrote:

>
> Nature is chock full of fractal designs including our species. Fractals
> absolutely dominate evolution to such an extent that I wonder why antenna
> evolution wants to ignore fractals. When something is so dominant and we
> overlooked it for so long, it raises a red flag that we may not be as
> smart as we think. In so many fields, fractals yield the best performance
> in the least space that I don't think fractals can be dismissed without
> consideration in the field of limited-space antennas. We simply do not
> have sufficient knowledge yet to come to a be-all end-all conclusion.

Thats kinda my point . We have already been there, done that to a great extent. I still maintain almost all of the symetrical balanced antennas we now use, could be considered a form of fractal. Now, I don't doubt that there might be a slightly better way to wind or shape a constantly bending wire, but I don't think the increase would be enough to get too excited about. Some claim they have many resonant frequencies, and can be used across a wide range of frequencies, but then again, so will a dummy load. I don't buy into any "special" fractal electromagnetic properties. Or at least no one has given me a reason to believe they exist so far. I've never overlooked fractals. Or at least since I've had a computer anyway. I have loads of visual fractal generators. IE: dazzle, etc. Thats one reason why I say the shape doesn't matter. I've seen dazzle spit out almost every shape under the sun. The only common theme is there are always mirror images of whatever object you see. Can be only one, two pairs, four pairs, ad nausium until the cats come home. I still think a dipole is a form of fractal as long as it's balanced . IE: one side mirrors the other. MK

--
http://web.wt.net/~nm5k

592. Re: Need an Elmer

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 00:10:17 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD24F69.36AD@wt.net>
Source record: 166343

Nathan Ciufo wrote:
>
> Greetings, and thanks in advance for your time in reading. I have a
> question that has nothing to do with an antenna, but this group seems to
> have the best Elmers on it. I am running a TS-430 with a matching DC power
> supply. I have a TR-7950 2 meter rig that I'm running off of the same
> supply. Anytime I have both rigs on, and I key the 2 meter rig, it "sounds"
> like it keys the 430 also, but it doesn't. There is an audible "click"
> sound, but it increases the brightness of the display on the 430. Any ideas
> as to whether or not this is safe, and/or if I have the 430 off, and use the
> 2 meter rig, is the 430 safe? Thanks and 73's, Nathan KA3MTT

Sounds like rf to me. How well decoupled is the 2m antenna? Have you
tried it with the antenna to the 430 unhooked? For the diplay to
brighten , you are pumping some rf into that radio one way or the other.
It's not really good for it"the 430", so I would find the cause. MK
--
http://web.wt.net/~nm5k

593. Re: 80 Meter Gama Match

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 00:20:46 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD251DE.C0D@wt.net>
Source record: 166345

Dean L wrote:
>
> Anyone done any work on a Gama Match on a 80 meter
> wire dipole antenna?
> Also what spacing should I use between the driven element and
> the reflector?
> Thanks
>
> 73 Dean L.
> W5GXL
> dean@iowaone.net

If you have a reflector and a driven element you have a 2 el yagi, not a 80m dipole. Easy to make the gamma match, just double whatever numbers they show for a 40m version. Or 4X the 20m specs. Or use a spacing of the elements that gives a near 50 ohm feed , and just use a coax choke or any other 1:1 balun. The spacing depends on how you want to optimize the antenna. I guess .15 to .2 wavelength probably the most common spacings. But can be whatever you want, according to the feed impedance you want, F/B ratio, gain, etc.You might want to try modeling it first.
MK
--
http://web.wt.net/~nm5k

594. Re: Need an Elmer

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 00:22:14 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9atjjhoaj1@uranium.btinternet.com>
Source record: 166344

Nathan wrote -
> this group seems to
> have the best Elmers
==========
You mean there are other elmers around somewhere ? Where ? Where
?

595. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 00:39:07 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD2562B.6BFF@wt.net>
Source record: 166346

Ed Cregger wrote:
>
> Half wave end fed antennas (an end fed dipole) do not
> utilize a ground plane. Forget the nonsense about a quarter
> wave matching section and extra gain with a ground plane.
> Sales hype for the uneducated.

Thats a decoupling section to reduce the feedline radiation. I'm not sure if they think of it that way though.
I've used and tested much the same setup on base fed half waves. The section and radials do help. But they are not required. You will have less feedline radiation with the section, and less skewing of the pattern upwards off the horizon. How much difference it makes depends on the degree of common mode currents on the coax shield.
Will vary with different length feedlines. Also, I notice many saying you "must" have something to drive against with a halfwave, and I guess thats true, and likely the feedline and /or mast is what the antenna drives against. But a 1/2 vertical can still do a real good job regardless. Look at all the j-poles, ringos, etc. I use a ringo on 10m at 20 ft. It works quite well, and I have no obvious common mode problems that I notice, and currently I'm using no decoupling at all on it. I talked to a couple on this NG with it one day a few months ago. They didn't seem to have any trouble hearing me. It's as good and usually better than using the tuner and my 440 feet of wire 160/80/40 dipoles mess which is twice the height. And the dipoles are nearly resonant on 10m also, so I know the feed loss isn't killing me on that antenna. MK
--
http://web.wt.net/~nm5k

596. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:19:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD25F86.24050EC1@IEEE.org>
Source record: 166347

Richard Clark wrote:
> More to the matter is describing a conventional antenna (easily
> described in standard geometries) as a fractal for the sake of
> claiming it provides proof of a fractal theory.

It wasn't I who did that, Richard.
--
http://www.mindspring.com/~w6rca

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597. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:19:25 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9atmun$lc5$1@neptunium.btinternet.com>
Source record: 166348

Denver Braughler wrote
> Reg Edwards wrote:
> > A change in AWG of 10 gauges, ie., from #16 to #10, results in
a
> > change of diameter of Sqrt(10) = 3.16 times.
> Please clarify how 16 minus 10 equals 10?
==========
Obviously a typo. A change from #16 to #6 will result in a 3.16
times increase in diameter. So will a change from #24 to #14.

Wire diameter = 0.3248 * 10 ^ (AWG / 20) inches.

Its just like decibels where AWG = dB and wire diameter is a
voltage or current of some sort.

Just as voltage doubles every 6 dB so the wire diameter doubles
every 6 AWG numbers.

598. WTB:BIG 20meter MONOBANDER

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:23:21 UTC
From: jimmoci@aol.com
Message-ID: <20010409212321.27683.00002930@ng-fk1.aol.com>
Source record: 166349

Looking for a large 20 meter monbander- 5 elements or more. Email me with what you have, condition, and price. Something that needs repair is ok to. One of those old Wilsons with the 50ft boom would be great! Something shorter will be considered also.
Thanks,
Jim

599. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:27:40 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD2618C.B4053839@IEEE.org>
Source record: 166375

Mark Keith wrote:
> The only thing to me, is almost any folding pattern you come up with
> could be called a fractal if it's symmetrical. I consider a dipole as a
> form of a fractal if both sides are equal length. So almost any fancy
> symmetrical design could be claimed as such. Note the "fractal
> challenge" and note the "apparaent" winners designs. They were just
> random doodling according to what I understand, but if they are
> symmetrical, I would still consider them a fractal of sorts. There is no
> real set shape or form needed to qualify as a fractal the way I see it
> as long as they are symmetrical. I consider an old UHF bowtie TV antenna
> as a form of fractal. MK

Fractal math is a whole relatively new branch of mathematics. If a
folding pattern can be defined with a mathematical equation, we know
what fractal equations/processes look like. Any antenna generated using
a fractal equation/process could surely be defined as a fractal antenna.

Fractal iterations using computer modeling software would probably zero
in on the most efficient method of folding an antenna given a certain
set of boundary conditions. It doesn't have to be a hit or miss situation
any more.
--
http://www.mindspring.com/~w6rca

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600. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:30:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD26225.C88F124C@IEEE.org>
Source record: 166350

Richard Clark wrote:
> The most problematic part of this is that even in conventional
> techniques one may encounter the problem of a local minima masking a
> better optimization. (You have even made it part of your criteria -
> doomed to failure by spec.) This is a very sophisticated problem that
> software designers have been working with for years.

How many years did man try to fly before he succeeded? Similar problems are being solved associated with DSP algorithms. All it requires is MIPs, MIPs, and more MIPs. I'm not saying the ultimate solution will ever be reached, just an acceptable solution to an immediate problem.

> Oh, don't misinterpret me. I did not say you would never get an
> answer, simply you would not get the best one (or second best, or
> third best, or...).

Question is, will I get an answer that is good enough? I suspect for any length of wire in a particular volume, a fractal antenna can be searched for and found that will beat any particular non-fractal antenna. You see, both sides of the argument have the same set of problems.
--
http://www.mindspring.com/~w6rca

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601. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:30:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD26233.409F2B1A@IEEE.org>
Source record: 166376

Roy Lewallen wrote:
> Indeed, if one considers all symmetrical antennas, including dipoles and
> rabbit ears, to be fractal, a great number of claims can be made for
> "fractal" designs. And I'd be much less surprised if a "fractal" antenna
> by this broad definition comes in first in a number of categories. But
> it certainly detracts from their novelty.

It's easy for a fractal expert to recognize a fractal mathematical process.
If an antenna can be described by a fractal equation, seems to me that is
prima facie evidence that the antenna is a fractal.
--
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602. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:39:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD26469.4CF77C38@IEEE.org>
Source record: 166377

Roy Lewallen wrote:
>
> W6RCecilA wrote:
> > Then why did you imply that fractal antennas are a "scam"? They are
> > not a scam. They obey the laws of physics. The most efficient folding
> > method for folded antennas just may be a fractal pattern.
>
> It might be that the most efficient folding method is a fractal pattern,
> but the evidence I've seen points against it. Steve Best has submitted
> several non-fractal designs which are more efficient than Fractenna's
> MI2 loop for the same resonant frequency and outside dimensions.

But Roy, that is like proving there is no water on earth because one is standing in the middle of a desert. What is needed to provide any valid proof is a fractal based iterative program interfaced to an antenna modeling program that can run unattended for as long as necessary. An optimum fractal is not something that can be achieved by a human being sitting for a few hours at a table with a pencil and paper. It took Mother Nature billions of years to achieve hers.
--
http://www.mindspring.com/~w6rca

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603. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:42:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD264F3.17294E0E@IEEE.org>
Source record: 166378

Ed Cregger wrote:
> Half wave end fed antennas (an end fed dipole) do not
> utilize a ground plane.

Where is the counterpoise?
--
http://www.mindspring.com/~w6rca

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604. Re: Severe

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:46:39 UTC
From: kk7ho@aol.communicate
Message-ID: <20010409214639.27990.00000582@ng-ft1.aol.com>
Source record: 166351

I think that BT internet should be notified about the incessant spamming of this guy in all sort of NGs

Subject: Severe
Warning.....
.....
Path:
lobby!newstf02.news.aol.com!portc01.blue.aol.com!cyclone2.usenetserver.com
!news-out.usenetserver.com!newsfeed.icl.net!newsfeed.icl.net!dispose.news.
demon.net!demon!btnet-peer0!btnet-feed5!btnet!mendelevium.btinternet.com!n
ot-for-mail
From: nqcncd@safety.net
Newsgroups: rec.puzzles, rec.puzzles.crosswords, rec.pyrotechnics, rec.radio,
rec.radio.amateur, rec.radio.amateur.antenna, rec.radio.amateur.digital,
rec.radio.amateur.digital.misc, rec.radio.amateur.equipment,
rec.radio.amateur.homebrew
Date: 7 Apr 2001 17:46:23 GMT
Organization: BT Internet
Lines: 6
Message-ID: <9anjpf$79i$562@neptunium.btinternet.com>
NNTP-Posting-Host: host62-7-76-124.btinternet.com
Xref: lobby rec.puzzles:136921 rec.puzzles.crosswords:27153
rec.pyrotechnics:161670 rec.radio:3084 rec.radio.amateur:18626
rec.radio.amateur.antenna:151694 rec.radio.amateur.digital.misc:45344
rec.radio.amateur.equipment:177281 rec.radio.amateur.homebrew:70241

Security Alert.....
For further information
you must visit
http://www.evidence-eliminator.com/go.shtml?A654833
puboldrehucpfmelqpyxxwujexttipkulnswlzgpqrrgchlwunqiiq

605. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:47:57 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD2664D.A757346E@IEEE.org>
Source record: 166352

Richard Clark wrote:
> You are denying the practice of ad-hoc science by replacing it with
> ad-hoc software.

Yep, that is the nature of fractals. They are much more within the range of GHz processors than human minds. It took Julia a month to do by hand what my computer can do in a few minutes.

IMO, for any non-fractal folded antenna with a particular set of boundary conditions, there exists a fractal antenna that will beat whatever parameter is deemed to be most important and given enough compute power and time, the computer can find one. Sorta like those monkeys typing the complete works of Shakespeare.
--
http://www.mindspring.com/~w6rca

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606. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:48:42 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD2667A.29E2500@IEEE.org>
Source record: 166379
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

"Mark S. Holden" wrote:
> Eliminating coax seems like a marvelously bad idea.
> It will "improve" reception of RFI from things like lamp dimmers, VCR's
> and computer monitors inside his house.

My coax fed vertical is a lot noiser than my ladder-line fed dipole.
--
http://www.mindspring.com/~w6rca

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607. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:51:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD26707.85CC8198@IEEE.org>
Source record: 166353

Richard Clark wrote:
> It is incumbent upon the offerer of a theory to provide a proof.

So how does one prove the theory that non-fractal antennas are
better than all fractal antennas yet to be invented?
--
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608. need instructions for hustler G7-144 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:53:39 UTC
From: ax9909@aol.com
Message-ID: <20010409215339.09999.00002531@ng-bj1.aol.com>
Source record: 166354

looking for a copy of the instructions for hustler 2mtr. vertical antenna. the model number is G7-144.... its there big 15' 4" tall vertical. if anyone has this please contact me at......ax9909@aol.com

thank's to all, george

609. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 01:58:19 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD268BB.E0C0FD4E@IEEE.org>
Source record: 166355

Richard Clark wrote:
> As difficult as you project it to be to prove a negative - you would
> be hard pressed to prove
> >An optimum fractal is not something that can be achieved by a human being
> is in fact achievable at all, by human or machine.

I'm not saying the ultimate fractal antenna can be achieved - just that
a good enough fractal antenna can be achieved, given enough processing
power and time, for any reasonable boundary conditions.
--
http://www.mindspring.com/~w6rca

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610. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 02:03:15 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <efp4dt4odosrvungbhif28a3cfiamd708j@4ax.com>
Source record: 166356
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

On Mon, 09 Apr 2001 18:21:40 -0400, Mark Holden <msholden@ct2.nai.net>
wrote:

>W6RCecilA wrote:
>
>> Mark Holden wrote:
>> > Using coax will shield the feed line from RFI within the house, and reduce
>> > the liklihood of overloading the radio.
>>
>> Why will coax shield common-mode currents any better than ladder-line?
>
>My original point was a grounded feed line was preferable to continuing the
>random wire straight into the house.
>
>I imagine ladder line would also be effective at reducing local RFI since the
>signal would hit both lines with roughly equal strength.
>
>Do you feel there is an advantage to ladder line over coax for receiving
>antennas? It does seem like you have your ladder line on the antenna I'd expect
>to be quieter anyway.

Hi Mark,

The point Cecil was stretching over several posts is that you might find advantage in a 1:1 current balun at the feed to prevent noise currents induced on the shield from entering that same feedpoint. You were correct to recognize Cecil's ladder line having an advantage due to the balanced system canceling common mode signals.

Two solutions with nearly equal results. Nearly? The cable will undoubtedly exhibit more loss, but the ladder line requires additional components all of which take a nick out of efficiency. The practical matter of the difference between them is nil for receivers.

I should chip in my 2 cents worth and add that I have a DX-440. I would suggest you pay close attention to those who caution you about getting "too good" an antenna.

Front end overload is very common and not always obvious. On your list of antenna gear should be a tuneable preselector. That you would be having a good antenna says you should not buy a preselector with amplifier. It's an odd distinction (or perhaps one that has already passed on), but such a preselector is simply what we call a tuner.

A tuner will bring you several benefits. One, it will reduce those signals you are not tuned to, and prevent them from overloading your front end. B, it will provide a means to match your system. III, it keeps your hand in the game (instead of punching buttons).

73's
Richard Clark, KB7QHC

611. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 02:09:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD26B5C.B6147A4A@IEEE.org>
Source record: 166357

Roy Lewallen wrote:
> Absolutely. I'm eagerly awaiting evidence, provided by you or anyone
> else, that fractal designs have some inherent advantage over non-fractal
> designs.

But the argument is that fractal forms have an inherent
disadvantage over other types of folding. I have seen no
evidence to support that conclusion.

> The argument you seem to be making is that we should assume that fractal
> antennas are inherently the most efficient until proven otherwise.

Nope, not at all. The point is that there are not enough examples or
evidence to conclude that non-fractal folded antennas are always
superior to well designed fractal antennas.

> I'll leave this sort of foggy thinking to the conspiracy buffs and
> pseudo scientists. Sorry, I require evidence.

So do I, Roy, and IMO not nearly enough evidence has been presented to
allow the rational discarding of fractal antennas as a "scam".
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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612. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 02:14:06 UTC
From: kk7ho@aol.communicate
Message-ID: <20010409221406.27990.00000586@ng-ft1.aol.com>
Source record: 166358

I've read this thread from beginning to end. Not being a frac freak as some in here put it, I still must point out that regarding audio (sound) waves, it has been known for years that the most efficient means of developing SPL (sound pressure levels),reinforcing acoustic waves, and increasing propagation (distance heard) has been thru the use of "folded" horns, enclosures etc. The "folded W" cabinet, and Bose "Wave" radio come to mind quickly. It only seems possible that perhaps the same "folding" used to reinforce sound "waves" could also affect RF waves to some degree. Granted, fractals could be going a bit far, but who knows? reinforcing sound waves and RF waves cannot be that far removed from each other, can they?
wearing my asbestos jumpsuit - flame away. 73 de Tim.............KK7HO

613. Re: How do AWG numbers work?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 02:20:05 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AD26DD5.6F3D2905@bwcc.com>
Source record: 166359

Reg Edwards wrote:
> Obviously a typo.
Obvious to you. :)

I really appreciate the clarification.
But it raises a new issue.
(Perhaps obviously a typo.)

> Wire diameter = 0.3248 * 10 ^ (AWG / 20) inches.
(20 / AWG) I could believe.
Should there not be an inverse relationship between AWG and diameter?

> It's just like decibels where AWG = dB and wire diameter is a
> voltage or current of some sort.
I don't see it yet.

> Just as voltage doubles every 6 dB so the wire diameter doubles
> every 6 AWG numbers.
But AWG (gage) numbers run backward into zeros.

614. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 02:22:51 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD26E7B.A3D58504@IEEE.org>
Source record: 166360

Rick Littlefield wrote:
> Like saying that, although 35 years of
> lunar exploration hasn't revealed anything to date, the Moon COULD have some
> green cheese lurking on its surface somewhere! After all, we haven't explored
> every square inch, yet, have we??

It's illogical to think the moon might be made out of green cheese. IMO,
it's not illogical to question the alleged superiority of non-fractal
folded antenna designs under all circumstances. The efficiency of fractals
has been demonstrated for billions of years. Dismissing all fractals out of
hand for antenna applications is, IMO, premature.

Rick, do you accept the nonlocality of reality?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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615. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 02:24:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD26ED8.F6E3E5F@IEEE.org>
Source record: 166362

Richard Clark wrote:
> The jury is still out? You are in the wrong court room.

I have yet to see a comprehensive study of fractal antennas.
--
http://www.mindspring.com/~w6rca

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616. Re: Antenna project inside joke

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 02:24:42 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AD26EEA.BC2736E7@bwcc.com>
Source record: 166361

Richard Clark wrote:
> One, ...
> B, ...
> III, ...
I know I should be laughing, but I don't get it.

617. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 02:26:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD26F5F.C0BF0B0D@IEEE.org>
Source record: 166364

Richard Clark wrote:
> I have seen half a dozen proofs posted right here by Steve.

If it was a mathematical proof, I missed it.
--
http://www.mindspring.com/~w6rca

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618. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 02:26:47 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad26751.112754647@news.accessunited.com>
Source record: 166363

On Mon, 09 Apr 2001 23:05:39 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:

>
>The possibility that skin effect acts to create such an effective shield so
>as to prevent the passage of the electric field as well as the magnetic
>field has been intimated but not really discussed in recent postings. This
>experiment seems to discount that possibility.
>
>So Richard, nothing proved, just some experimental indications.
>
>73, Roger, W7WKB

Hi Roger,

Skin effect occurs becuase the closer to the center of a conductor you
move the more magnetic lines of force surround that area.

That means the inductance is higher.

Since the ends of the conductor have the same voltage, and the
impedance is higher closer to the center, the current moves out
towards the surface.

I'm not sure why you want to prove that.

What I did was this, and maybe you can duplicate it.

I measured the voltage end-to-end on the shield of a few feet of coax
on 30 MHz when it was excited by an external generator. I measured
the voltage on the center conductor from end-to-end.

It was identical at both points, even through the shield and center
were not connected.

Now the shield has a slightly lower (but not much) impedance than the
center, but that doesn't affect the antenna except the antenna acts
like it has a larger diameter conductor when the shield is added.

If you remove the center conductor totally, and use the shield as the
antenna, it behaves exactly the same way as it does when you excite
the shield and use the center to feed the receiver (or voltmeter).

If you resonate the center conductor (you can do that with a
capacitor) and measure the impedance of the shield (you can do that
with the Autek) you will see the impedance of the shield greatly
increases.

If you perform this simple test, you will see the electric field performance of the shield is nearly identical to the center conductor, and that if you tune the center the shield impedance also increases.

This is important, because if the shield was a "shield" and was not influenced by the center or did not transfer energy to the center efficiently, none of this would happen.

The entire idea of the shield changing the response depends heavily on two things:

1.) An electric field (your applied voltage) will not influence the center conductor anywhere like it would with the center driven directly.

(You will see a very slight difference in voltage, because the conductor diameters and the path length is different...but it will be small.)

2.) The shield (Richard claimed this several times) must have a much lower impedance than the center conductor, and would be unaffected by tuning the center conductor.

(You will find the shield impedance IS greatly affected by the ceneter conductor's tuning or load).

If you want to read why this happens, it is explained in the section on loops in the later copies of Reference Data for Radio Engineers.

This stuff really isn't new, and really does not go against what any textbooks I've read says. It does, I admit, go against the somewhat common misconception among amateurs that time-varying magnetic and electric fields can be separated, and the electric field brought to zero without taking the magnetic field to zero.

I think some of this problem occurs because people extract information about directly coupled circuits and mix it with fields at a distance of a few loop diameters away. People think "magnetic" fields are good, and "electric" fields are bad.

This is why most 160 meter DX'ers are very disappointed when using loops for a while. The exception are people who work high wave angles (the loop does very well straight up in the sky compared to a vertical) or people who have a single groundwave noise source that is bothersome, and can be nulled by the loop.

I went through this whole loop-thing the hard way in the 70's, and learned my lessons well. At one time I had sixteen loop antennas in two arrays. They are all gone now, and (gasp) I use short verticals in my large arrays! With over 70 acres of space dedicated to antenna experiments, the loops are all in a pile. And if I used one, it would almost certainly not be shielded unless I needed something to help hold it up!!!

It seems those who never have antennas and who have no notable accomplishments in receiving arrays, are always the experts on antennas they don't have...and have never experimented with.

73 Tom

619. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 02:28:47 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad26fc9.114922417@news.accessunited.com>
Source record: 166365
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

On Mon, 09 Apr 2001 18:21:40 -0400, Mark Holden <msholden@ct2.nai.net>
wrote:

>W6RCecilA wrote:
>
>> Mark Holden wrote:
>> > Using coax will shield the feed line from RFI within the house, and reduce
>> > the liklihood of overloading the radio.
>>
>> Why will coax shield common-mode currents any better than ladder-line?
>
>My original point was a grounded feed line was preferable to continuing the
>random wire straight into the house.

That's a good idea and a good suggestion Mark.

73 Tom

620. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 02:52:06 UTC
From: Ed Cregger <nuke663jlm@vei.net>
Message-ID: <td4t6dgbfkct81@corp.supernews.com>
Source record: 166366

Mine has worked very well on 17 through 10 meters and
compares favorably to some of the more expensive
commercially available multiband verticals that do not
require a groundplane. The auto tuner in my HF rigs is all I
have ever needed to let the radio develop full output power.

Granted, I may not know diddly about how it works, but I do
know for a fact that it does work, and it works well. After
buying one and trying it, I was really disgusted at the
money I had spent on some of the near four hundred dollar
antennas.
--
Ed Cregger, NM2K
nuke663jlm@vei.net

*Remove the "nuke" for correct email address

"Mark Keith" <nm5k@wt.net> wrote in message
news:3AD2562B.6BFF@wt.net...
> Ed Cregger wrote:
> >
> > Half wave end fed antennas (an end fed dipole) do not
> > utilize a ground plane. Forget the nonsense about a
quarter
> > wave matching section and extra gain with a ground
plane.
> > Sales hype for the uneducated.
>
> Thats a decoupling section to reduce the feedline
radiation. I'm not
> sure if they think of it that way though.
> I've used and tested much the same setup on base fed half
waves. The
> section and radials do help. But they are not required.
You will have
> less feedline radiation with the section, and less skewing
of the
> pattern upwards off the horizon. How much difference it
makes depends on
> the degree of common mode currents on the coax shield.
> Will vary with different length feedlines. Also, I notice
many saying
> you "must" have something to drive against with a
halfwave, and I guess
> thats true, and likely the feedline and /or mast is what

the antenna
> drives against. But a 1/2 vertical can still do a real
good job
> regardless. Look at all the j-poles, ringos, etc. I use a
ringo on 10m
> at 20 ft. It works quite well, and I have no obvious
common mode
> problems that I notice, and currently I'm using no
decoupling at all on
> it. I talked to a couple on this NG with it one day a few
months ago.
> They didn't seem to have any trouble hearing me. It's as
good and
> usually better than using the tuner and my 440 feet of
wire 160/80/40
> dipoles mess which is twice the height. And the dipoles
are nearly
> resonant on 10m also, so I know the feed loss isn't
killing me on that
> antenna. MK
> --
> http://web.wt.net/~nm5k

621. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 03:23:22 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <K0vA6.16612$IJ1.1288390@bgtnsc05-news.ops.worldnet.att.net>
Source record: 166367

"Fractenna" <fractenna@aol.com> wrote in message
news:20010409071019.27480.00003015@ng-mj1.aol.com...
> >As you stated previously, fractal antennas do obey the laws of physics -
all
> >of them. There is nothing new here in that regard. The other fact is
that
> >they behave no differently than any other antenna with a bent wire
> >geometry - as more wire is added to the antenna, while maintaining the
same
> >"volume", the resonant frequency decreases, the resonant resistance
> >decreases, the resonant bandwidth decreases and the resonant efficiency
> >decreases. These are the performance trade-offs associated with lowering
of
> >resonant frequency in this manner. Additionally, the performance of the
> >fractal antenna is more a function of the increase in wire length than
the
> >fractal geometry. The self similar fractal geometry is insignificant in
> >determining the antenna behavior, ie. the lowering of resonant frequency,
> >the resonance compression and multi-band behavior. Fractal antennas
will
> >not necessarily provide "optimum" performance. They just perform
similarly
> >to thousands of other possible geometry configurations.
> >
> >All that "fractals" do in the design of linear wire antennas is provide a
> >mathematical tool to create the geometry.
> >
> >Steve VE9SRB
> >
>
> Some people feel they have to play bit parts in Kuhn's paradigm comedy.
But
> those parts end up as forgotten chaff.
>
> I've gathered lotsa info here and this will be incredibly useful. Or
rather
> incredibly predictable. Totally expected. The copy of Kuhn is dog eared.
I'll
> pass it along.
>
> Some people just can't be quiet. Others find patience and being good
observers
> rewards in themselves.
>

> Maybe there is time for steve best to write to all the ee departments who
have
> students presenting fractal antenna projects this spring (just as a
sample) and
> have them filled in on the fraud. Why believe thier results after all? Or
> anyone elses?
>

Actually, the articles to be presented at the 2001 IEEE conference, the article submitted to QEX, the article submitted to the IEEE Antennas and Propagation Magazine and the submitted "Comments" to the IEEE Transactions Editor on a recent IEEE Transactions fractal article pretty much take of this.

What I find most interesting is that not one single person (that Phil speaks of), except me apparently, even bothered to compare a fratcal antenna against another bent wire antenna of the same size and wire length.

Also, if it would help you personally, I would be pleased to point out the numerous errors in Dr. Cohen's CQ papers and patents. Let me know if you are up for that challenge, otherwise, please don't respond to this post with any more cute comments.

> Maybe there is still time for steve to call his buddies in lexington and
have
> them cancel the fractal antenna short course?
> Isn't he running the fractal session? Or is he?
>
> Hmmmmm:-)?
>
> Excuse me. I have a whole bunch of fractal antennas to cable up. A unique
> solution. The only solution that meets the customer's needs.
>
> They sure came back nicely from this outsourcer:-)
>
> 73
> Phil
> de N1ZKT

622. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 04:36:13 UTC
From: RadioHead <"set_master at hotmail dot com">
Message-ID: <td539smutcdaa3@corp.supernews.com>
Source record: 166269
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

"Porky" <Tim@nospam.5by9.co.uk> wrote in message
news:medA6.2683$Fm4.835203@news2-win.server.ntlworld.com...
> Best prevention is to just unplug the antenna during a storm.
>
> I had a mate who did just that, but left the antenna plug laying
> on the floor, the lightning did strike, and resulted in a discharge
> from his plug to the central heating radiator nearby. It blew a
> hole in the radiator and flooded his house.
>
> So, even when unplugged, make sure the end of your coax goes
> somewhere safe.
>
> Rgds
> Tim

My antenna cable comes through my wall and is not close to a window. I unplug my radio when it's not in use, but there is no place to put the coax. What would be my best bet, unplugging the ground wire on my radio and connecting it to my coax? The ground wire goes out the same wall, down the roof over my porch, down the side of the house and into a 3' copper rod that my lightning rods are connected to.

Thanks

623. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 04:37:16 UTC
From: Mike <km6ab@pacbell.net>
Message-ID: <3AD28DFC.42168180@pacbell.net>
Source record: 166270

Thanks very much for the responses and antenna modeling. I have a few spare SGC tuners and may make some time to run some tests. I suspect the results will be measurable but not perceivable.

624. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 04:53:48 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <ta45dt4kra64v0nd206r69na5la7ukv7gh@4ax.com>
Source record: 166273

On Mon, 09 Apr 2001 20:19:02 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> More to the matter is describing a conventional antenna (easily
>> described in standard geometries) as a fractal for the sake of
>> claiming it provides proof of a fractal theory.
>
>It wasn't I who did that, Richard.

Hi Cecil,

I'll agree you didn't to avoid asking you to prove you didn't.
;-)

73's
Richard Clark, KB7QHC

625. Re: #16 wire for a dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 04:54:51 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD2921B.B2D9381E@eznec.com>
Source record: 166272

Let's see, since there must be six gauge sizes per S-Awg, the wire
diameter doubles every Sawg?

Roy Lewallen, W7EL

Reg Edwards wrote:
>
> Denver Braughler wrote
> > Reg Edwards wrote:
> > > A change in AWG of 10 gauges, ie., from #16 to #10, results in
> a
> > > change of diameter of Sqrt(10) = 3.16 times.
> > Please clarify how 16 minus 10 equals 10?
> ================================
> Obviously a typo. A change from #16 to #6 will result in a 3.16
> times increase in diameter. So will a change from #24 to #14.
>
> Wire diameter = 0.3248 * 10 ^ (AWG / 20) inches.
>
> Its just like decibels where AWG = dB and wire diameter is a
> voltage or current of some sort.
>
> Just as voltage doubles every 6 dB so the wire diameter doubles
> every 6 AWG numbers.

626. Re: Yahoo! News Story - Power Outage Knocks Out AOL E-Mail

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 05:00:05 UTC
From: Martin Hibbs <mhibbs@ipeg.com>
Message-ID: <3AD29355.CF68664@ipeg.com>
Source record: 166274

"Yahoo! News" wrote:

> Billy Cheeks (williarsch@nandomail.com) has sent you a news article
> --
> Personal message:
>
> Alas, not permanently.

Damn!!

627. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 05:09:05 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <ch45dt4c78nj2f6tiat29ep6linshhuao2@4ax.com>
Source record: 166275

On Mon, 09 Apr 2001 20:30:13 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>Question is, will I get an answer that is good enough? I suspect for
>any length of wire in a particular volume, a fractal antenna can be
>searched for and found that will beat any particular non-fractal
>antenna. You see, both sides of the argument have the same set of
>problems.

Hi Cecil,

There are already half a dozen designs matching your criteria exactly
that outclass the best fractal. If anything is proven, it is with
herr doktor's vast experience, his aquaintance with genetic
algorithms, his years of high-grading all possible candidates, his
champion of fractals was whipped 6 ways to sunday within a week.

As I said, this presumption of software finding the optimal solution
was designed with failure built in.

73's
Richard Clark, KB7QHC

628. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 05:09:43 UTC
From: Bill Meacham <NOSPAMexray@coqui.net>
Message-ID: <3AD29597.925240C2@coqui.net>
Source record: 166276
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

RadioHead wrote:
>
> "Porky" <Tim@nospam.5by9.co.uk> wrote in message
> news:medA6.2683$Fm4.835203@news2-win.server.ntlworld.com...
> > Best prevention is to just unplug the antenna during a storm.
> >
> > I had a mate who did just that, but left the antenna plug laying
> > on the floor, the lightning did strike, and resulted in a discharge
> > from his plug to the central heating radiator nearby. It blew a
> > hole in the radiator and flooded his house.
> >
> > So, even when unplugged, make sure the end of your coax goes
> > somewhere safe.
> >
> > Rgds
> > Tim
>
> My antenna cable comes through my wall and is not close to a window. I
> unplug my radio when it's not in use, but there is no place to put the coax.
> What would be my best bet, unplugging the ground wire on my radio and
> connecting it to my coax? The ground wire goes out the same wall, down the
> roof over my porch, down the side of the house and into a 3' copper rod that
> my lightning rods are connected to.
>
> Thanks

A coax grounding block usually takes care of this concern.
There's some varying schools of thought here. Consider that a
surge comes thru the power, or static buildup comes thru the
antenna. Some will support the theory that says damaging surges
can COME FROM a ground. Any of them will look for the best path
to ground (or a better ground). You don't want that path to be
thru the radio.
Having a grounding block (outside) on the feedline and unplugging
the set from the wall would seem the most logical for antenna
induced surges, but its still not quite that cut-n-dried. Even
the best ground will have a few ohms resistance...a 3 ft rod in
typical soil could be several hundred ohms resistance in
connecting you with the earth...another incentive to tie your
ground to the power ground. Because of that, 100% of the juice
will never go to your ground rod even with an outdoor grounding
block...the rest looks for a better route. In the case of a
nearby lightning strike, that remainder may go to your radio and

jump a few inches to the next closest thing that is plugged in, or to the elec outlet itself. If you must leave the coax disconnected inside, keep that in mind.
From a purely theoretical point of view, the antenna should be grounded, obviously when you're not using it. And that is to say not just the shield of the coax, but the center conductor as well. Most ham-type antenna switches will do this. The theory here is that the antenna will then be at the same potential as ground, or any surrounding grounded objects, thereby presenting no more risk than your incoming power line, for example. When it is "floating" it may appear as a 'magnet' to lightning, simply because it is not 'charged' equally with its surroundings...much like the proverbial golfer's club in a thunderstorm. Its not to say that it attracts lightning, but it certainly attracts more than its share of charge from a nearby strike if it isn't grounded simply based on the difference of potential...when you speak in terms of a zillion volts a mile away, a fraction of a percent of that can certainly zap your equipment...or a golfer.
The ultimate safeguard is to disconnect EVERYTHING, even the ground wire. Thats not always practical, so the other suggested steps in my posts or others are all helpful in minimizing your susceptibility to damage. Properly done, having a radio antenna outside your house doesn't provoke any real additional risk to your property...improperly done and your insurance agent will forget who you are after the first claim.
This isn't a pressing issue to you guys in Vermont, but in the South and Midwest it can be a daily worry for several months out of the year. If you are in Central Florida, I suggest prayer.

Bill Meacham
Vieques, PR

629. Re: Loops

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 05:09:59 UTC
From: aduffy@sprint.ca
Message-ID: <3AD295A7.C86E7F13@sprint.ca>
Source record: 166277
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Thanks Reg and Kevin. Before I started cutting up $45 CDN in copper strips I definitely wanted to make sure about things. Definately wouldn't want an expensive door stop (although I could pass it off as modern art... well maybe).

As it turns out through modeling, the wider conductor increased my efficiency nicely but the band width was reduced quite a bit. Not that is was all that great to begin with. It'll have to be a design trade off. In the original design the bandwidth was 30kHz on 80m by shaping the drive loop differently (rectangular), so I hope to compensate by trying that with mine.

Once again, thanks to both of you.

73, Tony
VA3ATD, London, ON

aduffy@sprint.ca wrote:

> Hi All,
>
> Any one have an idea what % I should adjust the diameter of the loop to
> compensate for the effects of using 4.5" copper strips in place of 3/4"
> copper pipe in the main loop? And would it be advisable to construct the
> drive loop of the same material
>
> ---
> 73, Tony
>
> VA3ATD, London, ON

630. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 05:19:48 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <sg55dtcbuu4jt2add16jq27ot6kf209ne4@4ax.com>
Source record: 166279

On 10 Apr 2001 02:14:06 GMT, kk7ho@aol.communicate (KK7HO) wrote:

>I've read this thread from beginning to end. Not being a frac freak as some in
>here put it, I still must point out that regarding audio (sound) waves, it has
>been known for years that the most efficient means of developing SPL (sound
>pressure levels),reinforcing acoustic waves, and increasing propagation
>(distance heard) has been thru the use of "folded" horns, enclosures etc. The
>"folded W" cabinet, and Bose "Wave" radio come to mind quickly. It only seems
>possible that perhaps the same "folding" used to reinforce sound "waves" could
>also affect RF waves to some degree. Granted, fractals could be going a bit
>far, but who knows? reinforcing sound waves and RF waves cannot be that far
>removed from each other, can they?
>wearing my asbestos jumpsuit - flame away. 73 de Tim.............KK7HO

Hi Tim,

You've made a reasonable observation. This is exactly the level of
discussion that IS warranted in this group - it rarely attends fractal
discussion.

Myself I would characterize the fractal as being more efficient with
available space (being a EM sponge), however I must admit that Steve's
work has me suspecting that statement.

To extend your metaphor of tuned enclosures, we can agree that perhaps
both exhibit unusual near-field properties not found in common
examples of antennas (or speakers). The geometry of a fractal lends
itself easily to that argument.

73's
Richard Clark, KB7QHC

631. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 05:22:20 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <c065dtgsjviq49c9gp0fbl4gmdovvap017@4ax.com>
Source record: 166278

On Mon, 09 Apr 2001 20:51:03 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> It is incumbent upon the offerer of a theory to provide a proof.
>
>So how does one prove the theory that non-fractal antennas are
>better than all fractal antennas yet to be invented?

Hi Cecil,

Very simple. Who is offering the statement?

I don't care which side you are offering Cecil, you still have to
prove it. If you are not offering, you haven't got your skin in the
game.

73's
Richard Clark, KB7QHC

632. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 05:32:36 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <9565dtoloaojbu52afn5husr03e5ttgc2j@4ax.com>
Source record: 166280

On Mon, 09 Apr 2001 20:58:19 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> As difficult as you project it to be to prove a negative - you would
>> be hard pressed to prove
>> >An optimum fractal is not something that can be achieved by a human being
>> is in fact achievable at all, by human or machine.
>
>I'm not saying the ultimate fractal antenna can be achieved - just that
>a good enough fractal antenna can be achieved, given enough processing
>power and time, for any reasonable boundary conditions.

Hi Cecil,

This is the extreme of laziness. You want a software program to
optimize it to "good enough" when you could do that much as easily at
random?

Boy do I have some software to sell You! I can absolutely guarantee
you good enough results ï¿½3dB.

You speak of the fractal quality of nature and you want to buy it out
of box. Sheesh. I know you are retired, but did you forget how to
work? C'mon now, its no more difficult than building a bird house for
your kids.

73's
Richard Clark, KB7QHC

633. Re: coax and equipment grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 05:33:15 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AD29B1B.81BD8628@bwcc.com>
Source record: 166281

RadioHead wrote:
> The ground wire goes out the same wall, down the
> roof over my porch, down the side of the house and into a 3' copper rod that
> my lightning rods are connected to.
This does not sound right.
I suggest that you permanently connect your outdoor coax grounding
block to that wire right outside your house and not connect your radio to that wire.
Whatever your radio is connected to should be going through your electrical panel.

At the very least, your electrical panel needs to be bonded to the lightning arrestor system via a good copper strap.
(And you really should drive more ground rods and to a greater depth.
Lightning needs radials for dissipation.)

Having a separate ground for your radio is an open invitation for electrical transients and faults in your house to follow this better path to earth that you have provided.

You can run a wire or strap from your shack to the ground to give you a better ground.
Just make sure that the conductor goes to your electrical panel first.
The run another equal or even better conductor from the electrical panel to an array of ground rods using buried bare copper.

You presently have exactly the kind of situation that you don't want: your radio is on the path to ground for noise elsewhere in your house.

634. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 05:33:49 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <ko65dto75q4rnc8mt68e81ohdsvmkg1u1l@4ax.com>
Source record: 166282

On Mon, 09 Apr 2001 21:09:32 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>> Absolutely. I'm eagerly awaiting evidence, provided by you or anyone
>> else, that fractal designs have some inherent advantage over non-fractal
>> designs.
>
>But the argument is that fractal forms have an inherent
>disadvantage over other types of folding. I have seen no
>evidence to support that conclusion.
>

Hi Cecil,

You will.

73's
Richard Clark, KB7QHC

635. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 05:43:11 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <oq65dtkamnrm9utbvum0r42fmltipq26de@4ax.com>
Source record: 166283

On Mon, 09 Apr 2001 21:26:39 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> I have seen half a dozen proofs posted right here by Steve.
>
>If it was a mathematical proof, I missed it.

Hi Cecil,

You have an alternative mathematical proof to test it against? You
will see it eventually if you follow the journals.

The academic aside, Steve has working models too. How long do you
reckon this program you pine for would take to match Steve's
performance? How much would you pay for this software to have it done
in the same amount of time?

73's
Richard Clark, KB7QHC

636. Re: Antenna project inside joke

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 05:47:43 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <id75dtsiosrj8uoqv9mrnbvf4epav00i7d@4ax.com>
Source record: 166284

On Mon, 09 Apr 2001 22:24:42 -0400, Denver Braughler
<Braughler@bwcc.com> wrote:

>Richard Clark wrote:
>> One, ...
>> B, ...
>> III, ...
>I know I should be laughing, but I don't get it.

Hi Denver,

PBS

Car Talk

Click'n'Clack

If this means nothing to you, the allusion above won't make sense. It
has absolutely nothing to do with antennas or the group. It's a
schtick.

73's
Richard Clark, KB7QHC

637. Re: Antenna project inside joke

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 05:58:36 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AD2A10C.E0F52B83@bwcc.com>
Source record: 166285

Richard Clark wrote:
> Car Talk
>
> Click'n'Clack
>
> If this means nothing to you, the allusion above won't make sense.
I've heard those guys like only twice.

> It's a schtick.
Figures!

Thanks!

638. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 06:02:48 UTC
From: "Mark S. Holden" <msholden@ct2.nai.net>
Message-ID: <3AD2A208.32BD7B5B@ct2.nai.net>
Source record: 166286
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Richard Clark wrote:

> On Mon, 09 Apr 2001 18:21:40 -0400, Mark Holden <msholden@ct2.nai.net>
> wrote:
>
> >W6RCecilA wrote:
> >
> >> Mark Holden wrote:
> >> > Using coax will shield the feed line from RFI within the house, and reduce
> >> > the liklihood of overloading the radio.
> >>
> >> Why will coax shield common-mode currents any better than ladder-line?
> >
> >My original point was a grounded feed line was preferable to continuing the
> >random wire straight into the house.
> >
> >I imagine ladder line would also be effective at reducing local RFI since the
> >signal would hit both lines with roughly equal strength.
> >
> >Do you feel there is an advantage to ladder line over coax for receiving
> >antennas? It does seem like you have your ladder line on the antenna I'd expect
> >to be quieter anyway.
>
> Hi Mark,
>
> The point Cecil was stretching over several posts is that you might
> find advantage in a 1:1 current balun at the feed to prevent noise
> currents induced on the shield from entering that same feedpoint. You
> were correct to recognize Cecil's ladder line having an advantage due
> to the balanced system canceling common mode signals.
>
> Two solutions with nearly equal results. Nearly? The cable will
> undoubtedly exhibit more loss, but the ladder line requires additional
> components all of which take a nick out of efficiency. The practical
> matter of the difference between them is nil for receivers.
>
> I should chip in my 2 cents worth and add that I have a DX-440. I
> would suggest you pay close attention to those who caution you about
> getting "too good" an antenna.
>
> Front end overload is very common and not always obvious. On your
> list of antenna gear should be a tuneable preselector. That you would
> be having a good antenna says you should not buy a preselector with

> amplifier. It's an odd distinction (or perhaps one that has already
> passed on), but such a preselector is simply what we call a tuner.
>
> A tuner will bring you several benefits. One, it will reduce those
> signals you are not tuned to, and prevent them from overloading your
> front end. B, it will provide a means to match your system. III, it
> keeps your hand in the game (instead of punching buttons).
>
> 73's
> Richard Clark, KB7QHC

Hi

Thanks for your thoughtful response.

I did advise the original poster about matching the impedance, but that was back channel.

I use rack mount radios by Harris, Racal and Standard for HF. Overload has never been an issue for me.

My limiting factor is the noise floor.

The present game plan for my next antenna is another horizontal loop, with buried feed line, a couple hundred feet away from the house. I'm thinking about putting varactors on it so I can tweak it from the comfy chair.

Regards,

Mark

639. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 06:07:52 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD2A338.205A@wt.net>
Source record: 166287
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Mark Holden wrote:

> But back to the original person who started this thread, I can't imagine him
> using ladder line to feed a portable radio.
>
> Regards,
>
> Mark

Most of the times I fed a random wire to a receiver, I just ran the single wire the whole way. But I wasn't worried about lightning, decoupling etc. Still wouldn't really be a problem if you disconnected during bad wx. Back when I ran seperate xmtr and rcvr's as a novice, many times my receive antenna was just a wire strung around the ceilings and walls. If I use a tuner, I run the single wire to the tuner, and coax from the tuner to rig if it has a so-239. I hardly ever bothered with a tuner for a portable type radio with no decent antenna connector. I just clipped the single wire to the existing whip. MK

--
http://web.wt.net/~nm5k

640. anyone with experience with aircraft HF antennas?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 08:07:11 UTC
From: "..." <mecs@voyager.net>
Message-ID: <3ad2bfc6$0$18899$bbae4d71@news.net-link.net>
Source record: 166288

Trailing wire setup?
whatever? primarily want it for occasional HF work.

Richard W9EEE

641. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 09:10:01 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad2cd29.138830077@news.accessunited.com>
Source record: 166289

On Mon, 09 Apr 2001 20:30:27 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>It's easy for a fractal expert to recognize a fractal mathematical process.
>If an antenna can be described by a fractal equation, seems to me that is
>prima facie evidence that the antenna is a fractal.
>--
>http://www.mindspring.com/~w6rca

What is a fractal expert? Is that anything like a froctologist?
Or an ex-wife?

642. Wire Log-P antenna design required

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 09:43:52 UTC
From: marc@laradio.co.za
Message-ID: <3ad2d502.12937610@news.megaweb.co.za>
Source record: 166290

Hi there,

I am looking for some info (or preferably, a design or designs) for a wire log-periodic antenna.

I want to build a fixed-direction Log-P that operates from around 4MHz to 29MHz.

Any info, pointers, links etc. would be very much appreciated.

Regards,

Marc ZS6HZ

643. Re: How do AWG numbers work?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 10:52:30 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9auoh8$ra6$1@plutonium.btinternet.com>
Source record: 166291

Denver Braughler wrote > Reg Edwards wrote:
> > Obviously a typo.
> Obvious to you. :)
>
> I really appreciate the clarification.
> But it raises a new issue.
> (Perhaps obviously a typo.)
>
> > Wire diameter = 0.3248 * 10 ^ (AWG / 20) inches.
> (20 / AWG) I could believe.
> Should there not be an inverse relationship between AWG and
diameter?
>
> > It's just like decibels where AWG = dB and wire diameter is a
> > voltage or current of some sort.
> I don't see it yet.
>
> > Just as voltage doubles every 6 dB so the wire diameter doubles
> > every 6 AWG numbers.
> But AWG (gage) numbers run backward into zeros.
==========
I'll give someone else the pleasure of puzzling out whats missing
from the formula. It's good to see some of you are still awake over
there.

Reg

644. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 11:16:02 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9auptbksv1@neptunium.btinternet.com>
Source record: 166294

Tome wrote -
> It seems those who never have antennas and who have no notable
> accomplishments in receiving arrays, are always the experts on
> antennas they don't have...and have never experimented with.
==========
True Tom. Then there's that class of people who have made lots and
lots of experiments but have arrived at all the wrong conclusions
because they set off on the wrong foot.

Reg

645. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 11:22:24 UTC
From: fractenna@aol.com
Message-ID: <20010410072224.25107.00002817@ng-cr1.aol.com>
Source record: 166292

```
>
>
>"Fractenna" <fractenna@aol.com> wrote in message
>news:20010409071019.27480.00003015@ng-mj1.aol.com...
>> >As you stated previously, fractal antennas do obey the laws of physics -
>all
>> >of them. There is nothing new here in that regard. The other fact is
>that
>> >they behave no differently than any other antenna with a bent wire
>> >geometry - as more wire is added to the antenna, while maintaining the
>same
>> >"volume", the resonant frequency decreases, the resonant resistance
>> >decreases, the resonant bandwidth decreases and the resonant efficiency
>> >decreases. These are the performance trade-offs associated with lowering
>of
>> >resonant frequency in this manner. Additionally, the performance of the
>> >fractal antenna is more a function of the increase in wire length than
>the
>> >fractal geometry. The self similar fractal geometry is insignificant in
>> >determining the antenna behavior, ie. the lowering of resonant frequency,
>> >the resonance compression and multi-band behavior. Fractal antennas
>will
>> >not necessarily provide "optimum" performance. They just perform
>similarly
>> >to thousands of other possible geometry configurations.
>> >
>> >All that "fractals" do in the design of linear wire antennas is provide a
>> >mathematical tool to create the geometry.
>> >
>> >Steve VE9SRB
>> >
>>
>> Some people feel they have to play bit parts in Kuhn's paradigm comedy.
>But
>> those parts end up as forgotten chaff.
>>
>> I've gathered lotsa info here and this will be incredibly useful. Or
>rather
>> incredibly predictable. Totally expected. The copy of Kuhn is dog eared.
>I'll
>> pass it along.
>>
>> Some people just can't be quiet. Others find patience and being good
>observers
```

>> rewards in themselves.
>>
>> Maybe there is time for steve best to write to all the ee departments who
>have
>> students presenting fractal antenna projects this spring (just as a
>sample) and
>> have them filled in on the fraud. Why believe thier results after all? Or
>> anyone elses?
>>
>
>Actually, the articles to be presented at the 2001 IEEE conference, the
>article submitted to QEX, the article submitted to the IEEE Antennas and
>Propagation Magazine and the submitted "Comments" to the IEEE Transactions
>Editor on a recent IEEE Transactions fractal article pretty much take of
>this.
>
>What I find most interesting is that not one single person (that Phil speaks
>of), except me apparently, even bothered to compare a fratcal antenna
>against another bent wire antenna of the same size and wire length.
>
>Also, if it would help you personally, I would be pleased to point out the
>numerous errors in Dr. Cohen's CQ papers and patents. Let me know if you
>are up for that challenge, otherwise, please don't respond to this post with
>any more cute comments.
>
>> Maybe there is still time for steve to call his buddies in lexington and
>have
>> them cancel the fractal antenna short course?
>> Isn't he running the fractal session? Or is he?
>>
>> Hmmmmm:-)?
>>
>> Excuse me. I have a whole bunch of fractal antennas to cable up. A unique
>> solution. The only solution that meets the customer's needs.
>>
>> They sure came back nicely from this outsourcer:-)
>>
>> 73
>> Phil
>> de N1ZKT
>

Sure! Shoot the wad as they say! Go for it! Tell us all those 'mistakes' and
the 'fundamental fraud and fallacy' of fractals.

You've worked hard. You're organized with your harpies. Now time for those
benefits to kick in:-)

So given this is your very, very best shot then hit me with the details.

73
Phil
de N1ZKT

7

646. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 11:25:21 UTC
From: fractenna@aol.com
Message-ID: <20010410072521.25107.00002818@ng-cr1.aol.com>
Source record: 166293

>
>IMO, for any non-fractal folded antenna with a particular set of
>boundary conditions, there exists a fractal antenna that will beat
>whatever parameter is deemed to be most important and given enough
>compute power and time, the computer can find one. Sorta like those
>monkeys typing the complete works of Shakespheare.
>--

Gee.

I thought Dr. Cohen ran the fractal challenge to get people to think about how
good fractals are. This guy sure knows how to job the inertia!

I have here a copy of Dr. Coihen's first genetic algorithm article from 1996.
Also ones from 1997.
I am also sitting infront of a machine which is ga equipped.

Ever wonder what the ga does here?

Hmmm?

73
Phil
de N1ZKT

647. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 11:33:59 UTC
From: fractenna@aol.com
Message-ID: <20010410073359.25107.00002819@ng-cr1.aol.com>
Source record: 166295

>What I find most interesting is that not one single person (that Phil speaks
>of), except me apparently, even bothered to compare a fratcal antenna
>against another bent wire antenna of the same size and wire length.

What I find most interesting is that you are so out of it that you assume
people like Dr. Cohen don't know jack.

Like I said. Hit me with your best shot. You're dieing to do it so go ahead!
Tell us all about the bad bad Dr. Cohen!

73
Phil
de N1ZKT

648. FA: Last Day Kenwood CW Filter YK-88CN

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 12:02:17 UTC
From: Tim Randa <randas@mindspring.com>
Message-ID: <3AD2F649.3831C323@mindspring.com>
Source record: 166296
Cross-posted to: rec.radio.amateur.antenna,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.cb,rec.radio.amateur.boatanchors,rec.radio.shortwave,rec.radio.amateur.policy

Check it out...

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1227421384

649. Mosley TA-33 specs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 13:33:59 UTC
From: krishna <kkanakas@cisco.com>
Message-ID: <3AD30BC7.98EF0934@cisco.com>
Source record: 166297
Body handling: Binary attachment payload not displayed: kkanakas.vcf

Hi,
Can someone give me the following info for a Mosley 3E tribander.

Boom length.
Length of largest element
Turn radius
Wind loading.

I am planning on getting a used one and would like to start looking for a rotor and see how it would fit a roof mount tripod. Would have to start talking to neighbours and have a feel of their pulse before the aluminum shows up :)

thanks
krish

[One or more binary attachments are retained only in the source text.]

650. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 13:35:54 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD30C3A.45F300D0@IEEE.org>
Source record: 166298

Tom W8JI wrote:
> What is a fractal expert? Is that anything like a froctologist?
> Or an ex-wife?

The guys who wrote the book, "The Science of Fractal Images",
are fractal experts. I can look at certain software algorithms
and tell that they are related to fractals. There is a whole body
of scientific knowledge on fractals. A lot of special effects
in movies now are fractally generated. Fractals seem to be
a very efficient way to store information about nature. Much
of existence seems to be described by the algorithms of an
underlying fractal mathematics.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

651. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 13:50:54 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD30FBE.84973F83@IEEE.org>
Source record: 166299

Richard Clark wrote:
> There are already half a dozen designs matching your criteria exactly
> that outclass the best fractal.

Richard, since the best fractal has not been invented yet how can
you be so sure that it will be able to be beat? What causes this
attitude that all possible knowledge is already known and there
will be nothing new under the sun? Do you have a rigorous
mathematical proof that non-fractal folding is superior to
fractal folding? It is certainly not true for plants.

This reminds me of the cable TV show about the great scientists
of the time who believed it was impossible to invent a clock that
could keep accurate time on a ship at sea.

Mother Nature has spent billions of years learning how to fractally
fold plants in the most efficient manner. How long has man spent
learning how to fractally fold antennas? I'm not arguing that fractal
folding of antennas is superior. I'm arguing that not enough knowledge
exists on the subject to possess a valid opinion.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

652. Re: Lightning Protection

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 13:59:36 UTC
From: Harry Williams <harry.w.williams@cdc.com>
Message-ID: <3AD311C8.163A8AC6@cdc.com>
Source record: 166302

Thanks for the reply. I ended up using dual side by side banna
jacks/plugs. Put the
plug on the feedline and one jack on line to house and one jack on line
to
ground. Simple matter now to unplug from house and plug to ground.

Thanks,
Harry - W0PIY

'Doc wrote:

> Harry,
> A SPST would work too. 'Open' = no connection. 'Closed'
> shorts to ground. A 'better' solution is to use 'quick'
> disconnects and just drop it on the ground, or plug into
> a grounded 'disconnect'.
> 'Doc

653. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:03:36 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD312B8.C20A9267@IEEE.org>
Source record: 166300

Richard Clark wrote:
> I don't care which side you are offering Cecil, you still have to
> prove it.

I am not taking sides, Richard. I'm saying there is not enough
information available for a scientist to possess a valid opinion
on this particular subject. IMO, neither side has presented
anything beyond anecdotal examples.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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654. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:08:30 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <ytEA6.17066$RF1.1302070@bgtnsc06-news.ops.worldnet.att.net>
Source record: 166301

```
"Fractenna" <fractenna@aol.com> wrote in message
news:20010410072224.25107.00002817@ng-cr1.aol.com...
> >
> >
> >"Fractenna" <fractenna@aol.com> wrote in message
> >news:20010409071019.27480.00003015@ng-mj1.aol.com...
> >> >As you stated previously, fractal antennas do obey the laws of
physics -
> >all
> >> >of them. There is nothing new here in that regard. The other fact is
> >that
> >> >they behave no differently than any other antenna with a bent wire
> >> >geometry - as more wire is added to the antenna, while maintaining the
> >same
> >> >"volume", the resonant frequency decreases, the resonant resistance
> >> >decreases, the resonant bandwidth decreases and the resonant
efficiency
> >> >decreases. These are the performance trade-offs associated with
lowering
> >of
> >> >resonant frequency in this manner. Additionally, the performance of
the
> >> >fractal antenna is more a function of the increase in wire length than
> >the
> >> >fractal geometry. The self similar fractal geometry is insignificant
in
> >> >determining the antenna behavior, ie. the lowering of resonant
frequency,
> >> >the resonance compression and multi-band behavior. Fractal antennas
> >will
> >> >not necessarily provide "optimum" performance. They just perform
> >similarly
> >> >to thousands of other possible geometry configurations.
> >> >
> >> >All that "fractals" do in the design of linear wire antennas is
provide a
> >> >mathematical tool to create the geometry.
> >> >
> >> >Steve VE9SRB
> >> >
> >>
> >> Some people feel they have to play bit parts in Kuhn's paradigm comedy.
> >But
> >> those parts end up as forgotten chaff.
```

> >>
> >> I've gathered lotsa info here and this will be incredibly useful. Or
> >rather
> >> incredibly predictable. Totally expected. The copy of Kuhn is dog
eared.
> >I'll
> >> pass it along.
> >>
> >> Some people just can't be quiet. Others find patience and being good
> >observers
> >> rewards in themselves.
> >>
> >> Maybe there is time for steve best to write to all the ee departments
who
> >have
> >> students presenting fractal antenna projects this spring (just as a
> >sample) and
> >> have them filled in on the fraud. Why believe thier results after all?
Or
> >> anyone elses?
> >>
> >
> >Actually, the articles to be presented at the 2001 IEEE conference, the
> >article submitted to QEX, the article submitted to the IEEE Antennas and
> >Propagation Magazine and the submitted "Comments" to the IEEE
Transactions
> >Editor on a recent IEEE Transactions fractal article pretty much take of
> >this.
> >
> >What I find most interesting is that not one single person (that Phil
speaks
> >of), except me apparently, even bothered to compare a fratcal antenna
> >against another bent wire antenna of the same size and wire length.
> >
> >Also, if it would help you personally, I would be pleased to point out
the
> >numerous errors in Dr. Cohen's CQ papers and patents. Let me know if you
> >are up for that challenge, otherwise, please don't respond to this post
with
> >any more cute comments.
> >
> >> Maybe there is still time for steve to call his buddies in lexington
and
> >have
> >> them cancel the fractal antenna short course?
> >> Isn't he running the fractal session? Or is he?
> >>
> >> Hmmmmm:-)?
> >>
> >> Excuse me. I have a whole bunch of fractal antennas to cable up. A

unique
> >> solution. The only solution that meets the customer's needs.
> >>
> >> They sure came back nicely from this outsourcer:-)
> >>
> >> 73
> >> Phil
> >> de N1ZKT
> >
>
> Sure! Shoot the wad as they say! Go for it! Tell us all those 'mistakes'
and
> the 'fundamental fraud and fallacy' of fractals.
>

Why is it such an issue for you people to have someone disagree with you? I would be more than happy to seriously discuss this if I thought that you two could engage in an objective technical discussion.

Here's just one example: I don't have the article in front of me so I'm going from memory. In Dr. Cohen's article "Fractal Loops and the Small Loop Approximation," Communications Quarterly, pp. 77 - 81, Winter 1996, he presents gain in dBi for the MI2 and MI3 fractal loops (Fig 8). The gain curves indicate that the gain for both the MI2 and the MI3 never drops below 1.5 dBi down to almost zero frequency. In the text, he states that both have similar gain at low frequencies. In analyzing both the MI2 and the MI3, it is evident that he neglected to include ohmic losses in this gain calculation. These antennas do not have similar gains nor are they as efficient at low frequencies as his gain curves indicate. He made a mistake.

Here's another. In one article, he states that fractal loops do not obey the generalizations of the SLA because of their fractal geometry. He also goes on to state that because of the geometry dependence, it is impossible to determine the asymptote where the fractal loops obey the SLA radiation resistance predictions. This is not correct as I have derived the formula to determine this asymptote for fractal and other bent wire loops (the July IEEE Presentation). He made another mistake (actually several) in his assumptions regarding fractal loops and the SLA.

Everybody makes mistakes. Some people are just better than others at accepting this and learning from them.

>
> You've worked hard. You're organized with your harpies. Now time for those
> benefits to kick in:-)

What are you talking about?

>
> So given this is your very, very best shot then hit me with the details.
>

Have patience.

> 73
> Phil
> de N1ZKT
>
> 7

655. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:10:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD31443.7D530E48@IEEE.org>
Source record: 166303

Richard Clark wrote:
> This is the extreme of laziness. You want a software program to
> optimize it to "good enough" when you could do that much as easily at
> random?

You missed the point, Richard. "Good enough" means good enough to beat
any non-fractal folded design that you come up with. However, the same
software could be told to find the next good enough non-fractal design.

> Boy do I have some software to sell You! I can absolutely guarantee
> you good enough results ï¿½3dB.

Well, then use it to beat Steve's designs.

> Sheesh. I know you are retired, but did you forget how to work?

Absolutely!
--
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656. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:13:09 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD314F5.D667F183@IEEE.org>
Source record: 166305

Richard Clark wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >But the argument is that fractal forms have an inherent
> >disadvantage over other types of folding. I have seen no
> >evidence to support that conclusion.

> You will.

When?
--
http://www.mindspring.com/~w6rca

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657. Re: anyone with experience with aircraft HF antennas?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:14:34 UTC
From: "James S. Speck" <speck@qns.com>
Message-ID: <ezEA6.370$Rx.3888@news.onenet.net>
Source record: 166307

I installed plenty of these in Beech and Aero Commanders which were flown overseas on their delivery flights. Generally we used surplus electric reels (which can be found with either 12 or 24 v. motors). Mounted in the tail somewhere behind the cabin, and remotely controlled by an in/out switch, also connected to the 'landing gear down' light to force 'in' if the gear was extended. Antenna position was available by a three digit counter and tach shaft, if desired. A phenolic fairlead tube leads the antenna wire through the skin, with a brass collar on the inside which makes connection to the coax from the HF. (Ground the shield to the skin). We used a rubber toilet float as a drogue on the end of the wire. There is a limit switch which shuts off the motor when the wire is reeled completely in. In use, one reels out wire until the HF loaded up. The position indicator could be logged so freq. changes were quick. A quarter-wave length of wire was usually what was used (the first peak of the antenna current).

For permanent HF installations, a 29' or 34' wire antenna was rigged from the top of the cabin to the tail and then to the wingtip, for instance (depending on the aircraft), and a tuner installed.

Jim W5AI

"..." <mecs@voyager.net> wrote in message
news:3ad2bfc6$0$18899$bbae4d71@news.net-link.net...
> Trailing wire setup?
> whatever? primarily want it for occasional HF work.
>
> Richard W9EEE
>
>

658. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:16:40 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <cBEA6.17068$RF1.1302663@bgtnsc06-news.ops.worldnet.att.net>
Source record: 166304

"Fractenna" <fractenna@aol.com> wrote in message
news:20010410073359.25107.00002819@ng-cr1.aol.com...
> >What I find most interesting is that not one single person (that Phil
speaks
> >of), except me apparently, even bothered to compare a fratcal antenna
> >against another bent wire antenna of the same size and wire length.
>
> What I find most interesting is that you are so out of it that you assume
> people like Dr. Cohen don't know jack.
>

"you are so out of it" Good technical defense.

Who's Jack?

> Like I said. Hit me with your best shot. You're dieing to do it so go
ahead!
> Tell us all about the bad bad Dr. Cohen.

How old are you?

What would be wrong with making this statement to me:

"Steve, would you be willing to share your analysis and results with us? We
would like to take a look at it and see if we agree or disagree. Perhaps
you saw something that we missed. On the other hand, perhaps some of your
analysis missed something. It would be good to get to the bottom of this
and come to some mutual agreement. Look forward to discussing further.
Take care."

>
> 73
> Phil
> de N1ZKT

659. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:17:47 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD3160B.F0B8AEC@IEEE.org>
Source record: 166309

Richard Clark wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>
> >Richard Clark wrote:
> >> I have seen half a dozen proofs posted right here by Steve.
> > >
> > >If it was a mathematical proof, I missed it.
>
> You have an alternative mathematical proof to test it against? You
> will see it eventually if you follow the journals.

Please keep us up to date. There's not a whole lot of journals in
Madisonville, TX. If it doesn't appear in "IEEE Spectrum" or "Science
News", I am not likely to see it.

> The academic aside, Steve has working models too. How long do you
> reckon this program you pine for would take to match Steve's
> performance?

Didn't you say you already had it and offered to sell it to me?
--
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660. Re: anyone with experience with aircraft HF antennas?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:17:49 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AD3160D.ACC20BBC@spam.me.not>
Source record: 166306

I like the motorized reel solution... pretty ingenious. I would have never thought of it.

-SSB

"James S. Speck" wrote:

> I installed plenty of these in Beech and Aero Commanders which were flown
> overseas on their delivery flights. Generally we used surplus electric
> reels (which can be found with either 12 or 24 v. motors). Mounted in the
> tail somewhere behind the cabin, and remotely controlled by an in/out
> switch, also connected to the 'landing gear down' light to force 'in' if the
> gear was extended. Antenna position was available by a three digit counter
> and tach shaft, if desired. A phenolic fairlead tube leads the antenna wire
> through the skin, with a brass collar on the inside which makes connection
> to the coax from the HF. (Ground the shield to the skin). We used a rubber
> toilet float as a drogue on the end of the wire. There is a limit switch
> which shuts off the motor when the wire is reeled completely in. In use,
> one reels out wire until the HF loaded up. The position indicator could be
> logged so freq. changes were quick. A quarter-wave length of wire was
> usually what was used (the first peak of the antenna current).
>
> For permanent HF installations, a 29' or 34' wire antenna was rigged from
> the top of the cabin to the tail and then to the wingtip, for instance
> (depending on the aircraft), and a tuner installed.
>
> Jim W5AI
>
> "..." <mecs@voyager.net> wrote in message
> news:3ad2bfc6$0$18899$bbae4d71@news.net-link.net...
> > Trailing wire setup?
> > whatever? primarily want it for occasional HF work.
> >
> > Richard W9EEE
> >
> >

661. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:19:10 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AD3165E.E63BE00C@spam.me.not>
Source record: 166308

That would be too civil.....

-SSB

VE9SRB wrote:

> What would be wrong with making this statement to me:
>
> "Steve, would you be willing to share your analysis and results with us? We
> would like to take a look at it and see if we agree or disagree. Perhaps
> you saw something that we missed. On the other hand, perhaps some of your
> analysis missed something. It would be good to get to the bottom of this
> and come to some mutual agreement. Look forward to discussing further.
> Take care."
>
>

662. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:21:05 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD316D0.47C648AB@IEEE.org>
Source record: 166310
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

RadioHead wrote:
> My antenna cable comes through my wall and is not close to a window. I
> unplug my radio when it's not in use, but there is no place to put the coax.
> What would be my best bet, unplugging the ground wire on my radio and
> connecting it to my coax?

Seems that would route a lightning strike to your ground wire. What I
did was install coax connectors on the outside of my house so I can
disconnect the coax there and throw it out in the yard.
--
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663. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:22:01 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <dGEA6.17072$RF1.1302696@bgtnsc06-news.ops.worldnet.att.net>
Source record: 166311

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AD0070D.E20B6200@IEEE.org...
> Dick Carroll wrote:
> >
> > Fractenna wrote:
> > >
> > > everything new in science is pseudo science.
> >
> > No, not everything, but for sure there is a percentage of scams in
> > science as elsewhere. Can you identify one? The rest of the readership
> > here can.
>
> Well, not the entire rest of the readership. You have proven yourself to
> be close-minded about anything new be it good or bad. Folding is an
ancient
> method of putting antennas in a small space. Is it too much of a stretch
> for your mind to comprehend that there may exist a most efficient folding
> method and, more likely than not, that particular fold will be a fractal?
> Mother Nature seems to have discovered fractals billions of years ago -
why
> haven't you?
> --

Hi Cecil:

My position on your issue is this: In some cases, there will be fractal antennas that perform better (needs definition) than non-fractal antennas. In some cases, there will be non-fractal antennas that perform better than fractal antennas. The real point being is that there is nothing special about either fractal or non-fractal antennas.

It is absolutely certain that the performance attributes assigned to fractal antennas, lower resonant frequency, resonance compression behavior etc, are not a result of the fractal geometry. They are more a result of the increase in wire length.

Steve

664. Re: Antenna project update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:23:26 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD3175E.428C1EBB@IEEE.org>
Source record: 166313
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Mark Holden wrote:
> My original point was a grounded feed line was preferable to continuing the
> random wire straight into the house.

Sorry, I must have gotten two different threads confused.
--
http://www.mindspring.com/~w6rca

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665. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:24:22 UTC
From: fractenna@aol.com
Message-ID: <20010410102422.08213.00003424@ng-mn1.aol.com>
Source record: 166312

>>Actually, the articles to be presented at the 2001 IEEE conference, the
>>article submitted to QEX, the article submitted to the IEEE Antennas and
>>Propagation Magazine and the submitted "Comments" to the IEEE Transactions
>>Editor on a recent IEEE Transactions fractal article pretty much take of
>>this.
>>

Notice you say 'submitted' and not 'accepted and in press'.... What's holding up the process? Hmmm?

Don't you want a crescendo of stuff to peak at the APS meeting? That way you can pass around tomatoes and get all your buddies to pepper Dr. Cohen:-) Wonder what he has planned if anything. Or do you think he'll just bring the salad dressing and take his tomatoes sun dried?

:-)?

Am I the only one to notice that ALL of your comments and papers are targeted at Dr. Cohen? For example can you quote us the title and abstract of just one of these submissions which focuses on , say, one of the other 130 or so authors's works who have written on fractal antennas?

Tell us more:-) Itza matter of public record ya see:-)

73
Phil
de N1ZKT

666. Re: Mosley TA-33 specs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:43:15 UTC
From: on4bam@yahoo.com
Message-ID: <3ad31b7c.1011495@news.easynet.be>
Source record: 166314

On Tue, 10 Apr 2001 09:33:59 -0400, krishna <kkanakas@cisco.com>
wrote:

>Hi,
> Can someone give me the following info for a Mosley 3E tribander.
>
> Boom length.
> Length of largest element
> Turn radius
> Wind loading.

http://www.mosley-electronics.com/
or direct:
http://www.mosley-electronics.com/am_main.htm#multi-ta

nothing a good searchengine wouldn't find.

Bye Maurice

Hamradio: ON4BAM / M0CIL http://www.qsl.net/on4bam
Pix and travelstories from Alaska, Schotland
South Africa and IOTA activations
*** remove 'nobrol' to reply ***
Fight Spam! Join CAUCE (Coalition Against Unsolicited Commercial Email)
at http://www.cauce.org/

667. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:50:51 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad31d1b.159299182@news.accessunited.com>
Source record: 166315

On Tue, 10 Apr 2001 12:16:02 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Tome wrote -
>> It seems those who never have antennas and who have no notable
>> accomplishments in receiving arrays, are always the experts on
>> antennas they don't have...and have never experimented with.
>==========
>True Tom. Then there's that class of people who have made lots and
>lots of experiments but have arrived at all the wrong conclusions
>because they set off on the wrong foot.
>----
>Reg

Yep, it takes all kinds. That's why the best is a mix of people all
looking at the same problem.

When a diverse mix agrees, it increases the likliehood of a correct
result to a sure thing.

In this case the mix of people are well in agreement with each other,
and Richard is the odd man out.

73 Tom

668. Re: anyone with experience with aircraft HF antennas?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:54:42 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <ba76dt4474gu1oueokh4uk0jha14reo7a7@4ax.com>
Source record: 166316

"..." <mecs@voyager.net>
shared these priceless pearls of wisdom:

->Trailing wire setup?
->whatever? primarily want it for occasional HF work.

If you only want it for "occasional" work and don't want to go to the hassle of a motorized reel and all that stuff...

Use a fishing reel isolated from airframe ground and wind a hundred feet or so of #22 BARE copper wire on it. DO NOT use the insulated wire or you will have one hell of a loading coil at the reel. Drill a ï¿½" hole in an inspection plate in the belly and feed the wire through a rubber or plastic grommet in the inspection plate. Use a plastic drogue of some sort (tennis ball drilled through, handball, toilet stopper, etc.) firmly affixed to the wire extending out the airplane belly.

Calibrate the reel in "turns per foot" on the ground and you'd be surprised how close you can come to resonance by counting turns in the air. Also, it makes it easier when you are "reeling in" to be able to know approximately when the tennis ball is going to hit the inspection plate.

Or, simply run a permanent wire from overhead cabin to rudder fin tip (spring loaded against mechanical resonance) and get some practice using a *really* good antenna tuner.

Jim
Jim Weir, VP Eng. RST Eng. WX6RST
A&P, CFI, and other good alphabet soup

669. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:56:14 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <iaFA6.6$%o2.4031@news1.sttls1.wa.home.com>
Source record: 166317

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ad26751.112754647@news.accessunited.com...
> On Mon, 09 Apr 2001 23:05:39 GMT, "Roger Sparks" <sparksrc@home.com>
> wrote:

(snip some)

> What I did was this, and maybe you can duplicate it.
>
> I measured the voltage end-to-end on the shield of a few feet of coax
> on 30 MHz when it was excited by an external generator. I measured
> the voltage on the center conductor from end-to-end.
>
> It was identical at both points, even through the shield and center
> were not connected.
>
> Now the shield has a slightly lower (but not much) impedance than the
> center, but that doesn't affect the antenna except the antenna acts
> like it has a larger diameter conductor when the shield is added.
>
> If you remove the center conductor totally, and use the shield as the
> antenna, it behaves exactly the same way as it does when you excite
> the shield and use the center to feed the receiver (or voltmeter).
>
> If you resonate the center conductor (you can do that with a
> capacitor) and measure the impedance of the shield (you can do that
> with the Autek) you will see the impedance of the shield greatly
> increases.
>
> If you perform this simple test, you will see the electric field
> performance of the shield is nearly identical to the center conductor,
> and that if you tune the center the shield impedance also increases.
>
> This is important, because if the shield was a "shield" and was not
> influenced by the center or did not transfer energy to the center
> efficiently, none of this would happen.
>

(snip some more)

> 73 Tom

Hi Tom,

Thanks for these ideas. I did some test in somewhat the manner you
suggested but using resistors as loads to accomplish the same thing you did.

I also changed the shape of the coax, thinking that if the shielding by skin effect was occurring, then the impedance of the center conductor should not change simply because I coiled up the coax into a tighter coil. Of course it did change so I was forced to rethink my concepts. I am increasingly doubting that skin effect really does the shielding that some claim it does.

Frankly, I am beginning to believe that the shielding effect (if it occurs at all) comes too late to actually shield anything. The double shielded coax experiment certainly seems to show that a conductor placed between two plates does not shield one plate from the other.

I will try to explain my version of why skin effect is not a shield at all. It boils down to closing the barn door after the horse has already escaped. Or better, cause leads effect.

To get to where I want to go takes two steps, so please do not stop at the first step.

The first step is to assume that the magnetic and electric fields existing in a coaxial line do NOT stop at the surface of the coax, contrary to what is usually taught in our text books. Instead, assume that they continue throughout space, becoming weaker as they leave the local volume of space. Now we can not detect TWO fields if they are equal and opposite, exactly the condition we have in a coaxial line. This maintains textbook consistency with my analysis so far as real world testing goes.

How you ask, can we make this assumption? Well, this is exactly what we do when we model antennas. We assume each radiating element sends a field in a direction, and then take the vector sum to determine the actual resultant field. I am doing the same thing here.

Step one could be summed up by saying that we have to apply antenna concepts even at such small scale analysis as skin effect within the conductor.

Step two has to do with the speed with which local conditions can change in response to external events. The external fields travel at the speed of light, but the charged particles move very slowly. Thus we have a situation where the cause (the electromagnetic field moving at the speed of light) passes through a material to cause an effect (the movement of charged particles). The movement of charged particles occurs slowly, and only in response to the passage of the electromagnetic field so the local conditions are always playing catch-up to changing external conditions.

Following this theory, the center of any conductor will experience the same externally generated electromagnetic field as the near edge (as will the far edge) of the conductor, but at a different time. The external field will strike the near edge of the conductor, pass through the center and then leave on the far side. Obviously the charged particles in the conductor will move farther on the near side than on the far side just because they have had more time to travel.

The local motion by the charged particles serves to create fields which oppose the driving field, but can never completely cancel the driving field.

This simply reflects the fact that a driving field must begin in one conductor and travel to a second conductor. Maybe we should say that we have two local events, but each is external and remote to the other. I am trying to say that the effects occurring on the receiving conductor (the receiving antenna) can never completely cancel the cause created by the driving conductor (the transmitting antenna).

Skin effect occurs because the local effects (in response to the cause) travel outward from the center of the material and cause a canceling of the cause. But the canceling only follows the cause, and complete canceling is not possible.

Another illustration might help. If we have a yagi, we can capture energy from an incoming wave. How much energy is left to be captured from the wave if we have a second yagi directly behind the first yagi? The answer is that it depends upon the distance between the first and second yagi's. The first yagi will create a response field which will nearly cancel the incoming wave near the antenna, but the shape of the response field will be much different from the incoming field so that the cancellation will occur only very locally. The second yagi will receive nearly full energy (as if the first yagi were not present) if placed a few wavelengths away from the first yagi.

Remember, cause leads effect.

Sorry for such a long response. Hope it makes sense but it is difficult to present these concepts in words.

By the way, Bart Rowlett, gave us a link to the web site of Kevin, W9CV, which has an excellent discussion of the process of Skin Effect. The address is http://fermi.la.asu.edu/w9cf/skin/. He relates skin effect as being a result of the slow velocity of the electromagnetic wave in a conductor. I tried to not violate any of his principals in my description.

So what does everyone think?

Have a good day,

Roger, W7WKB

670. R6000/R8/MA5B Question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:58:01 UTC
From: "Timothy J. Fiebig" <timothy.j.fiebig@exxonmobil.com>
Message-ID: <3AD31F79.5553C255@exxonmobil.com>
Source record: 166219

After 3 years I need to get an antenna back up in the air. I previously used a butternut vertical which I was please with. However, I am now trying to make things simple and eliminate the radials. Are there any R6000 or R8 users out there who can comment on the performance of either of these antennas?

Another consideration may be the mini beam that Cushcraft manufactures. Any comments on this antenna would also be appreciated.

Best Wishes,

Tim

671. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 14:58:39 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <ve76dtc7k7s9mf89ba2mmtmiqaegjpo0ts@4ax.com>
Source record: 166318

On Tue, 10 Apr 2001 08:35:54 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Tom W8JI wrote:
>> What is a fractal expert? Is that anything like a froctologist?
>> Or an ex-wife?
>
>The guys who wrote the book, "The Science of Fractal Images",
>are fractal experts. I can look at certain software algorithms
>and tell that they are related to fractals. There is a whole body
>of scientific knowledge on fractals. A lot of special effects
>in movies now are fractally generated. Fractals seem to be
>a very efficient way to store information about nature. Much
>of existence seems to be described by the algorithms of an
>underlying fractal mathematics.

Hi Cecil,

Just for grins and giggles, can you provide us with one (1) fractal
formula? You know, like the classic y = m * x + b

THEN, could you tell us how the particular formula you offer is
differentiable from the classic y = m * x + b

I will make it simple, what is the formula for drawing a fern?

This example of fractal has been around for a quarter of a century,
you should have no trouble providing us the formula for that. Or
maybe not. herr doktor has been propounding fractals here for 5 years
and has yet to offer one formula.

Sorry Cecil, I knew this was an impossible task for you.

73's
Richard Clark, KB7QHC

672. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:01:17 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <qt76dt8eu2263u95s74p180r1rkm4roqh1@4ax.com>
Source record: 166220

On Tue, 10 Apr 2001 08:50:54 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard, since the best fractal has not been invented yet how can
>you be so sure that it will be able to be beat?

Hi Cecil,

I do wonder where you get your information. herr doktor, the leading
expert on fractal antennas has already put it to us (pun intended)
that the MI2 was the best example.

Why do you doubt this recognized authority?

Are there chips in your belief system?

73's
Richard Clark, KB7QHC

673. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:18:28 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad31e55.159613303@news.accessunited.com>
Source record: 166221

I've really had it with people picking on Dr. Cohen.

On Tue, 10 Apr 2001 14:08:30 GMT, "VE9SRB" <srbest@att.net> wrote:

>Here's just one example: I don't have the article in front of me so I'm
>going from memory. In Dr. Cohen's article "Fractal Loops and the Small Loop
>Approximation," Communications Quarterly, pp. 77 - 81, Winter 1996, he
>presents gain in dBi for the MI2 and MI3 fractal loops (Fig 8). The gain
>curves indicate that the gain for both the MI2 and the MI3 never drops below
>1.5 dBi down to almost zero frequency. In the text, he states that both
>have similar gain at low frequencies. In analyzing both the MI2 and the
>MI3, it is evident that he neglected to include ohmic losses in this gain
>calculation. These antennas do not have similar gains nor are they as
>efficient at low frequencies as his gain curves indicate. He made a
>mistake.

It is well known that "Dr. Cohen" did not include losses in his
models. In his defense, he has no training or experience in this area.

He barely made the grade as an astronomer, it is unfair to expect him
to understand things like loss resistance. Give the poor guy a break!

>Here's another. In one article, he states that fractal loops do not obey
>the generalizations of the SLA because of their fractal geometry. He also
>goes on to state that because of the geometry dependence, it is impossible
>to determine the asymptote where the fractal loops obey the SLA radiation
>resistance predictions. This is not correct as I have derived the formula
>to determine this asymptote for fractal and other bent wire loops (the July
>IEEE Presentation). He made another mistake (actually several) in his
>assumptions regarding fractal loops and the SLA.

He also didn't understand what radiation resistance was, that is
evident in his articles. He does not or did not understand that dB
power is log 10 and dB voltage is log 20. He also though a tree was a
good antenna because it was fractal shaped, and that rocks wrapped
with fopil make good broad-band antennas.

But so what, he was a beginner at all of this. He had no one to work
with but "Phil", so how would you expect him to do better?

In my opinion, you should be praising him for the things he got
correct instead of the few minor mistakes he made....like leaving loss
resistance out of the antenna.

What he lacks in technical abilities he makes up for in focus.

>Everybody makes mistakes. Some people are just better than others at
>accepting this and learning from them.

Few of us learn instantly. Instead of picking on him, look at how far
he has come. In just a few years he has learned many important things.
Instead of rejoicing at his steady and CAREFUL progress, you pick at
the lack of speed!

Look at how he progressed in four of five years.

He has learned to put conductor resistance in the models, and I'm sure
he has learned other things that I can't think of right at the moment.
I'll bet each of us can pick out at least one thing he has learned in
the last four or five years.

Even "Phil" has improved, he has quit using the F word... and is
noticably more mature than he was just three years ago.

Knock it off Steve. Give them a fair amount of time to learn things.

73 Tom

674. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:20:45 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad3245f.161160162@news.accessunited.com>
Source record: 166223

On Tue, 10 Apr 2001 08:35:54 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>in movies now are fractally generated. Fractals seem to be
>a very efficient way to store information about nature.

Give me an example, can you please?

Say I want to record the life of a bird. How do I do that with
fractals? Is that what you mean?

675. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:23:20 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <5386dtkco4robdj031m4mrmgspnn37k0rm@4ax.com>
Source record: 166222

On 10 Apr 2001 11:25:21 GMT, fractenna@aol.com (Fractenna) wrote:

>>
>>IMO, for any non-fractal folded antenna with a particular set of
>>boundary conditions, there exists a fractal antenna that will beat
>>whatever parameter is deemed to be most important and given enough
>>compute power and time, the computer can find one. Sorta like those
>>monkeys typing the complete works of Shakespheare.
>>--
>
>Gee.
>
>I thought Dr. Cohen ran the fractal challenge to get people to think about how
>good fractals are. This guy sure knows how to job the inertia!
>
>I have here a copy of Dr. Coihen's first genetic algorithm article from 1996.
>Also ones from 1997.
>I am also sitting infront of a machine which is ga equipped.
>
>Ever wonder what the ga does here?
>
>Hmmm?
>
>73
>Phil
>de N1ZKT

herr doktor,

ga or gi? I think everyone here knows what to expect.

Glad to hear you are finally sitting up - but why in front of a gi
machine? Is it like dialysis? (There are simpler ways, herr doktor)

You ran the FRACTAL CHALENGE? You forgot FROM. But the road to
recovery includes acknowledging your defects and you have made a
start. Who knows, you may even come to the startling realization that
your design was a dog - pardon, an optimized dog. We mustn't slight
the modern advances of software to expend time and energy to perform
something that could be bested by random doodling.

I note your spelling is getting progressively worse. Your mood must
be lightening up given what was spelled wrong (or is this passive
aggression from one of your minions who trashed your file system last
year and sent you threatening letters?). Life is such a delicate
balance.

I suppose we will be regaled about how you turned one Ham's life
around by accusing him as being the Wakefield killer. ;-)

73's
Richard Clark, KB7QHC

676. Re: Loops

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:30:13 UTC
From: richardharrison@webtv.net
Message-ID: <10663-3AD32705-42@storefull-117.iap.bryant.webtv.net>
Source record: 166231

Tom, W8JI wrote:
"Small loops are Never as efficient as people postulate because there are many sources of losses that are ignored, and the radiation resistance is so low."

One advantage of a small closed loop antenna is that it is a small inductive reactance as a load. A short dipole is a capacitive reactance. Which of these can be tuned more efficiently?

Best regards, Richard Harrison, KB5WZI

677. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:30:49 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD32729.28F25FEC@IEEE.org>
Source record: 166226

Richard Clark wrote:
> I will make it simple, what is the formula for drawing a fern?

Ferns are generated using appropriate parameters in an image
rendering program for Iterated Function Systems. Want me to send
you a copy of the formulas and the BASIC program?

> This example of fractal has been around for a quarter of a century,
> you should have no trouble providing us the formula for that. Or
> maybe not.

I'm looking at the book that provides the algorithm. It's on page
232 of "The Science of Fractal Images" and is called "Image rendering
of Iterated Function Systems". All one needs to do is plug in the
parameters for a fern and run the program. The actual formula cannot
be typed in ASCII.

RenderIFS(x,y,P,num,xmin,xmax,ymin,ymax,I,L,M,numcols,seed)

> Sorry Cecil, I knew this was an impossible task for you.

If this is a joke, I don't get it. I have a 300 page book that lists
hundreds of BASIC programs for most of the common fractals. Have you
ever seen this book, Richard?
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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678. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:31:07 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010410113107.27669.00002421@ng-fk1.aol.com>
Source record: 166225

>Looking for a 10 meter no radial vertical to mount on a mast.
>
>Thinking the Solarcon A-99 might be good. I see no negative comments
>about it. Wondering what anyone has experienced.
>How about the ground plane kit? Does it help that much?
>I'd rather not use one if I can get by.

I've done some shopping around for vertical antennas myself, but for CB. I compared the A-99 with the Imax 2000 and ended up buying the Imax. It has tuning rings like the A-99, and from what I have been told, can tune the 10 meter band with no problem. SWR's are flat across the entire CB band, no tuning required. The A-99 is a 1/2 wave antenna while the Imax 2000 is a 5/8 wave. From everything I have read, the Imax seems to outperform the A-99 all around. Also, I have read about the A-99's falling apart in severe weather, while I've had people tell me they have seem the Imax almost bend 90 degrees without breaking... Do a search for "Imax 2000" and you will find lots of information on them.

The difference is the price. You can get an A-99 from Copper Electronics for about $40, whereas the Imax goes for about $70, slightly more than the A-99 with the GP kit, but it's worth the money.

=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
http://www.vhfradiobuff.com
http://egroups.com/group/2mallmode
http://egroups.com/group/6mallmode

679. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:33:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD327B2.3DD3387B@IEEE.org>
Source record: 166227

Richard Clark wrote:
> I do wonder where you get your information. herr doktor, the leading
> expert on fractal antennas has already put it to us (pun intended)
> that the MI2 was the best example.

If he said it was the best, I would disagree with him. The best
is yet to come.
--
http://www.mindspring.com/~w6rca

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680. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:37:06 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <mt96dts124odla53c1h70rqald2b8li204@4ax.com>
Source record: 166228

On 10 Apr 2001 11:22:24 GMT, fractenna@aol.com (Fractenna) wrote:

>Sure! Shoot the wad as they say! Go for it! Tell us all those 'mistakes' and
>the 'fundamental fraud and fallacy' of fractals.
>

herr doktor,

Such mood swings! Can't wait, huh? Boy, I don't know how you are
going to contain yourself until this summer with this kind of
enthusiasm. :-)

Remember to take your aspirin, just in case.... :-(

73's
Richard Clark, KB7QHC

681. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:41:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD3299C.5300D959@IEEE.org>
Source record: 166230

VE9SRB wrote:
> My position on your issue is this: In some cases, there will be fractal
> antennas that perform better (needs definition) than non-fractal antennas.
> In some cases, there will be non-fractal antennas that perform better than
> fractal antennas. The real point being is that there is nothing special
> about either fractal or non-fractal antennas.

So you tend to agree with me rather than with the people who claim any
fractal antenna is a snake oil sham?

> It is absolutely certain that the performance attributes assigned to fractal
> antennas, lower resonant frequency, resonance compression behavior etc, are
> not a result of the fractal geometry. They are more a result of the
> increase in wire length.

Knowing what I know about fractals, it seems to me the design that will keep
sections of the wire as far apart as possible while allowing the maximum
amount of wire in the minimum amount of space would be a fractal. After all,
Mother Nature, in billions of years of trying, has not come up with a design
superior to fractals for putting the maximum amount of leaves in the minimum
amount of space.
--
http://www.mindspring.com/~w6rca

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------== Over 80,000 Newsgroups - 16 Different Servers! =-----

682. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:48:26 UTC
From: richardharrison@webtv.net
Message-ID: <10663-3AD32B4A-43@storefull-117.iap.bryant.webtv.net>
Source record: 166235

Roger Sparks wrote:
"The double shielded coax experiment certainly seems to show that a conductor placed between two plates does not shield one plate from the other."

Did Roger ground the center plate?

Best regards, Richard Harrison, KB5WZI

683. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:56:48 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <06a6dt44df4hapvc2qrul8d0m9qp8q84l2@4ax.com>
Source record: 166232

On 10 Apr 2001 11:33:59 GMT, fractenna@aol.com (Fractenna) wrote:

>bad bad Dr. Cohen!
>
>73
>Phil
>de N1ZKT

herr doktor,

You mood so light just one post ago has turned somber again. :-(

You did improve your spelling (we notice such gains). ;-)

No one here is describing anyone as bad bad, herr doktor! You sure that one of your minions isn't tampering with your system again? You are especially aware of violence in the workplace given your concern over the Wakefield killer. Is this one reason we find such unusual forms of communication? Are you under a possible court restraint that imposes this identity problem on your messages?

Our group has observed the strained relationship that exists between you and your minions. You must be extremely tolerant of their cynicism and minor acts of sabotage (although the pop-psychologists would clamor to call this a dysfunction, you seem to cope quite well).

73's
Richard Clark, KB7QHC

684. Stop by - www.ab7sl.com -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 15:57:03 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <j3GA6.4515$Ak1.459603@newsread2.prod.itd.earthlink.net>
Source record: 166233
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

Lots of STUFF to do at www.ab7sl.com such as...

All - NEW - W9INN antenna page!!

1. Ham Radio Links (some unusual)
2. Several Ham Radio Web Rings !
3.AB7SL Biography
4.Personal Photos
5.Station Description
6.Software Downloads
7.The DX Page (w / Telnet links)
8.Downloadable IOTA List
9.W7NH - Elmer Tribute
8.Prescott Arizona Page
9.Online DX Logbook
10.3D Art Gallery (downloads)
11.Music Page (downloads)
12.Frequently Asked Questions
13.Free-For-All Links Page
14.Guestbook
15.Equipment Photos
16.Downloadable DXCC Countries List
17.Downloadable ITU Prefixes List
18.W9INN Antennas Page
--

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

685. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 16:01:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD32E48.B6CAF25F@IEEE.org>
Source record: 166234

Tom W8JI wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >in movies now are fractally generated. Fractals seem to be
> >a very efficient way to store information about nature.
>
> Give me an example, can you please?

"(Carpenter) was called to Lucasfilm to take a leading role in the
preparation of 'Star Trek II'. Several computer-generated sequences
of this film involve fractal landscapes ... Digital Productions
later included massive fractal landscapes in 'The Last Starfighter'".
Quoted from "The Science of Fractal Images".

> Say I want to record the life of a bird. How do I do that with
> fractals? Is that what you mean?

Nope, I'm talking about storing images of nature. It's difficult
to tell a fractal fern from the real thing. It takes fewer bytes
to store a fractal algorithm plus fern parameters than to store
the graphic image of a fern.
--
http://www.mindspring.com/~w6rca

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686. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 16:23:47 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <2bb6dtofuffppv0t06hd1714s80ak658ol@4ax.com>
Source record: 166236

On Tue, 10 Apr 2001 08:35:54 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>I can look at certain software algorithms
>and tell that they are related to fractals.

Hi Cecil,

I find this previously unknown skill of yours quite intriguing.

How about the following code block?

```
rev ([ ] , [ ]).
rev ([ H | T ] , L) :- rev (T , Z), append (Z , [ H ] , L).

append ([ ] , X , X).
append ([ A | B ] , C , [ A | D ]) :- append (B , C , D).
```

If it isn't, then just what relation is missing? If it is, can you
describe the form of the fractal?

73's
Richard Clark, KB7QHC

687. Antenna project results

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 16:30:05 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3AD3350D.9AAC78E0@cticonsulting.net>
Source record: 166229
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

Tried the antenna last night:
1. 40' approx of wire (from RadioShack SW Ant kit) from near roof top accross the yard to a 6' fence. 50 ohm RG58 coax from antenna to radio. As yet, not grounded.

Findings accross random bands:
1. It's pretty damn easy to confuse the headphone jack and the antenna jack on the DX-390 and spend a half hour trying to figure out why the signal meter is strong but there is no sound! anyway..

2. Medium strength stations (one-half of the strength bars) became full strength. Sound improved somewhat, not exactly 'next-door' quality, but better.
3. Strong stations showed little change, in fact there seemed to be noise from other stations bleeding in.
4. A few quiet spots without the antenna all of the sudden show weak or medium signals, which are intelligable. Not sure if this is actually a transmission at that freq, or bleed in from other stations.

Overall, new signals are being picked up, and reception is better. My expectations of 40' of wire were a little higher though.... Also, there seems to be the situation where one station seems to be in the background and noisy all over the band, and sometimes spans several bands. Requlars local AM is marginally improved.

I will try to ground it over the next few days, see if that helps. Right now I just through the cable out the window for lightning protection. I would say reception is 2-3 times better, but not 10 times better. I will review previous posts regarding noise reduction.

Thanks to all

688. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 16:32:00 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <00d6dtgaots6kbspcqfnvm6cav3ckjkdua@4ax.com>
Source record: 166237

On 10 Apr 2001 14:24:22 GMT, fractenna@aol.com (Fractenna) wrote:

>
>Am I the only one to notice that ALL of your comments and papers are targeted
>at Dr. Cohen?

herr doktor,

We were trying to be diplomatic and avoid that. Perhaps if you were
to invite your peers to this debate, then you wouldn't feel like you
are being picked on. You are no doubt familiar with taking the path
of least (non-dissipative) resistance.

Oh, another observation. No, you are not the only one to notice.
However, it IS embarrassing that you are the last to catch on.

73's
Richard Clark, KB7QHC

689. Spammed again (Was:Stop by - www.ab7sl.com -)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 16:33:04 UTC
From: K0HB@qwest.net
Message-ID: <9avck0$on9$1@news.netmar.com>
Source record: 166245
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc

In article <j3GA6.4515$Ak1.459603@newsread2.prod.itd.earthlink.net>, Charles Johnston <ctj92@earthlink.net> writes:

>Lots of STUFF to do at www.ab7ls.com such as...

This guy must get a nice commission from his advertisers everytime someone visits.

----- Posted via NewsOne.Net: Free (anonymous) Usenet News via the Web -----
http://newsone.net/ -- Free reading and anonymous posting to 60,000+ groups
NewsOne.Net prohibits users from posting spam. If this or other posts
made through NewsOne.Net violate posting guidelines, email abuse@newsone.net

690. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 16:35:21 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <ggd6dt8i11n6cmismh9bfikfhjb859quu0@4ax.com>
Source record: 166238

On Tue, 10 Apr 2001 14:16:40 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"Fractenna" <fractenna@aol.com> wrote in message
>news:20010410073359.25107.00002819@ng-cr1.aol.com...
>> people like Dr. Cohen don't know jack.
>>
>
>Who's Jack?
>

Who's on first!

691. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 16:36:51 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AD336A3.F4E113BC@spam.me.not>
Source record: 166239

I don't know... (third base)

Richard Clark wrote:

> On Tue, 10 Apr 2001 14:16:40 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >"Fractenna" <fractenna@aol.com> wrote in message
> >news:20010410073359.25107.00002819@ng-cr1.aol.com...
> >> people like Dr. Cohen don't know jack.
> >>
> >
> >Who's Jack?
> >
>
> Who's on first!

692. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 16:36:57 UTC
From: fractenna@aol.com
Message-ID: <20010410123657.22616.00005196@ng-md1.aol.com>
Source record: 166240

>What would be wrong with making this statement to me:
>
>"Steve, would you be willing to share your analysis and results with us? We
>would like to take a look at it and see if we agree or disagree. Perhaps
>you saw something that we missed. On the other hand, perhaps some of your
>analysis missed something. It would be good to get to the bottom of this
>and come to some mutual agreement. Look forward to discussing further.
>Take care."
>
>
>>
>> 73
>> Phil
>> de N1ZKT
>
>

How about the above with the added invitation to take you to lunch?

Really doesn't matter if you want to show the analysis or not before publication. Dr. Cohen and a colleague are writing up a review and will go with what is published until an appropriate cutoff date. Won't cite unpublished work

The 'mutual agreement' will have to be played out in the journals and other info sources though. After all, if you have concerns, others who aren't up to speed may also. Fractal antennas are the emerging major direction in antennas and one has to expect some dissent. That's how science works.

I asked; lunch is Dr. Cohen's suggestion; said he'd be delighted to have you join us. Suggests somewhere in southern NH easily accessible to Rt 93. If you can come in towards Boston instead then we can also get Dr. Hohlfeld to join. Best time after 24 April.

He also says you are welcome to join the fractal antenna reflector at any time.

Take Care,

Phil
de N1ZKT

693. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 16:50:18 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <o1e6dto1v0ndh3i41nfnmmrhfl37lp1g4t@4ax.com>
Source record: 166241

On Tue, 10 Apr 2001 10:30:49 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>The actual formula cannot
>be typed in ASCII.
>
>RenderIFS(x,y,P,num,xmin,xmax,ymin,ymax,I,L,M,numcols,seed)
>
>> Sorry Cecil, I knew this was an impossible task for you.
>
>If this is a joke, I don't get it. I have a 300 page book that lists
>hundreds of BASIC programs for most of the common fractals. Have you
>ever seen this book, Richard?

Hi Cecil,

Sorry Cecil, I gave up basic when I put aside children's things. As
you said (and I anticipated), you cannot render the formula. I have
no interest in algorithms - those I can create in ANY language if I
know the formula. Anything else is derivative and subject to error.
There is no way you could prove that these algorithm implementations
actually conform to fractal formulae.

73's
Richard Clark, KB7QHC

694. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 16:54:16 UTC
From: Ed Cregger <nuke663jlm@vei.net>
Message-ID: <td6ehgna8iv5b@corp.supernews.com>
Source record: 166242

Does the Imax operate on 17, 15 & 12 meters as well as 11 or
10? The A-99 works very well on the other bands. I'm not
saying that the A-99 is a better antenna. I'm just curious
about the Imax.
--
Ed Cregger, NM2K
nuke663jlm@vei.net

*Remove the "nuke" for correct email address

"VHFRadioBuff" <vhfradiobuff@aol.comspamsux> wrote in
message news:20010410113107.27669.00002421@ng-fk1.aol.com...
> >Looking for a 10 meter no radial vertical to mount on a
mast.
> >
> >Thinking the Solarcon A-99 might be good. I see no
negative comments
> >about it. Wondering what anyone has experienced.
> >How about the ground plane kit? Does it help that much?
> >I'd rather not use one if I can get by.
>
> I've done some shopping around for vertical antennas
myself, but for CB. I
> compared the A-99 with the Imax 2000 and ended up buying
the Imax. It has
> tuning rings like the A-99, and from what I have been
told, can tune the 10
> meter band with no problem. SWR's are flat across the
entire CB band, no tuning
> required. The A-99 is a 1/2 wave antenna while the Imax
2000 is a 5/8 wave.
> From everything I have read, the Imax seems to outperform
the A-99 all around.
> Also, I have read about the A-99's falling apart in severe
weather, while I've
> had people tell me they have seem the Imax almost bend 90
degrees without
> breaking... Do a search for "Imax 2000" and you will find
lots of information
> on them.
>
> The difference is the price. You can get an A-99 from
Copper Electronics for
> about $40, whereas the Imax goes for about $70, slightly
more than the A-99

> with the GP kit, but it's worth the money.
>
>
> =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
> 73! de KC2SSB (ex: KF4KHC/HL9HCT)
> http://www.vhfradiobuff.com
> http://egroups.com/group/2mallmode
> http://egroups.com/group/6mallmode

695. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 16:56:52 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <ske6dtsb6p3akag4769rrfpldfoe3tqf7f@4ax.com>
Source record: 166243

On Tue, 10 Apr 2001 09:10:11 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>You missed the point, Richard. "Good enough" means good enough to beat
>any non-fractal folded design that you come up with. However, the same
>software could be told to find the next good enough non-fractal design.

Hi Cecil,

Hmmm, missed the point did I? ;-)

You describe an infinite regress. All of smilin' george's tax hand
back couldn't put a down payment on that piece of software art!

73's
Richard Clark, KB7QHC

696. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 16:57:26 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <8re6dts70u7l5b8jrkv9jlcp5h47chl838@4ax.com>
Source record: 166244

On Tue, 10 Apr 2001 09:13:09 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>> >But the argument is that fractal forms have an inherent
>> >disadvantage over other types of folding. I have seen no
>> >evidence to support that conclusion.
>>
>> You will.
>>
>When?

soon.

697. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 17:03:09 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <9te6dtsnirj5n8leu9tgv15to57emepe22@4ax.com>
Source record: 166246

On Tue, 10 Apr 2001 09:17:47 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>> The academic aside, Steve has working models too. How long do you
>> reckon this program you pine for would take to match Steve's
>> performance?
>
>Didn't you say you already had it and offered to sell it to me?

Hi Cecil,

Where's your check? I'm not practicing science here, Bubba. Cough up
some cash or sleep in the street.

73's
Richard Clark, KB7QHC

698. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 17:10:02 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9avel4$l46$1@plutonium.btinternet.com>
Source record: 166247

A useful way of analysing/understanding how energy can leak from a long coaxial line is to begin at DC and work your way up to HF via audio frequencies. Put some amps and volts into the line. Remember copper has an impedance in both longitudinal and radial diections. Spend some time at DC and AF - it is not so simple as it may at first seem.

You can stop when the thickness of the outer conductor is several skin depths. Attenuation in the radial direction is 1 neper = 8.686 dB per skin depth.

It is also useful to consider how cross-talk occurs (yes it does) between two coaxial lines running in parallel with each other for any appreciable distance. (Cable-to-cable crosstalk is important. It's the ultimate limiting factor in the performance of underground communications systems.)

Reg.

699. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 17:28:51 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD342D3.FCB286A8@IEEE.org>
Source record: 166248

Richard Clark wrote:
> As you said (and I anticipated), you cannot render the formula.

Of course I cannot render the formula in ASCII, Richard, and neither
can you. Does resorting to silly tricks makes you happy?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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700. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 17:46:57 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD34711.F2DFF2@IEEE.org>
Source record: 166249

Richard Clark wrote:
> If it isn't, then just what relation is missing? If it is, can you
> describe the form of the fractal?

Sorry, I don't recognize the code. Are 'rev' and 'append' functions?
The code in "The Science of Fractal Images" is written at the lowest
possible level in a language I can read, maybe PL1 or ALGOL, that is
easily converted to BASIC or 'C'.

I'm not a fractal expert, Richard. Here's what I said: "I can look at
certain software algorithms and tell that they are related to fractals."
The example you gave is not in a computer language that I recognize.
Is it 'C++'? I only got to 'C' before I retired.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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701. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 17:52:19 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD34853.39315CBF@IEEE.org>
Source record: 166250

Richard Clark wrote:
> You describe an infinite regress.

It only seems that way to a Homo Sapien whose processor
is running at 0.00001 MIPs.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

702. Re: How do AWG numbers work?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 17:53:34 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ad34898.74413802@news.aepnet.com>
Source record: 166252

On Tue, 10 Apr 2001 11:52:30 +0100, "Reg Edwards" <g4fgq.regp@btinternet.com>
wrote:

[snip]
>>
>> > Wire diameter = 0.3248 * 10 ^ (AWG / 20) inches.

[snip]

>==============================
>I'll give someone else the pleasure of puzzling out whats missing
>from the formula. It's good to see some of you are still awake over
>there.
>---
>Reg

A so-so result is found using:

Wire diameter = 0.1 / (0.3248 * 10 ^ (AWG / 20) inches.)

A much closer answer is found using:

Wire diameter = 10 ^ (-0.05035 * AWG - 0.4884)

(For guages larger than 0, use negative values, e.g. 000, use -2)

Wes Stewart N7WS

703. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 17:54:07 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <d0i6dtc69220gsdcj04j6204q11igsc24g@4ax.com>
Source record: 166251

On Tue, 10 Apr 2001 12:28:51 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> As you said (and I anticipated), you cannot render the formula.
>
>Of course I cannot render the formula in ASCII, Richard, and neither
>can you. Does resorting to silly tricks makes you happy?

Hi Cecil,

I would be a fool to admit otherwise. ;-)

I wasn't so foolish to offer tho'.

73's
Richard Clark, KB7QHC

704. Re: mount ant on Jeep?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 18:00:05 UTC
From: KA9CAR <nospam@nospam.usa>
Message-ID: <9avhm3$q4i$1@news.tribune.com>
Source record: 166253

I have a Tracker (Suzuki Imitation Jeep sold by GM)

I built a "sleeve dipole" and mounted it to the spare tire rack, between the tire and the body so the mount holes are drilled in the tire rack. The Sleeve is completely above the tire, and the center of radiation is even with the convertable top on the car. Gets great coverage.

I have a nice photo, but it is a .bmp file and is .9 mb so I did not post it.

KA9CAR

al <ke4nu@hotmail.com> wrote in message news:RErA6.159$6v3.1231@newsfeed.slurp.net...
> Got a jeep wrangler, just wondering if anyone out there has mounted a
> vhf/uhf antenna on one. How and where would be nice too. Looks like a
> control head should mount well inside the jeep. any ideas let me know
> please..73..Alan
>
>

705. Looking for an EggBeater VHF antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 18:11:48 UTC
From: John Adamson <josttech@mediaone.net>
Message-ID: <3AD37714.DCFC75B5@mediaone.net>
Source record: 166254

Please email direct.

73, John w1hzh

706. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 18:32:30 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD351BE.74C4544A@mwci.net>
Source record: 166255

Richard Harrison wrote:

> Roger Sparks wrote:
> "The double shielded coax experiment certainly seems to show that a
> conductor placed between two plates does not shield one plate from the
> other."
>
> Did Roger ground the center plate?

Imagine a two-plate capacitor connected to a capacitance meter. Place a thin parallel third plate, not grounded but floating, between them.

The reading of the capacitance meter will indicate a slightly higher value.

Reason: the third plate does not have a voltage drop from one side to the other. The electric field of the capacitor plates induces charges in the middle plate in such a manner that the resultant voltage across the middle plate is zero.

This means that the effective spacing of the two capacitor plates has been reduced, and the capacitance is greater.

If the third plate is grounded, then each capacitor plate forms a new capacitor with the third plate. The total capacitance is the sum of two capacitors in parallel.

Bill W0IYH

707. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 18:48:12 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <q6i6dtg0q7cbcjmp8qsu0i7u8nemctro5h@4ax.com>
Source record: 166257

On Tue, 10 Apr 2001 12:46:57 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> If it isn't, then just what relation is missing? If it is, can you
>> describe the form of the fractal?
>
>Sorry, I don't recognize the code. Are 'rev' and 'append' functions?
>The code in "The Science of Fractal Images" is written at the lowest
>possible level in a language I can read, maybe PL1 or ALGOL, that is
>easily converted to BASIC or 'C'.
>
>I'm not a fractal expert, Richard. Here's what I said: "I can look at
>certain software algorithms and tell that they are related to fractals."
>The example you gave is not in a computer language that I recognize.
>Is it 'C++'? I only got to 'C' before I retired.

Hi Cecil,

I will re-post the code block:

```
>
> rev ([ ] , [ ]).
> rev ([ H | T ] , L) :- rev (T , Z), append (Z , [ H ] , L).
>
> append ([ ] , X , X).
> append ([ A | B ] , C , [ A | D ]) :- append (B , C , D).
>
```

to answer your question.

The language is Prolog, a non-procedural language that employs what is
called Predicate Calculus. There are two predicates above with names
rev and append. For each of the predicates, the first entry line for
each is the terminating condition for recursive iterations.

For each of the predicates, the second line entry is a conditional
(that is the significance of the :- symbol which corresponds to IFF or
If and Only If). The named parameters contain values that may be
applied, or may be withdrawn (or both) from the right side expression
(if the right expression can be said to be true for BOTH the applied
AND returned values). The symbols [ ] are for a list. The standard
syntax allows you to decimate a list into its head and tail, hence the
usage above of [H | T]. The head of a list is the first element.
The tail of a list is all remaining elements.

The append predicate builds lists; the rev predicate reverses them.

Now, as to my original question. These code blocks exhibit recursion and the language is naturally recursive. Recursion is a principal mode of generating fractals. There are more in-efficient ways to do the same thing linearly and with greater complexity. Languages like Prolog, Trilogy, Lisp and so on can handle very complex associations that programming languages like C (all variants) Basic (all variants) Java, Fortran... all stumble to cover with embarrassing results.

So, I have exhibited a block of code that performs successive iterations - is this an example of what you speak about?

As to the purpose of this code (another matter altogether), it builds and reverses lists. This could easily be extended to constructing antenna elements and repositioning them through iterative techniques - is this an example of what you speak about?

And, yes, I have generated fractal images using Prolog. Years before herr doktor's eye glimmered with the possibilities. And I moved on.

Given a tractable (one you can express here in this group) fractal formula, the corresponding predicate probably wouldn't run more than three entries.

The program (of your desire) you describe is largely linear and prone to massive errors and instability. Some years back, the answer to this was to change the code on the fly to make the data fit, rather than pounding the same code with different data. The resulting munched code then would generate the solution. This is a rough description of Genetic Algorithms focusing on the code change on the fly.

Genetic Algorithms are a derivation of the first principles of this prior work in Predicate Calculus. Predicate Calculus suffers from combinatorial explosion if a recursion has no terminating condition that can be met within the system resources. Genetic Algorithms inherit this instability which can either whipsaw the results into noise, or drive the answer to the rails. You suggested what I am sure seemed to you to be a short list of fundamental boundaries. This list's length compounds through the successive calls within any particular iteration. Being recursive, all prior work-in-progress has to be held in memory until the terminating condition is found OR the premise is discarded and a new one taken to replace it.

This consumes vast amounts of memory very quickly and will bring the system to its knees in milliseconds. A poor GA programmer will abandon some fruitful paths simply because his system doesn't have enough memory. Or, contrariwise, that same poor GA programmer (I'm actually talking about the user, or in this case herr doktor, who likes to think he can program) can establish boundaries that never resolve to one answer (and the several it offers are all bogus).

GA is the Philosopher's Stone of academic research. It has been successful in the transmutation of lead into papers. In industry, where results count and you don't pay for fools gold, GA is a supreme

disappointment (unless it employs Fuzzy Logic - that is not a joke by the way).

73's
Richard Clark, KB7QHC

708. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 18:50:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD355E2.A99A9596@eznec.com>
Source record: 166256

Fractenna wrote:
>
> >>Actually, the articles to be presented at the 2001 IEEE conference, the
> >>article submitted to QEX, the article submitted to the IEEE Antennas and
> >>Propagation Magazine and the submitted "Comments" to the IEEE Transactions
> >>Editor on a recent IEEE Transactions fractal article pretty much take of
> >>this.
> >>
>
> Notice you say 'submitted' and not 'accepted and in press'.... What's holding
> up the process? Hmmm?

Just think of them as "pending papers" and it'll be easier to
understand.

Roy Lewallen, W7EL

709. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 18:50:27 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010410145027.25524.00002833@ng-bh1.aol.com>
Source record: 166258

>Does the Imax operate on 17, 15 & 12 meters as well as 11 or
>10? The A-99 works very well on the other bands. I'm not
>saying that the A-99 is a better antenna. I'm just curious
>about the Imax.

The A-99 is only rated for 11 meters, or 10 meters if you adjust the tuning rings, as is the Imax. With a tuner both antennas can expand this range from what I have been told.
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
http://www.vhfradiobuff.com
http://egroups.com/group/2mallmode
http://egroups.com/group/6mallmode

710. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 18:59:24 UTC
From: richardharrison@webtv.net
Message-ID: <10663-3AD3580C-59@storefull-117.iap.bryant.webtv.net>
Source record: 166260

Reg wrote:
"It is also useful to consider how cross-talk occurs (yes it does) between two coaxial lines running in parallel for any appreciable distance."

Our cables over here usually have 8 or so coaxes plus a bunch of service pairs in the bundle. But, I have a solution to cross-talk between coax cables. Run coaxes each in its own right of way. That would cut cross-talk and when the diggers cut a cable, communications with the whole world wouldn`t be ended.

Cross talk between coax cables is worse at lower frequencies. It`s skin depth again.

Why is the base group (12 ea. 4-KHz channels) located in the spectrum between 60-KHz and 108-KHz, and not in a lower frequency slice? The answer is that coax does not provide good shielding at low frequencies. (skin effect) Also, equalization is tougher at lower frequencies.

Best regards, Richard Harrison, KB5WZI

711. Re: Looking for an EggBeater VHF antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 19:13:52 UTC
From: Ken Bessler <kg0wx@yahoo.com>
Message-ID: <3AD35B70.5CA6@yahoo.com>
Source record: 166259

John Adamson wrote:
>
> Please email direct.
>
> 73, John w1hzh

John Follow the link below to see a webpage that shows you how
to make your own eggbeater....

http://members.aol.com/k5oe/eggbeater.htm
--

Ken Bessler, Ham Callsign KGï¿½WX
Design Services Company
http://kg0wx.users.50megs.com/
Smoke free since 9/30/96!
ICQ# 63379650

712. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 19:19:04 UTC
From: richardharrison@webtv.net
Message-ID: <10663-3AD35CA8-61@storefull-117.iap.bryant.webtv.net>
Source record: 166263

Tom, W8JI wrote:
"If you take ANY time-varying flux to zero, all fields go to zero."

Is Tom saying Terman, et al are wrong in saying the electric field of an r-f signal can be terminateed by a Faraday shield while the magnetic field survives?

Is Terman wrong? Come on, Tom. Yes or no?

Best regards, Richard Harrison, KB5WZI

713. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 19:31:35 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD35F97.E2293C04@IEEE.org>
Source record: 166261

Richard Clark wrote:
> The program (of your desire) you describe is largely linear and prone
> to massive errors and instability.

So were my programs in 1958 but languages and I have improved since
then.

What I had in mind, Richard, was a program that follows a positive
slope until the slope becomes zero at the peak of performance, like
some of the adaptive filtering programs that I have written. It is
true that is a localized peak but a matrix of slopes would allow one
to locate all the peaks within the matrix that are inside the
resolution of the matrix. If none of those peaks have good enough
performance, other matrices could be searched or that particular matrix
could be re-searched with higher matrix resolutions.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

714. Re: Antenna lightening protection

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 19:36:34 UTC
From: ehsjr@bellatlantic.net
Message-ID: <3AD36195.8F21554E@bellatlantic.net>
Source record: 166262

810-21 (j) Bonding of Electrodes. "A bonding jumper not smaller than No. 6 copper or equivalent shall be connected between the radio and television equipment grounding electrode and the power grounding electrode system at the building or structure served where separate electrodes are used." Quoted from the 1999 NEC

See also 250-50.

DMartin560 wrote:

> >NEC requires connection of the antenna and electrical service grounds.
>
> Hi Richard,
> Can you give me the section of the NEC that deals with this? And possibly
> where to find it on the net? I know this is the way it is done, but I am
> having to convince an electrican that I'm working with at a new 911 center that
> we must tie all grounds together.
> Thanks,
> Dwayne

715. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 19:56:50 UTC
From: richardharrison@webtv.net
Message-ID: <20194-3AD36582-45@storefull-113.iap.bryant.webtv.net>
Source record: 166265

Bill Sabin wrote:
"If the third plate (inserted between two outer plates) is grounded,
then each capacitor plate forms a new capacitor with the third plate.
The total capacitance is the sum of the two capacitors in parallel."

Yes, if the outer plates are connected, that must be true. The area of one plate is unchanged. The number of plates has doubled by insertion of a thin intermediate plate with two sides. Another change is that the distance between plates is half the original distance so the capacitance is quadrupled.

The fly in the ointment is that the outer plates are unlikely to be connected. In case they are unconnected, we have two capacitors in series if the middle plate is ungrounded, but the distance between the plates is halved and the capacitance between outside plates is unchanged.

Best regards, Richard Harrison, KB5WZI

716. Re: Antenna project results

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 20:09:22 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AD36872.762AF0FB@oio.net>
Source record: 166264
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

Randon,
I'd say your findings are typical, considering your
location and equipment, etc.
'Doc

717. Re: anyone with experience with aircraft HF antennas?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 20:17:37 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AD36A61.4AB2CD49@oio.net>
Source record: 166266

Richard,
In general, the simplest antenna would be as long a wire
as can be mounted (tail to cockpit overhead? tail to wing tips?),
then run it through a tuner. There are all kinds of 'buts' doing
this, so a little research would benifit you greatly (talk to some
aviation radio techs). Depending on who/where/what your flying,
you might also check the legal requirements.
'Doc

718. Re: The First "Left-Handed" Material

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 20:21:40 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AD36B54.C3CB9CBB@oio.net>
Source record: 166267

Richard,
Is this stuff supposed to be a substitute for 'Sweet n Low'?
'Doc

719. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 20:22:57 UTC
From: fractenna@aol.com
Message-ID: <20010410162257.20216.00001172@ng-fy1.aol.com>
Source record: 166268

>>Here's just one example: I don't have the article in front of me so I'm
>>going from memory. In Dr. Cohen's article "Fractal Loops and the Small Loop
>>Approximation," Communications Quarterly, pp. 77 - 81, Winter 1996, he
>>presents gain in dBi for the MI2 and MI3 fractal loops (Fig 8). The gain
>>curves indicate that the gain for both the MI2 and the MI3 never drops below
>>1.5 dBi down to almost zero frequency. In the text, he states that both
>>have similar gain at low frequencies. In analyzing both the MI2 and the
>>MI3, it is evident that he neglected to include ohmic losses in this gain
>>calculation. These antennas do not have similar gains nor are they as
>>efficient at low frequencies as his gain curves indicate. He made a
>>mistake.
>

No he didn't. You read something that is not there. Dr. Cohen went through this paper with me some time ago. I looked at it again. This is not a paper that even ADDRESSES the issue of ohmic loss. It isn't MEANT to. The SLA DOESN'T ADDRESS the issue of ohmic loss either-- and that's what this paper is about! It is meant to show that the radiation resistance for fractal is higher (it is) and meant to show that the gain is caused by phasing which is what you see on that figure.

Because the gain is caused by phasing the current distributions must be in phase or out of phase but not the same phase. So the current is not uniform. So the small loop approx isn't correct for these.

He didn't FORGET anything. The values are GAINS. A GAIN --also-- is a description fo an antenna in which there is no ohmic loss. The fact that the square loop has a GAIN of 1.8 dBi when the ohmic loss is not considered, is a well known result.

>It is well known that "Dr. Cohen" did not include losses in his
>models. In his defense, he has no training or experience in this area.

In his defense you act as if he should have. Nope. If he had done that AT THAT STAGE in understanding fractal antennas then no one would have understood where the higher radiation resistance and GAIN comes from. It comes from phasing of a non uniform current distribution. That's what it says. That's what I was taught.

73
Phil
de N1ZKT

720. Re: Antenna project results

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 20:31:13 UTC
From: Mark Holden <msholden@ct2.nai.net>
Message-ID: <3AD36D90.785DDABC@ct2.nai.net>
Source record: 166169
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

Attaching the ground should help.

If you do something to match the impedance of your antenna to the coax, you should see another significant improvement.

Good luck,

Mark

Randon Loeb wrote:

> Tried the antenna last night:
> 1. 40' approx of wire (from RadioShack SW Ant kit) from near roof top
> accross the yard to a 6' fence. 50 ohm RG58 coax from antenna to
> radio. As yet, not grounded.
>
> Findings accross random bands:
> 1. It's pretty damn easy to confuse the headphone jack and the antenna
> jack on the DX-390 and spend a half hour trying to figure out why the
> signal meter is strong but there is no sound! anyway..
>
> 2. Medium strength stations (one-half of the strength bars) became full
> strength. Sound improved somewhat, not exactly 'next-door' quality, but
> better.
> 3. Strong stations showed little change, in fact there seemed to be
> noise from other stations bleeding in.
> 4. A few quiet spots without the antenna all of the sudden show weak or
> medium signals, which are intelligable. Not sure if this is actually a
> transmission at that freq, or bleed in from other stations.
>
> Overall, new signals are being picked up, and reception is better. My
> expectations of 40' of wire were a little higher though.... Also, there
> seems to be the situation where one station seems to be in the
> background and noisy all over the band, and sometimes spans several
> bands. Regular local AM is marginally improved.
>
> I will try to ground it over the next few days, see if that helps.
> Right now I just through the cable out the window for lightning
> protection. I would say reception is 2-3 times better, but not 10
> times better. I will review previous posts regarding noise reduction.
>
> Thanks to all

721. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 20:38:16 UTC
From: KB9WFK <KB9WFK@mindspring.com>
Message-ID: <9avqtk$584$1@slb6.atl.mindspring.net>
Source record: 166170

snip
>. Let me make my own
> proposal. I propose that pretzel shaped antennas will prove to be the
> most efficient.
snip
> Roy Lewallen, W7EL

HEY! I was working on the pretzel shaped antenna. Allright. I'll change. but let it be known that I am now starting work on the most efficient design ever known to man.....The antenna shaped antenna. I better not catch anyone stealing my idea either. There is a pending patent pending. All I have to do is well....design it, write it up and submit it....So I better not catch any of you with any antenna shaped antenna or it's lawyer time. I hear there is one in Boston that works on cases like this. Maybe I'll start a mail list and not let anyone post to it.....

722. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 20:38:59 UTC
From: fractenna@aol.com
Message-ID: <20010410163859.25689.00003390@ng-cs1.aol.com>
Source record: 166171

Hey--

Here's what I found on the FAQ of

http://www.fractenna.com

regarding the 'mistake' of understanding fractal loops--

"Q: If a FEA shrinks an antenna, how can it still work well?

A: It is well known that physical limitations impose severe field strength restrictions on electrically small antennas. And, when FEA are chosen to be very small (compared to a wavelength) they perform poorly--like all such small antennas. However, at the top side of the electrically small regime (say shrunk 2-4 times) FEA perform extremely efficiently and practically exceed other methods of antenna loading, including top loading. "

Sounds like we guys at Fractal know what we're talkin' about;-)

73
Phil
de N1ZKT

723. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 21:12:31 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AD3773F.8F3B185B@hiwaay.net>
Source record: 166173

Roy- to keep in proper syntax, shouldn't it be "Papers Pending"?

Bill-W4BSG
(now that I'm 74, is it OK to use "Septuagenerian" as a phonetic in my call?)

Roy Lewallen wrote:
>
> Just think of them as "pending papers" and it'll be easier to
> understand.
>
> Roy Lewallen, W7EL

724. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 21:13:55 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <qit6dtglmrpnuk77og0grbc7qj4iquet9p@4ax.com>
Source record: 166172

On 10 Apr 2001 20:22:57 GMT, fractenna@aol.com (Fractenna) wrote:

>>It is well known that "Dr. Cohen" did not include losses in his
>>models. In his defense, he has no training or experience in this area.
>
>In his defense you act as if he should have. Nope. If he had done that AT THAT
>STAGE in understanding fractal antennas then no one would have understood where
>the higher radiation resistance and GAIN comes from. It comes from phasing of a
>non uniform current distribution. That's what it says. That's what I was
>taught.
>
>
>73
>Phil
>de N1ZKT

Oh herr doktor,

Actually, it is your response that suggests that you should have AT
THAT STAGE, as your understanding has already revealed you wouldn't
have lost anything for the effort. ;-)

This summer's offerings will allow to you to slowly get up to speed
tho'.

73's
Richard Clark, KB7QHC

725. Re: Stop by - www.ab7sl.com -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 21:54:45 UTC
From: helmsman <>
Message-ID: <2707dtko0fb3g05b57urdgj2f383c9lb85@4ax.com>
Source record: 166174
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

On Tue, 10 Apr 2001 15:57:03 GMT, "Charles Johnston"
<ctj92@earthlink.net> wrote:

>Lots of STUFF to do at www.ab7sl.com such as...
>
Always a nice page to visit.
.
Shame on ARIZONA,USA
Be aware these people are NOT convicted of anything.
http://www.geocities.com/novapunkca/
If you don't like it tell the Governor.
http://www.governor.state.az.us/feedback.html

726. Re: Downloadable IOTA List - UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 21:56:19 UTC
From: helmsman <>
Message-ID: <fa07dtoqod1pplroehko8d8o98911b08or@4ax.com>
Source record: 166175
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.policy

On Fri, 23 Mar 2001 22:04:33 GMT, "Charles Johnston"
<ctj92@earthlink.net> wrote:

>The downloadable IOTA list has been updated effective 23-Mar-2001 -
>22:07UTC
>
>Available as a 15k zip file on the IOTA List page of the web site listed
>below

Thanks.

.
Shame on ARIZONA,USA
Be aware these people are NOT convicted of anything.
http://www.geocities.com/novapunkca/
If you don't like it tell the Governor.
http://www.governor.state.az.us/feedback.html

727. Re: anyone with experience with aircraft HF antennas?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 21:57:55 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <voDTOqam8cUJ7OHe77hqUH1HQj68@4ax.com>
Source record: 166176

"..." <mecs@voyager.net> wrote:

>Trailing wire setup?
>whatever? primarily want it for occasional HF work.
>
>Richard W9EEE
>

Well, all I know about such an antenna is what I read on page 338 of the catalog from Surplus Sales of Nebraska. They sell something called "Trailing Wire Antenna." The ad copy says this antenna wire is "strong and flexible enough to reel out of a plane at 600 mph and not break, even with 1000's of pounds of its own weight tugging."

So maybe you have to worry about the wire breaking under its own weight?

Bob
k5qwg

728. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 22:02:40 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <4qLA6.2291$%o2.81379@news1.sttls1.wa.home.com>
Source record: 166177

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:10663-3AD32B4A-43@storefull-117.iap.bryant.webtv.net...
> Roger Sparks wrote:
> "The double shielded coax experiment certainly seems to show that a
> conductor placed between two plates does not shield one plate from the
> other."
>
> Did Roger ground the center plate?
>
> Best regards, Richard Harrison, KB5WZI
>

No, it was left floating.

73, Roger, W7WKb

729. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 22:23:36 UTC
From: richardharrison@webtv.net
Message-ID: <15470-3AD387E8-76@storefull-111.iap.bryant.webtv.net>
Source record: 166179

Roger wrote:
"No, it was left floating."

The shield needs to be grounded.

Best regards, Richard Harrison, KB5WZI

730. Stealth #26 ant wire?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 22:28:08 UTC
From: David Snyder Hale <david@isi9.mtwilson.edu>
Message-ID: <9b01dolra1@agate.berkeley.edu>
Source record: 166178

Does anyone know of a good source for this so-called "stealth"
antenna wire? This stuff is typically 19 strands of Cu clad
steel, insulated, with overall size = #26 AWG. It is very
lightweight (< 1lb / 1000').

DavisRF and The Wireman both do not have it.

Thanks,
--
Dave * N3WTK (DM04xf) * http://isi.mtwilson.edu * n3wtk@arrl.net

731. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 22:52:08 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad38ca2.187854869@news.accessunited.com>
Source record: 166180

On Tue, 10 Apr 2001 14:19:04 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Is Tom saying Terman, et al are wrong in saying the electric field of an
>r-f signal can be terminateed by a Faraday shield while the magnetic
>field survives?
>
>Is Terman wrong? Come on, Tom. Yes or no?

Probably not. I suspect you misunderstand what he is describing, and
quoting things out of context.

Like the stuff about the "balanced OR shielded loop" where you
selectively discount the words "balanced or".

73 Tom

732. Re: Loops

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 22:55:11 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad38eb8.188389005@news.accessunited.com>
Source record: 166181

On Tue, 10 Apr 2001 10:30:13 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:
>
>One advantage of a small closed loop antenna is that it is a small
>inductive reactance as a load. A short dipole is a capacitive reactance.
>Which of these can be tuned more efficiently?

For a single frequency and a given conductor length, a small dipole is
much more easily made more efficient than a small loop.

That is because the radiation resistance of a small loop is so low.

The real advantage of a small loop is it can be moved to new
frequencies mush easier.

73 Tom

733. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 23:22:47 UTC
From: k3bu@aol.com
Message-ID: <20010410192247.01577.00002891@ng-fo1.aol.com>
Source record: 166182

I wonder if Dr. Phil, when he looks in the mirror, who does he see? Dr. Chip, Dr. Nathan, Dr. Cohendog, Dr. Freak, Dr. Frac, Dr Johny0595, Dr. Cohen, Dr. Pretzel, Dr. Gestapo, or ?

Bada BUm
looks like some people here can't live without that crap, more than freaka frac, keep feeding the troller!

734. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 23:32:56 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad38f7c.188584988@news.accessunited.com>
Source record: 166183

On Tue, 10 Apr 2001 14:56:14 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:

>Thanks for these ideas. I did some test in somewhat the manner you
>suggested but using resistors as loads to accomplish the same thing you did.
>I also changed the shape of the coax, thinking that if the shielding by skin
>effect was occurring, then the impedance of the center conductor should not
>change simply because I coiled up the coax into a tighter coil. Of course
>it did change so I was forced to rethink my concepts. I am increasingly
>doubting that skin effect really does the shielding that some claim it does.

Why?

The shield BECOMES the antenna, and so when you coil it naturally the
impedance changes.

This stuff really is very well known. Only Richard is beating the
wrong drum.

>Frankly, I am beginning to believe that the shielding effect (if it occurs
>at all) comes too late to actually shield anything. The double shielded
>coax experiment certainly seems to show that a conductor placed between two
>plates does not shield one plate from the other.

Of course it does not, because it couples from one shield to another
to another. But that does NOT rule out skin effect, because the
voltage at the gap in the shield drives each side with current.

>The first step is to assume that the magnetic and electric fields existing
>in a coaxial line do NOT stop at the surface of the coax, contrary to what
>is usually taught in our text books.

So you are saying all out textbooks are incorrect?

Don't you suppose someone smarter than you and I would have caught
that mistake by now?

>Instead, assume that they continue
>throughout space, becoming weaker as they leave the local volume of space.
>Now we can not detect TWO fields if they are equal and opposite, exactly
>the condition we have in a coaxial line. This maintains textbook
>consistency with my analysis so far as real world testing goes.
>
>How you ask, can we make this assumption? Well, this is exactly what we do
>when we model antennas. We assume each radiating element sends a field in a
>direction, and then take the vector sum to determine the actual resultant
>field. I am doing the same thing here.

>
>Step one could be summed up by saying that we have to apply antenna concepts
>even at such small scale analysis as skin effect within the conductor.

OK. If you place two elements in parallel, the second element has
opposite flowing current.

If fields pass through the shield, why does current on the outside
flow the same direction as on the inner loop???

Easy. The currents inside the shield are differential. ALWAYS.

Let's say we are looking at the axis of the loop, and the gap in the
shield is down. Current flow on the center conductor is counter
clockwise if the positive terminal is on the right from our view
(electrons actually flow the other way, but let's use current) .

This current tries to move electrons to the right termnal, which is
held positive by out external source.

Now we have a shield over that conductor. Inside the shield, the
current flows OPPOSITE. Electrons pile up on the left terminal, so
current flow would be clockwise.

There would be no current, except the outside of the shield (isolated
by skin depth) provides an independent layer. That outer layer is
driven by the votage across the gap. Since the positive is on the
right, the current flow is counter-clockwise. The electrons try to
move to the positive terminal (since they move the opposite way
current flow is described).

Since this is all linked through tight coupling, voltages will all be
about the same on each gap.

You can test that very easy.

If Richard is correct, the shield will remain a low impedance NO
MATTER WHAT you do to the center.

If I am correct, the changes you make at the center will affect the
impedance across the shield. There will be a small difference in
impedances because the shield is fat, and current flows around the
shield twice. But basically the shield's impedance will follow the
impedance of the center conductor...or vice versa.

You have all the equipment to measure that, even if you do not have a
voltmeter (which would show if you drive the shield gap with a
voltage, the center conductor gap will have the same voltage.

This happens, whether anyone likes it or not. Some transformers are
made this way, like those in solid state PA's.

73 Tom

735. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 23:40:12 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad3993f.191084133@news.accessunited.com>
Source record: 166184

On Tue, 10 Apr 2001 11:01:13 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Tom W8JI wrote:
>>
>> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>> >in movies now are fractally generated. Fractals seem to be
>> >a very efficient way to store information about nature.
>>
>> Give me an example, can you please?
>
>"(Carpenter) was called to Lucasfilm to take a leading role in the
>preparation of 'Star Trek II'. Several computer-generated sequences
>of this film involve fractal landscapes ... Digital Productions
>later included massive fractal landscapes in 'The Last Starfighter'".
>Quoted from "The Science of Fractal Images".
>
>> Say I want to record the life of a bird. How do I do that with
>> fractals? Is that what you mean?
>
>Nope, I'm talking about storing images of nature. It's difficult
>to tell a fractal fern from the real thing. It takes fewer bytes
>to store a fractal algorithm plus fern parameters than to store
>the graphic image of a fern.

Oh, I see what you are saying. You are saying a repeating pattern can
be stored as an algorithm as long as it has the proper limits.

I guess that explains why fractal antennas work???? Or means something
important?

73 Tom

736. Re: Antenna project results

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 23:45:37 UTC
From: Dan <Diverd4777@aol.com>
Message-ID: <3AD39B2B.14E5E7E1@aol.com>
Source record: 166185
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

Also, there
seems to be the situation where one station seems to be in the
background and noisy all over the band, and sometimes spans several
bands. Requlars local AM is marginally improved.

Randon Loeb wrote:
>
-Try a Pre selector or attenuator (cheaper the better)
between your radio & the antenna;
THAT should make a huge difference re: the same stations
popping up all over

Dan

737. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 23:56:40 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <Y4NA6.17352$IJ1.1355899@bgtnsc05-news.ops.worldnet.att.net>
Source record: 166186

"Fractenna" <fractenna@aol.com> wrote in message
news:20010410102422.08213.00003424@ng-mn1.aol.com...
> >>Actually, the articles to be presented at the 2001 IEEE conference, the
> >>article submitted to QEX, the article submitted to the IEEE Antennas and
> >>Propagation Magazine and the submitted "Comments" to the IEEE
Transactions
> >>Editor on a recent IEEE Transactions fractal article pretty much take of
> >>this.
> >>
>
> Notice you say 'submitted' and not 'accepted and in press'.... What's
holding
> up the process? Hmmm?
>

The review process. It is a very slow process.

> Don't you want a crescendo of stuff to peak at the APS meeting? That way
you
> can pass around tomatoes and get all your buddies to pepper Dr. Cohen:-)
> Wonder what he has planned if anything. Or do you think he'll just bring
the
> salad dressing and take his tomatoes sun dried?
>
> :-)?
>

I have no buddies doing anything.

>
> Am I the only one to notice that ALL of your comments and papers are
targeted
> at Dr. Cohen? For example can you quote us the title and abstract of just
one
> of these submissions which focuses on , say, one of the other 130 or so
> authors's works who have written on fractal antennas?
>

Actually, I also have "Comments" regarding the work of others on this topic.
You just have not yet seen them. They have been sent to the IEEE.

I generally only state my opinions here. My responses towards Dr. Cohen
only occur when you try to deify him as a ground breaking pioneer or
directly challenge me personally. I still try to limit my comments to
technical points of disagreement. You don't seem to realize this yet but if
you stopped posting on the subject, I would as well.

> Tell us more:-) Itza matter of public record ya see:-)
>

As for public record, that works both ways.

> 73
> Phil
> de N1ZKT
>
>

738. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-10 23:58:49 UTC
From: k1bqt@aol.com
Message-ID: <20010410195849.08198.00003259@ng-mn1.aol.com>
Source record: 166187

It is not known who actually responds from the Fractenna site--making it fair game for all of us to speculate with impunity. I don't wish to beat a dead horse, but read the rhetoric, smell the roses, and draw your own conclusions!

Rick K1BQT

739. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 00:00:38 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <G8NA6.17359$IJ1.1356143@bgtnsc05-news.ops.worldnet.att.net>
Source record: 166188

"Fractenna" <fractenna@aol.com> wrote in message
news:20010410163859.25689.00003390@ng-cs1.aol.com...
> Hey--
>
> Here's what I found on the FAQ of
>
> http://www.fractenna.com
>
> regarding the 'mistake' of understanding fractal loops--
>
> "Q: If a FEA shrinks an antenna, how can it still work well?
>
> A: It is well known that physical limitations impose severe field strength
> restrictions on electrically small antennas. And, when FEA are chosen to
be
> very small (compared to a wavelength) they perform poorly--like all such
small
> antennas. However, at the top side of the electrically small regime (say
shrunk
> 2-4 times) FEA perform extremely efficiently and practically exceed other
> methods of antenna loading, including top loading. "
>
> Sounds like we guys at Fractal know what we're talkin' about;-)
>

Have you compared performance at resonant frequencies? Did you notice that the resonant resistance, bandwidth, and efficiency decrease? FEA perform exactly the same as other methods of bent wire loading. It might also help to compare some FEA to some non-fractal bent wire antennas of the same volume and same total wire length.

> 73
> Phil
> de N1ZKT

740. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 00:10:01 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <thNA6.18301$rk4.1292796@bgtnsc04-news.ops.worldnet.att.net>
Source record: 166189

"Fractenna" <fractenna@aol.com> wrote in message
news:20010410123657.22616.00005196@ng-md1.aol.com...
> >What would be wrong with making this statement to me:
> >
> >"Steve, would you be willing to share your analysis and results with us?
We
> >would like to take a look at it and see if we agree or disagree. Perhaps
> >you saw something that we missed. On the other hand, perhaps some of
your
> >analysis missed something. It would be good to get to the bottom of this
> >and come to some mutual agreement. Look forward to discussing further.
> >Take care."
> >
> >
> >>
> >> 73
> >> Phil
> >> de N1ZKT
> >
> >
>
> How about the above with the added invitation to take you to lunch?
>

Thank you for the kind invitation. I will seriously consider it.

> Really doesn't matter if you want to show the analysis or not before
> publication. Dr. Cohen and a colleague are writing up a review and will go
with
> what is published until an appropriate cutoff date. Won't cite unpublished
work
>

I am not certain as to what "review" you are talking about. If it is a
review of the bent wire loop designs, you really should wait until some
results are published as the EZNEC files provide no insight into my analysis
or my detailed measurements. I will consider sharing the "submitted"
paper with you. It includes both calculated and measured results for MI
fractal loops, non-fractal bent wire loops, Koch fractal monopoles and
non-fractal bent wire monopoles. It provides a full analysis of performance
properties at multiple resonances and over 5 octaves of frequency spectrum.
It also includes the SLA modifications that allow determination of the
frequency at which fractal and other bent wire loops can be considered
electrically small.

> The 'mutual agreement' will have to be played out in the journals and
other
> info sources though. After all, if you have concerns, others who aren't up
to
> speed may also. Fractal antennas are the emerging major direction in
antennas
> and one has to expect some dissent. That's how science works.
>
> I asked; lunch is Dr. Cohen's suggestion; said he'd be delighted to have
you
> join us. Suggests somewhere in southern NH easily accessible to Rt 93. If
you
> can come in towards Boston instead then we can also get Dr. Hohlfeld to
join.
> Best time after 24 April.
>
> He also says you are welcome to join the fractal antenna reflector at any
time.
>
> Take Care,
>
> Phil
> de N1ZKT

Seriously, thank you for the kind post and offers. I will consider seriously and get back to you. Take care as well.

Steve

741. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 00:15:57 UTC
From: fractenna@aol.com
Message-ID: <20010410201557.25176.00002927@ng-cr1.aol.com>
Source record: 166190

>It is not known who actually responds from the Fractenna site--making it fair
>game for all of us to speculate with impunity. I don't wish to beat a dead
>horse, but read the rhetoric, smell the roses, and draw your own conclusions!
>
>
>Rick K1BQT
>

It's well known Rick. Just read the sig.

73
Phil
de N1ZKT

742. Re: Stop by - www.qsl.net/k7on/ -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 00:28:22 UTC
From: Brian Short <k7on@earthlink.net>
Message-ID: <MPG.153db5a0a05f43a39896aa@news.earthlink.net>
Source record: 166191
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

In article <j3GA6.4515$Ak1.459603@newsread2.prod.itd.earthlink.net>,
ctj92@earthlink.net says...
> Lots of STUFF to do >

--
mailto:k7on@earthlink.net >< http://www.qsl.net/k7on/
--

743. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 00:45:49 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AD3A93C.166E0A33@hiwaay.net>
Source record: 166192

Rick- if you review the history of the use of the "Fractenna" screen name- you will find that neither Chip, nor Nathan, nor Phil will make a simple declaration like:
" I, Nathan (aka Chip)Cohen do not originate posts that are signed as if by "Phil":
or
"I, Nathan Cohen, do not sign posts I write, with names other than my own"
or
"I, Phil, do not let my name be used by Dr. Cohem for posts that he originates"

He/They will tell us all about how many people are authorized to use the screen name, but will NEVER tell the truth about the tap dancing they do with the posts from that AOL account.

It is not in them to tell the truth.

Bill-W4BSG

Rick Littlefield wrote:
>
> It is not known who actually responds from the Fractenna site--making it fair
> game for all of us to speculate with impunity. I don't wish to beat a dead
> horse, but read the rhetoric, smell the roses, and draw your own conclusions!
>
> Rick K1BQT

744. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 00:53:52 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AD3AB20.3710DEAF@hiwaay.net>
Source record: 166193

More of the same - the thread line for this set of exchanges contains
the word "Fraudulent". Does that not describe the selection of sigs for
the Fractenna group? The Easter Bunny came early and told me that that
group had some BAD little boys.

(OOPS -wrong Theology- sorry)

Bill-W4BSG

Fractenna wrote:
>
> >It is not known who actually responds from the Fractenna site--making it fair
> >game for all of us to speculate with impunity. I don't wish to beat a dead
> >horse, but read the rhetoric, smell the roses, and draw your own conclusions!
> >
> >
> >Rick K1BQT
> >
>
> It's well known Rick. Just read the sig.
>
> 73
> Phil
> de N1ZKT

745. Re: Lightning Protection

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 01:05:32 UTC
From: Dan H <w4lgm@gte.net>
Message-ID: <w5OA6.1235$PM5.325357@paloalto-snr1.gtei.net>
Source record: 166194

Check into Industrial Communication Engineers, LTD. product line. They manufacture a full line of suppressors. Models 309 and 309H are for ladder line.
309 1kw pep $44.00
309H 8kw pep $72.00

http://www.inducomm.net

I am not affiliated with them. I just like and use their products.

Good luck,

Dan -ai4et

"Harry Williams" <harry.w.williams@cdc.com> wrote in message news:3ACB664D.5ED30FEB@cdc.com...
> I need some ideas on how to effectively ground 450 ohm ladder line for
> lightning
> protection. I would like to be able to go outside and throw a switch to
> put my
> ladder line to ground. I was thinking of an old DPDT knife switch but
> can not find
> one anywhere. Anybody got other ideas on how to do this??
>
> Thanks,
> Harry - W0PIY
>

746. Re: Stealth #26 ant wire?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 01:47:47 UTC
From: John Kennedy <jkenned1@rochester.rr.com>
Message-ID: <7JOA6.25468$RV1.4442287@typhoon.nyroc.rr.com>
Source record: 166195

Try the radio bookstore in Rindge NH. They carry wire etc.
73
John

747. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 01:56:31 UTC
From: fractenna@aol.com
Message-ID: <20010410215631.08253.00003027@ng-mn1.aol.com>
Source record: 166196

>
>
>"Fractenna" <fractenna@aol.com> wrote in message
>news:20010410163859.25689.00003390@ng-cs1.aol.com...
>> Hey--
>>
>> Here's what I found on the FAQ of
>>
>> http://www.fractenna.com
>>
>> regarding the 'mistake' of understanding fractal loops--
>>
>> "Q: If a FEA shrinks an antenna, how can it still work well?
>>
>> A: It is well known that physical limitations impose severe field strength
>> restrictions on electrically small antennas. And, when FEA are chosen to
>be
>> very small (compared to a wavelength) they perform poorly--like all such
>small
>> antennas. However, at the top side of the electrically small regime (say
>shrunk
>> 2-4 times) FEA perform extremely efficiently and practically exceed other
>> methods of antenna loading, including top loading. "
>>
>> Sounds like we guys at Fractal know what we're talkin' about;-)
>>
>
>Have you compared performance at resonant frequencies? Did you notice that
>the resonant resistance, bandwidth, and efficiency decrease? FEA perform
>exactly the same as other methods of bent wire loading. It might also help
>to compare some FEA to some non-fractal bent wire antennas of the same
>volume and same total wire length.
>
>> 73
>> Phil
>> de N1ZKT
>

Dr. Cohen and Dr. Hohlfeld gave an open colloquium at the NSA in 1999 in which they showed the field strength and other tradeoffs.For these loops.That was the first public description. The fact that they have not published it must mean something don't you think?

You have a very custom definition of fractal so when you use the word, someone who actually knows something about them--such as Dr. Hohlfeld, or Dr. Cohen,

get totally confused. Virtually all forms of bent wires fall into the category of fractal. A meander is a related geometry. Look at any of the fractal books.

The issue of wire length was shown to be a non issue over 25 years ago. Optimized wire antennas were demonstrated to be what are now called 'fractal'. They have lotsa extra wire. Only in the extreme of very electrically small is it an issue. So I learned from Dr. C.

Dr. Cohen explained to me that wire length is a non-parameter. No one ever designs practical antennas based on the amount of wire they have. They have a form factor and take it from there to get a figure of merit for desired operating characteristics. Dr. Cohen also informed me that the amount of ohmic loss cannot naively be viewed as proportional to the length. Depends where the current is. Or isn't. Or is small.
.
If you made the above statement, or expect to publish it, it is in contradiction to already published works which you apparently have not tried to seek out. At least I am paraphrasing Dr. Cohen's comment to me. He is not making comments to you or anyone else on this USENET forum.

So it looks like you are turning down the lunch munch. Not unexpected. You preach 'science' but your focus is singly to --attempt--to discredit Dr. C. At least it seems that way.

So go ahead with your papers. Kuhn will bear out the paradigm and discard the straight and narrow view based on 'what was simple to do mathematically'.

73
Phil
de N1ZKT

748. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 02:04:05 UTC
From: fractenna@aol.com
Message-ID: <20010410220405.08253.00003029@ng-mn1.aol.com>
Source record: 166197

>My responses towards Dr. Cohen
>only occur when you try to deify him as a ground breaking pioneer or
>directly challenge me personally. I still try to limit my comments to
>technical points of disagreement. You don't seem to realize this yet

You make a response when he isn't here to talk to you. That's dirty pool.

And you are entirely wrong. You had your buddies bait everyone with the QEX stuff and then you jumped in. When the crud got too smelly then I came back to give a reality check.

Heck you haven't even got the QEX article in press and already you've told enough people here that they bait bait bait. In fact they are so successful at it that they bait each other! Then they get so diss--appointed that Dr. C won't come down to their level (he's gone; forget about him ever coming back) that they start dissing each other. It a weird and destructive hobby you guys have and you've taken the logical final steps.

Then you make silly comments that you aren't organized.

Anyone can see through this.

73
Phil
de N1ZKT

749. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 02:08:28 UTC
From: fractenna@aol.com
Message-ID: <20010410220828.08269.00002740@ng-mn1.aol.com>
Source record: 166198

```
>
>
>"Fractenna" <fractenna@aol.com> wrote in message
>news:20010410123657.22616.00005196@ng-md1.aol.com...
>> >What would be wrong with making this statement to me:
>> >
>> >"Steve, would you be willing to share your analysis and results with us?
>We
>> >would like to take a look at it and see if we agree or disagree. Perhaps
>> >you saw something that we missed. On the other hand, perhaps some of
>your
>> >analysis missed something. It would be good to get to the bottom of this
>> >and come to some mutual agreement. Look forward to discussing further.
>> >Take care."
>> >
>> >
>> >>
>> >> 73
>> >> Phil
>> >> de N1ZKT
>> >
>> >
>>
>> How about the above with the added invitation to take you to lunch?
>>
>
>Thank you for the kind invitation. I will seriously consider it.
>
>> Really doesn't matter if you want to show the analysis or not before
>> publication. Dr. Cohen and a colleague are writing up a review and will go
>with
>> what is published until an appropriate cutoff date. Won't cite unpublished
>work
>>
>
>I am not certain as to what "review" you are talking about. If it is a
>review of the bent wire loop designs, you really should wait until some
>results are published as the EZNEC files provide no insight into my analysis
>or my detailed measurements. I will consider sharing the "submitted"
>paper with you. It includes both calculated and measured results for MI
>fractal loops, non-fractal bent wire loops, Koch fractal monopoles and
>non-fractal bent wire monopoles. It provides a full analysis of performance
>properties at multiple resonances and over 5 octaves of frequency spectrum.
>It also includes the SLA modifications that allow determination of the
```

>frequency at which fractal and other bent wire loops can be considered
>electrically small.
>
>> The 'mutual agreement' will have to be played out in the journals and
>other
>> info sources though. After all, if you have concerns, others who aren't up
>to
>> speed may also. Fractal antennas are the emerging major direction in
>antennas
>> and one has to expect some dissent. That's how science works.
>>
>> I asked; lunch is Dr. Cohen's suggestion; said he'd be delighted to have
>you
>> join us. Suggests somewhere in southern NH easily accessible to Rt 93. If
>you
>> can come in towards Boston instead then we can also get Dr. Hohlfeld to
>join.
>> Best time after 24 April.
>>
>> He also says you are welcome to join the fractal antenna reflector at any
>time.
>>
>> Take Care,
>>
>> Phil
>> de N1ZKT
>
>Seriously, thank you for the kind post and offers. I will consider
>seriously and get back to you. Take care as well.
>
>Steve

Forget it, you had your chance. I don't see how anyone can keep up with your seemingly bipolar approach in dealing with people.

Go full steam ahead with your plans.

73
Phil
de N1ZKT

750. 6 to 9 dB Improvement in Coaxial Cable

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 02:28:09 UTC
From: Frank Donovan <donovanf@erols.com>
Message-ID: <9b0fft$39c$1@bob.news.rcn.net>
Source record: 166199

http://www.arrl.org/members-only/extra/features/2001/04/01/
73
Frank
W3LPL
donovanf@erols.com

751. Re: Solarcon A-99 - any feedback on this antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 02:35:17 UTC
From: Ed Cregger <nuke663jlm@vei.net>
Message-ID: <td7gisak5gm0c4@corp.supernews.com>
Source record: 166200

I enjoy the fact that my A-99 works without needing a tuner
on 17 meters as well as 10 meters. I keep one around for
those times when the other antennas are down, for whatever
reason.

As you can probably tell, I really get a kick out of this
antenna. It almost feels as though I'm getting away with
something that shouldn't be happening. It's cheap, durable,
easy to erect in a hurry and it WORKS. What more can a
person want for the investment? The only thing it lacks is
snob appeal. Oddly enough, the lack of snob appeal, appeals
to me.
--
Ed Cregger, NM2K
nuke663jlm@vei.net

*Remove the "nuke" for correct email address

"VHFRadioBuff" <vhfradiobuff@aol.comspamsux> wrote in
message news:20010410145027.25524.00002833@ng-bh1.aol.com...
> >Does the Imax operate on 17, 15 & 12 meters as well as 11
or
> >10? The A-99 works very well on the other bands. I'm not
> >saying that the A-99 is a better antenna. I'm just
curious
> >about the Imax.
>
> The A-99 is only rated for 11 meters, or 10 meters if you
adjust the tuning
> rings, as is the Imax. With a tuner both antennas can
expand this range from
> what I have been told.
> =-
> 73! de KC2SSB (ex: KF4KHC/HL9HCT)
> http://www.vhfradiobuff.com
> http://egroups.com/group/2mallmode
> http://egroups.com/group/6mallmode

752. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 02:48:26 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD3C5FA.41D4893@eznec.com>
Source record: 166201

This is even more bizarre than usual.

On April 10, 1636 UTC, "Phil" wrote (directed to Steve):

>
> How about the above with the added invitation to take you to lunch?

> . . .

> I asked; lunch is Dr. Cohen's suggestion; said he'd be delighted to have you
> join us. Suggests somewhere in southern NH easily accessible to Rt 93. If you
> can come in towards Boston instead then we can also get Dr. Hohlfeld to join.
> Best time after 24 April.

> . . .

On April 11, 0010 UTC, Steve replied:

>. . .
>Seriously, thank you for the kind post and offers. I will consider
>seriously and get back to you. Take care as well.

On April 11, 0156 UTC, Phil responded:

>. . .

>So it looks like you are turning down the lunch munch. Not unexpected. You
>preach 'science' but your focus is singly to --attempt--to discredit Dr. C. At
>least it seems that way.

Then on April 11, 0208 UTC, "Phil" added:

>Forget it, you had your chance. I don't see how anyone can keep up with your
>seemingly bipolar approach in dealing with people.
>. . .

Did I miss the posting where Steve turned down the lunch invitiation? Or
was the possibility that it actually might take place enough to cause
the abrupt withdrawal?

It appears that the lunch invitation, valid for less than ten hours, was
extended with the same sincerety and credibility as the "$1000 Fractal
Challenge" and all the lawsuit threats and deadlines. If "Phil" isn't
really Chip, he's certainly learned at the foot of the master. But
surely there can't be TWO people like this at Fractenna. Can there?

Roy Lewallen, W7EL

753. Re: 6 to 9 dB Improvement in Coaxial Cable

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 03:02:21 UTC
From: Chuck O'Neal <coneal@ultranet.com>
Message-ID: <9b0hgdenm1@bob.news.rcn.net>
Source record: 166202

I have achieved better through cooling to 69 degrees BELOW
absolute zero. Through relativistic mechanics involving
cryogenic cooling below absolute zero, one can obtain
negative noise figures, allowing detection of time events prior
to the big bang.....and.....an esape to the 4th dimension...
but wait there's more....next???

Frank Donovan wrote in message <9b0fft$39c$1@bob.news.rcn.net>...
>http://www.arrl.org/members-only/extra/features/2001/04/01/
>73
>Frank
>W3LPL
>donovanf@erols.com
>
>

754. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 03:57:58 UTC
From: richardharrison@webtv.net
Message-ID: <20845-3AD3D646-49@storefull-114.iap.bryant.webtv.net>
Source record: 166203

Tom, W8JI wrote:
"In this case the mix of people are well in agreement with each other, and Richard is the odd man out."

My name is Richard and I doubt that nobody agrees with me.

Some readers of this thread know that a metal enclosure is often used at r-f to keep energy in or out.

Some readers know that coils, each shielded, can be coupled with an interconnecting capacitor. They know shields on the coils prevent any magnetic coupling, but the coupling capacitor permits only the electric field coupling to pass the signal along very nicely.

Some readers know that Terman and other experts said a Faraday shield works to bar electric field conveyance between electrical circuits while allowing magnetic coupling between those same circuits.

If you wish confirmation, the nearly 10,000 U.S. AM broadcast stations can be tuned in to hear a signal which has had its electric field blocked at a point in its transmission by a Faraday shield only to have the surviving magnetic field regenerate a new electric field on the antenna side of the shield.

If there had been a solid shield in place of the Faraday shield you would hear nothing from the station because the magnetic and electric fields would have been put down simultaneously.

Tom says if you kill either field you kill both. You don`t have to kill two birds with the same stone. It`s not an "or" function as Tom supposes. It is an "and" function in which both fields must be done-in to kill the signal.

The solid shield kills the electric field "and" the magnetic field. The whole signal is repelled by a solid shield. Block just one of the two fields and the signal is immediately regenerated.

For the first time in this thread I am referring to the 19th edition of the "ARRL Antenna Book". I didn`t even know it had a shielded loop. The subscript for Fig 2 on page 14-2 reads in part: "The ends of the shielding are not connected, to prevent shielding the loop from magnetic fields. The shield is effective against electric fields."

I personally confide in Terman more than the Antenna Handbook, but I believe that many readers have found the Antenna Handbook reliable and have confidence in its contents and therefore will agree with me and not with Tom when he says the electric and magnetic fields are

"INSEPARABLE".

Now, Tom is likely to again say: "I never said that. I said the time-varying electric and time-varying magnetic fields were inseparable."

For the purposes of this discussion there`s no damn difference.

Best regards, Richard Harrison, KB5WZI

755. Computer Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 06:51:48 UTC
From: J Titcomb <kimoloka@hawaii.rr.com>
Message-ID: <8aTA6.5225$hr6.836461@typhoon.hawaii.rr.com>
Source record: 166204

Aloha Guys (and Gals)

There's too many newsgroups out there to find the exact one to answer this one particular question, which just happens to be about computers.

So I'm going to rely on my fellow hams, who are also experts in many other fields, especially you guys on the amateur antenna newsgroup. Enough stroking? Here's the question:

How can I get rid of the Microsoft Networking logon prompt that pops up every time Windows starts? I know all you have to do is click Cancel, or ESC, to continue loading Windows, but why do I have to keep doing this every single time? Is there a way to get rid of the prompt altogether?

I already did a search on my browser engine and also on the microsoft.com site, but couldn't seem to find the answer.

Thanks for any help and 73s

Jim Titcomb
KH6IX

756. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 07:21:03 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD405DF.458C@wt.net>
Source record: 166210

Fractenna wrote:

> >
> >Seriously, thank you for the kind post and offers. I will consider
> >seriously and get back to you. Take care as well.
> >
> >Steve
>
> Forget it, you had your chance. I don't see how anyone can keep up with your
> seemingly bipolar approach in dealing with people.

You are a funny man.

>
> Go full steam ahead with your plans.

I'm sure he can find another burger king around there somewhere. Or are
you a McDonalds man? Any fractal fries with that order? MK

--
http://web.wt.net/~nm5k

757. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 07:37:23 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD409B3.582D@wt.net>
Source record: 166209

Fractenna wrote:
>
> >My responses towards Dr. Cohen
> >only occur when you try to deify him as a ground breaking pioneer or
> >directly challenge me personally. I still try to limit my comments to
> >technical points of disagreement. You don't seem to realize this yet
>
> You make a response when he isn't here to talk to you. That's dirty pool.

I'm telling !
Sniffle...Sniffle...WAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY!!!!!!
!!!!
>
> And you are entirely wrong. You had your buddies bait everyone with the QEX
> stuff and then you jumped in. When the crud got too smelly then I came back to
> give a reality check.

I hope it was for 1000$.
>
> Heck you haven't even got the QEX article in press and already you've told
> enough people here that they bait bait bait. In fact they are so successful at
> it that they bait each other! Then they get so diss--appointed that Dr. C won't
> come down to their level (he's gone; forget about him ever coming back) that
> they start dissing each other. It a weird and destructive hobby you guys have
> and you've taken the logical final steps.

You bait yourself. With some pretty smelly bait I might add. But wait!
You say Dr. C is gone forever?
sniffle...sniffle..WAAAAAAAAAAAAAAAAAAAAAAAAAAYYYYYYYYYYYYYYYYYYYYYYYYYY!!!!!!!!!!!!!!!!
!!!!!!

Oh well....I still have Dr.Pepper.

>
> Then you make silly comments that you aren't organized.

I can see how you would see that that is silly. But do you think anyone
else will buy it? If so, at what price?
>
> Anyone can see through this.

Even a blind man? Can you see clearly though it, or is it more like
stained glass?
--
http://web.wt.net/~nm5k

758. Re: Computer Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 07:57:07 UTC
From: Zoran Brlecic <zbrlecic@earthlink.net>
Message-ID: <3AD40ECA.F64B729E@earthlink.net>
Source record: 166205

J Titcomb wrote:

> How can I get rid of the Microsoft Networking logon prompt that pops up
> every time Windows starts? I know all you have to do is click Cancel, or
> ESC, to continue loading Windows, but why do I have to keep doing this every
> single time? Is there a way to get rid of the prompt altogether?

I think it's fairly simple: if you enter your User Name, but you do not enter the Password, the system will never prompt you again. So, if you've been escaping it ever since the install, make up a user name, skip the password and click OK.

73 .... Zoran WA7AA

--
Support freedom of speech, or I'll kill you!

759. Re: 6 to 9 dB Improvement in Coaxial Cable

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 08:01:58 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AD40F75.8B661173@oio.net>
Source record: 166206

Frank Donovan wrote:
>
> http://www.arrl.org/members-only/extra/features/2001/04/01/
> 73
> Frank
> W3LPL
> donovanf@erols.com

Frank,
Since I'm not a member, I can't get there from here.
'Doc

760. Re: 6 to 9 dB Improvement in Coaxial Cable

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 08:29:38 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AD415F2.508237A4@spam.me.not>
Source record: 166207

I didn't know it was possible to cool something below absolute 0, that
is to say 0 Kelvin...

I'd like to learn more about this, Chuck... Is there a published source,
or a URL where I could find more information ?

thx

-SSB

Chuck O'Neal wrote:

> I have achieved better through cooling to 69 degrees BELOW
> absolute zero. Through relativistic mechanics involving
> cryogenic cooling below absolute zero, one can obtain
> negative noise figures, allowing detection of time events prior
> to the big bang.....and.....an esape to the 4th dimension...
> but wait there's more....next???
>
> Frank Donovan wrote in message <9b0fft$39c$1@bob.news.rcn.net>...
> >http://www.arrl.org/members-only/extra/features/2001/04/01/
> >73
> >Frank
> >W3LPL
> >donovanf@erols.com
> >
> >

761. Trap theory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 09:28:38 UTC
From: stan.holmes@eskom.co.za
Message-ID: <3AD423C6.3D911703@eskom.co.za>
Source record: 166208

Hi
Can anyone explain the theory behind the Hy-gain trap construction.
Does the shield form part of the capacitance. Normally the capacitor is connected in parallel with the coil, the shield is only connected on the one side.

Thanks
Stan

762. Re: Lightning Protection

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 11:05:56 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad438ea.231964908@news.accessunited.com>
Source record: 166211

On Wed, 11 Apr 2001 01:05:32 GMT, "Dan H" <w4lgm@gte.net> wrote:

>Check into Industrial Communication Engineers, LTD. product line. They
>manufacture a full line of suppressors. Models 309 and 309H are for ladder
>line.
>309 1kw pep $44.00
>309H 8kw pep $72.00
>
>http://www.inducomm.net

You need to be careful with that.

It is not possible to rate a lightning gap for power in nearly all
installations using 450 ohm line, since most people use it with high
standing waves.

The only correct or reliable way to rate the gap protection would be
typical voltage breakdown.

While a gap helps, generally by the time the gap is large enough to
handle the transmitter power you are up to several kV even at modest
powers.

The only safe thing is to disconnect the line.

73 Tom

763. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 11:28:20 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9b1f49$e6o$1@slb2.atl.mindspring.net>
Source record: 166212

All:

Which makes a better "shield"... A sheet of cold rolled steel, a copper screen, or... a sheet of aluminium of the same thickness?

Which is most important in shield effectiveness, low elect-roresistivity or high magnetic permeability?

Anyone remember "mu-metal"?... gosh I haven't seen any of that stuff for a long while.

Will a mu-metal "shield" keep out the magnetic field and let in the electric field?

Over the years, in my professional work, I have done various kinds of em work in many different "screen rooms".

Some of those screen rooms were made of copper screens, sort of like your back screen porch except the mosquito screen was made of copper, and some of those screen rooms were made of cold rolled steel, sort of like an "iron coffin".

On occasion I brought a personal ham receiver into those rooms to see what I could hear? It was difficult explaining the ham receiver to the clients though... heh, heh.

Results? Can't hear much on the short waves in either kind of screen room, certainly not WWV.

I always wanted to go to a site with both kinds of screen room side by side so that I could go into one and take an S-meter reading on an external station and then go into the other and take a similar reading for comparison.

Only problem was, I could never find a facility with both a cold rolled steel screen room and a copper mesh screen room both in the same facility. Usually they were hundreds of miles apart.

Anyone know the names of contractors who build screen rooms? Do they have WWW URL's? How does one "test" and "certify" a screen room? Who is qualified to certify the quality of a screen room?

Thoughts, comments?

-Peter K1PO

"Roger Sparks" <sparksrc@home.com> wrote in message
news:_oJz6.687911$U46.21438121@news1.sttls1.wa.home.com...
> I have read the "Faraday Shield Antenna" thread, and I have studied the

> responses from members of the two schools of thought regarding skin effect
> and the properties of electrically dynamic elements. One school believes
> that a current will loop around a coaxial shield in a continuous path made
> when skin effect splits the shield into inner and outer conductors (the
> loop-over camp). The other school (the transparent camp) believes no loop
> occurs, but that the shield is transparent to transverse electrical
fields.
> The two predictions lead to different results that should yield to
> experimental verification.
>
> I will suggest an experiment and then predict the results each camp will
> expect from the experiment.
>
> The apparatus will be a dipole of any length which consist of two
elements,
> a center element and
> an outer element which completely surrounds the inner element, except at
the
> ends. The separation
> between the inner and outer elements is 0.2 inch, and the central
conductor
> is 10 gage wire. The
> thickness of the outer element is adequate to allow skin effect to be
> completely established on
> both inner and outer sides. Thus, the dimensions are a little larger than
> those of RG-8. The
> elements are in free space unaffected by any nearby objects. At the
center
> of the inner element
> we will place a nifty new micro transceiver with auto tuning. The
frequency
> under consideration
> can be any frequency having a wavelength which is very long compared to
the
> 1/4 inch spacing, say 29 Mhz or less.
>
> What will each camp predict for the electrical characteristics seen by the
> transceiver?
>
> On transmit, the loop-over folks will predict that an unbalanced current
> will flow the entire length of the outside of the shield. This occurs
> because the current on the inner element creates an opposing
> current on the inside of the outer element which is held on the inside by
> skin effect. When this
> current reaches the end of the outer element, it folds over the shield and
> flows down the outside of the outer element, held outside by skin effect.
> The two inner currents are balanced and cancel, they can't radiate anyway
> because the skin effect confines all electrical effects to the inside of
the
> shield. The outside however, is free to radiate and will be an effective

> radiator somewhat akin to an end loaded center fed dipole.
>
> The transparent shield camp will predict that no separate current will
flow
> on the outside of the outside element. Instead a current flowing on the
> inner element will generate an equal and opposite current on the outer
> element. The fields of two currents will nearly cancel each other thus
> radiation can occur only to the extent that the current in the outer
element
> lags the current on the inner element. This will be small indeed at 28
Mhz.
> Thus the efficiency of any antenna built this way would be very low.
>
> The difference between the two predictions should be easily detected when
> the impedance
> calculation is compared to actual observed readings.
>
> An observation can be made that three separate current paths are described
> by the loop-over
> folks. The current paths are longer than the current paths predicted by
the
> transparent camp so the current presumably has more resistance to flow and
> will have increased losses. The difference in
> predicted losses should be detectable experimentally.
>
> On receive, the situation is somewhat different. The loop-over folks will
> predict that the system
> is just the reverse of the transmit situation. Efficiency will remain
high.
>
> The transparent camp will beg to differ, predicting that the efficiency
will
> remain very low. On
> receive they would explain, the current on the inner element flows IN
PHASE
> with the current on
> the outer element. The magnitude of the current flowing on the inner
> element is very small
> because most of the current flows on the much larger outer element. The
> effect is somewhat
> similar to the impedance transformation which is observed when a large
> element was placed near
> a small driven element (the older ARRL Antenna Book's had charts for
this).
> Efficiency is low
> only because the outer element effectively shorts or bypasses the currents
> away from the inner element.
>
> The two camps will predict a much different observed signal strength level
> from any external signal source. This difference should be easily

observed.
>
> Now the thread discussion was mostly about a circular loop so we may want
to
> consider that
> the straight loop could be bent into a circle but not connected to form a
> continuous loop. Both
> camps will agree that the loop will be much less efficient than the
straight
> version assuming that an
> equal length of material is used in each comparable situation.
>
> Can we do a real world experiment such as this? Of course. We could
> replace the futuristic
> transceiver with a very carefully balanced and attached twin wire feed
line,
> make the appropriate
> adjustments for ground effects, and run the test. When some enterprising
> amateur reports the
> results, we will know more about the art of radio.
>
> Please comment on anything in this posting.
>
> Have a good day all,
>
> Roger, W7WKB
>
>
>
>
>
>
>
>

764. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 11:29:25 UTC
From: 2w8ji@akorn.net
Message-ID: <3ad43bb6.232680998@news.accessunited.com>
Source record: 166213

On 11 Apr 2001 01:56:31 GMT, fractenna@aol.com (Fractenna) wrote:

>Dr. Cohen explained to me that wire length is a non-parameter. No one ever
>designs practical antennas based on the amount of wire they have. They have a
>form factor and take it from there to get a figure of merit for desired
>operating characteristics. Dr. Cohen also informed me that the amount of ohmic
>loss cannot naively be viewed as proportional to the length. Depends where the
>current is. Or isn't. Or is small.

>73
>Phil
>de N1ZKT

Hi Phil,

I think you should give him a break, and not force him to answer
questions he really can't answer. I can't understand why you want to
embarrass your boss and only friend in public.

In fairness to the good Dr. Cone, he is very new at all this. He has
just (within the past several years) learned to include resistance in
his models. He has only recently been exposed to the difference
between "dB volts" and "dB power".

Far too many people are critical of him, since they assume his
education is in an area that gives him some expertise on or experience
with antennas.

Lighten up "Phil", give your better-half a break.

73 Tom

765. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 12:10:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD449C1.411E0B08@IEEE.org>
Source record: 166214

Richard Harrison wrote:
> Some readers of this thread know that a metal enclosure is often used at
> r-f to keep energy in or out.

I don't know enough to argue one way or another. In trying to keep
a microprocessor from radiating, I tried an aluminum box around the
unit. I was amazed at how much RF leaked through the box when it
was floating VS when the aluminum box was grounded.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

766. Re: 6 to 9 dB Improvement in Coaxial Cable

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 12:17:43 UTC
From: w1rfi@aol.com
Message-ID: <20010411081743.27433.00003997@ng-mj1.aol.com>
Source record: 166215

>From: Sideband sideband@spam.me.not

>I didn't know it was possible to cool something below absolute 0, that
>is to say 0 Kelvin...

>I'd like to learn more about this, Chuck... Is there a published source,
>or a URL where I could find more information ?

A number of years ago, ARRL published an April article on "gravity-gradient modulation." The article described the use of antimatter to modulate a signal. The ARRL Lab got about a dozen apparently serious inquiries from hams who wanted to know wehre to get the antimatter. :-)

73,
Ed Hare, W1RFI

767. Re: Computer Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 12:25:07 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <15j8dts2fu2kg1i78jrm18uml12oii0sh9@4ax.com>
Source record: 166069

You didn't mention if you are running on a network. If you are, then
there is another approach that what Zoran mentioned below.

Danny

On Wed, 11 Apr 2001 07:57:07 GMT, Zoran Brlecic
<zbrlecic@earthlink.net> wrote:

>J Titcomb wrote:
>
>> How can I get rid of the Microsoft Networking logon prompt that pops up
>> every time Windows starts? I know all you have to do is click Cancel, or
>> ESC, to continue loading Windows, but why do I have to keep doing this every
>> single time? Is there a way to get rid of the prompt altogether?
>
>I think it's fairly simple: if you enter your User Name, but you do not enter
>the Password, the system will never prompt you again. So, if you've been
>escaping it ever since the install, make up a user name, skip the password and
>click OK.
>
>
>73 .... Zoran WA7AA

768. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 12:34:29 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9b1ise$9iv$1@neptunium.btinternet.com>
Source record: 166216

Rich wrote -
> Cross talk between coax cables is worse at lower frequencies.
It`s skin
> depth again.
>
> Why is the base group (12 ea. 4-KHz channels) located in the
spectrum
> between 60-KHz and 108-KHz, and not in a lower frequency slice?
The
> answer is that coax does not provide good shielding at low
frequencies.
> (skin effect) Also, equalization is tougher at lower frequencies.
==========

Actually the (international) basic group of 12 audio channels in the band 60 to 108 KHz was chosen long before coax was used on long-distance trunk routes. It was chosen as the optimum band for multiple-twin balanced-pair cables and it was equalisation over the frequency band which determined the actual frequncies. The cross-talk problem was solved by running the 'go-and-return' circuits in two separate lead-sheathed cables. Each cable being 24 pair, paper-insulated, 40lbs/mile conductors, amplifiers spaced at about 20 miles.

As you know, when trunk routes were eventually run on coax cables the basic 12-channel groups were piled on top of each other in the form of supergroups and hypergroups. In the UK some coax trunk routes occupied frequency bands up to 20 MHz using 1" outside diameter coax with amplifiers spaced every 3 miles. Then came the digital stuff.

Go-and-return coaxial pairs were in the same lead-sheathed cable. With the lowest frequency of 60 kHz being pre-determined, it was necessary to reduce coax-pair to coax-pair, within-cable crosstalk, by a mu-metal tape wrapped around each coaxial outer conductor.

The combination of mu-metal magnetic screening and skin effect reduced coax-to-coax crosstalk to about 85 dB at 60 kHz. The British Post Office specified minimum was 80 dB if I remember correctly.

At 500 kHz the actual crosstalk level was usually better than 160 dB. I do remember the great difficulty in measuring crosstalk levels as low as this when acceptance testing cables from a mobile laboratory parked above a manhole in the middle of a city street when its pouring with rain.

The signal generator had a 10 watt output. The measuring voltmeter was a WW2 ex-navy, 8-tube communications receiver modified to work from 6V plus 250-volt lead-acid batteries, believe it or not !

Water for making tea was boiled with the cable jointer's paraffin blow lamp. 45 years later, I do not really enjoy a cup of tea unless a drop of paraffin is added alonside the sugar and milk.

Happy days they were !

Reg, G4FGQ

769. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 12:49:49 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <NpYA6.17890$RF1.1373038@bgtnsc06-news.ops.worldnet.att.net>
Source record: 166217

"Fractenna" <fractenna@aol.com> wrote in message
news:20010410220405.08253.00003029@ng-mn1.aol.com...
> >My responses towards Dr. Cohen
> >only occur when you try to deify him as a ground breaking pioneer or
> >directly challenge me personally. I still try to limit my comments to
> >technical points of disagreement. You don't seem to realize this yet
>
> You make a response when he isn't here to talk to you. That's dirty pool.
>
> And you are entirely wrong. You had your buddies bait everyone with the
QEX
> stuff and then you jumped in. When the crud got too smelly then I came
back to
> give a reality check.
>

Hi Phil:

I will do my best to keep this objective and non-personal.

I have no "buddies" doing anything. I simply respond to posts on the NG. I do not direct nor control posts from anyone else. Most of us are just responding to your QST posts or your claims regarding fractals and Dr. C. I can't control how or where the conversations go.

> Heck you haven't even got the QEX article in press and already you've told
> enough people here that they bait bait bait. In fact they are so
successful at
> it that they bait each other! Then they get so diss--appointed that Dr. C
won't
> come down to their level (he's gone; forget about him ever coming back)
that
> they start dissing each other. It a weird and destructive hobby you guys
have
> and you've taken the logical final steps.
>

I recall many, many times that you or Dr. Cohen announce on this NG the FAS patent awards, ham talks, previous and pending publications, fractal reflector groups, N1IR open houses, FAS web pages, fractal antenna performance, N1IR contest status, etc, all in your own self interest. So why am I such a bad guy because I mention a QEX article?

> Then you make silly comments that you aren't organized.
>
> Anyone can see through this.

>
> 73
> Phil
> de N1ZKT

770. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 12:51:22 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <erYA6.17891$RF1.1373397@bgtnsc06-news.ops.worldnet.att.net>
Source record: 166218

"Fractenna" <fractenna@aol.com> wrote in message
news:20010410220828.08269.00002740@ng-mn1.aol.com...
> >
> >
> >"Fractenna" <fractenna@aol.com> wrote in message
> >news:20010410123657.22616.00005196@ng-md1.aol.com...
> >> >What would be wrong with making this statement to me:
> >> >
> >> >"Steve, would you be willing to share your analysis and results with
us?
> >We
> >> >would like to take a look at it and see if we agree or disagree.
Perhaps
> >> >you saw something that we missed. On the other hand, perhaps some of
> >your
> >> >analysis missed something. It would be good to get to the bottom of
this
> >> >and come to some mutual agreement. Look forward to discussing
further.
> >> >Take care."
> >> >
> >> >
> >> >>
> >> >> 73
> >> >> Phil
> >> >> de N1ZKT
> >> >
> >> >
> >>
> >> How about the above with the added invitation to take you to lunch?
> >>
> >
> >Thank you for the kind invitation. I will seriously consider it.
> >
> >> Really doesn't matter if you want to show the analysis or not before
> >> publication. Dr. Cohen and a colleague are writing up a review and will
go
> >with
> >> what is published until an appropriate cutoff date. Won't cite
unpublished
> >work
> >>
> >
> >I am not certain as to what "review" you are talking about. If it is a

> >review of the bent wire loop designs, you really should wait until some
> >results are published as the EZNEC files provide no insight into my
analysis
> >or my detailed measurements. I will consider sharing the "submitted"
> >paper with you. It includes both calculated and measured results for MI
> >fractal loops, non-fractal bent wire loops, Koch fractal monopoles and
> >non-fractal bent wire monopoles. It provides a full analysis of
performance
> >properties at multiple resonances and over 5 octaves of frequency
spectrum.
> >It also includes the SLA modifications that allow determination of the
> >frequency at which fractal and other bent wire loops can be considered
> >electrically small.
> >
> >> The 'mutual agreement' will have to be played out in the journals and
> >other
> >> info sources though. After all, if you have concerns, others who aren't
up
> >to
> >> speed may also. Fractal antennas are the emerging major direction in
> >antennas
> >> and one has to expect some dissent. That's how science works.
> >>
> >> I asked; lunch is Dr. Cohen's suggestion; said he'd be delighted to
have
> >you
> >> join us. Suggests somewhere in southern NH easily accessible to Rt 93.
If
> >you
> >> can come in towards Boston instead then we can also get Dr. Hohlfeld to
> >join.
> >> Best time after 24 April.
> >>
> >> He also says you are welcome to join the fractal antenna reflector at
any
> >time.
> >>
> >> Take Care,
> >>
> >> Phil
> >> de N1ZKT
> >
> >Seriously, thank you for the kind post and offers. I will consider
> >seriously and get back to you. Take care as well.
> >
> >Steve
>
> Forget it, you had your chance. I don't see how anyone can keep up with
your
> seemingly bipolar approach in dealing with people.

>
> Go full steam ahead with your plans.
>
> 73
> Phil
> de N1ZKT

You lost me on this one. I guess the offer for lunch is gone.

771. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 13:19:20 UTC
From: k1bqt@aol.com
Message-ID: <20010411091920.17046.00000146@ng-fm1.aol.com>
Source record: 166070

Hi Roy--

> But surely there can't be TWO people like this at Fractenna. Can there?<

Phil now posts that "Chip said this" and "Chip told me that..." (as the line steadily narrows)! If Chip pays for, authorizes, encourages, and apparently dictates what appears on his account, he's surely not inoculated against responsibility for this current outbreak of spew. I can't imagine any thin disclaimer about "Dr. Cohen does not communicate via USENET" will fly with those who may have encouraged Chip to clam up!

Rick K1BQT

772. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 13:22:53 UTC
From: richardharrison@webtv.net
Message-ID: <27145-3AD45AAD-13@storefull-116.iap.bryant.webtv.net>
Source record: 166075

Peter, K1PO wrote:
"Anyone remember "mu-metal" ?. ---Will a mu-metal "shield" keep out the magnetic field and let in the electric field?"

Mu-metal is one of a class of conducting high permeability alloys which shield the electric field, too.

In the 1955 edition of "Electronic and Radio Engineering" Terman, speaking of high permeability alloys says:
"The addition of molybdnenum to them increases their resistivity and hence reduces eddy-current loss, without significant sacrifice in low hysteresis loss or in the permeability characteristics. The resulting molybdenum permalloy is accordingly particularly well suited for use at relatively high frequencies."

On page 38 Terman says:
"Magnetic shields of high-permeability material are also more effective at radio frequencies than are copper or aluminum shields. At these higher frequencies they act as conducting shields, but because of their high permeability have less skin depth.

Best regards, Richard Harrison, KB5WZI

773. Re: Computer Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 13:24:56 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3ad45b1d$0$42877$1dc6e903@news.corecomm.net>
Source record: 166071

Go to "Start"/"Control Panel"/"Network"/ select "Primary Network Logon"
for "Windows Logon". Select "OK" and close. Upon Reboot you will not
have to login anymore.

David Nagel, WD9BDZ

J Titcomb wrote:
>
> Aloha Guys (and Gals)
>
> There's too many newsgroups out there to find the exact one to answer this
> one particular question, which just happens to be about computers.
>
> So I'm going to rely on my fellow hams, who are also experts in many other
> fields, especially you guys on the amateur antenna newsgroup. Enough
> stroking? Here's the question:
>
> How can I get rid of the Microsoft Networking logon prompt that pops up
> every time Windows starts? I know all you have to do is click Cancel, or
> ESC, to continue loading Windows, but why do I have to keep doing this every
> single time? Is there a way to get rid of the prompt altogether?
>
> I already did a search on my browser engine and also on the microsoft.com
> site, but couldn't seem to find the answer.
>
> Thanks for any help and 73s
>
> Jim Titcomb
> KH6IX

774. Re: Computer Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 13:26:00 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3ad45b5b$0$42877$1dc6e903@news.corecomm.net>
Source record: 166072

This message applied to an installation not reboot..
Dave Nagel

Zoran Brlecic wrote:
>
> J Titcomb wrote:
>
> > How can I get rid of the Microsoft Networking logon prompt that pops up
> > every time Windows starts? I know all you have to do is click Cancel, or
> > ESC, to continue loading Windows, but why do I have to keep doing this every
> > single time? Is there a way to get rid of the prompt altogether?
>
> I think it's fairly simple: if you enter your User Name, but you do not enter
> the Password, the system will never prompt you again. So, if you've been
> escaping it ever since the install, make up a user name, skip the password and
> click OK.
>
> 73 .... Zoran WA7AA
>
> --
> Support freedom of speech, or I'll kill you!

775. Re: Trap theory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 13:34:34 UTC
From: John Passaneau <jxp16@psu.edu>
Message-ID: <9b1mh3$gb4@r02n01.cac.psu.edu>
Source record: 166074

Hi Stan:

The "shield" forms a capacitor with part of the element tube that sticks into the trap. Most of the beams I've looked at use some variation of this method.
Mosley takes it one step further and puts two coils inside the "shield" and it forms the cap for both traps.

--
John Passaneau, W3JXP
Physics Dept. Electronics Shop
Penn State University
104 Davey Lab, University Park , Pa. 16802
814.863.4297, jxp16@psu.edu

<stan.holmes@eskom.co.za> wrote in message
news:3AD423C6.3D911703@eskom.co.za...
> Hi
> Can anyone explain the theory behind the Hy-gain trap construction.
> Does the shield form part of the capacitance. Normally the capacitor is
> connected in parallel with the coil, the shield is only connected on the
> one side.
>
> Thanks
> Stan
>
>
>

776. Re: Stealth #26 ant wire?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 13:35:36 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <l13UOkpihzHb0FCZY69eBLSWwT+m@4ax.com>
Source record: 166073

David Snyder Hale <david@isi9.mtwilson.edu> wrote:

>Does anyone know of a good source for this so-called "stealth"
>antenna wire? This stuff is typically 19 strands of Cu clad
>steel, insulated, with overall size = #26 AWG. It is very
>lightweight (< 1lb / 1000').
>
>DavisRF and The Wireman both do not have it.
>
>Thanks,

Try http://radioworks.com/ and look under "antenna wire." They have it.

Bob
k5qwg

777. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 14:03:03 UTC
From: k3bu@aol.com
Message-ID: <20010411100303.01712.00002817@ng-fo1.aol.com>
Source record: 166076

>It appears that the lunch invitation, valid for less than ten hours, was
>extended with the same sincerety and credibility as the "$1000 Fractal
>Challenge" and all the lawsuit threats and deadlines. If "Phil" isn't
>really Chip, he's certainly learned at the foot of the master. But
>surely there can't be TWO people like this at Fractenna. Can there?

Amazing that people still don't get it. It is one and same ID1OT with different
names/personalities, craving for attention, lacking logic and decency, giving
hams and PhDees bad name.
Watchout for patent claiming all the trees being fractal antennas and anybody
who has a tree has to pay royalties to FreakenFrectalAnalSystems.
::--)))))))))))))))
Chirp, chirp
Time to change the subject line to GARBAGE?

Happy trolling!

Bada BYng

778. GARBAGE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 14:07:42 UTC
From: k3bu@aol.com
Message-ID: <20010411100742.01712.00002820@ng-fo1.aol.com>
Source record: 166077

Here it is new subject line, please continue :-)

779. Re: BELMONT GARBAGE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 14:17:23 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AD46773.451D0E1C@hiwaay.net>
Source record: 166078

Yuri- try this one

Yuri Blanarovich wrote:
>
> Here it is new subject line, please continue :-)

780. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 14:26:54 UTC
From: richardharrison@webtv.net
Message-ID: <27146-3AD469AE-7@storefull-116.iap.bryant.webtv.net>
Source record: 166080

Reg wrote:
"Actually the (international) basic group of 12 audio channels in the band 60 to 108 KHz was chosen before coax was used on long-distance trunk routes. It was chosen as the optimum band for multiple-twin balanced-pair cables and it was equalisation over the frequency band which determined the actual frequencies."

Thank you for that history, Reg. I only had a vague idea about the origins of the basic group frequency selections

I was aware the multiple-twin balanced-pair cables. This was actually carried over to the first microwave radio sets over here. The same frequency division multiplex already used on wired circuits was applied to the radios. The mux had been around for a long time, so they made the radios fit.

On radios, we didn`t waste any baseband. We used a "low-group" and a curtailled "low-low-group" to use it all. Talk about noise! These low-frequency channels had plenty even though harmonics generated by non-linearity in various pieces of gear all fell in the higher channels. It`s harmonics of the power frequencies that get you in the low channels. These channels end up being unfit for customers but work for supervision and control. After a hundred hops or so, noise can accumulate, if you are not very careful.

I`m amazed that anyone could measure 160 dB isolation. Maybe by speculation that 80 dB + 80 dB equals 160 dB isolation. Hi. Hi.

Best regards, Richard Harrison, KB5WZI

781. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 14:41:13 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <d2_A6.17928$RF1.1378229@bgtnsc06-news.ops.worldnet.att.net>
Source record: 166079

"Fractenna" <fractenna@aol.com> wrote in message
news:20010410215631.08253.00003027@ng-mn1.aol.com...
> >
> >
> >"Fractenna" <fractenna@aol.com> wrote in message
> >news:20010410163859.25689.00003390@ng-cs1.aol.com...
> >> Hey--
> >>
> >> Here's what I found on the FAQ of
> >>
> >> http://www.fractenna.com
> >>
> >> regarding the 'mistake' of understanding fractal loops--
> >>
> >> "Q: If a FEA shrinks an antenna, how can it still work well?
> >>
> >> A: It is well known that physical limitations impose severe field
strength
> >> restrictions on electrically small antennas. And, when FEA are chosen
to
> >be
> >> very small (compared to a wavelength) they perform poorly--like all
such
> >small
> >> antennas. However, at the top side of the electrically small regime
(say
> >shrunk
> >> 2-4 times) FEA perform extremely efficiently and practically exceed
other
> >> methods of antenna loading, including top loading. "
> >>
> >> Sounds like we guys at Fractal know what we're talkin' about;-)
> >>
> >
> >Have you compared performance at resonant frequencies? Did you notice
that
> >the resonant resistance, bandwidth, and efficiency decrease? FEA perform
> >exactly the same as other methods of bent wire loading. It might also
help
> >to compare some FEA to some non-fractal bent wire antennas of the same
> >volume and same total wire length.
> >
> >> 73
> >> Phil

> >> de N1ZKT
> >
>
> Dr. Cohen and Dr. Hohlfeld gave an open colloquium at the NSA in 1999 in which
> they showed the field strength and other tradeoffs.For these loops.That was the
> first public description. The fact that they have not published it must mean
> something don't you think?
>

I don't consider a presentation at NSA a "public description". What does it mean Phil? Either it was published as part of the 1995 - 1996 articles, it was owned by NSA and was precluded from being published, or it was not worth publishing. I really don't know what it means.

> You have a very custom definition of fractal so when you use the word, someone
> who actually knows something about them--such as Dr. Hohlfeld, or Dr. Cohen,
> get totally confused. Virtually all forms of bent wires fall into the category
> of fractal. A meander is a related geometry. Look at any of the fractal books.
>

Ah yes, the all bent wire antennas are fractals approach. Even if I agreed with this, it changes nothing. Geometry, self-similar fractal or otherwise, in and of itself is not the significant parameter in determining the antenna performance as it relates to the resonance compression and multi-band behavior exhibited by fractal antennas. The two significant variables in determining antenna performance are the wire length and the overall size. Geometry is secondary. Antennas of virtually any geometry with the same total overall size and total wire length will exhibit similar resonance compression and multi-band behavior.

> The issue of wire length was shown to be a non issue over 25 years ago.
> Optimized wire antennas were demonstrated to be what are now called 'fractal'.
> They have lotsa extra wire. Only in the extreme of very electrically small is
> it an issue. So I learned from Dr. C.
>

To state that wire length is a non-issue is technically absurd.

Fractal antennas do have "lotsa extra wire". At any given resonant frequency, a fractal antenna will always have more total wire length than a similarly resonant Euclidean antenna. This is one of the well known fundamental trade-offs in antenna design.

When you want to lower the volume that an antenna occupies and yet maintain the same resonant frequency, you first compress the wire into a smaller volume, through some bent wire geometry. However, as you do this while maintaining the same total wire length, the resonant frequency increases. To maintain the original resonant frequency you now have to add wire length to the antenna. Geometry compression (volume reduction) and increasing wire length offset one another in determining the resonant frequency. Volume compression of a fixed wire length antenna increases resonant frequency. Adding wire to any fixed volume antenna decreases resonant frequency. The two most significant variables in determining the resonant frequency are the volume (size) and the wire length. The geometry is secondary to both of these variables. For a given overall size, the wire length is more significant than geometry (fractal or otherwise) in determining resonant frequency and the resonance compression behavior.

If wire length was not an issue, then the fractal antenna would perform as well as the similarly resonant Euclidean antenna. It does not. The trade-offs are lowering of resonant resistance, lowering of bandwidth and lowering of efficiency.

> Dr. Cohen explained to me that wire length is a non-parameter. No one ever
> designs practical antennas based on the amount of wire they have. They have a
> form factor and take it from there to get a figure of merit for desired
> operating characteristics.

This is news to me. Wire length is a non-parameter? No one ever designs practical antennas based on the amount of wire they have? Surely Dr. C. can't be serious.

I'll tell you what, since wire length is a non-issue and a non-parameter in antenna design here's the new Fractal Challenge. You have 10 m of #12 wire. Have Dr. C. design a fractal loop antenna resonant at 2 MHz.

>Dr. Cohen also informed me that the amount of ohmic
> loss cannot naively be viewed as proportional to the length. Depends where the
> current is. Or isn't. Or is small.
>
> If you made the above statement, or expect to publish it, it is in
> contradiction to already published works which you apparently have not tried to
> seek out.

There are a number of factors determining the ohmic losses in an antenna. Ohmic losses are primarily a function of wire length, volume compression and operating frequency. Geometry is again secondary.

The only point that I intend to make is that for a given resonant frequency, fractal antennas are less efficient than Euclidean antennas. As the fractal iteration increases, the efficiency decreases. This is primarily a function of the increase in wire length. Note that as the fractal iteration increases, the total wire length increases.

>At least I am paraphrasing Dr. Cohen's comment to me. He is not
> making comments to you or anyone else on this USENET forum.
>

He does however, seem to be making a significant number of comments to me
and to USENET through you.

> So it looks like you are turning down the lunch munch. Not unexpected. You
> preach 'science' but your focus is singly to --attempt--to discredit Dr.
C. At
> least it seems that way.
>

I did not turn down lunch. It might actually be enjoyable.

I am not trying to discredit him, I simply disagree with him. You and he
state your opinions and state that I am wrong. You even stated that "I was
out of it".

We can continue to disagree on USENET. Let's not turn it into a session of
personal insults.

> So go ahead with your papers. Kuhn will bear out the paradigm and discard
the
> straight and narrow view based on 'what was simple to do mathematically'.
>
> 73
> Phil
> de N1ZKT

Steve VE9SRB

782. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 15:38:31 UTC
From: richardharrison@webtv.net
Message-ID: <1044-3AD47A77-38@storefull-112.iap.bryant.webtv.net>
Source record: 166081

Peter, K1PO wrote:
"Which makes a better "shield"... A sheet of cold rolled steel, a copper screen, or... a sheet of aluminum of the same thickness."

It depends on frequency. Almost any conductor is an effective electrostatic shield if it completely encloses the items to be shielded and is properly grounded. The rub is in magnetic shielding. At low frequencies, due to a small skin effect, very thick copper or aluminum is needed for magnetic shielding. The permeability of steel makes it better. At VHF, the solid sheet of aluminum is better than copper screen. In the HF range, copper screen is usually good enough.

50 years ago many professional magazines had ads for screened rooms or enclosures, pre-fab and portable, with their "specifications" of capabilities. These were copper screen construction.

I`ve built similar screeing into shortwave broadcasting plant rooms. We weren`t looking for specifications, only "good enough". We wanted STL reception rooms that kept the 100KW broadcast signals next door out of the STL receivers.

We screened the rooms containing monitoring and recording equipment for the same reason.

Ditto some lab rooms. We needed our instruments to work while we were on the air which was almost around the clock.

WE covered all room surfaces with copper screen wire. We soldered all the seams and judiciously grounded the enclosures very well.
All electrical service was, of course, r-f filtered very well, and grounded at the common ground connection. Coax for the STL`s was, of course, grounded to the screen at the ground connection.

When finished and tested, the surfaces were tiled and plastered as appropriate. Upon bringing a SP-600 into an enclosure the high powered signals all around were hard to find. That was good enough.

Best regards, Richard Harrison, KB5WZI

783. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 16:19:37 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <tu%A6.4066$%o2.296278@news1.sttls1.wa.home.com>
Source record: 166082

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9avel4$l46$1@plutonium.btinternet.com...
> A useful way of analysing/understanding how energy can leak from a
> long coaxial line is to begin at DC and work your way up to HF via
> audio frequencies. Put some amps and volts into the line.
> Remember copper has an impedance in both longitudinal and radial
> diections. Spend some time at DC and AF - it is not so simple as
> it may at first seem.
>
> You can stop when the thickness of the outer conductor is several
> skin depths. Attenuation in the radial direction is 1 neper =
> 8.686 dB per skin depth.
>
> It is also useful to consider how cross-talk occurs (yes it does)
> between two coaxial lines running in parallel with each other for
> any appreciable distance. (Cable-to-cable crosstalk is important.
> It's the ultimate limiting factor in the performance of underground
> communications systems.)
> ---
> Reg.
>
Hi Reg,

You have me intrigued. I would expect crosstalk if the resistance losses,
or the impedance, were unequal on the shield and on the center conductor.
This would occur because the electrical voltage center would not be in the
center of
the load, but would be offset by the amount of resistive unbalance around
the length of the line. If your impedance per unit length was not the same
on the braid and on the center conductor, then your circuit would rapidly
degenerate into a circuit which had a different voltage drop from end to end
on the inside conductor compared to the outside conductor. The result is a
common mode current which of course would radiate.

I don't think a coaxial cable can be designed so that the dynamic
impedance (Impedance changes with frequency due to skin effect
and other effects) can be the same for both the center and shield when
considered
over the length of the cable. Unless that could be done, I would expect
that crosstalk would be impossible to prevent.

This would all be consistent with my earlier posting concerning fields
which extend past the shield boundary, and with the recognition that cause
precedes effect.

On the other hand, if wire pairs inside a conductive shield were used, then very good
balancing should be possible and crosstalk reduced. Perfect shielding should be
impossible because of the time and spacing factors, but it could be made to be very
effective.

Enough of my theory, what is your real world experience?

73, Roger, W7WKB

PS. A link to a site covering basic telephone cable is
http://www.nationalwire.com/cdg/basicintro.html

784. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 16:41:00 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <b329dtonlmvrke7hj03d63qclbnn687uqd@4ax.com>
Source record: 166083

On Wed, 11 Apr 2001 09:26:54 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>
>I`m amazed that anyone could measure 160 dB isolation. Maybe by
>speculation that 80 dB + 80 dB equals 160 dB isolation. Hi. Hi.
>
>Best regards, Richard Harrison, KB5WZI
>

Hi Richard,

If you transmit 1KW and I receive you at S9, there's 133dB of
isolation right there. 160dB isn't that far away. ;-)

73's
Richard Clark, KB7QHC

785. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 16:46:04 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ad47ca0.32185423@news.aepnet.com>
Source record: 166084

On Wed, 11 Apr 2001 07:28:20 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote:

I am most familiar with r-f shielded rooms so most of the following is concerned with them. However, the medical field uses a lot of magnetically-shielded rooms today for MRI, et cetera.

Today, most modular shielded rooms are constructed of galvanized sheet steel or copper panels bonded to plywood or particle board panels. There are single-shield rooms, clad on only one side, double-shielded rooms, clad on both sides and "shield-within-a-shield" where the two clad sides connect to each other only at the single ground point.

Various manufacturers have different clamping methods for assembling the panels and different door gasketing methods. The door penetration is usually the weak point in shielding effectiveness.

There are also fully welded rooms and "screen rooms" that use copper or bronze screen wire. The latter are not as effective as solid walls but are see-thru and hear-thru and don't need plumbed in ventilation.

[snip]
>
>Anyone know the names of contractors who build screen rooms? Do they have
>WWW URL's? How does one "test" and "certify" a screen room? Who is
>qualified to certify the quality of a screen room?

Try Lindgren at:
http://www.lindgrenrf.com

or EMC Test Systems at:
http://www.emctest.com

Although I'm retired now, when I was still working I had a "private" lab that was inside a room very similar to the photo (except I had decorative wall paneling and an accoustic ceiling) at:
http://www.emctest.com/emchtm/7181/Series81.cfm

As an example of how little things matter, first take a look at:
http://www.emctest.com/emchtm/7181/DoorsRCMconcept.cfm

This is the door sealing method used in the room I specified. We imposed a 120 dB shielding effectiveness at X-Band. The way this was certified was to set up two horn antennas, one inside and one outside the room. The outside horn was excited with a stabilized Gunn oscillator and the inside horn fed a calibrated spectrum analyzer through a GaAs FET LNA.

Calibration consisted of opening the door and getting a reference level on the analyzer and then closing the door without moving anything and measuring the level of the received signal. 120 dB was pushing the resolution of the system, but we had overspecified anyway so it was entirely adequate.

The fun part was when the technician said, "Watch this" as he removed a dollar bill from his wallet and placed it across the fingerstock gap and then closed the door on it. We lost about 40 dB of isolation.

Wes Stewart N7WS

>
>Thoughts, comments?
>
>-Peter K1PO
>

786. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 16:57:42 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <a20B6.18005$RF1.1384002@bgtnsc06-news.ops.worldnet.att.net>
Source record: 166085

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AD3299C.5300D959@IEEE.org...
> VE9SRB wrote:
> > My position on your issue is this: In some cases, there will be fractal
> > antennas that perform better (needs definition) than non-fractal
antennas.
> > In some cases, there will be non-fractal antennas that perform better
than
> > fractal antennas. The real point being is that there is nothing special
> > about either fractal or non-fractal antennas.
>
> So you tend to agree with me rather than with the people who claim any
> fractal antenna is a snake oil sham?
>

Hi Cecil:

I don't think fractal antennas, in and of themselves, are shams at all. The issue in question is whether the lowering of resonant frequency, the resonance compression behavior and the multi-band performance of fractal antennas can be solely attributed to the self-similar fractal geometry. Once someone understands the relationship between decreasing antenna volume and increasing total wire length in maintaining an antenna's resonant frequency, they will recognize that the fractal antenna geometry is a secondary factor in determining antenna performance. The fractal geometry is relatively insignificant.

Removing the volume and wire length variables, I am yet to be convinced that a fractal geometry will provide optimum performance over all other geometries (given the same volume and wire length). For a given fractal geometry, a non-fractal geometry can be found that provides better performance. I am not certain that the reverse of this is true. I think self-similar fractals are just one subset of an infinite number of geometries. I don't think that because it can be viewed as a subset with unique mathematical or geometric properties that it must therefore provide optimum performance as an antenna.

> > It is absolutely certain that the performance attributes assigned to
fractal
> > antennas, lower resonant frequency, resonance compression behavior etc,
are
> > not a result of the fractal geometry. They are more a result of the
> > increase in wire length.
>
> Knowing what I know about fractals, it seems to me the design that will

keep
> sections of the wire as far apart as possible while allowing the maximum
> amount of wire in the minimum amount of space would be a fractal.

This may or may not be true. Either way, it provides no evidence as to whether or not a fractal design provides optimum performance as an antenna.

> After all,
> Mother Nature, in billions of years of trying, has not come up with a design
> superior to fractals for putting the maximum amount of leaves in the minimum
> amount of space.
> --

Consider a sphere. It too is a geometry widely found in nature - from stars to sub-atomic particles. I believe that a sphere is a very efficient geometry in terms of the relationship between enclosed volume and surface area. However, I would not conclude from this that spherical antennas provide optimum performance.

Steve VE9SRB

787. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 17:13:04 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9b23b0$ke5$0@208.207.71.155>
Source record: 166086

VE9SRB wrote:
>
> What I find most interesting is that not one single person (that Phil speaks
> of), except me apparently, even bothered to compare a fratcal antenna
> against another bent wire antenna of the same size and wire length.

I can tell you right away why I didn't. Charming Chip was a bit too
reluctant to decscribe his jewel well enough so that I could have any
confidence whatever that I was actually building what he was so pleased
with himself for not describing in any detail whatever. I tired quickly
of his peevish references to obscure university documantary 'evidence'
and soon realized where he was- and was not- coming from. And I decided
not to guess the demensions from his photo showing him holding one.
I know you had a much easier time of researching it than I could have.
But I remain as certain that you didn't find the demensions in his
writings.

788. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 17:21:44 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9b23r8$ke5$1@208.207.71.155>
Source record: 166087

Rick Littlefield wrote:
>
> It is not known who actually responds from the Fractenna site--making it fair
> game for all of us to speculate with impunity. I don't wish to beat a dead
> horse, but read the rhetoric, smell the roses, and draw your own conclusions!
>
> Rick K1BQT

Smell the WHAT?

789. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 17:25:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD4938C.43B74F54@IEEE.org>
Source record: 166089

VE9SRB wrote:
> The fractal geometry is relatively insignificant.

Or to say it another way, fractal folding seems to be as good a way
as any to fold an antenna?

> For a given fractal
> geometry, a non-fractal geometry can be found that provides better
> performance. I am not certain that the reverse of this is true.

If it is not true, there should be a scientific explaination for it
not being true. For instance, the physical location of the lines of
maximum current for best gain might preclude a fractal design.

> Consider a sphere. It too is a geometry widely found in nature - from stars
> to sub-atomic particles. I believe that a sphere is a very efficient
> geometry in terms of the relationship between enclosed volume and surface
> area. However, I would not conclude from this that spherical antennas
> provide optimum performance.

However, a circle is the most effective loop antenna. In any case, IMO, it
is too early to dismiss fractal antennas as useless.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

790. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 17:26:31 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9b2447$ke5$2@208.207.71.155>
Source record: 166088

Bill Aycock wrote:

> Bill-W4BSG
> (now that I'm 74, is it OK to use "Septuagenerian" as a phonetic in my
> call?)

Hey, that's neat - Dubya Four Bloomin' Septuagenarian Genius - I like
it!

Dick

791. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 17:33:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9b24di$t6s$1@slb3.atl.mindspring.net>
Source record: 166090

Wes:

Thanks for that feedback, great information.

-Peter K1PO

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
news:3ad47ca0.32185423@news.aepnet.com...
> On Wed, 11 Apr 2001 07:28:20 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com>
> wrote:
>
> I am most familiar with r-f shielded rooms so most of the following is
concerned
> with them. However, the medical field uses a lot of magnetically-shielded
rooms
> today for MRI, et cetera.
>
> Today, most modular shielded rooms are constructed of galvanized sheet
steel or
> copper panels bonded to plywood or particle board panels. There are
> single-shield rooms, clad on only one side, double-shielded rooms, clad on
both
> sides and "shield-within-a-shield" where the two clad sides connect to
each
> other only at the single ground point.
>
> Various manufacturers have different clamping methods for assembling the
panels
> and different door gasketing methods. The door penetration is usually the
weak
> point in shielding effectiveness.
>
> There are also fully welded rooms and "screen rooms" that use copper or
bronze
> screen wire. The latter are not as effective as solid walls but are
see-thru
> and hear-thru and don't need plumbed in ventilation.
>
> [snip]
> >
> >Anyone know the names of contractors who build screen rooms? Do they
have
> >WWW URL's? How does one "test" and "certify" a screen room? Who is
> >qualified to certify the quality of a screen room?

>
> Try Lindgren at:
> http://www.lindgrenrf.com
>
> or EMC Test Systems at:
> http://www.emctest.com
>
> Although I'm retired now, when I was still working I had a "private" lab
that
> was inside a room very similar to the photo (except I had decorative wall
> paneling and an accoustic ceiling) at:
> http://www.emctest.com/emchtm/7181/Series81.cfm
>
> As an example of how little things matter, first take a look at:
> http://www.emctest.com/emchtm/7181/DoorsRCMconcept.cfm
>
> This is the door sealing method used in the room I specified. We imposed
a 120
> dB shielding effectiveness at X-Band. The way this was certified was to
set up
> two horn antennas, one inside and one outside the room. The outside horn
was
> excited with a stabilized Gunn oscillator and the inside horn fed a
calibrated
> spectrum analyzer through a GaAs FET LNA.
>
> Calibration consisted of opening the door and getting a reference level on
the
> analyzer and then closing the door without moving anything and measuring
the
> level of the received signal. 120 dB was pushing the resolution of the
system,
> but we had overspecified anyway so it was entirely adequate.
>
> The fun part was when the technician said, "Watch this" as he removed a
dollar
> bill from his wallet and placed it across the fingerstock gap and then
closed
> the door on it. We lost about 40 dB of isolation.
>
> Wes Stewart N7WS
>
> >
> >Thoughts, comments?
> >
> >-Peter K1PO
> >
>
>

792. Re: Stealth #26 ant wire?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 17:36:33 UTC
From: David Snyder Hale <david@isi9.mtwilson.edu>
Message-ID: <9b24n1$4bf$1@agate.berkeley.edu>
Source record: 166092

Thanks, both, for your replies.

It seems that EVERYONE is out of it -- manufacturer delays.

If anyone has some of this onhand they'd be willing to sell
me *now*, I'm ready to buy. I'd be interested in buying
200' but would settle for whatever you've got.

73,
--
Dave * N3WTK (DM04xf) * http://isi.mtwilson.edu * n3wtk@arrl.net

793. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 17:36:57 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD49639.83B0D00E@eznec.com>
Source record: 166091

Richard Clark wrote:
>
> On Wed, 11 Apr 2001 09:26:54 -0500 (CDT), richardharrison@webtv.net
> (Richard Harrison) wrote:
>
> >
> >I`m amazed that anyone could measure 160 dB isolation. Maybe by
> >speculation that 80 dB + 80 dB equals 160 dB isolation. Hi. Hi.
> >
> >Best regards, Richard Harrison, KB5WZI
> >
>
> Hi Richard,
>
> If you transmit 1KW and I receive you at S9, there's 133dB of
> isolation right there. 160dB isn't that far away. ;-)
>
> 73's
> Richard Clark, KB7QHC

Yep, the difference between 133 and 160 dB is a mere factor of
1,000,000,000,000,000,000,000,000,000. Just crank up the output power a
dudge and you're there.

Roy Lewallen, W7EL

794. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 17:37:22 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <mD0B6.1672$IS.165597@bgtnsc07-news.ops.worldnet.att.net>
Source record: 166093

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AD4938C.43B74F54@IEEE.org...
> VE9SRB wrote:
> > The fractal geometry is relatively insignificant.
>
> Or to say it another way, fractal folding seems to be as good a way
> as any to fold an antenna?
>

Yes, you could say it that way.

> > For a given fractal
> > geometry, a non-fractal geometry can be found that provides better
> > performance. I am not certain that the reverse of this is true.
>
> If it is not true, there should be a scientific explaination for it
> not being true. For instance, the physical location of the lines of
> maximum current for best gain might preclude a fractal design.
>

This would clearly require some work.

It is safe to say that a resonant fractal antenna will not perform as well
as the resonant Euclidean antenna.

> > Consider a sphere. It too is a geometry widely found in nature - from
stars
> > to sub-atomic particles. I believe that a sphere is a very efficient
> > geometry in terms of the relationship between enclosed volume and
surface
> > area. However, I would not conclude from this that spherical antennas
> > provide optimum performance.
>
> However, a circle is the most effective loop antenna. In any case, IMO, it
> is too early to dismiss fractal antennas as useless.

And a straight line seems to be the most effective monopole antenna. We're
back to Euclidean geometries providing the best performance. I guess we've
gone full "circle". We could have gone full "fractal" but it would have
taken us a bit longer to get here.

Steve

> --
> http://www.mindspring.com/~w6rca
>
>

> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

795. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 17:39:17 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9b24s5$n3j$0@208.207.71.155>
Source record: 166094

VE9SRB wrote:
>
> > >Seriously, thank you for the kind post and offers. I will consider
> > >seriously and get back to you. Take care as well.
> > >
> > >Steve
> >
> > Forget it, you had your chance. I don't see how anyone can keep up with
> your
> > seemingly bipolar approach in dealing with people.
> >
> > Go full steam ahead with your plans.
> >
> > 73
> > Phil
> > de N1ZKT
>
> You lost me on this one. I guess the offer for lunch is gone.

He accused you of being bipolar then immediately proved that HE is.

796. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 17:41:06 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9b24vi$n3j$1@208.207.71.155>
Source record: 166095

Roy Lewallen wrote:
>
> It appears that the lunch invitation, valid for less than ten hours, was
> extended with the same sincerety and credibility as the "$1000 Fractal
> Challenge" and all the lawsuit threats and deadlines. If "Phil" isn't
> really Chip, he's certainly learned at the foot of the master. But
> surely there can't be TWO people like this at Fractenna. Can there?

Not a chance. Even their syntax is the same, only the names change to
protect the uh, innocent.

797. Re: Mosley TA-33 specs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 18:38:55 UTC
From: "Richard L. Dunklee, Jr." <richard.l.dunklee@tc.faa.gov>
Message-ID: <3AD4A4BF.B72289C5@tc.faa.gov>
Source record: 166096

Look at www.mosley.com and you will find the specs there.

Richard L. Dunklee, Jr.
WA2ONM

krishna wrote:

> Hi,
> Can someone give me the following info for a Mosley 3E tribander.
>
> Boom length.
> Length of largest element
> Turn radius
> Wind loading.
>
> I am planning on getting a used one and would like to start looking for
> a rotor and see how it would fit a roof mount tripod. Would have to
> start talking to neighbours and have a feel of their pulse before the
> aluminum shows up :)
>
> thanks
> krish

798. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 18:58:54 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <v1a9dtol8guba4mkt9ql5ihgnnif82aio0@4ax.com>
Source record: 166097

On Wed, 11 Apr 2001 10:36:57 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Richard Clark wrote:
>>
>> On Wed, 11 Apr 2001 09:26:54 -0500 (CDT), richardharrison@webtv.net
>> (Richard Harrison) wrote:
>>
>> >
>> >I`m amazed that anyone could measure 160 dB isolation. Maybe by
>> >speculation that 80 dB + 80 dB equals 160 dB isolation. Hi. Hi.
>> >
>> >Best regards, Richard Harrison, KB5WZI
>> >
>>
>> Hi Richard,
>>
>> If you transmit 1KW and I receive you at S9, there's 133dB of
>> isolation right there. 160dB isn't that far away. ;-)
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Yep, the difference between 133 and 160 dB is a mere factor of
>1,000,000,000,000,000,000,000,000,000. Just crank up the output power a
>dudge and you're there.
>
>Roy Lewallen, W7EL

Hi Roy,

What are you using, fractal math? ;-)

Or is this dBreFractal antenna?

73's
Richard Clark, KB7QHC

799. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 19:02:02 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9b29j3$6id$1@neptunium.btinternet.com>
Source record: 166098

Cec said -
I was amazed at how much RF leaked through the box when it
> was floating VS when the aluminum box was grounded.
==========
Cecil - you shouldn't have been.

No doubt the power supply lead for the uP equipment passed through
a hole in the box. The RF current did not leak through the box
metal - it was through the hole along the supply lead to ground.
The box was a top-hat loading capacitor.

Reg

800. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 19:24:55 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD4AF87.C019054F@mwci.net>
Source record: 166099

Richard Harrison wrote:

> Electric and magnetic fields are not "inseparable".

There is a way to get a better and clearer insight regarding the relationships between electric and magnetic fields at the surfaces of a thin open-circuit conductor such as the braid of a coax.

First of all, the preoccupation with the fact that E=0 in a perfect conductor is causing more trouble, confusion and consternation than it is worth. We should not get ourselves tied up in knots with this true but overblown fact.

If we just focus on what electric charges are doing in a conductor, we can get a clear picture of what is going on from a circuit standpoint. It is these charges that we measure with a voltmeter, that procuce current in L and C components, that heat up resistors, and cause radiation. It is the practical aspect of any circuit that we are interested in. A good way to get fouled up is to keep agonizing about EMF and Maxwell's equations. Let's just accept this as given and move on.

From a circuit standpoint there are four basic rules that help us to understand:

1) An electromagnetic field outside a conductor induces a voltage (density of electric charges) and as a result a current (flow of electric charges) in the conductor.

2) Voltage and current in a conductor create electric and magnetic fields in the empty space beyond the surface of the conductor. Each of these fields can be responsible for electromagnetic fields that travel outward from the conductor.

3) If a conductor has a complete (closed) circuit path, a current flows along that complete path. Voltage ups and downs along that path satisfy Kirchhoff's voltage law for a single-loop circuit.

4) If the conductor does not have a complete path (or from a practical standpoint such a high impedance that the circuit can be common-sense construed as "open") then current flow and voltage variations are confined to the conductor itself. The number of free electrons is essentially constant or, if more are needed they can be brought up from the single ground connection. Current flow in this situation requires a special interpretation. It is not charges traveling a closed path. It is better described as a gathering of charges at each location on the conductor that counterbalances the phase and amplitude of the induced EMF of the input wave at that particular location. This can be construed as a current flow, but it

is "localized" within the open circuit conductor (skin effect is operative). It does not actually "go anywhere". A corresponding voltage pattern is also formed by the same process.

From these four rules we can figure out, at least qualitatively, what is going on at and near the conductor. We don't have to get tied up in knots, agonizing over the nuances of Maxwell's equations.

Let's think of a short length of coax braid that is being used as a Faraday shield. An incoming wave induces a voltage and current on the shield, that are confined to the braid. As the wave oscillates, so too the current and voltage in the braid.

At each point the local free electrons (charges) line up to create a voltage drop (or rise) that is equal and opposite to the E field of the incoming wave. We thus have a voltage on the braid that can be measured with a voltmeter.

Crucial point: For a difference of voltage between the outer and inner surfaces the copper braid is a *marvelous* conductor directly *through* the braid, therefore the voltage that we measure on the inner surface is essentially *instantly* identical to the voltage that we measure on the outer surface. If they were not equal a very large current would flow directly through the braid that would force them to become equal. Moreover, this equality of voltages applies everywhere within the braid, not just at the surfaces. There is *no* skin effect for any path that is perpendicular to the braid. The laws that govern skin effect do not operate in this situation. Skin effect is not involved in this transfer of voltage from outer surface to inner surface.

For this reason, as one participant has correctly said, it is not "necessary" to talk about a current flow over the open edge and down along the inner surface. This cockamany idea has been floating around in Ham Radio circles for a long time and it is time to *get rid of it*. True, skin effect for a current along a surface reduces the current below the surface that is in the same direction as the surface current. But that that does not make copper an "insulator" for a *transverse voltage* between the surfaces.

And because the voltage pattern on the outside surface is identical to that on the inside surface, it follows that the "local" current (as I described above) also resides on the inner surface.

So this is where we stand: The voltage and (local) current distributions on the outside surface were created by the incoming wave. The identical voltage and current distributions on the inner surface will create a wave beyond the inner surface that is *identical* to the incoming wave. This wave (call it electromagnetic induction if you prefer) proceeds to its destination, which in this case is the center wire (or wires). If there are N turns on the center wire, the the braid voltage is multiplied by N on the center wires. This shield and center wire setup is not much more that a conventional RF transformer.

As in any conventional transformer, the secondary can "talk back" to the primary, modifying the voltage and current values, and also the Z0 of the space regions nearby. The impedance levels in the system are affected. And these reflections from the secondary can, and do, produce a wave that is transferred by the outer surface into the space beyond the braid. And "wave" is the correct term at RF.

About eddy currents: In the coax braid Faraday shield, the geometry is such that there are no significant eddy currents that flow in complete paths *within* the braid. That is what we mean by "eddy" currents, just as in the water analogy "eddy (whirpool) currents". In other types of Faraday shield, for example between solenoid coils, the open-circuit wires are needed to prevent these eddy currents. In the case of the solenoid or any situation where eddy currents are a problem, it is credible that the short circuiting of the magnetic field is quite believable and that the wire structure prevents this. In the case of the coax shield, the "short circuiting" does not happen. And that is precisely why the coax braid is, in fact, a true Faraday shield.

About the concept of separation of electric and magnetic fields in a Faraday shield: Within the conducting material itself, E fields and H fields are both zero, so the question of "separation" is irrelevant. They are both demolished. It is what is happening at the surfaces and just beyond the surfaces that matters. And what happens is this: the electromagnetic field that leaves the inner surface of the *true* Faraday shield, regardless of how it is constructed, is *identical* to the electromagnetic field that approaches the outer surface of the Faraday shield. This applies 100% also to wire structure Faraday shields. The "sieve" analogy is simplistic. The same things happen on the wires that happen on the braid.

The answer is that what happens *inside* the copper is irrelevant. What matters is that the incoming wave is exactly reproduced at the other side of the shield.

The purpose of the shield is to stop direct capacitive coupling, referred to as "electrostatic coupling" (either correctly or incorrectly, and frankly I couldn't care less about that). In the case of a local electromagnetic noise source, it may be possible that the shield would reduce the near field of that source. I am not sure about this, but this near field would have energy components parallel to the shield and also energy components perpendicular to the shield, and the latter components might be attenuated (shunted to ground). That might make a difference.

This has been a very long article. I hope it will be interesting.

Bill W0IYH

801. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 19:38:17 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <ima9dt82nmu6a552vocoo38i588ilha3pr@4ax.com>
Source record: 166100

On 11 Apr 2001 17:13:04 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>
>
>VE9SRB wrote:
>>
>> What I find most interesting is that not one single person (that Phil speaks
>> of), except me apparently, even bothered to compare a fratcal antenna
>> against another bent wire antenna of the same size and wire length.
>
>
> I can tell you right away why I didn't. Charming Chip was a bit too
>reluctant to decscribe his jewel well enough so that I could have any
>confidence whatever that I was actually building what he was so pleased
>with himself for not describing in any detail whatever. I tired quickly
>of his peevish references to obscure university documantary 'evidence'
>and soon realized where he was- and was not- coming from. And I decided
>not to guess the demensions from his photo showing him holding one.
> I know you had a much easier time of researching it than I could have.
>But I remain as certain that you didn't find the demensions in his
>writings.

Hi Dick,

Well....

You are right and wrong on the issue of
> for not describing in any detail whatever.
There was at least one detail - I'm sure of it - somewhere.

The research that both I and Steve found easier to perform was simply
placing a sheet of paper against the tube and tracing the design.
This of course led to threats of suit (note I said threats - this
impotent activity equals the auto-erogenations that attend these
designs) when we both found we had arrived at better designs by the
accident of poor transcription.

Genetic Algorithms must be tough to tune for at least one practitioner
to achieve a level of optimization so easily eclipsed at random.
Well, at least herr doktor will have adult supervision on the podium
assisting him at this summer's event. I hope the poor fellow doesn't
have to stumble through BOTH the errors of spelling AND science.
(Will herr doktor be allowed to actually speak? Is this related to
some perceived InterNeTourette's syndrome - possibly?)

You know, if only he could actually serve one paper, it would probably bring a sigh of relief to see something accomplished this year. And once he got that paper served (and out of his system), he could turn to writing something scientific. Maybe - unless success goes to his head and he finds this is his true calling. Who knows, the yearly average may even rise to two papers served (and as luck would have it, it would probably be on one of his own minions - twice). Then again, maybe not - he is very concerned with workplace violence afterall and had to cast false accusations on an innocent Ham before another "incident?" Things must be real dicey at fraudtenna - no wonder herr doktor is the only one allowed to hold the soldering iron. Such is the weight of legitimacy and integrity that so burdens our poor hero (whoops... herr doktor - I was getting carried away there for a moment).

You gotta hand it to Steve, tho'. He's actually got herr doktor defending his - well, now I am at a loss to say just what - I thought there was at least one detail in there. Maybe you are right after-all Dick. ;-)

73's
Richard Clark, KB7QHC

802. OT - phased arrays of TV yagi antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 19:58:12 UTC
From: ato_zee <ato_zee@hotmail.com>
Message-ID: <9b2d0e$oa5$1@news8.svr.pol.co.uk>
Source record: 166101

I'm seeking to link, for greater gain,
for terrestrial digital TV, 2 or 4 yagi-tv-antennas.
How far apart? Just link feeders at centre?
Mount free space lambda over 2 apart, connect with
x'd wires? Does paralleling yagis lower the feed
impedance? Do I need a lambda over 4 matching
section?
I realise that doubling the number doesn't
double the gain. Do I need to get an old
s/h portable TV and tap into the AGC line to make a
signal strength meter and do it empirically?

Any good phased array websites?
Is the ARRL handbook still going strong?

803. Re: 6 to 9 dB Improvement in Coaxial Cable

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 20:15:40 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AD4BB6C.52F0E143@spam.me.not>
Source record: 166102

::grin::

Ok.. I thought as much. Thanks Ed.

-SSB

W1RFI wrote:

> >From: Sideband sideband@spam.me.not
>
> >I didn't know it was possible to cool something below absolute 0, that
> >is to say 0 Kelvin...
>
> >I'd like to learn more about this, Chuck... Is there a published source,
> >or a URL where I could find more information ?
>
> A number of years ago, ARRL published an April article on "gravity-gradient
> modulation." The article described the use of antimatter to modulate a signal.
> The ARRL Lab got about a dozen apparently serious inquiries from hams who
> wanted to know wehre to get the antimatter. :-)
>
> 73,
> Ed Hare, W1RFI

804. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 20:44:10 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AD4C21A.AA64AFE4@toast.net>
Source record: 166103

Roy Lewallen wrote:

> Richard Clark wrote:
> >
> > On Wed, 11 Apr 2001 09:26:54 -0500 (CDT), richardharrison@webtv.net
> > (Richard Harrison) wrote:
> >
> > >
> > >I`m amazed that anyone could measure 160 dB isolation. Maybe by
> > >speculation that 80 dB + 80 dB equals 160 dB isolation. Hi. Hi.
> > >
> > >Best regards, Richard Harrison, KB5WZI
> > >
> >
> > Hi Richard,
> >
> > If you transmit 1KW and I receive you at S9, there's 133dB of
> > isolation right there. 160dB isn't that far away. ;-)
> >
> > 73's
> > Richard Clark, KB7QHC
>
> Yep, the difference between 133 and 160 dB is a mere factor of
> 1,000,000,000,000,000,000,000,000,000. Just crank up the output power a
> dudge and you're there.

Shouldn't that be a difference of 27 db, or a factor of 500?

john

805. Re: OT - phased arrays of TV yagi antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 21:14:19 UTC
From: oldtimeradio@??.net
Message-ID: <3ad4c8b1.31153706@news.vnet.net>
Source record: 166104

On Wed, 11 Apr 2001 20:58:12 +0100, "ato_zee" <ato_zee@hotmail.com>
wrote:

>I'm seeking to link, for greater gain,
>for terrestrial digital TV, 2 or 4 yagi-tv-antennas.
>How far apart? Just link feeders at centre?
>Mount free space lambda over 2 apart, connect with
>x'd wires? Does paralleling yagis lower the feed
>impedance? Do I need a lambda over 4 matching
>section?
>I realise that doubling the number doesn't
>double the gain. Do I need to get an old
>s/h portable TV and tap into the AGC line to make a
>signal strength meter and do it empirically?
>
>Any good phased array websites?
>Is the ARRL handbook still going strong?
>

You will find a lot of information at this web site,,,, hopefully your
answers.
http://www.tacocommunications.com/Stacking.htm

Ed
KMA Antennas

KMA Antennas
VHF - UHF - HF log periodics
http://www.kmaantennas.com

help support qsl.net with a donation
https://proxy.qsl.net/donation

806. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 21:34:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD4CDD5.4AE8FF8E@IEEE.org>
Source record: 166105

Reg Edwards wrote:
>
> Cec said -
> I was amazed at how much RF leaked through the box when it
> > was floating VS when the aluminum box was grounded.
> ==========
> Cecil - you shouldn't have been.

You have to realize, Reg, that it doesn't take much to amaze me.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

807. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 21:57:25 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD4D345.39DB@wt.net>
Source record: 166106

W6RCecilA wrote:

>
> However, a circle is the most effective loop antenna. In any case, IMO, it
> is too early to dismiss fractal antennas as useless.

I don't think to many claim them as useless. But myself, I don't buy
into the idea that there is any magic fractal electromagnetic properties
to that type of form. I consider them just another way of folding a
bunch of wire. No more, no less. MK
--
http://web.wt.net/~nm5k

808. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 22:18:27 UTC
From: richardharrison@webtv.net
Message-ID: <3788-3AD4D833-3@storefull-113.iap.bryant.webtv.net>
Source record: 166110

Bill Sabin wrote:
"There is "no" skin effect for any path which is perpendicular to the braid."

That is a very provocative thought. But, the relevance is limited.

Terman says on page 22 of his 1955 book:
"When the frequency is sufficiently high, substantially all of the current is confined to a region very close to the surface. The current density then falls off with the depth from the surface in accordance with the relation

Current at depth z / current at the surface equals: epsilon raised to the minus z/delta exp.

Here z and delta are in the same units and delta is a quantity called the skin depth that is given by the equation

delta = 5033 on the square root of rho divided by mu times the frequency.
delta = skin depth in cm
rho = resistivity of the conductor in ohms per centimeters cube
f = frequency, Hertz
mu = magnetic permeability of the core material (air = 1) for low flux densities (that is mu is the initial permeability)

For copper at 20 degrees C this reduces to

Skin depth of copper in cm = 6.62 over the square root of the frequency.

I`ll make an observation now.
When a radio wave travels along the ground from its source, in the western hemisphere it doesn`t dive towards China, but is mostly confined to a thin uppercrust of the earth`s surface. The resistivity of copper is usually much smaller than the earth`s crust and Terman has already worked out the skin depth for us. A radio signal traveling along a copper surface only penetrates about 6.62 cm divided by the square root of the frequency in Hz. Very simple to figure with a hand calculator, or your old slide rule.

Best regards, Richard Harrison, KB5WZI

809. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 22:19:56 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD4D88B.3F7A46E@IEEE.org>
Source record: 166107

Mark Keith wrote:
>
> W6RCecilA wrote:
> > However, a circle is the most effective loop antenna. In any case, IMO, it
> > is too early to dismiss fractal antennas as useless.
>
> I don't think too many claim them as useless.

You have obviously not been reading all the postings on the subject.
Many posters rank all fractal antennas right alongside crossed field
antennas, i.e. snake oil scams.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

810. FS: 70' Tower

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 22:32:56 UTC
From: aidehua@aol.com
Message-ID: <20010411183256.21970.00003453@ng-cl1.aol.com>
Source record: 166108

Hygain, crank-up type wit thrust bearin and rotor plate. New, never installed. Available for pick-up only in Long Beach, CA. $1100/OBO. E-mail if interested.

73 de NI6S

811. Mystery behind fractal personalities revealed?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 22:34:32 UTC
From: k3bu@aol.com
Message-ID: <20010411183432.14321.00001768@ng-cg1.aol.com>
Source record: 166109

as reported at
http://news.bbc.co.uk/hi/english/sci/tech/newsid_1272000/1272655.stm

By the BBC's Andrew Craig

The Scottish-based company that created Dolly the sheep has now produced a litter of five transgenic cloned pigs.

PPL Therapeutics says the work is another step towards producing pigs whose organs could be transplanted into humans.

The company, which worked with the Roslin Institute on Dolly, the first cloned adult mammal, says all five piglets are healthy.

They are not the first cloned pigs - a previous litter was born last year . But they are the first pig clones to have a foreign gene added to the cells from which they were developed.

The success, so far, of this procedure is encouraging the researchers to believe they may eventually be able to engineer pigs whose organs will not be rejected if they are transplanted into human patients.

Ethical difficulties

Pigs are among the species favoured for such procedures. Their organs are a similar size to those of people, they are quite easy to breed, and their use in scientific and medical procedures does not produce the outcry that is aroused by experiments on our closest relatives, apes and monkeys.

Pig heart valves are already used to replace faulty human ones, although rejection can be a problem. But any cross-species organ transplants that might one day be possible are some way into the future, with technical and ethical difficulties to be overcome.

The few cloned animals that have been produced so far tend to be unusually big, to age prematurely, and to have other defects in their development.

There is also concern that transplanting animal organs into humans could introduce new viruses that might be harmless in the original species but dangerous to us.

812. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 22:49:43 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AD4DF87.41DC88C2@bwcc.com>
Source record: 166111

Richard Harrison wrote:
> Bill Sabin wrote:
> "There is "no" skin effect for any path which is perpendicular to the
> braid."
>
> That is a very provocative thought. But, the relevance is limited.
More importantly, you are talking principally about current.
William said: "... equality of voltages applies everywhere within the braid ..."

813. Re: skin effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 23:04:53 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AD4E315.6E69D9A@bwcc.com>
Source record: 166112

"William E. Sabin" wrote:
> And because the voltage pattern on the outside surface is identical to that
> on the inside surface, it follows that the "local" current (as I described
> above) also resides on the inner surface.
Please explain why current must follow voltage.

The air pressure in my building follows the air pressure outside.
But not much wind is blowing in here every when the winds outside reach 50 mph.
The walls and roof provide a nice skin.

814. Re: Stop by - www.ab7sl.com -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 23:24:05 UTC
From: la8ak@online.no
Message-ID: <3ad4e768.633589480@news.online.no>
Source record: 166113
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

On Tue, 10 Apr 2001 15:57:03 GMT, "Charles Johnston"
<ctj92@earthlink.net> wrote:

>Lots of STUFF to do at www.ab7sl.com such as...
>
and what about MPD-5C antenna on the WARC-bands?

-JM

815. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-11 23:39:02 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD4EB16.13554E9@mwci.net>
Source record: 166114

Richard Harrison wrote:

> Bill Sabin wrote:
> "There is "no" skin effect for any path which is perpendicular to the
> braid."
>
> That is a very provocative thought. But, the relevance is limited.

Don't you understand what I mean by the words, specifically repeated many
times

"path perpendicular to the surface of the braid"?

Good heavens, Richard.

Bill WoIYH

816. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 00:07:45 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9b2rkh$2qs$0@208.207.71.155>
Source record: 166115

W6RCecilA wrote:
>
In any case, IMO, it
> is too early to dismiss fractal antennas as useless.

I don't think anyone has said they are 'useless'. They just aren't more efficient than other antennas, and sometimes they're clearly less, contrary to the bloated projections of some proponants. As I see it, that's the sham. They've been promoted as the find of the century. 'Taint so.

817. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 00:09:03 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9b2rmv$2qs$1@208.207.71.155>
Source record: 166116

W6RCecilA wrote:
>
> Mark Keith wrote:
> >
> > W6RCecilA wrote:
> > > However, a circle is the most effective loop antenna. In any case, IMO, it
> > > is too early to dismiss fractal antennas as useless.
> >
> > I don't think too many claim them as useless.
>
> You have obviously not been reading all the postings on the subject.
> Many posters rank all fractal antennas right alongside crossed field
> antennas, i.e. snake oil scams.

You have been misreading. It isn't the antennas, it's the claims made
for them.

818. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 00:11:52 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AD4F2C8.FDCF1C6E@hiwaay.net>
Source record: 166117

Cec-
I really think the reaction to Chip, et al, often sounds like it is a rejection of Fractal antennas,when it is not. Most of us know that there are quite a few reputable explorers of Fractals, as applied to antennas. Some of them seem to understand the value of them. There are probably a few who have distorted views of the field, just like Chip does. We, on this NG, just do not see all the field. (just the bad apple)

Chip is an easy guy to dislike, and seems to really enjoy it. It is unfortunate that he is giving the field a bad name.(He really is, you know) If I were some of the more rputable investigators , I would be posting to Dr. Ebersole, and asking him to "curb his dog". His personality is awful, if his actions on the lists he has been banned from, and here, are any thing to go by. His Academic ability is (to me) suspect, because he seems to have failed to make much of a position for himself in his current school, or in his degree field. He seems to be desparate to find someone he can beat. (or Best, as the case may be)

My personal opinion is that fractals (in the mathematical usage) offer an easy, systematic, way to describe symetrical figures with given fixed parameters. (Like length, bounding dimensional limits, etc). I do NOT think that there is any inherent advantage, electically, to such geometry. I could be wrong. The extensive explorations published by Richard show some possibilities, but "hard copy" experiments need to be done to affirm their reality.

I have tried a few EZNEC trials. I took FRactal shapes similar to Chips, and compared the properties to systematic distortions that removed the "fractalness". I could always move up in gain, or move the resistance in a desired direction. Going 3-D, (instead of planar) looks like fun.

enough- Bill-W4BSG

W6RCecilA wrote:
>
> Mark Keith wrote:
> >
> > W6RCecilA wrote:
> > > However, a circle is the most effective loop antenna. In any case, IMO, it
> > > is too early to dismiss fractal antennas as useless.
> >
> > I don't think too many claim them as useless.
>
> You have obviously not been reading all the postings on the subject.
> Many posters rank all fractal antennas right alongside crossed field

> antennas, i.e. snake oil scams.
> --
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>
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> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

819. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 00:31:22 UTC
From: richardharrison@webtv.net
Message-ID: <1044-3AD4F75A-91@storefull-112.iap.bryant.webtv.net>
Source record: 166118

Denver Braughler wrote:
"More importantly, you are talking principally about current."

From Terman`s 1955 book on page 133:
This commentary relates to waveguide but coax outer conductor is similar.
"The direction in which the current flows at any point in waveguide wall is at right angles to the adjacent magnetic flux.---The current in the guide walls penetrates in accordance with the laws of skin effect, as given in Eq. (2-9). The depth of penetration is accordingly inversely proportional to the square root of frequency."

Eq. (2-9) is the epsilon to the minus z/delta, ratio of current at a depth (z) to current at the surface already given in a previous post.

For example, we have a magnetic field sweeping across a conductor at right angles (or vice versa) and a longitudinal current is induced by the right-hand-rule (or left-hand-rule) if you prefer.

If you have a loop it can produce a voltage which is given as;

V = 2 pi(mu0) N(A) H0(f) cos theta
This is the straight algebraic product of six terms which are:
2 pi (mu0) = a constant
N = the number of turns
A = the loop area in sq. mtrs.
H0 = the applied magnetic field in amperes per meter
F = frequency in Hz
cos theta = the cosine of the angle between the loop axis and the field

It is too simple to say that there is solid copper between the inside and outside of the walls of coax, so the voltage on one side is shorted to the opposite side which must therefore be at the same voltage. If that were so, shields would all be failures. Coax and wave guide would not work as we know it. Imagine the isolation between adjacent coax cables. It sure wouldn`t be over 100 db. This is madness.

Best regards, Richard Harrison, KB5WZI

820. Slinky (for antenna)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 00:50:21 UTC
From: "W.G. Ewald" <wgewald@att.net>
Message-ID: <kku9dt83nqv4lbuvie003o97fnqpoktnm1@4ax.com>
Source record: 166119
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

I've been looking for a source of Slinkies for antennas, and finally found one. (The ones in Toys R Us are plastic anymore).

www.sciplus.com

Catalogue #88701, $3.50 each. The shipping is pretty steep, though, $5.45 for orders up to $20.00. I'd guess you'd need 4 for a dipole, that would be $19.45 total.

821. Re: OT - phased arrays of TV yagi antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 00:54:47 UTC
From: denton sprague <denton@oregontrail.net>
Message-ID: <3AD4FCD7.81158D6D@oregontrail.net>
Source record: 166121

I used to run (and still have on the ground) a pair of uhf corner
reflectors for tv. I ran an equal length of 300 ohm twin lead from each
yagi to a combiner and then a single twin lead line to a pre-amp and
then low loss 75 ohm coax to the tv network. I suspect the gain with the
additional corner reflector was about 2 db, calculating the loss of the
combiner in the system.
I didn't notice too much difference over a single yagi, but the major
improvement was in the multipath or ghosting rejection.
Distance between the yagi's were about a foot or so from the bottom of
one reflector to the top of the other one.
I used so called 120 mile antennas. To be honest, I was never really
well pleased with the setup as signals would vary from summer to winter,
when the trees would loose their leaves, and there are too many hills in
my vicinity. You will have different results depending also on antenna
array elevation and other locations.

ato_zee wrote:

> I'm seeking to link, for greater gain,
> for terrestrial digital TV, 2 or 4 yagi-tv-antennas.
> How far apart? Just link feeders at centre?
> Mount free space lambda over 2 apart, connect with
> x'd wires? Does paralleling yagis lower the feed
> impedance? Do I need a lambda over 4 matching
> section?
> I realise that doubling the number doesn't
> double the gain. Do I need to get an old
> s/h portable TV and tap into the AGC line to make a
> signal strength meter and do it empirically?
>
> Any good phased array websites?
> Is the ARRL handbook still going strong?

822. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 00:59:00 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AD4FDD3.350F5D2B@bwcc.com>
Source record: 166120

Richard Harrison wrote:
> It is too simple to say that there is solid copper between the inside
> and outside of the walls of coax, so the voltage on one side is shorted
> to the opposite side which must therefore be at the same voltage.
But William specified that it be measured:
"... the voltage that we measure on the inner surface is
essentially *instantly* identical to the voltage that we
measure on the outer surface."

I'm not sure how to measure a voltage on an inner surface nor
how instantly a measurement could be taken.

823. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 01:04:39 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AD4FF27.FC585C9C@bwcc.com>
Source record: 166122

"William E. Sabin" wrote:
> Crucial point: For a difference of voltage between the outer and inner
> surfaces the copper braid is a *marvelous* conductor directly *through* the
> braid, therefore the voltage that we measure on the inner surface is
> essentially *instantly* identical to the voltage that we measure on the
> outer surface.
I think there could be a lot of wiggle room in "essentially".
I am also having a harder time visualizing the effects in a braid than in a single solid conductor.
Do you intend that your assertions are most relevant to braided rather than solid conductors?

824. Re: Slinky (for antenna)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 01:52:11 UTC
From: swl_yb400pe@yahoo.com
Message-ID: <3ad5093d.199745@news.getgoin.net>
Source record: 166126
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

On Thu, 12 Apr 2001 00:50:21 GMT, W.G. Ewald <wgewald@att.net> wrote:

>
>I've been looking for a source of Slinkies for antennas, and finally
>found one. (The ones in Toys R Us are plastic anymore).
>
>www.sciplus.com
>
>Catalogue #88701, $3.50 each. The shipping is pretty steep, though,
>$5.45 for orders up to $20.00. I'd guess you'd need 4 for a dipole,
>that would be $19.45 total.
>
>
if you have a walmart nearby,
they usually have the metal ones in stock (at least they do out here
in so mo).
thanks,
yachtboy!

--
==========
"Being diabetic is alot like having an un-invited
guest at a picnic, who keeps pointing out the potato
salad may have gone bad."--W.B. Willis
----
http://www.geocities.com/swl_yb400pe
http://www.geocities.com/swl_yb400pe/who_won.html
http://www.geocities.com/swl_yb400pe/psychedelic.htm
http://www.geocities.com/swl_yb400pe/slinkypage.html
http://www.geocities.com/swl_yb400pe/must_have.html
======================

825. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 02:16:37 UTC
From: richardharrison@webtv.net
Message-ID: <25200-3AD51005-80@storefull-111.iap.bryant.webtv.net>
Source record: 166125

Bill Sabin wrote:
"There is "no" skin effect for any path which is perpendicular to the braid."

This example pertains to a solid shield box and not a braid but the principle should be identical.

B. Whitfield Griffith, Jr. in "Radio-Electronic Transmission Fundamentals" makes a valiant attempt to explain how r-f can`t ordinarily penetrate a shield but must take the long way around on the shield surface from the inside to the outside. Everyone should have a copy of this book. I`ve heard a limited reprint is contemplated.

Griffith says:
"Figure 27-4 shows an anti-resonant (coil and capacitor in parallel) tank circuit which might be part of a radio transmitter; the circuit includes a capacitor and an inductor, with the inductor mounted inside a metal box so that its shield will not extend into other parts of the transmitter. The connection between the capacitor and coil passes through a hole in the metal shield enclosure. The box is mounted on insulators but is grounded to the frame of the transmitter by a connection that is fastened to a large bolt which passes through the center of the bottom of the box. The ground end of the coil is fastened to this same bolt on the inside of the enclosure. The ground end of the capacitor is fastened to the frame of the transmitter. We assume that an r-f voltage is impressed across the capacitor so that a large circulating current flows around the tank circuit.

The question now is this:
Along which path will the "ground-return" current flow from the coil to the capacitor? At first glance we might say that this is a simple thing to answer, that the current flows down through the bolt, through the connecting strap to the frame, and along the frame to the grounded side of the capacitor. But our knowledge of skin effect tells us that this cannot happen; since the bolt is fastened tightly in place, it is electrically a part of the solid bottom of the box. The current is confined by the skin effect to the surface of the metal.

The actual path of this current is therefore as follows: from the bottom of the coil it flows down to the center of the bottom of the box and up the sidewall to the hole where the incoming lead enters, then over the edge of this hole and down the outside surface of the box to the connector at the center of the bottom of the box. From here it flows along the frame to the capacitor....

Another current is introduced in the box by the current flowing in the coil; its direction is such that its magnetic field opposes the coil, so that the inductance of the coil is less than it would be if the shield box were removed."

This would be much better with the illustrations in the book. The point is the shield is inpenetrable by the r-f which is forced to take the long way around.

Another expert has testified!

Best regards, Richard Harrison, KB5WZI

826. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 02:25:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD51226.73B6AB6C@eznec.com>
Source record: 166124

Some days I shouldn't be allowed near a keyboard. (Maybe that's ALL days!) The number I wrote is 270, not 27 dB. I'm sure thankful for you folks who are paying attention.

Now, if you'll excuse me, I'll get fitted for a glass belly-button. . .

Roy Lewallen, W7EL

John O'Flaherty wrote:
>
> Roy Lewallen wrote:
>
> > Richard Clark wrote:
> > >
> > > On Wed, 11 Apr 2001 09:26:54 -0500 (CDT), richardharrison@webtv.net
> > > (Richard Harrison) wrote:
> > >
> > > >
> > > >I`m amazed that anyone could measure 160 dB isolation. Maybe by
> > > >speculation that 80 dB + 80 dB equals 160 dB isolation. Hi. Hi.
> > > >
> > > >Best regards, Richard Harrison, KB5WZI
> > > >
> > >
> > > Hi Richard,
> > >
> > > If you transmit 1KW and I receive you at S9, there's 133dB of
> > > isolation right there. 160dB isn't that far away. ;-)
> > >
> > > 73's
> > > Richard Clark, KB7QHC
> >
> > Yep, the difference between 133 and 160 dB is a mere factor of
> > 1,000,000,000,000,000,000,000,000,000. Just crank up the output power a
> > dudge and you're there.
>
> Shouldn't that be a difference of 27 db, or a factor of 500?
>
> john

827. where can i buy 900 mhz antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 02:26:34 UTC
From: MAL <MHYETT@BIGPOND.NET.AU>
Message-ID: <un8B6.1033$W7.3500@news-server.bigpond.net.au>
Source record: 166123

I am after 900 mhz antenna for use with cordless phones in australia pref
Any inf wouyld be great
mal hyett

828. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 03:32:02 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AD521B2.A5EEAE04@bwcc.com>
Source record: 166127

Richard Harrison wrote:
> Griffith said:
> The actual path of this current is therefore as follows: from the bottom
> of the coil it flows down to the center of the bottom of the box and up
> the sidewall to the hole where the incoming lead enters, then over the
> edge of this hole and down the outside surface of the box to the
> connector at the center of the bottom of the box.
Is that in fact that it flows all over the inside of the box, out the hole,
all over the outside surface, and onto the connector at the bottom?

829. FERRITE ROD ANTENNA

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 03:44:58 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9b38fc$qe0$1@bob.news.rcn.net>
Source record: 166128

i have a homemade inductive loop antenna that works well with radios that have internal ferrite rod antennas..i also have a receiver without a ferrite antenna......i have yet to find an individual knowledgeable enough to instruct me on building my own ferrite rod antenna!!!!! there must be "ONE" person out there with some experience!!!!!!!

830. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 04:29:20 UTC
From: k1bqt@aol.com
Message-ID: <20010412002920.08941.00003347@ng-mo1.aol.com>
Source record: 166129

Hi Cecil--

> Many posters rank all fractal antennas right alongside crossed field antennas, i.e. snake oil scams.<

I think you'd be hard-pressed to find any informed posters (ie. people who have actually modeled or built fractal elements) who would classify this approach as grossly inferior. My own experience has been that many fractal elements work fine, but bring no "special" qualities to the table that other similar loading shapes can't provide.

Real world antenna solutions most often begin with analysis of a targeted outcome --what's needed for pattern, gain, bandwidth, packaging, matching, material costs and availability, labor costs, and a host of other nut-and-bolt factors. I'm sure there are applications where a fractal element might provide a good fit. But, to prescribe anything on the basis of shape alone without first looking at all other factors is either silly or self promotional.

Put another way, should someone use Viagra because it's blue, or because it might accomplish something of value to them? Get my...point?

Rick K1BQT

831. Thanks Everyone. Problem's Fixed!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 04:44:54 UTC
From: J Titcomb <kimoloka@hawaii.rr.com>
Message-ID: <apaB6.211$AR6.30055@typhoon.hawaii.rr.com>
Source record: 166130

Hey, Guys, Thanks for your help. Got the problem fixed. Sorry if I offended anyone by using this newsgroup for a computer question. The people in the Windows98 newsgroup are pretty knowledgable, but also kind of harsh and intolerant of beginners or inexperienced people. Whereas I feel comfortable among other hams, who are usually more than willing to help someone else out. Mahalo plenty, 73 es aloha. Jim KH6IX

J Titcomb <kimoloka@hawaii.rr.com> wrote in message
news:8aTA6.5225$hr6.836461@typhoon.hawaii.rr.com...
> Aloha Guys (and Gals)
>
> There's too many newsgroups out there to find the exact one to answer this
> one particular question, which just happens to be about computers.
>
> So I'm going to rely on my fellow hams, who are also experts in many other
> fields, especially you guys on the amateur antenna newsgroup. Enough
> stroking? Here's the question:
>
> How can I get rid of the Microsoft Networking logon prompt that pops up
> every time Windows starts? I know all you have to do is click Cancel, or
> ESC, to continue loading Windows, but why do I have to keep doing this
every
> single time? Is there a way to get rid of the prompt altogether?
>
> I already did a search on my browser engine and also on the microsoft.com
> site, but couldn't seem to find the answer.
>
> Thanks for any help and 73s
>
> Jim Titcomb
> KH6IX
>
>

832. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 04:58:46 UTC
From: richardharrison@webtv.net
Message-ID: <1112-3AD53606-113@storefull-117.iap.bryant.webtv.net>
Source record: 166132

Denver Braughler wrote:
"Is that in fact that it flows all over the inside of the box, out the hole, all over the outside surface, and onto the connector at the bottom?"

Yes that was the path Griffith described. Griffith made no characterization of the spread out to "all" of the inside and outside surfaces. But, a characteristic of skin effect is to cause the current to deploy so that it is encircled by the fewest flux lines. On a strip, for instance, current tends to move out to the edges. Current in the center of the strip is encircled by nearly all of the magnetic flux lines, and that is not where it tends to be. On the edges, fewer flux lines tend to surround the current. That picture is not very satisfying to me, but it`s one given by Terman, and my experience is that I must search more carefully to find the gaps in my understanding.

The avoidance of much of the conductor is why the a-c resistance rises. Griffith probably thought he had a hard enough job to explain the inpenetrability of the conductor without complications of other attributes at that point.

Best regards, Richard Harrison, KB5WZI

833. Re: Antenna project results

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 05:09:01 UTC
From: Ross Archer <dogbert@mindless.com>
Message-ID: <987051977.554216@sj-nntpcache-5>
Source record: 166131
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

Randon Loeb <rloebusenet@cticonsulting.net> wrote in message
news:3AD3350D.9AAC78E0@cticonsulting.net...
> Tried the antenna last night:
> 1. 40' approx of wire (from RadioShack SW Ant kit) from near roof top
> accross the yard to a 6' fence. 50 ohm RG58 coax from antenna to
> radio. As yet, not grounded.
>
> Findings accross random bands:
> 1. It's pretty damn easy to confuse the headphone jack and the antenna
> jack on the DX-390 and spend a half hour trying to figure out why the
> signal meter is strong but there is no sound! anyway..
>
> 2. Medium strength stations (one-half of the strength bars) became full
> strength. Sound improved somewhat, not exactly 'next-door' quality, but
> better.
> 3. Strong stations showed little change, in fact there seemed to be
> noise from other stations bleeding in.
> 4. A few quiet spots without the antenna all of the sudden show weak or
> medium signals, which are intelligable. Not sure if this is actually a
> transmission at that freq, or bleed in from other stations.
>

It's typical that weak signals are significantly boosted, and strong signals
are not improved much (or at all) with a larger antenna. Mainly this is
because the radio's automatic gain control will "ratchet down" the gain
as the incoming signal gets stronger, once it's "strong enough".
On weak signals, the signal isn't strong enough yet to start that gain
limiting
behavior.

> Overall, new signals are being picked up, and reception is better. My
> expectations of 40' of wire were a little higher though.... Also, there
> seems to be the situation where one station seems to be in the
> background and noisy all over the band, and sometimes spans several
> bands. Requlars local AM is marginally improved.
>

That sounds very much like overloading. Have you tried your radio
with the DX/LOCAL switch (if it has one?) in the LOCAL position
to see how it works? Sometimes there is enough extra signal coming
in that the LOCAL position is a better choice.

Last, you could rig up an inexpensive variable attenuator, or
add a passive preselector, to "tune out" signals that are off frequency.

Good luck. It sounds like you're getting more or less typical results.

-- Ross

> I will try to ground it over the next few days, see if that helps.
> Right now I just through the cable out the window for lightning
> protection. I would say reception is 2-3 times better, but not 10
> times better. I will review previous posts regarding noise reduction.
>
> Thanks to all

834. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 08:43:06 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AD56A9A.9AACA440@spam.me.not>
Source record: 166133

Rick Littlefield wrote:

> Put another way, should someone use Viagra because it's blue, or because it
> might accomplish something of value to them? Get my...point?
>
> Rick K1BQT

::GROAN::

-SSB

835. Re: FERRITE ROD ANTENNA

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 09:56:34 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9b3u08$k8k$1@plutonium.btinternet.com>
Source record: 166134

marvin rosen wrote .
> i have yet to find an individual knowledgeable enough to
> instruct me on building my own ferrite rod antenna!!!!! there
must be "ONE"
> person out there with some experience
==========

Take a look at a ferrite rod antenna recovered from an unwanted transistor radio. Clearly it is one of the easiest radio components to make. But why bother when you already holding one ?

The larger the rod the more sensitive it will be. Doubling the number of turns halves the resonant frequency with the same tuning capacitor. Enamelled copper wire OK. Doesn't matter much whether winding is short or spread out along rod. For medium and long wave bands use ferrite materials with permeabiliuty in the range 100 to 200. Higher permeabilities have high loss.

Don't bother making one for HF use. Ferrite loops are less sensitive than 2 or 3 feet of throw-out wire.

Most of the experimentation is involved with the number of turns on the coil tap or link coupling to match the antenna to the receiver input impedance. For low impedance 50-ohm receivers the number of coupling turns is about 1/20 of the tuned winding turns.

Winding the coil on a cardboard tube which slides up and down the rod allows the inductance and tuning range to be finely adjusted. But this matters only when the receiver is a superhet with a double-gang tuning capacitor. Some loss in sensitivity occurs when the coil is at one end of the rod.

You could, of course, spend a very long time trying to find some papers on the subject. If you should manage to find such papers you will realise that you could have made a 1000 antennas without them in the time it has taken to obtain them. For practical purposes the papers are useless. Anyone who recommends them has obviously never tried using them. They were written only to demonstrate academic prowess.

To summarise: the best way of designing a ferrite rod antenna is to obtain a rod and wind some wire on it. Connect a tuning capacitor in parallel and then connect it to a receiver. In 10 minutes you will have learned more than in 12 months of academic research.

--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

836. Re: Downloadable IOTA List - UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 11:57:53 UTC
From: Zlatko Feric <zlatko.feric@sb.hinet.hr>
Message-ID: <9b4555$3mrb$1@as121.tel.hr>
Source record: 166136
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.policy

test

--

Zlatko Feric
zlatko.feric@sb.hinet.hr
<helmsman> wrote in message
news:fa07dtoqod1pplroehko8d8o98911b08or@4ax.com...
> On Fri, 23 Mar 2001 22:04:33 GMT, "Charles Johnston"
> <ctj92@earthlink.net> wrote:
>
> >The downloadable IOTA list has been updated effective 23-Mar-2001 -
> >22:07UTC
> >
> >Available as a 15k zip file on the IOTA List page of the web site listed
> >below
>
> Thanks.
>
> .
> Shame on ARIZONA,USA
> Be aware these people are NOT convicted of anything.
> http://www.geocities.com/novapunkca/
> If you don't like it tell the Governor.
> http://www.governor.state.az.us/feedback.html

837. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 12:00:07 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD598C7.8BA7539@mwci.net>
Source record: 166135

Richard Harrison wrote:

> The actual path of this current is therefore as follows: from the bottom
> of the coil it flows down to the center of the bottom of the box and up
> the sidewall to the hole where the incoming lead enters, then over the
> edge of this hole and down the outside surface of the box to the
> connector at the center of the bottom of the box. From here it flows
> along the frame to the capacitor....

Nonsense.

If this were true, then if we follow the through-the-hole path from the bottom of the coil (where the inside surface of the bolt is) through the hole and back to the bolt at the outside of the box, we would find that the *phase* of the current has shifted substantially.

Keep in mind that there is an RF impedance (reactance) along this path, therefore a definite voltage difference would also exist along this path.

Due to this change of phase of the voltage, there would now be a substantial voltage difference between the inside surface of the bolt and the outside surface of the bolt. This voltage difference must exist in order to justify the current on the long-way path. It's exactly that simple.

Are you and Griffith trying to tell us that the bolt has now, because of skin effect, suddenly become an *insulator* that just simply ignores that voltage difference?

That is wrong, Richard. It is more than wrong, it is **STUPID**.

This attempt to turn perfectly good copper into an insulator for a voltage difference between its surfaces, using some kind of bizarre Alice-in-Wonderland logic, a bastardization of skin effect, is absolutely *insane*.

The bolt has, by far, a very much lower impedance than that ridiculous "long-way" path through the "looking glass" (whoops, I mean "hole").

Here is what is actually going on. If we use a scope probe to explore the inside path, from bolt to hole, we will see a definite phase shift. Now move the probe to the outside and travel from hole to bolt. You will find that the phase shift that we measured inside *decreases* so that when we reach the bolt on the outside the phase shift has returned to zero, exactly as it must in any kind of real world that makes any kind of sense.

In other words, the probe measurements on the inside and outside are the same, indicating zero voltage difference between inside and outside at *any* location. Not only that, the box is a Faraday shield that does not, and must

not, have a closed path for current flow as Griffith suggests. Griffith may be your "expert" in this particular matter, but he is not mine (in this particular matter). And just because you saw it in a book somewhere doesn't mean that it can't be wrong. It is wrong.

This is the world as it really is, not the strange world that skin effect devotees try to create in their heads.

Bill W0IYH

838. Best Screwdriver Ant ???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 12:07:39 UTC
From: dan <danlx@execpc.com>
Message-ID: <3ad599b0$0$18897$272ea4a1@news.execpc.com>
Source record: 166137

Hi
Looking for experienced based opinions on performance, ease of
operation, dependability, and ease of installation.
Thanks
N9JBF
Dan

I've rambled enough, back to the rocking chair. ZZZZZZZZZ

Remove left x for a direct reply.

839. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 13:29:17 UTC
From: richardharrison@webtv.net
Message-ID: <1044-3AD5ADAD-148@storefull-112.iap.bryant.webtv.net>
Source record: 166138

Bill Sabin wrote: "Nonsense."

Ny 1998 ARRL Handbook lists Bill Sabin as a contributor. On page 10.12 is an item on Skin Effect. In part:

"This resistance increase, called skin effect, is insignificant at low (audio) frequencies, but beginning around 1 MHz (depending on the size of the conductor) is so pronounced that practically all of the current flows in a very thin layer near the conductor surface, For this reason, at RF a hollow tube and a solid tube of the same diameter and made of the same metal will have the same resistance."

I would have said "solid rod" and "about" the same resistance, above.

On page 19,2 of the same ARRL book is found: "In contrast with open-wire line, the outer conductor in a coaxial line acts as a shield, confining RF energy within the line."

I guess if Bill was the author of the items above, he has changed his mind, which is OK but best if it represents a correction.

Best regards, Richard Harrison, KB5WZI

840. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 14:28:39 UTC
From: richardharrison@webtv.net
Message-ID: <1044-3AD5BB97-150@storefull-112.iap.bryant.webtv.net>
Source record: 166139

Page 19.2 of the 1998 ARRL Handbook says:
"In contrast with open-wire line, the outer conductor in a coaxial line acts as a shield, confining energy within the line."

The fellows at Bell Labs thought the same thing. From AT&T`s "Principles of Electricity", page 144 of the 1961 edition:
"More important (than reduced loss) is the fact that the shielding effect of the outer cylindrical conductor prevents interference from external sources of electric energy, and also prevents radiation losses of the energy being transmitted over the coaxial."

Translation:
The shield keeps energy out and it keeps energy in. It is non-porous.

Best regards, Richard Harrison, KB5WZI

841. Re: Thanks Everyone. Problem's Fixed!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 14:46:59 UTC
From: Bill <bill@hovac.com>
Message-ID: <9b4f58$1gg6$1@box9.cho.cstone.net>
Source record: 166140

Which suggestion fixed it for you?

Bill

"J Titcomb" <kimoloka@hawaii.rr.com> wrote in message
news:apaB6.211$AR6.30055@typhoon.hawaii.rr.com...
> Hey, Guys, Thanks for your help. Got the problem fixed. Sorry if I
offended
> anyone by using this newsgroup for a computer question. The people in the
> Windows98 newsgroup are pretty knowledgable, but also kind of harsh and
> intolerant of beginners or inexperienced people. Whereas I feel
comfortable
> among other hams, who are usually more than willing to help someone else
> out. Mahalo plenty, 73 es aloha. Jim KH6IX
>
>
> J Titcomb <kimoloka@hawaii.rr.com> wrote in message
> news:8aTA6.5225$hr6.836461@typhoon.hawaii.rr.com...
> > Aloha Guys (and Gals)
> >
> > There's too many newsgroups out there to find the exact one to answer
this
> > one particular question, which just happens to be about computers.
> >
> > So I'm going to rely on my fellow hams, who are also experts in many
other
> > fields, especially you guys on the amateur antenna newsgroup. Enough
> > stroking? Here's the question:
> >
> > How can I get rid of the Microsoft Networking logon prompt that pops up
> > every time Windows starts? I know all you have to do is click Cancel, or
> > ESC, to continue loading Windows, but why do I have to keep doing this
> every
> > single time? Is there a way to get rid of the prompt altogether?
> >
> > I already did a search on my browser engine and also on the
microsoft.com
> > site, but couldn't seem to find the answer.
> >
> > Thanks for any help and 73s
> >
> > Jim Titcomb
> > KH6IX
> >
> >

>
>

842. Re: where can i buy 900 mhz antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 14:56:16 UTC
From: DL7JSK <tansorg@cs.tu-berlin.de>
Message-ID: <9b4fnd$j2d$02$1@news.t-online.com>
Source record: 166141

www.telewave.com

"MAL" <MHYETT@BIGPOND.NET.AU> schrieb im Newsbeitrag
news:un8B6.1033$W7.3500@news-server.bigpond.net.au...
> I am after 900 mhz antenna for use with cordless phones in australia pref
> Any inf wouyld be great
> mal hyett
>
>

843. Re: Slinky (for antenna)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 15:09:25 UTC
From: n8blk@aol.com
Message-ID: <20010412110925.18833.00001719@nso-cn.aol.com>
Source record: 166142

In article <kku9dt83nqv4lbuvie003o97fnqpoktnm1@4ax.com>, W.G. Ewald <wgewald@att.net> writes:

>I've been looking for a source of Slinkies for antennas, and finally
>found one. (The ones in Toys R Us are plastic anymore).
>

I don't know about that. I've seen the metal slinkies apparently made of some form of galvanized metal sold at some Toys R US. They could of course be old stock, but said stores don't seem to keep things they can't sell anymore either.

Anyway, the antennas are a nice one trick antenna, but probably not suitable for long term outdoor usage.
-art clemons-

844. Re: TH3-MK3 specs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 16:41:39 UTC
From: Roger <rdhalste@tm.net>
Message-ID: <7VkB6.440$5d.59074@newshog.newsread.com>
Source record: 166143

"krishna kumar" <kumarkrishna.REMOVEME@mindspring.com> wrote in message
news:3ACDBA68.4DBC3792@mindspring.com...
> Hi there,
> I would like to get some specs from the users of the above beam.
> Esp, i want the following info.
>
> Boom Length
> Turning radius
> Length of largest element
> wind loading.

Goto http://www.hy-gain.com/hy-gain/index.htm and scroll down to the desired antenna.

Call their sales department at (800) 647-1800 and ask about parts availability.

Roger Halstead (K8RI) www.RogerHalstead.com
N833R World's Oldest Debonair? s# CD-2

>
> what about the availability of replacement components from Hy-gain.?
> Nothing seen on their website.
>
> I have someone planning on selling one along with a Ham-M rotor and i
> am want to buy it.
> I plan to roof mounting it and i need the specs before i can make a
> decision.
>
> I have browsed the older threads about comparison on the
> cushcraft,mosley and hy-gain performance.
>
> I primarily am used to the wire antennas and i want to put up a beam. I
> am not a whole
> lot experienced in beam install/tune/operate, since i have never done
> this before. But
> i would like to learn and get there.
>
> Any help with information is greatly appreciated.
>
> Thanks
> krishna(w4/vu2vku)
>
> (NOTE - as always, please remove the "NOSPAM" from my email address when
> replying direct.)

>

845. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 18:06:21 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD5EE9D.59DE107B@mwci.net>
Source record: 166144

Richard Harrison wrote:

> Bill Sabin wrote: "Nonsense."
>
> My 1998 ARRL Handbook lists Bill Sabin as a contributor.

snip the rest

Have a good day, Richard, and best 73

Bill W0IYH

846. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 19:10:48 UTC
From: Denver Braugher <Braughler@bwcc.com>
Message-ID: <3AD5FDB8.3652A871@bwcc.com>
Source record: 166145

"William E. Sabin" wrote:
> If this were true, then if we follow the through-the-hole path from the
> bottom of the coil (where the inside surface of the bolt is) through the
> hole and back to the bolt at the outside of the box, we would find that the
> *phase* of the current has shifted substantially.
I don't see that as a problem.

My question is what if I shape the box and place pin holes in it at a few locations measured precisely to make the path lengths such that the phase shifts must occur?

> Are you and Griffith trying to tell us that the bolt has now, because of
> skin effect, suddenly become an *insulator* that just simply ignores that
> voltage difference?
A shield. Shall we call a shield an insulator?

> This attempt to turn perfectly good copper into an insulator for a voltage
> difference between its surfaces,
It seems reasonable.
If we were talking about DC, I would agree with you.
But with radio frequency, I can't automatically do that.

> The bolt has, by far, a very much lower impedance than that ridiculous
> "long-way" path through the "looking glass" (whoops, I mean "hole").
To a DC potential, yes.
To AC, perhaps not.

> If we use a scope probe to explore the
> inside path, from bolt to hole,
> we will see a definite phase shift.
Okay.

> Now move the probe to the outside and travel
> from hole to bolt. You will find that
> the phase shift that we measured inside *decreases* so that when we reach
> the bolt on the outside the phase shift has returned to zero, exactly as it
> must in any kind of real world that makes any kind of sense.
Again, I don't know.
I am inclined to say that this is actually quite wrong.
It sure seems wrong on the surface.
If you insist that some current travels through the bolt, I will insist that it travels through the box at every point which means many paths of varying lengths.

> In other words, the probe measurements on the inside and outside are the
> same, indicating zero voltage difference between inside and outside at *any*
> location.
You must be assuming that the box is a perfect conductor.

You certainly did not prove it.

> This is the world as it really is, not the strange world that skin effect
> devotees try to create in their heads.
I suspect observational error.

847. Near Fields for a Monopole and 2 Fractals

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 19:27:21 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <120cdt82ur31dvgvlqjd0p0kj80vhst291@4ax.com>
Source record: 166146

Hi All,

I have been toying with the visualization of near fields and have come up with a small study of my favorite reference, a vertical quarterwave and compared it to two fractals the Koch Quadratic and Sierpinski's Dragon.

http://members.home.net/kb7qhc/antenna/Fields/index.htm

The principle tool for visualization was Mathcad employing the data tables generated by eznec.

73's
Richard Clark, KB7QHC

848. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 20:39:32 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD61284.26B57D2@mwci.net>
Source record: 166147

Denver Braugher wrote:

> "William E. Sabin" wrote:
> > If this were true, then if we follow the through-the-hole path from the
> > bottom of the coil (where the inside surface of the bolt is) through the
> > hole and back to the bolt at the outside of the box, we would find that the
> > *phase* of the current has shifted substantially.
> I don't see that as a problem.

If the phase changes, due to travel time, then the value of the current changes.

> > Are you and Griffith trying to tell us that the bolt has now, because of
> > skin effect, suddenly become an *insulator* that just simply ignores that
> > voltage difference?
> A shield. Shall we call a shield an insulator?

It is not an insulator, but it does not have a *complete* path for current conduction. That is not the same as an insulator.

> > This attempt to turn perfectly good copper into an insulator for a voltage
> > difference between its surfaces,
> It seems reasonable.
> If we were talking about DC, I would agree with you.
> But with radio frequency, I can't automatically do that.

Why not? The RF impedance is also very small.

> > Now move the probe to the outside and travel
> > from hole to bolt. You will find that
> > the phase shift that we measured inside *decreases* so that when we reach
> > the bolt on the outside the phase shift has returned to zero, exactly as it
> > must in any kind of real world that makes any kind of sense.
> Again, I don't know.
> I am inclined to say that this is actually quite wrong.

Not wrong at all. Think about it some more.

> It sure seems wrong on the surface.
> If you insist that some current travels through the bolt, I will insist that it travels through the box at every point which means many paths of varying lengths.

Not true at all. You are not giving it enough thought.

> > In other words, the probe measurements on the inside and outside are the
> > same, indicating zero voltage difference between inside and outside at *any*
> > location.
> You must be assuming that the box is a perfect conductor.

No, it does not have to be perfect, just a very good conductor, like copper or aluminum.

> You certainly did not prove it.

Maybe you would like to check that out. How would you do it?

Bill W0IYH

849. Re: TH3-MK3 specs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 20:59:24 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AD6172C.2781E494@rupert.tds-az.lmco.com>
Source record: 166149

krishna,

Roger wrote:
>
> "krishna kumar" <kumarkrishna.REMOVEME@mindspring.com> wrote in message
> news:3ACDBA68.4DBC3792@mindspring.com...
> > Hi there,
> > I would like to get some specs from the users of the above beam.
> > Esp, i want the following info.
> >
> > Boom Length
> > Turning radius
> > Length of largest element
> > wind loading.
>
> Goto http://www.hy-gain.com/hy-gain/index.htm and scroll down to the desired
> antenna.

Actually, the TH3-MK3 is a discontinued model and the specs are not on
hy-gain's web site. However, the TH3-MK4 is and it appears to be the
replacement for the TH3-MK3. The specs for the TH3-MK4 appear to be
very close to the TH3-MK3. It should give you a good idea of what you
are working with.

You can also order a manual for the discontinued models for $5.00 from
HY-Gain. If you really need the specs, and can wait until the weekend,
I can email them to you. I have the manual and can transcribe all of
the pertenent information. I would send it now but the manual is at
home and I am not.

> Call their sales department at (800) 647-1800 and ask about parts
> availability.
>
> Roger Halstead (K8RI) www.RogerHalstead.com
> N833R World's Oldest Debonair? s# CD-2
>
> >
> > what about the availability of replacement components from Hy-gain.?
> > Nothing seen on their website.

Parts for the TH3-MK3 should still be available. I recently purchased a
new mast mount for my TH3-MK3. They take phone orders if you have a
credit card. They also respond to e-mail. I asked some questions using
"hy-gain@mfjenterprises.com" but I think their new email address is
"hy-gain@hy-gain.com". They must have changed it very recently. The
phone number that they gave me, and the one I used for ordering, was

800-973-6572.

> > I have someone planning on selling one along with a Ham-M rotor and i
> > am want to buy it. I plan to roof mounting it and i need the specs
> > before i can make a decision.
> >
> > I have browsed the older threads about comparison on the
> > cushcraft,mosley and hy-gain performance.
> >
> > I primarily am used to the wire antennas and i want to put up a beam. I
> > am not a whole lot experienced in beam install/tune/operate, since i
> > have never done this before. But i would like to learn and get there.
> >
> > Any help with information is greatly appreciated.
> >
> > Thanks
> > krishna(w4/vu2vku)

I don't have a lot of experience with beams either and I don't have
anything to really compare it against, but so far it seems to work well.

When I purchased mine, the first thing I did was fully dissassemble it
and clean all the aluminum. I then replaced all of the nuts, bolts, and
clamps. The original ones would have worked but they were getting pretty
rusty and I didn't want to have to pull it down just for a rusty bolt.

I carefully measured the element lengths according to the
specifications,
while the antenna was on the ground. When it was finally erected, it
came
very close to the specified bandwidths and frequency coverages.

The manual only gives you two sets of measurements. One set of
measurements
sets the antenna for the CW portion of 10, 15, and 20 Meters. The other
set of measurements set the antenna for the SSB portion of 10, 15, and
20 Meter. They do not recommend trying to tune for the SSB section of
one
band and the CW of another. Probably, if you wanted to play with it a
little you could set it for anywhere you wanted.

If you are going to be ordering parts you might want to look at the
condition of the plastic end caps for the traps. The can get dry and
brittle after a little time in the weather. The guy that I bought mine
from
put all new plastic on it just before he took it down, so I didn't need
any. Pay close attention where the holes are in some of the element
pieces
and the traps. These all need to be lined up and pointed down to allow
water to drain properly.

Finally, when you are on the roof, be careful. I recently fell off the roof when I was going to make some adjustments on mine. I managed to break the heel of my right foot. Trying to adjust your antenna on one leg and a pair of crutches is real tough. :)

Good Luck with the antenna. Let me know if you want me to email you the antenna specs.

Martin, K7MEM

--
Martin E. Meserve K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore my responses may not be as timely as you, or I, would like them to be. If I seem to be ignoring you, send me another E-Mail to jog my memory. Opinions are my own and do not reflect the opinions of my employer.

850. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-12 21:33:03 UTC
From: Denver Braugher <Braughler@bwcc.com>
Message-ID: <3AD61F0F.24CFC95A@bwcc.com>
Source record: 166148

"William E. Sabin" wrote:
> Maybe you would like to check that out. How would you do it?
Paint all my electrons neon pink and watch them under a microscope.

Unless I had a rather large and powerful setup, I would be quite concerned that my measurements would interfere with what was really happening.
Even then, accounting for the effects from my probe and leads could be confusing.

What are we talking about when we say current?
Do we mean the path over which the energy is being dissipated?

If that's the case, this is easy.
Crank up the power and observe whether that little hole gets very hot.

851. Re: Not exactly

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 00:11:31 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD64433.7CB6@wt.net>
Source record: 166150

burt@innocent.com wrote:

>
> Did he? He's almost as large as the Falstaffian Robert Hohlfeld here.
>
> http://www.skypub.com/news/special/images/0104setifuture05.jpg
>

I still say thats really Theodore "Beaver" Cleaver and Clarence "Lumpy"
Rutherford. And that leaves you know who as the realï¿½ Edward Clark
Haskell . MK
--
http://web.wt.net/~nm5k

852. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 00:55:38 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9b5iqa$5e5$0@208.207.71.159>
Source record: 166151

Richard Harrison wrote:
>
> It is too simple to say that there is solid copper between the inside
> and outside of the walls of coax, so the voltage on one side is shorted
> to the opposite side which must therefore be at the same voltage. If
> that were so, shields would all be failures. Coax and wave guide would
> not work as we know it. Imagine the isolation between adjacent coax
> cables. It sure wouldn`t be over 100 db. This is madness.

Until a couple posts ago I thought I understood how a choke balun at an
antenna feedpoint worked. If it doesn't stop RF from coming back down
the outside of the feedline braid from the inside surface of the shield
via the feedpoint, how *does* it work?
By the earlier post it couldn't possibly work that way, unless I
misread something, which is certainly possible.

Dick

853. Re: Near Fields for a Monopole and 2 Fractals

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 01:03:26 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9b5j8h$587$1@slb6.atl.mindspring.net>
Source record: 166152

Richard:

Thanks for those near field visualizations. In case no one has told you before, you do good work!

None of the "fractalonians" have ever shown such a comparison of near fields. I am glad that you have taken the trouble to share that with us. We can now readily see the "vast" difference between fractal antenna near fields and the near fields of "mere mortal" antennas. If the difference were any greater it would probably be worth a patent application, don't you think?

Another excellent contribution to the field of fractal electromagnetics.

Congratulations!

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:120cdt82ur31dvgvlqjd0p0kj80vhst291@4ax.com...
> Hi All,
>
> I have been toying with the visualization of near fields and have come
> up with a small study of my favorite reference, a vertical quarterwave
> and compared it to two fractals the Koch Quadratic and Sierpinski's
> Dragon.
>
> http://members.home.net/kb7qhc/antenna/Fields/index.htm
>
> The principle tool for visualization was Mathcad employing the data
> tables generated by eznec.
>
> 73's
> Richard Clark, KB7QHC

854. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 01:24:48 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9b5kh0aac0@208.207.71.159>
Source record: 166153

W6RCecilA wrote:
>
> Richard Harrison wrote:
> > Some readers of this thread know that a metal enclosure is often used at
> > r-f to keep energy in or out.
>
> I don't know enough to argue one way or another. In trying to keep
> a microprocessor from radiating, I tried an aluminum box around the
> unit. I was amazed at how much RF leaked through the box when it
> was floating VS when the aluminum box was grounded.

Radio shop I once worked in processed hundreds of two-way radios each year for refurbishing when they were removed from one car and installed another new vehicle. The shop was located on the grounds of the station with which many of the cars communicated, about a hundred yards from the tower which held the transmitting & recieving antennas, same frequencies. When the mobile transmitters were tuned and checked, they had to be within one of the shops 'screen rooms', a completely enclosed room with workbench and all test equipment inside, and the door had to be closed. Shielded thus, one could transmit 100 watts into a dummy load-also located inside the screen room- and the sensitive station receivers next door would never know that a signal was on the air - it was completely shielded. But if you forgot to close the door, it was a different matter entirely.

One of the base stations had a pressureized 1ï¿½ inch copper tube type coaxial feedline which was accessible at the back of the transmitter. When it was transmitting 1500 watts, one could touch the outer surface of the copper coax and feel nothing whatever. Evidently the voltage didn't come through from the inside surface to the outer surface of the shield. I don't believe one would dare touch the feedline if it was an open wire type.

The only coax I remember hearing about "leaking" RF was some cheap stuff which had skimpy, thin braid, not the 95% braid normally used.

The idea that a coax shield doesn't act as a shield is news to me. But Gary Coffman insisted that while DC doesn't pass through the dialectric of a capacitor, AC does. I didn't bother him to explain what happens when it's charging.

Dick

855. 40 or 20 meters best for nighttime CW dx?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 01:30:15 UTC
From: cm13141@aol.com
Message-ID: <20010412213015.20426.00001549@ng-fz1.aol.com>
Source record: 166154

Can anyone tell me what is my best bet for working nighttime cw dx,40 or 20 meters?I have just upgraded to general and love working cw dx,i have been using a 10 meter dipole,now that i have more bands to work i am going to make another dipole but i dont know if i should go for 20 or 40 meters?Anyone have any advice?
Thanks,
James

856. Re: 40 or 20 meters best for nighttime CW dx?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 01:46:49 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <dUsB6.102092$Ok4.8116082@news1.rdc1.ct.home.com>
Source record: 166155

Go for both. Use a common coax feed for the three dipoles-- 10/20/40. 20 meters is a great daytime dx band, and whether you will work DX in the evening or at night depends on where you live in reference to the equator, and the state of the current sunspot cycle.

40 meters is a a great evening DX band. Don't limit yourself to one or two bands. Explore and use them all.
BTW, a forty meter dipole will also work quite well on 15 meters, since it is an odd multiple of a quarterwave on that band as well.

Good luck.

"Cm13141" <cm13141@aol.com> wrote in message news:20010412213015.20426.00001549@ng-fz1.aol.com...
> Can anyone tell me what is my best bet for working nighttime cw dx,40 or 20
> meters?I have just upgraded to general and love working cw dx,i have been using
> a 10 meter dipole,now that i have more bands to work i am going to make another
> dipole but i dont know if i should go for 20 or 40 meters?Anyone have any
> advice?
> Thanks,
> James

857. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 02:06:07 UTC
From: Denver Braugher <Braugher@bwcc.com>
Message-ID: <3AD65F0F.CADADDDA@bwcc.com>
Source record: 166156

Dick Carroll wrote:
> One of the base stations had a pressureized 1ï¿½ inch copper tube type
> coaxial feedline which was accessible at the back of the transmitter.
> When it was transmitting 1500 watts, one could touch the outer surface
> of the copper coax and feel nothing whatever.
You didn't say what voltage.

> Gary Coffman insisted that while DC doesn't pass through the dielectric
> of a capacitor, AC does.
What a kidder.

858. FA: {2 Days} RD-98 - 17" 2M/440 flexible antenna w/BNC New

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 02:08:05 UTC
From: ravenfalls@aol.com
Message-ID: <20010412220805.09671.00002154@ng-fu1.aol.com>
Source record: 166157

This is a great scanning Antenna!!
http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1228557016

View my webpage:
http://www.azradio.8k.com

Please reply with any questions directly.

Thx,

Joe

859. FA: {2 Days} Premier RD-78 - 15" 2M/440 antenna w/BNC New!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 02:11:57 UTC
From: ravenfalls@aol.com
Message-ID: <20010412221157.09671.00002159@ng-fu1.aol.com>
Source record: 166158

This is a great scanning Antenna!!
http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1228560217

View my webpage:
http://www.azradio.8k.com

Please reply with any questions directly.

Thx,

Joe

860. Re: R6000/R8/MA5B Question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 02:26:26 UTC
From: Thomas Beltran <tbeltran@earthlink.net>
Message-ID: <mttB6.2895$yh.267148@newsread2.prod.itd.earthlink.net>
Source record: 166159

I have an R7000+ (which means it has the 80 meters kit) and an MA5B. I am very happy with the MA5B - it has good directivity and has about 5 S units advantage on receive for DX stations.

I mounted the antenna on a 24 foot pole on my roof with a Yaesu G-800 rotator. It is up about 40 feet and works great. I just did not want the expense of a beam at this time, and with the Santa Anna winds in the Los Angeles, I just didn't want a larger beam.

I know you asked about an R6, but I can say, my vertical works fine, about 110 Khz bandwith on 80. But now that I have the beam, I'm looking for a wire antenna for 80, 40 and 30. Tom W6EIJ

"Timothy J. Fiebig" <timothy.j.fiebig@exxonmobil.com> wrote in message news:3AD31F79.5553C255@exxonmobil.com...
> After 3 years I need to get an antenna back up in the air. I previously
> used a butternut vertical which I was please with. However, I am now
> trying to make things simple and eliminate the radials. Are there any
> R6000 or R8 users out there who can comment on the performance of either
> of these antennas?
>
> Another consideration may be the mini beam that Cushcraft manufactures.
> Any comments on this antenna would also be appreciated.
>
> Best Wishes,
>
> Tim
>

861. Re: 40 or 20 meters best for nighttime CW dx?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 02:43:19 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD667C7.4868@wt.net>
Source record: 166160

Peter J. Bertini wrote:
>
> Go for both. Use a common coax feed for the three dipoles-- 10/20/40. 20
> meters is a great daytime dx band, and whether you will work DX in the
> evening or at night depends on where you live in reference to the equator,
> and the state of the current sunspot cycle.
>
> 40 meters is a a great evening DX band. Don't limit yourself to one or two
> bands. Explore and use them all.
> BTW, a forty meter dipole will also work quite well on 15 meters, since it
> is an odd multiple of a quarterwave on that band as well.
>
> Good luck.

Don't forget 30m. I bet 75% of the stations I work on 30m at night are
dx. And some of the harder to find countries too. Tons of europe, asia,
VK, etc. If I had to work dx at night, and had to pick between
40,30,20, I'd probably pick 30m, although any of them will do. On many
nights 30 will be quite a bit more active than 20 if the propagation is
so-so. MK
--
http://web.wt.net/~nm5k

862. Re: Trap theory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 02:48:55 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9b5pen$5lo$8@bashir.peak.org>
Source record: 166162

stan.holmes@eskom.co.za wrote:
: Hi
: Can anyone explain the theory behind the Hy-gain trap construction.
: Does the shield form part of the capacitance. Normally the capacitor is
: connected in parallel with the coil, the shield is only connected on the
: one side.

If the shield is connected to the element/coil, then it is indeed one side of a capacitor. The coil is the other side.

A not quite basic electronics quiz: Would the resulting capacitor be considered to be in parallel or series with the coil? Explain your answer.

No prize for the correct answer.

--
Bill Nelson (billn@peak.org)

863. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 02:53:34 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <OStB6.9375$%o2.815212@news1.sttls1.wa.home.com>
Source record: 166161

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9b5iqa$5e5$0@208.207.71.159...

(clip some)
>
> Until a couple posts ago I thought I understood how a choke balun at an
> antenna feedpoint worked. If it doesn't stop RF from coming back down
> the outside of the feedline braid from the inside surface of the shield
> via the feedpoint, how *does* it work?
> By the earlier post it couldn't possibly work that way, unless I
> misread something, which is certainly possible.
>
> Dick

Hi Dick,

Think of the balun (whether choke or coiled coaxial) as a transformer with 1:1 turns ratio. The normal feed line currents flowing from the transmitter to the antenna are equal in both the inner and outer coax conductor but are 180 degrees out of phase. Therefore the fields they emit cancel when they are measured from any point outside the coaxial line.

The bigger discussion is about any unbalanced voltages and currents.

The voltages and currents reflected from the ends of the antenna may not be in balance. Assume for the point of discussion that one side of a dipole is much shorter than the other. The voltage and current reflected from the short side will return to the balun much before the voltage from the long side arrives. Therefore, one of the 4 leads going into the balun will have a voltage and current rise earlier than any of the other 3 leads. The balun will then act as a transformer to share energy between the 3 remaining leads, both by magnetic coupling and capacity coupling.

Bottom line: a choking action will occur between the two leads comprising the transformer primary on the short side of the antenna, and a power transfer will occur causing a current and voltage on the secondary side of the transformer. The result is a more balanced current in the coax than would occur with the balun omitted.

This example also sets up conditions for a common mode current which will flow through the transformer, equally and in phase on both the coaxial conductors. The balun (transformer) will retune the feed line in this case similar to the way a coil placed in a top loaded vertical would retune the antenna.

A lot of discussion has occurred concerning a possible path to ground which might occur on the outside of the coax braid. Not everyone agrees that this

path is independent of the inner surface of the coax braid.

73, Roger, W7WKB

864. Downloadable IOTA List update

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 03:07:37 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <Z3uB6.3464$Pj2.314636@newsread1.prod.itd.earthlink.net>
Source record: 166163
Cross-posted to: alt.ham-radio.marketplace,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.policy

Downloadable IOTA List updated as of 13-Apr-2001 03:04 UTC

On the IOTA List Page at http://www.ab7sl.com

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Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

865. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 03:26:46 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD671F6.6C7B8CF9@eznec.com>
Source record: 166164

If you connect even a perfectly balanced dipole to a coax feedline, it can result in common mode current on the feedline. (With coax, common mode current manifests itself as current flowing on the outside of the shield.) As Roger pointed out, the currents on the inside of the coax are equal and opposite. At the antenna connection, the center conductor is connected to one side of the dipole, so all its current flows into the dipole half. The current on the shield has two choices, though. It can either flow into the other dipole half, or it can flow back down over the outside of the coax. The amount which goes each way depends on the relative impedances of the paths, so feedline length and orientation can affect the amount of common mode current. A "current" or "choke" balun imposes a high impedance to currents flowing on the outside of the cable, so nearly all the current on the inside of the shield ends up going onto the dipole half it's connected to. This results in (nearly) equal currents in the dipole halves, and (nearly) zero current on the outside of the coax. For more about this topic, see "Some Aspects of the Balun Problem", by Walt Maxwell, W2DU, in QST, March 1983; or "Baluns: What They Do And How They Do It" in the _ARRL Antenna Compendium_, Vol. 1.

Roy Lewallen, W7EL

Roger Sparks wrote:
>
> "Dick Carroll" <dixie@townsqr.com> wrote in message
> news:9b5iqa$5e5$0@208.207.71.159...
>
> (clip some)
> >
> > Until a couple posts ago I thought I understood how a choke balun at an
> > antenna feedpoint worked. If it doesn't stop RF from coming back down
> > the outside of the feedline braid from the inside surface of the shield
> > via the feedpoint, how *does* it work?
> > By the earlier post it couldn't possibly work that way, unless I
> > misread something, which is certainly possible.
> >
> > Dick
>
> Hi Dick,
>
> Think of the balun (whether choke or coiled coaxial) as a transformer with
> 1:1 turns ratio. The normal feed line currents flowing from the transmitter
> to the antenna are equal in both the inner and outer coax conductor but are
> 180 degrees out of phase. Therefore the fields they emit cancel when they
> are measured from any point outside the coaxial line.

>
> The bigger discussion is about any unbalanced voltages and currents.
>
> The voltages and currents reflected from the ends of the antenna may not be
> in balance. Assume for the point of discussion that one side of a dipole is
> much shorter than the other. The voltage and current reflected from the
> short side will return to the balun much before the voltage from the long
> side arrives. Therefore, one of the 4 leads going into the balun will have
> a voltage and current rise earlier than any of the other 3 leads. The balun
> will then act as a transformer to share energy between the 3 remaining
> leads, both by magnetic coupling and capacity coupling.
>
> Bottom line: a choking action will occur between the two leads comprising
> the transformer primary on the short side of the antenna, and a power
> transfer will occur causing a current and voltage on the secondary side of
> the transformer. The result is a more balanced current in the coax than
> would occur with the balun omitted.
>
> This example also sets up conditions for a common mode current which will
> flow through the transformer, equally and in phase on both the coaxial
> conductors. The balun (transformer) will retune the feed line in this case
> similar to the way a coil placed in a top loaded vertical would retune the
> antenna.
>
> A lot of discussion has occurred concerning a possible path to ground which
> might occur on the outside of the coax braid. Not everyone agrees that this
> path is independent of the inner surface of the coax braid.
>
> 73, Roger, W7WKB

866. Re: copper skin depth

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 03:49:54 UTC
From: Denver Braugher <Braugher@bwcc.com>
Message-ID: <3AD67762.E36F3B61@bwcc.com>
Source record: 166165

Richard Harrison wrote:
> For copper at 20 degrees C this reduces to
> Skin depth of copper in cm = 6.62 over the square root of the frequency.

For 60 Hz, I get 0.854 cm.
Doubling it, I get a diameter of 1.71 cm.

Does this have any implications for the USA's electrical power grid?
I realize that cables could be made thicker for mechanical strength alone.

867. Re: Faraday shield antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 03:50:29 UTC
From: richardharrison@webtv.net
Message-ID: <3785-3AD67785-176@storefull-113.iap.bryant.webtv.net>
Source record: 166167

Denver Braugher wrote:
"Unless I had a rather large and powerful setup, I would be quite concerned that my measurements would interfere with what was really happening."

If r-f current flowed perpendicularly through the outer coax conductor, an SWR pattern inside the coax would be repeated externally. We would have no use for slotted lines, we could determine the SWR pattern using an external sensor.

Having climbed over and around parabolic and periscopic microwave antenna systems aplenty, and checking illumination of many, I can testify that the conductive reflectors measure almost no signal on their reverse sides though their illuminated sides register intense signals.

Many ellipse and "fly-swatter" reflectors are perforated with many small holes, but they still show almost no signal on their reverse sides. These metal surfaces reflect rather than conduct and that is exactly what they are supposed to do.

Radio Shack sold a microwave oven leakage meter. I`ve had one for many years. I`ve used mine to check communications dishes in a pinch. You might borrow one of those to see if you can find a field around your oven door. Mine is sensitive enough to work well with a watt or so from a communications transmitter, but nearly a KW from an oven doesn`t force enough energy through the oven walls, window screen or door gaskets to register a thing.

Shielding works. The energy is not conducted through metal walls.

Best regards, Richard Harrison, KB5WZI

868. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 04:00:26 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9b5tkq$66i$0@208.207.71.159>
Source record: 166166

Denver Braugher wrote:
>
> Dick Carroll wrote:
> > One of the base stations had a pressureized 1i¿½ inch copper tube type
> > coaxial feedline which was accessible at the back of the transmitter.
> > When it was transmitting 1500 watts, one could touch the outer surface
> > of the copper coax and feel nothing whatever.
> You didn't say what voltage.

No doubt plenty high enough to feel profoundly if the RF came through
the shield to the outsice surface.

>
> > Gary Coffman insisted that while DC doesn't pass through the dielectric
> > of a capacitor, AC does.
> What a kidder.

Oh he had some explanation from theoretical physics that sounded OK to
him.

869. Re: Antenna: Drill a hole or not to drill a hole /Mobile (2m/70cm)/

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-13 04:28:49 UTC
From: John Shepherd <john.shepherd@earthlink.net>
Message-ID: <8ovcdt8joeula99t2ca1joe68ab28muuvk@4ax.com>
Source record: 166168

You will find a remarkable improvement in fringe areas. In strong repeater areas there will be no noticable difference.

You will not find problems except in the lowest of parking structures unless you driving a high vehicle to start with.

If you install the mount carefully you will not have any problems with leaking - just be sure to seat the little "O" ring properly (if your mount uses one).

Unless you have a leased car the hole will not be a problem. You can leave the mount on and put on a spike antenna when you sell - or remove the mount and buy a plug for the hole (get one at any 2 way shop - $1)

I recommend drilling the hole, You will always get the best coverage and never worry about missing a contact because you compromised on the antenna.

John AD6NR

On Wed, 28 Mar 2001 07:28:20 -0500, "John (KB3CDF)" <murphman@erols.com> wrote:

>Dear Elmer:
>
>I am considering a permanent antenna mount for 2m/70cm. I am
>seriously considering a NMO in the center of the roof of my vehicle
>vs. any other type mount.
>
>It is suspect that there would be a HUGE increase in performance with
>this type of installation.
>
>I am kind of "on the fence" with this decision.
>
>My concerns:
>1.) parking garage issues
>2.) resale or trade-in of the vehicle
>3.) leaks ...rain or water issues???
>
>I am guessing there are many HAMs out there that have considered this
>and decided one way or the other for various reasons. I would love to
>hear your arguments in either direction.
>
>Thanks in advance,

870. Effective, Short Antenna for 14.07MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 13:18:53 UTC
From: Les Kramer <wa3sgz@mindspring.com>
Message-ID: <9bamjb$h9$1@slb6.atl.mindspring.net>
Source record: 166028

I operate PSK31 most of the time because of the ability to reliabily communicate at low power. Due to the narrow bandwidth of PSK31 (31.5 Hz), most operation occurs within 3KHz above the defacto PSK31 calling frequency (i.e., for 20 meters, that frequency is 14.070 MHz). Thus, for monoband operation, a narrow bandwidth antenna is an acceptable compromise. I have seen over 30 signals within the PSK 3KHz passband on 20 meters.

I intend to purchase a Small Wonders Laboratory 20M PSK31 QRP kit later in the year and use it exclusively when I travel with my laptop (it will fit in the laptop case). My problem is that I need a short, highly portable, light weight antenna cut for 14.070 MHz. This antenna needs to be small enough to fit in a small suitcase (20 inch) with normal travel stuff. I also have two folding, bungy corded fiberglass tent poles of about 10 feet in length that I intend to support the antenna with from a hotel window (hopefully three stories or higher but depends on the hotel layout).

CAN SOMEBODY SUGGEST THE BEST COMPROMISE ANTENNA FOR THIS KIND OF OPERATION? I have thought of helical dipoles, shortened loops, a fractal monopole, possibly a vertical delta loop for some applications, etc.) Obviously, a wire antenna is the preferred solution. Sketches or references to sketches and other information would also be appreciated.

73,

de WA3SGZ Les

871. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 20:59:59 UTC
From: kd1jt@arrl.net
Message-ID: <3ad8ba2a.27522799@news.mybizz.net>
Source record: 166019

On 14 Apr 2001 19:20:01 GMT, fazamy@aol.com (FAZAMY) wrote:

>Since most rigs nowadays use 52 ohm coax, what can one use 72 ohm coax for.
>I've the braid and center conductor type of 72 ohm coax, not the cable tv kind.
>
>73,
>Evan
>KB2AMY

I use it to wind coax traps for my shortened dipole antennas ... I've
been using RG59/U and it works fine.

872. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 21:26:13 UTC
From: kenneth m cubilo <kce@freeway.net>
Message-ID: <3ad8c087$0$12824$2c3e98f8@news.voyager.net>
Source record: 166020

hi evan well go ahead and use it place of 52 ohm coax. years ago when i
was a novice buying radio gear from paper route earnings the free 72 and
75 ohm coax the local cable company was giving away worked great. you
can also use it in the construction of loop antennas using a quarter
wave piece (minus the vf of course) for the matching section.
ken w8ob

FAZAMY wrote:
>
> Since most rigs nowadays use 52 ohm coax, what can one use 72 ohm coax for.
> I've the braid and center conductor type of 72 ohm coax, not the cable tv kind.
>
> 73,
> Evan
> KB2AMY

873. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 21:34:11 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9bafoj$ra7$1@208.207.71.157>
Source record: 166021

W6RCecilA wrote:
>
> Dick Carroll wrote:
> > Gary insisted that under other than steady state conditions 'charge'
> > DOES flow through the dielectric....That's essentially when he lost me.
>
> If you don't think current can flow through the dielectric of a capacitor,
> try using a disc ceramic capacitor (instead of a stub) for loading across
> ladder-line. :-) I looked out one night and my feedline was on fire.

Cecil you really should use one rated for enough voltage to withstand
the strain.

874. Re: Antenna Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 21:42:27 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AD8C443.F29FCE6E@hiwaay.net>
Source record: 166022

I suggest you make a simple test antenna- use an SO 239 coax connecter
and 5 short lengtyhs of #12 wire. Cut one piece to about 19.5 inches-
solder it into the SO239 so it sticks up when the threads are down- cut
four pieces about 20 inches- solder them to the mounting holes in the
SO239.
With the threads pointing down, bend the four pieces to droop at about
45 degrees- hook the coax up, put it where the Vent gadget is, and make
a test.

If this 1/4 wave ground plane gets out, you know two things- the coax
and connectors are OK, and the ventenna has a problem. If it doesn't get
out- there is probably another problem, in the coax or connectors

Good luck- Bill

Frizz wrote:
>
> I just spent all damned day putting up a Ventenna. Since this thing would
> not fit over the one vent pipe I have, I opted for the side mounting kit
> from the same company. I ran maybe 30 or 40 feet of RG-8x to the antenna
> (as short as I could get it), hooked it up and nothing happened. When I
> transmitted on 2m (this is the 2m version) I couldn't hit a repeater a few
> miles down the road, my amplifier started buzzing, and with another radio
> transmitting into the same repeater I could barely hear it with my base
> radio. So did I waste my money on this stupid piece of junk antenna in a
> pipe? Should I go back and check my coax connection (which I have done
> repeatedly.) ? I did take my multimeter and checked the continuity across
> the coax and it was fine. Any suggestions? This really pisses me off.....

875. Re: Antenna Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 21:51:43 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AD8C66F.25305B0C@spam.me.not>
Source record: 166024

And if it works, you can always just leave it up there. ::Grin::

-SSB

Bill Aycock wrote:

> I suggest you make a simple test antenna- use an SO 239 coax connecter
> and 5 short lengtyhs of #12 wire. Cut one piece to about 19.5 inches-
> solder it into the SO239 so it sticks up when the threads are down- cut
> four pieces about 20 inches- solder them to the mounting holes in the
> SO239.
> With the threads pointing down, bend the four pieces to droop at about
> 45 degrees- hook the coax up, put it where the Vent gadget is, and make
> a test.
>
> If this 1/4 wave ground plane gets out, you know two things- the coax
> and connectors are OK, and the ventenna has a problem. If it doesn't get
> out- there is probably another problem, in the coax or connectors
>
> Good luck- Bill
>
> Frizz wrote:
> >
> > I just spent all damned day putting up a Ventenna. Since this thing would
> > not fit over the one vent pipe I have, I opted for the side mounting kit
> > from the same company. I ran maybe 30 or 40 feet of RG-8x to the antenna
> > (as short as I could get it), hooked it up and nothing happened. When I
> > transmitted on 2m (this is the 2m version) I couldn't hit a repeater a few
> > miles down the road, my amplifier started buzzing, and with another radio
> > transmitting into the same repeater I could barely hear it with my base
> > radio. So did I waste my money on this stupid piece of junk antenna in a
> > pipe? Should I go back and check my coax connection (which I have done
> > repeatedly.) ? I did take my multimeter and checked the continuity across
> > the coax and it was fine. Any suggestions? This really pisses me off.....

876. SSB'ers...join the club!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 22:40:31 UTC
From: "A.E. 352" <A.E._member@newsranger.com>
Message-ID: <3ad8c3cf$1@news2.mibx.net>
Source record: 166023

Hey SIDEBANDERS! If you're looking for a club to join, please feel-free to check-out http://american-eagle.tripod.com We are a brotherhood of 10/11M SIDEBAND operators with members WORLDWIDE, who simply happen to enjoy the hobby. So...give us a look. Membership is ALWAYS free!

A.E. 352

877. Re: SSB'ers...join the club!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 22:59:44 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD8D660.75DD365B@eznec.com>
Source record: 166025

More specifically, this is the "American Eagle CB'ers Club". Which part
of 10 meters is now CB?

Roy Lewallen, W7EL

"A.E. 352" wrote:
>
> Hey SIDEBANDERS! If you're looking for a club to join, please feel-free to
> check-out http://american-eagle.tripod.com We are a brotherhood of 10/11M
> SIDEBAND operators with members WORLDWIDE, who simply happen to enjoy the
> hobby. So...give us a look. Membership is ALWAYS free!
>
> A.E. 352

878. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 23:24:11 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bam6gsbp1@slb7.atl.mindspring.net>
Source record: 166026

Bill:

Thanks, that analysis helps a lot.

During this thread development, I kept mentally coming back to "leaky" coax, such as that used in Guidar and other such systems where the outer shield has been deliberately pierced in a uniform manner to enable signals to "leak" in and out of the coax.

One could postulate such an infinitely long, uniformly pierced, coax where the "leakage" was readily apparant, and then postulate that the piercings became vanishingly small until there was no measureable "deliberate" leak.

"In the limit" at that point where the deliberate leak was vanishingly small, the result should be the same as you have outlined.

I also believe that the best way to visualize "leaky" coax is that it has very low common mode rejection or has a high common mode response, depending on whether you are interested in "ingress" or "egress".

i.e. does punching a "hole" no matter how symmetric in a coaxial line, destroy it's common mode properties?

Certainly the "radiation" from leaky coax can be thought as as a coax having an "antenna" current flowing on/in it, in other words a leaky coaxial cable radiates because of low common mode rejection.

Would a "conventional" current balun stop the leakage and radiation?

Thoughts, comments?

-Peter K1PO

"William E. Sabin" <sabinw@mwci.net> wrote in message
news:3AD829A0.18484061@mwci.net...
>
>
> William E. Sabin wrote:
>
> > This article will try to put the subject of skin effect on the
> > braid of a coax at HF frequencies into perspective. The
> > discussion adheres to W.C. Johnson "Transmission Lines and
> > Networks" McGraw-Hill, 1960. Johnson was E.E. Dept. Chair at
> > Princeton University. Relevant pages 58 to 79 have been scanned
> > and are available in PDF format by email upon request.
> >
> > Initially I will summarize the results for a current forced to
> > flow only along the length of the braid (a common mode current)

> > of an ordinary coax cable made of ordinary copper:
> >
> > 1) Current concentrates where the magnetic flux is greatest. Or
> > as Terman (1955) says "where the magnetic flux linkages are
> > greatest". The current concentrates on the outer surface of the
> > braid (this is what we are interested in).
> >
> > 2) Visualize current I2 at (and parallel to) the surface and I1 a
> > short distance directly below (also parallel to) the surface, and
> > both currents in the same direction. Consider just one short
> > segment of length X for these currents.
> >
> > 3) A magnetic flux is contained within the rectangular segment
> > defined by these currents and X. An EMF (electromagnetic force)
> > is created around the periphery of this path by the rate of time
> > variation of this flux.
> >
> > 4) This EMF is in such a direction that it opposes the current
> > I1, therefore making it smaller. If it were not for the changing
> > flux, I1 would equal I2.
> >
> > 5) This rectangle also has two very short end segments that are
> > perpendicular to the surface, directed toward the center of the
> > wire. The voltages in these segments are zero because they are
> > perpendicular to the direction of the electric field, which is in
> > the direction of the current.
>
> A better way to say this is that any induced voltages in the end
> segments are "cancelled" by induced voltages from adjacent
> rectangles.
>
> > 6) The voltage along the buried path equals I1 x R + (an induced
> > voltage due to flux). R is the natural resistance of the copper
> > material. The voltage along the surface path is just I2 x R. The
> > voltage along the surface segment and the voltage along the
> > buried segment are *equal*. That is, although current decreases
> > inside the wire, voltage drop along the direction of the wire
> > does not decrease. There is an equilibrium between current I1 and
> > induced EMF such that the voltages along paths 1 and 2 remain
> > equal. But the "effective" resistance along path 1 is greater
> > because of the reduced current.
>
> Effective "impedance" would be better.
>
> > 7) The action of the flux causes a phase shift in the EMF that
> > opposes the current in I1. This means that the voltage along I1
> > lags the voltage along current I2 at the surface. This is called
> > the "internal inductance" effect. For each skin depth the phase
> > shift is 1 radian. However, if the diameter of the braid is much
> > larger than its thickness, Johnson shows that the "total" phase

> > shift of the "total" current at RF, found by integrating current
> > density vs depth, is about -45 degrees. The reason is that the
> > current decreases so quickly below the surface. The "total" H
> > field is also -45 degrees.
> >
> > 8) Two important conclusions from parts 6) and 7) are: Although
> > the *currents* I1 and I2 are quite a bit different in amplitude
> > and phase, the *voltages* along I1 and I2 are *equal* in
> > magnitude. And this equality extends all the way to the inner
> > surface of the braid. The voltage drop along the inner surface
> > is equal to the voltage drop along the outer surface. That is,
> > although there is little current on the inner surface, the
> > voltages are identical in magnitude, but differing in phase. And
> > no voltages appear on the segments of the rectangle that are
> > perpendicular to the surface because the current is always
> > perpendicular to those equipotential segments.
>
> Should be "because of the cancellation effects mentioned above".
>
> There are a lot of subtleties involved that are very tough to get a
> good handle on.
>
> Bill W0IYH
>
>

879. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 23:31:31 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bamg6of1@neptunium.btinternet.com>
Source record: 166027

FAZAMY wrote
> Since most rigs nowadays use 52 ohm coax, what can one use 72 ohm coax for.
> I've the braid and center conductor type of 72 ohm coax, not the cable tv kind.
==========
Use it anywhere you fancy. If there should be a slight change in performance it is just as likely to be a little better as a little worse.

72-ohm coax is almost a perfect match to the centre feedpoint of a 1/2-wave dipole. Some say that's what it was manufactured for but its not very likely. There's far more 75-ohm coax been manufactured over the years than all the other coax impedances put together.

But most likely there will be no noticeable change in performance. Radio is the most inexact of all the sciences. What's a couple of decibels more or less.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

880. Re: SSB'ers...join the club!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 23:38:45 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3AD8DF7D.A93F7C8F@netdoor.com>
Source record: 166029

I can operate both legally. You can too can't you? not!!!

Roy Lewallen wrote:

> More specifically, this is the "American Eagle CB'ers Club". Which part
> of 10 meters is now CB?
>
> Roy Lewallen, W7EL
>
> "A.E. 352" wrote:
> >
> > Hey SIDEBANDERS! If you're looking for a club to join, please feel-free to
> > check-out http://american-eagle.tripod.com We are a brotherhood of 10/11M
> > SIDEBAND operators with members WORLDWIDE, who simply happen to enjoy the
> > hobby. So...give us a look. Membership is ALWAYS free!
> >
> > A.E. 352

881. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 23:48:56 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bangr$29e$1@neptunium.btinternet.com>
Source record: 166031

Tom wrote .
> Hi OMs
> I have a new transceiver (Alinco DX-70),that has a grounding
screw.Must I
> use it ? I have only a heating tube in my shack.
==========
If your transceiver's case is already connected to the station
ground via the outer coax cable conductor it won't make any
difference to station operation whether you connect it to a ground
or not.

But for your personal safety, connect it to the 50Hz 240V supply
ground. Because when you are messing about in the shack you may
disconnect the coax with the transceiver still powered up.

If there is any other radio equipment in the shack, connect all the
boxes together and also to the 50 Hz supply ground using the
grounding screws.

882. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-14 23:51:22 UTC
From: rsmits@home.com
Message-ID: <3ad8e26d1efzvgf$mr2ice@news>
Source record: 166030

In <20010414152001.22764.00000214@ng-ba1.aol.com>, on 04/14/2001
at 07:20 PM, fazamy@aol.com (FAZAMY) said:

>Since most rigs nowadays use 52 ohm coax, what can one use 72 ohm coax
>for. I've the braid and center conductor type of 72 ohm coax, not the
>cable tv kind.

Coaxial cable all has an outer braid or mesh and an inner conductor. RG59
and RG11 used in Cable systems does too.

You can use it to feed antennas, make impedance transformers, etc. I've
used it to make a 1/4 wave matching section to feed a delta loop with.

Bob

Robert Smits Ladysmith BC Canada VE7HS

--
---
rsmits@home.com
---

883. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 00:12:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD8E776.5403F2C@eznec.com>
Source record: 166032

Bill,

Thanks for taking the time to give such a complete and detailed explanation. One thing isn't quite clear to me. I'm not intending to take the following paragraph out of context, so if the answer lies elsewhere in the explanation I apologize.

> > 8) Two important conclusions from parts 6) and 7) are: Although
> > the *currents* I1 and I2 are quite a bit different in amplitude
> > and phase, the *voltages* along I1 and I2 are *equal* in
> > magnitude. And this equality extends all the way to the inner
> > surface of the braid. The voltage drop along the inner surface
> > is equal to the voltage drop along the outer surface. That is,
> > although there is little current on the inner surface, the
> > voltages are identical in magnitude, but differing in phase. And
> > no voltages appear on the segments of the rectangle that are
> > perpendicular to the surface because the current is always
> > perpendicular to those equipotential segments.
>
> Should be "because of the cancellation effects mentioned above".

I envision current path I1 between points A and B on the outer surface, and path I2 between points C and D at some depth in the conductor (or on the inner surface):

```
A -> I1 -> B
================
================
C -> I2 -> D
```

If I read correctly what you wrote, the magnitude of the voltage drop from A to B equals the magnitude of the voltage drop from C to D, although I1 isn't necessarily equal to I2 and the A-B drop is a different phase than the C-D drop. (If my reading is wrong, the rest of my question isn't relevant, so please correct me. I did look at the explanation pretty carefully and think I got it right.)

Let's suppose that the voltage at A equals the voltage at C (Vac = 0). If the phase angle of the A-B drop isn't equal to the phase angle of the C-D drop, then the voltage at B can't equal the voltage at D. Just choosing some arbitrary numbers, if Vab = 1 at an angle of zero degrees (1 + j0) and Vcd = 1 at an angle of 90 degrees (0 + j1), and if Va = Vc, then Vbd = 1.41 at an angle of -45 degrees (1 - j1). So as long as the phase of the drop from A to B is different than the phase of the drop from C to D, Vac and Vbd can't both be equal. Is that true? If not, what am I missing?

Roy Lewallen, W7EL

884. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 00:16:30 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bap4i$ie9$1@plutonium.btinternet.com>
Source record: 166034

Cec sez -
> If one stands under the end of a dipole facing the feedpoint and
looks up,
> one sees the end of the dipole. If one looks down aways, one sees
the
> feedpoint. If one looks at the top of a vertical and looks down
aways,
> one sees the feed point. Thus, off the end of the dipole, the
radiation
> can't help but be vertical because of the perspective.
==========
Let's say there will be a vertical component at ground level.

Regardless of how it got there no-one has yet denied its existence.

But the question of whether the RF power in the groundwave is taken
into account when computing very-far-field radiating efficiency
remains unanswered.

Reg.

885. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 00:19:07 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD8E8FB.AE01CD55@mwci.net>
Source record: 166033

Peter O. Brackett wrote:

> "leaky" coax,
> such as that used in Guidar and other such systems where the outer shield
> has been deliberately pierced in a uniform manner to enable signals to
> "leak" in and out of the coax.

Suppose we place a small hole in the braid. The normal electric field lines from center wire to braid can now be"mapped" and they will stick out of the hole a little and loop around and terminate on the outside of the braid. But being out in the open gives them a change to create an H field outside the hole. The H field begets an E field and so forth and we then have a radio wave in space. J.D. Jackson 3d edition has a diagram that shows what it looks like at the hole.

> I also believe that the best way to visualize "leaky" coax is that it has
> very low common mode rejection or has a high common mode response, depending
> on whether you are interested in "ingress" or "egress".

In April 2000 Ian G3SEK suggested that leakage is due (at least partly) to the conversion within the coax of differential mode to common mode due to imperfections in the shielding. This common mode signal then can escape from the coax. I really like that explanation. Common mode inside the coax means that the normal cancellation of magnetic field at the inner surface of the braid that occurs is degraded.

Bill W0IYH

886. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 00:42:21 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD8EE6D.32730BEE@mwci.net>
Source record: 166035

Roy Lewallen wrote:

> I envision current path I1 between points A and B on the outer surface,
> and path I2 between points C and D at some depth in the conductor (or on
> the inner surface):
>
> A -> I1 -> B
> ================
> ================
> C -> I2 -> D
>
>
> Let's suppose that the voltage at A equals the voltage at C (Vac = 0).
> If the phase angle of the A-B drop isn't equal to the phase angle of the
> C-D drop, then the voltage at B can't equal the voltage at D. Just
> choosing some arbitrary numbers, if Vab = 1 at an angle of zero degrees
> (1 + j0) and Vcd = 1 at an angle of 90 degrees (0 + j1), and if Va = Vc,
> then Vbd = 1.41 at an angle of -45 degrees (1 - j1). So as long as the
> phase of the drop from A to B is different than the phase of the drop
> from C to D, Vac and Vbd can't both be equal. Is that true? If not, what
> am I missing?

I got my info from W.C. Johnson and repeated it the way he wrote it.
However, I detected the problem that you mention, and in a followup post
(you may have it available) I added the following note:

"A better way to say this is that any induced voltages in the end
segments are cancelled by induced voltages from adjacent
rectangles."

I believe this is OK, if we look at adjacent rectangles and see that the
voltages do cancel each other at adjacent boundaries. I said the same thing
in an August 1996 QEX article. The main idea is that the rectangles are all
in the mind. It is the various "layers" that are important. I believe
Johnson overlooked this fine point. At any rate it has no bearing on his
conclusions.

Bill W0IYH

887. Re: Cheap attenuator?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 00:43:43 UTC
From: Dante'@inferno.net
Message-ID: <9baqrv$9ac$3@news.uky.edu>
Source record: 166036
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

In article <3AD7EEB0.674D4F5D@coqui.net>, NOSPAMexray@coqui.net says...
>
>Here's a novel idea. Has anybody tried a TUBE preamp (like the
>old Ameco ones) with some attenuation to feed a modern rice-box
>for better IMD performance? Maybe the noise level is worse?
>Ideas like compromising the antenna fly in the face of capturing
>weak signals to compensate for a lousy front-end.
>---
>Bill (tubes-r-us) Meacham
>Vieques, PR
>
A friend has experimneted with a "tube" preamp.
He tried several different tubes,including nuvistors.
While they work, and work pretty good, he found that the step down transformer discribed by John Doty does a much better job.
He used the tubes in several different configuration, with a cathode follower working best.
He also has a remotley tunned antenna matcher desinged for his ham radio.
And the step down transformer was within a dB or so of his transmatch.
The transmatch had a slight advantage in reducing BCB intermod without knocking all the signals down. But again, the differnce in performance is hardly worth it.
Given that you can salvage the core from most TV "baluns", and the wire is cheap,
why not try it.

888. What's Best For 6 Meters??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 00:53:06 UTC
From: "David J. Moge" <n1rzb@mailops.com>
Message-ID: <3ad8efe6_2@excalibur.gbmtech.net>
Source record: 166037

Being totally new to 6 Meters, I would like to know what is the best all around antenna to use?
Thanks
N1RZB

889. Looking for Ground Planes 101

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 01:00:12 UTC
From: Idontwantspam@net
Message-ID: <3ad8f048.7303020@news.bellatlantic.net>
Source record: 166038

Hi:

I'm looking to find out more about the factor involved in designing a ground plane, trying to deal with other, mechanical issues at the same time.

Advice or steering me to reference material would be welcome.

First, I understand that an antenna, for example a 2M mag mount, that is designed to work with a ground plane will not work well without.

One question: the ground plane needs to be at right angles to the vertical antenna. Does the base have to be directly even with the plane, or could it be suspended a couple of inches above it?

Second: as I understand, the plane should be at least 1/4 wavelength radius to be effective. Does it need to be solid, or would perforated material or strips or mesh be as effective?

Third: how flat does it need to be? I know the classic definition of a plane, but many things (including the roof of most cars) are not quite flat enough.

TIA,
Happy trails,
Gary

"In three words I can sum up everything I've learned about life: it goes on."
-Robert Frost-

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

890. 6 meter antennas.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 01:27:27 UTC
From: JAD <jdavoli@NOSPAMerols.com>
Message-ID: <9batblpob1@bob.news.rcn.net>
Source record: 166039

Hi Dave,

Here's the dump on six meters! For FM and repeaters, use a vertical. You can work a fair amount of 6m dx with a vertical as well, considering that tropo and ionosphereic "skip" change polarization more than Carter has liver pills anyway. For AM, SSB and CW, and BEST DX (and serious advantage in "ground gain" and relief from man made NOISE) performance, a horizontally polarized antenna is the way to go. Just about everyone on these modes will be on "the flat side," so if you want to work the locals (200 miles on a good day,) as well as dx, you need to be horizontal. A multi-element beam is best, but a small loop like the HO loop from M2 will put you "on the flat side" if you can't put up a beam and rotor. There are several 6m longwire antennas that can be built, as well as the ubiquitous dipole, that will perform very well.

Be aware that many verticals for 'six will not resonate properly in the SSB and CW portions of the band, and can be used for the FM portion only. An antenna tuner will allow you to stretch the bandwidth of these sticks, so at least the transmitter will see a match.

If you are talking mobile, you can get a good start in all modes with a 1/4 wave vertical. Forget magnet mounts......six meters likes a counterpoise and to take advantage of the broadbanded performance of a 1/4 wave, the antenna needs grounded properly at it's base. Screw the Jap and other short antennas with coils and crap, make a 1/4 wave whip out of a CB whip cut to 54" (this is approximate,) or buy a Hamstick, Aantron or Valor whip (some of these develop gain) and make sure that the mount is grounded to the car. Needs not be overdone like an HF grounding system, just PROPERLY grounded or with a "hole" mount. The ONLY magnet antenna I've seen work on '6 is the MFJ one, that they advertise as being a 2 and 6 meter antenna (resonates 1/4 wave on 6 and 5/8 on 2 if I remember.) Serous 6m CW/SSB mobileers have one or more horizontal loops on a mast on the car. You may matriculate to that some day..... I have not!

I work all modes on '6 (including AM) and it's my favorite band next to 2m. When the MUF drops into 50MHz, 6m operators come out of the woodwork to work the band openings. I catch them as much on FM (go to 52.525 and 52.49) as SSB. LEARN the band plan well before you transmit, and by all means, WELCOME to the Magic band!

'73 de Joe
KB3DMF
FM29

"David J. Moge" <n1rzb@mailops.com> wrote in message
news:3ad8efe6_2@excalibur.gbmtech.net...

Being totally new to 6 Meters, I would like to know what is the best all around antenna to use?
Thanks
N1RZB

891. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 01:54:45 UTC
From: richardharrison@webtv.net
Message-ID: <3691-3AD8FF65-89@storefull-114.iap.bryant.webtv.net>
Source record: 166043

Reg Edwards wrote:
"Regardless of how it got there no-one has yet denied its existence.

But the question of whether the RF power in the groundwave is taken into account when computing very-far-field radiating efficiency remains unanswered."

Antenna analysis programs probably try to present a radiation efficiency number. Pure speculation on my part because I`ve never seen such a program, but it should be easy to include. I gather it is not part of Reg`s program.
I think there is no unique answer to Reg`s question.

For shortwave communication antennas the specification is usually gain over an isotropic or 1/2-wave dipole in free space, taken in the best direction.

Shortwave broadcasters look at "gain-beamwidth-product". But efficiency? That`s something for regional broadcasters.

A shortwave groundwave "peters-out" fast. Vertically-polarized shortwave radiation is something useful if you happen to need skywave contact in the direction of the antenna wire (or maybe line-of-sight contacts), but in most cases it would be considered a byproduct of the stronger broadside radiation from a low horizontal 1/2-wave dipole. Figures 12 and 13 in chapter 3 of the 19th edition of the ARRL "Antenna Book" show the relative strengths of broadside radiation and radiation off the ends of the dipole.

I mention that "bible" because I think it`s the reason Reg got no quarrel as to the existence of radiation off the ends of the horizontal half-wave dipole. It`s in the Book!

Best regards, Richard Harrison, KB5WZI

892. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 01:59:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD90074.F907D387@IEEE.org>
Source record: 166040

Dick Carroll wrote:
>
> W6RCecilA wrote:
> > If you don't think current can flow through the dielectric of a capacitor,
> > try using a disc ceramic capacitor (instead of a stub) for loading across
> > ladder-line. :-) I looked out one night and my feedline was on fire.
>
> Cecil you really should use one rated for enough voltage to withstand
> the strain.

I learned something from that, Dick. The rating on the disc ceramic was
plenty high enough at 3 kV. The only problem is that is a DC rating, not
an RF rating. A Technician class ham educated me about that characteristic
of disc ceramic capacitors. Wonder how many Extras know that?
--
http://www.mindspring.com/~w6rca

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893. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 02:03:57 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD9018D.784C6861@IEEE.org>
Source record: 166041

Reg Edwards wrote:
> But the question of whether the RF power in the groundwave is taken
> into account when computing very-far-field radiating efficiency
> remains unanswered.

I don't see how there could be much of a vertical component in the ground wave from a horizontal dipole. The vertical component directly off the ends is a combination of skywave and ground reflection and thus is a far field characteristic.
--
http://www.mindspring.com/~w6rca

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-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

894. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 02:10:27 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9bavuj$9ra$0@208.207.71.165>
Source record: 166042

"Ian White, G3SEK" wrote:
>
> Dick Carroll wrote:
> >
> > Gary insisted that under other than steady state conditions 'charge'
> >DOES flow through the dielectric....That's essentially when he lost me.
> >
> >
> Gary having said:
> >> This current
> >> even has a name -- displacement current, as opposed to conduction
> >> current. What actually happens is that the electric field transports
> >> energy from one side to the other, but the effect on both sides is
> >> the same as if charge actually flowed through the dielectric.
>
> As far as I can see, there is no conflict between Gary's statement and
> Dick's 'Fort Monmouth' version. The only problem is that Dick
> misinterpreted what he quoted from Gary.
>
> The key words in Gary's statement are 'AS IF'.

Ian, that wasn't Gary's words, those were from another psoter who who
thought I didn't understand capacior action. Gary was unequivocal that
AC does flow through the dielectric in a capacitor while DC does not. I
printed his post and have it her somewhere.

He makes it very clear
> that charge (real physical electrons) does NOT flow across the gap
> between the plates, but when viewed as a component - a 'sealed black
> box' with two connecting leads - in an AC circuit, the capacitor
> *behaves* AS IF electrons flow right through it.

Again, that is NOT what Gary said, it's what I said. My training was
that no current flowed through a capacitor dielectric, rather through
the external circuit while charging and discharging the capacitor.

>
> 'Displacement current' is simply a fiction invented to account for this
> behavior.

I don't remember the Signal Corps ever using the term. As I recall they
called current flowing through a capacitive circuit "apparent current"
flow through the capacitor.

Dick

895. Re: QST- QST- QST INVITATION TO 3 ANTENNA RELATED DIRECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 02:18:27 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9bb0dj$au4$0@208.207.71.165>
Source record: 166044

Fractenna wrote:

If you want to send him e-mail with a question--don't. He won't
> answer.

Youi got that right. He *CAN'T* answer. He has no answers.

If you want to go on USENET with a question for Dr.Cohen --don't. He
> won't answer.

Redux.

>
> BUT if you want to use a sane and moderated forum, with a question of interest
> to others--do it.

Ah, among them fans might just come up with some answers that Dock can
use. That's the rationale.

896. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 02:24:21 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bb0ob$l9v$1@nntp9.atl.mindspring.net>
Source record: 166045

Evan:

If you've got it...

Just use it!

In most amateur applications, you will never notice the difference between 73 Ohm and 50 Ohm coax feedlines in "on air" performance. If you must, to save face while you are working the world with your 73 Ohm coax that "should really be 50 Ohms", just lie and tell the ham on the other end of your QSO's that it is 50 Ohms.

No one will know but you!

Enjoy!

Peter K1PO

"FAZAMY" <fazamy@aol.com> wrote in message news:20010414152001.22764.00000214@ng-ba1.aol.com...
> Since most rigs nowadays use 52 ohm coax, what can one use 72 ohm coax for.
> I've the braid and center conductor type of 72 ohm coax, not the cable tv kind.
>
> 73,
> Evan
> KB2AMY

897. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 03:30:30 UTC
From: "Richard L. Dunklee, Jr." <rdunklee@att.net>
Message-ID: <3AD915D2.A816ED55@att.net>
Source record: 166046

Go to a ground rod or a cold water pipe. Grounding is VERY important.
Ground loops, rusty bolt problem, etc.. DO ONT over look a GOOD ground.

Richard L. Dunklee, Jr.
WA2ONM

DL7JSK wrote:

> Hi OMs
> I have a new transceiver (Alinco DX-70),that has a grounding screw.Must I
> use it ? I have only a heating tube in my shack.
>
> 73
> Tom

898. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 03:33:19 UTC
From: "Richard L. Dunklee, Jr." <rdunklee@att.net>
Message-ID: <3AD9167C.81320FBF@att.net>
Source record: 166047

What ground loops??????????????
A direct ground is 10000% better than relying on the shield of coax for
a GOOD ground.

Richard L. Dunklee, Jr.
WA2ONM

Reg Edwards wrote:

> Tom wrote .
> > Hi OMs
> > I have a new transceiver (Alinco DX-70),that has a grounding
> screw.Must I
> > use it ? I have only a heating tube in my shack.
> ==========
> If your transceiver's case is already connected to the station
> ground via the outer coax cable conductor it won't make any
> difference to station operation whether you connect it to a ground
> or not.
>
> But for your personal safety, connect it to the 50Hz 240V supply
> ground. Because when you are messing about in the shack you may
> disconnect the coax with the transceiver still powered up.
>
> If there is any other radio equipment in the shack, connect all the
> boxes together and also to the 50 Hz supply ground using the
> grounding screws.

899. Re: SSB'ers...join the club!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 04:23:53 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9bb7op$3m4$0@208.207.71.165>
Source record: 166048

Roy Lewallen wrote:
>
> More specifically, this is the "American Eagle CB'ers Club". Which part
> of 10 meters is now CB?

28.085 is, as far as they are concerned.

900. Re: 6 meter antennas.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 05:07:19 UTC
From: wa8ulx@aol.com
Message-ID: <20010415010719.08430.00000397@ng-fi1.aol.com>
Source record: 166049

>"the flat side,"

What is the Flat Side? Sounds like some CB term, if you mean Horizontal why not say that.

901. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 05:31:27 UTC
From: dennis@wawa.juniper.net
Message-ID: <9bbbnf$9ao$1@heap.juniper.net>
Source record: 166050

Roy Lewallen <w7el@eznec.com> wrote:
>I envision current path I1 between points A and B on the outer surface,
>and path I2 between points C and D at some depth in the conductor (or on
>the inner surface):
>
> A -> I1 -> B
> ================
> ================
> C -> I2 -> D
>
>If I read correctly what you wrote, the magnitude of the voltage drop
>from A to B equals the magnitude of the voltage drop from C to D,
>although I1 isn't necessarily equal to I2 and the A-B drop is a
>different phase than the C-D drop. (If my reading is wrong, the rest of
>my question isn't relevant, so please correct me. I did look at the
>explanation pretty carefully and think I got it right.)
>
>Let's suppose that the voltage at A equals the voltage at C (Vac = 0).
>If the phase angle of the A-B drop isn't equal to the phase angle of the
>C-D drop, then the voltage at B can't equal the voltage at D. Just
>choosing some arbitrary numbers, if Vab = 1 at an angle of zero degrees
>(1 + j0) and Vcd = 1 at an angle of 90 degrees (0 + j1), and if Va = Vc,
>then Vbd = 1.41 at an angle of -45 degrees (1 - j1). So as long as the
>phase of the drop from A to B is different than the phase of the drop
>from C to D, Vac and Vbd can't both be equal. Is that true? If not, what
>am I missing?

My optics references are packed, but I'm pretty sure the velocity of EM
wave propagation in a conductor is tiny. I think the wavelength is equal
to the skin depth multiplied by 2 * pi (this matches the radian of current
phase shift per skin depth that Bill mentioned), so the shield of a coax
cable will often be many wavelengths thick.

When you are looking at voltages at locations separated by a substantial
fraction of a wavelength, I think "equal" could quite possibly be plus or
minus a phase shift. I haven't quite figured out yet how Bill's assertion
that the voltages on both surfaces of the shield are in phase could be
true, though I don't know that the assertion is false either.

Dennis Ferguson

902. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 06:06:59 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9bbdq3$pd0$0@208.207.71.132>
Source record: 166051

W6RCecilA wrote:
>
> Dick Carroll wrote:
> >
> > W6RCecilA wrote:
> > > If you don't think current can flow through the dielectric of a capacitor,
> > > try using a disc ceramic capacitor (instead of a stub) for loading across
> > > ladder-line. :-) I looked out one night and my feedline was on fire.
> >
> > Cecil you really should use one rated for enough voltage to withstand
> > the strain.
>
> I learned something from that, Dick. The rating on the disc ceramic was
> plenty high enough at 3 kV. The only problem is that is a DC rating, not
> an RF rating. A Technician class ham educated me about that characteristic
> of disc ceramic capacitors. Wonder how many Extras know that?

I thought every ham was supposed to know the difference between peak
and average. And AC stresses the dielectric lots more than DC since the
current is constantly moving onto and off the plates and heats things
up. It is even worse at RF, of course. I imagine the dielectric itself
is adversely affected over time from the continuous fast polarity
reversal of the applied high voltage.

I used to maintain some lowband VHF transmitters rated at 3KW which ran
1.5 to 2KW ICAS 24/7. The linear amps used a pair of 8877's paralleled,
in a grounded grid circuit with a pi net output very similiar to any ham
linear amp. The plate DC blocking cap was three 7.5KV rated units in
parallel with 3.3KV applied. Pretty solid design. Still, every
occasionally one of those caps would go off like a hand grenade. I
believe I'd have used at least 10KV caps and I don't think they would
have failed.

Over a twenty year period ('70-'90) I built, and several times rebuilt,
a ham linear amp around a 4-1000A tube. Every hamfest flea mkt I was
looking for heavier components for it, and finally wound up with a huge
mica "bathtub" plate blocking cap from a BC transmitter that was rated
for 15 KV, along with the plate transformer from a Gates BC-1J BC rig on
a big variac that I could crank up to 7.5KV if I wished (only tried that
once to see what would happen. Engineer pal told me I might xray myself
at that voltage :-)). Never had a cap failure in that rig.

Dick

903. Re: Looking for Ground Planes 101

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 06:44:52 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD94364.4520@wt.net>
Source record: 166052

Gary S. wrote:

>
> One question: the ground plane needs to be at right angles to the
> vertical antenna. Does the base have to be directly even with the
> plane, or could it be suspended a couple of inches above it?

It can be a couple of inches above for a 2m antenna. I don't think it would hurt it much at all. Many will be a little over the radials anyway just due to the manner of construction.
>
> Second: as I understand, the plane should be at least 1/4 wavelength
> radius to be effective. Does it need to be solid, or would perforated
> material or strips or mesh be as effective?

You can use wires, strips, perforated metal, or solid metal. Solid is the best, but elevated the difference won't be too large from just 4 to 6 wire radials.If the antenna is elevated from the ground at least a 1/2 wave, you only need four radials for good performance. Thats only a tad over 3 ft off the ground for a 2m antenna. Naturally, you will likely be a bit higher than that.
>
> Third: how flat does it need to be? I know the classic definition of a
> plane, but many things (including the roof of most cars) are not quite
> flat enough.
Doesn't have to be flat. It can angle towards the ground and will give you a better match to 50 ohm coax. All the 2m 1/4 wave ground planes I make, I angle the radials downwards at about a 45 degree angle. This raises the impedance from the appx 35 ohms for flat level radials, up to about 50 ohms which is a good match to coax. Also you get a very slight increase in gain, but not likely very noticable in the real world. MK

--
http://web.wt.net/~nm5k

904. Re: Antenna Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 06:53:39 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD94573.2B37@wt.net>
Source record: 166055

Frizz wrote:
I did take my multimeter and checked the continuity across
> the coax and it was fine. Any suggestions? This really pisses me off.....

You mean no continuity I hope. Sounds like a coax connection problem to
me. You should see a continuity from each end's center to center, and
shield to shield. And none from shield to center pin. Kinda sounds like
a connector problem. Pull the coax and check it if possible. MK

--
http://web.wt.net/~nm5k

905. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 06:54:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AD945AE.735C8311@eznec.com>
Source record: 166053

I'm sorry, It's still a little unclear. (Sometimes I need the 2 X 4
directly between the eyes.) Are you saying that the phase shift (as well
as magnitude) of voltage from A to B *is* the same as from C to D?

Thanks,

Roy Lewallen, W7EL

"William E. Sabin" wrote:
>
> Roy Lewallen wrote:
>
> > I envision current path I1 between points A and B on the outer surface,
> > and path I2 between points C and D at some depth in the conductor (or on
> > the inner surface):
> >
> > A -> I1 -> B
> > ================
> > ================
> > C -> I2 -> D
> >
> >
> > Let's suppose that the voltage at A equals the voltage at C (Vac = 0).
> > If the phase angle of the A-B drop isn't equal to the phase angle of the
> > C-D drop, then the voltage at B can't equal the voltage at D. Just
> > choosing some arbitrary numbers, if Vab = 1 at an angle of zero degrees
> > (1 + j0) and Vcd = 1 at an angle of 90 degrees (0 + j1), and if Va = Vc,
> > then Vbd = 1.41 at an angle of -45 degrees (1 - j1). So as long as the
> > phase of the drop from A to B is different than the phase of the drop
> > from C to D, Vac and Vbd can't both be equal. Is that true? If not, what
> > am I missing?
>
> I got my info from W.C. Johnson and repeated it the way he wrote it.
> However, I detected the problem that you mention, and in a followup post
> (you may have it available) I added the following note:
>
> "A better way to say this is that any induced voltages in the end
> segments are cancelled by induced voltages from adjacent
> rectangles."
>
> I believe this is OK, if we look at adjacent rectangles and see that the
> voltages do cancel each other at adjacent boundaries. I said the same thing
> in an August 1996 QEX article. The main idea is that the rectangles are all
> in the mind. It is the various "layers" that are important. I believe
> Johnson overlooked this fine point. At any rate it has no bearing on his

> conclusions.
>
> Bill W0IYH

906. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 06:56:33 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD94621.221B@wt.net>
Source record: 166054

FAZAMY wrote:
>
> Since most rigs nowadays use 52 ohm coax, what can one use 72 ohm coax for.
> I've the braid and center conductor type of 72 ohm coax, not the cable tv kind.
>
> 73,
> Evan
> KB2AMY

I've used 75 ohm coax many times in a pinch. If you had a perfect match
with 50 ohm coax, and switched, you would still be 1.4:1 swr. No
worries. MK
--
http://web.wt.net/~nm5k

907. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 07:11:34 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD949A6.9ECD48D2@mwci.net>
Source record: 166056

Dennis Ferguson wrote:

> I haven't quite figured out yet how Bill's assertion
> that the voltages on both surfaces of the shield are in phase could be
> true, though I don't know that the assertion is false either.

I did not make that assertion. Please take another look.

Bill W0IYH

908. Re: 40 or 20 meters best for nighttime CW dx?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 07:28:41 UTC
From: kelly@nospam.dvol.com
Message-ID: <3ad94c8b.432913722@news2.dvol.com>
Source record: 166057

On 13 Apr 2001 01:30:15 GMT, cm13141@aol.com (Cm13141) wrote:

>Can anyone tell me what is my best bet for working nighttime cw dx,40 or 20
>meters?I have just upgraded to general and love working cw dx,i have been using
>a 10 meter dipole,now that i have more bands to work i am going to make another
>dipole but i dont know if i should go for 20 or 40 meters?Anyone have any
>advice?
>Thanks,
>James
>
There are no "rules of thumb". They're all great depending on the
propogation. I've run into condx when 15 was hot at 2am. And when the
only dx audible on any band were on 80. I suggest you gear up for both
20 and 40 as a minimum.
>
And congratulations, welcome aboard!
>
w3rv

909. Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 08:52:12 UTC
From: NoSpamForKDJ@hotmail.com
Message-ID: <3AD9613C.9B3368F2@hotmail.com>
Source record: 166058

I'm using a MFJ antenna analyzer (model 269) to adjust a wire dipole antenna. The antenna seemed to be resonating low so I removed a few inches from each end. Currently the Rs = 50, the Xs = 0, but the SWR = 3.1 at 14.035 mhz. This is up from a 2.2 SWR when I began. Should the SWR be this high at resonance? Or, is there something else wrong?

Thanks

910. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 08:57:20 UTC
From: DL7JSK <truckdrivingman@hotmail.com>
Message-ID: <9bbnsp$5qb$01$1@news.t-online.com>
Source record: 166059

Ok,but what about the wire diameter ? I've heard it should be as thick as possible.But more than 2 mm aren't possible in my shack,since I must thru the window (I can't make holes in the wall)

Tom

"Richard L. Dunklee, Jr." <rdunklee@att.net> schrieb im Newsbeitrag news:3AD915D2.A816ED55@att.net...
> Go to a ground rod or a cold water pipe. Grounding is VERY important.
> Ground loops, rusty bolt problem, etc.. DO ONT over look a GOOD ground.
>
> Richard L. Dunklee, Jr.
> WA2ONM
>
>
> DL7JSK wrote:
>
> > Hi OMs
> > I have a new transceiver (Alinco DX-70),that has a grounding screw.Must I
> > use it ? I have only a heating tube in my shack.
> >
> > 73
> > Tom
>

911. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 09:33:59 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD96B07.34C282CA@mwci.net>
Source record: 166060

Roy Lewallen wrote:

> Are you saying that the phase shift (as well
> as magnitude) of voltage from A to B *is* the same as from C to D?

Yes. Definitely.

Item 6) in my article is repeated:

6) The voltage along the buried path equals I1 x R + (an induced voltage due to flux). R is the natural resistance of the copper material. The voltage along the surface path is just I2 x R. The voltage along the surface segment and the voltage along the buried segment are *equal*. That is, although current decreases inside the wire, voltage drop along the direction of the wire does not decrease. There is an equilibrium between current I1 and induced EMF such that the voltages along paths 1 and 2 remain equal. But the "effective" resistance along path 1 is greater because of the reduced current.

A little meditation will convince that the two voltages must be equal.

Keep in mind that a-b and c-d are in the direction of the braid and in the direction of current travel. There is no reason to believe that the velocity, therefore the phase shift, is not the same in the equal-length segments a-b and c-d. It is also good common sense. If the velocities were not equal, the consequences would be very strange indeed.

The equation in part 6) says that the voltage a-b is exactly the same as the voltage c-d. Johnson asserts that they are *exactly equal*. If they were not equal, then there would be a strong current between surfaces a-b and c-d that would *force* equality.

This equality *requires* equal velocity, therefore equal phase shift in a-b and c-d.

This equality of voltages, therefore equality of phase shifts, therefore equality of velocities, is the cornerstone of Johnson's analysis. I suggest think carefully before deciding it's wrong.

Bill W0IYH

912. << VERTICAL WANTED Dead or Alive: Cushcraft R7000

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 09:52:14 UTC
From: roland@geter.org
Message-ID: <3ad9708a.107795095@news.earthlink.net>
Source record: 166061
Cross-posted to: rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna

Will pay cash and shipping for a Cushcraft R7000 Matching Network
(MN7000) or other parts in working or non-working condition.
Roland - WB6LNA

913. Re: SSB'ers...join the club!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 11:00:26 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3AD97F4A.749353FA@berkshire.net>
Source record: 166063

every 10kc from 28005 up seems to be some days. look for many of them on "ch-19 up-1" (28085) and "ch-19 up-2" (28535).

Roy Lewallen wrote:
>
> More specifically, this is the "American Eagle CB'ers Club". Which part
> of 10 meters is now CB?
>
> Roy Lewallen, W7EL
>
> "A.E. 352" wrote:
> >
> > Hey SIDEBANDERS! If you're looking for a club to join, please feel-free to
> > check-out http://american-eagle.tripod.com We are a brotherhood of 10/11M
> > SIDEBAND operators with members WORLDWIDE, who simply happen to enjoy the
> > hobby. So...give us a look. Membership is ALWAYS free!
> >
> > A.E. 352

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

914. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 11:49:25 UTC
From: jgboyles@aol.com
Message-ID: <20010415074925.15273.00000214@ng-ck1.aol.com>
Source record: 166062

>Currently the Rs = 50, the Xs = 0, but the SWR =
>3.1 at 14.035 mhz. This is up from a 2.2 SWR when I began. Should the
>SWR be this high at resonance? Or, is there something else wrong?

Sounds like the 269 has a problem, the swr should indicate 1.0 for that value of R and X. You may be getting some local broadcast interference in the analyzer. If you could run the analyzer to a 50 ohm dummy load and get R=50, X=0, and swr=1.0 then interference is the problem. If the swr is still high into a dummy load, the analyzer needs calibration, and it would have to be sent back to MFJ. Unless you have some good test equipment and a cal. procedure. If you don't have a dummy load, you could solder a couple of short pigtails with small alligator clips to a pl-259 connector and connect them to a 50 ohm non-inductive resistor to check the calibration of the 269. I use this method to check small capacitors, inductors, and antenna impedance right at the antenna terminals. Good luck.
73 Gary N4AST
73 Gary N4AST

915. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 12:01:54 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <my$TD0By2Y26EAWw@ifwtech.com>
Source record: 166064

Dick Carroll wrote:
>
>
>"Ian White, G3SEK" wrote:
>>
>> Dick Carroll wrote:
>> >
>> > Gary insisted that under other than steady state conditions 'charge'
>> >DOES flow through the dielectric....That's essentially when he lost me.
>> >
>> >
>> Gary having said:
>> >> This current
>> >> even has a name -- displacement current, as opposed to conduction
>> >> current. What actually happens is that the electric field transports
>> >> energy from one side to the other, but the effect on both sides is
>> >> the same as if charge actually flowed through the dielectric.
>>
>> As far as I can see, there is no conflict between Gary's statement and
>> Dick's 'Fort Monmouth' version. The only problem is that Dick
>> misinterpreted what he quoted from Gary.
>>
>> The key words in Gary's statement are 'AS IF'.
>
>
> Ian, that wasn't Gary's words, those were from another psoter who who
>thought I didn't understand capacior action. Gary was unequivocal that
>AC does flow through the dielectric in a capacitor while DC does not. I
>printed his post and have it her somewhere.
>
My apologies - it looked as if the words you were quoting had been
Gary's. Anyhow, it's probably best left to Gary to continue this, if he
wishes to (and if he returns to the newsgroup before the thread has
died).

>> 'Displacement current' is simply a fiction invented to account for this
>> behavior.
>
>
> I don't remember the Signal Corps ever using the term. As I recall they
>called current flowing through a capacitive circuit "apparent current"
>flow through the capacitor.

"Apparent" seems a fair enough label - it's certainly more descriptive
than "displacement".

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

916. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 12:20:56 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <ITJDrBCoIZ26EAFn@ifwtech.com>
Source record: 166065

William E. Sabin wrote:
>> I also believe that the best way to visualize "leaky" coax is that it has
>> very low common mode rejection or has a high common mode response, depending
>> on whether you are interested in "ingress" or "egress".
>
>In April 2000 Ian G3SEK suggested that leakage is due (at least partly)
>to the conversion within the coax of differential mode to common mode
>due to imperfections in the shielding. This common mode signal then can
>escape from the coax. I really like that explanation.

Wow, did I really say that? Must have been a random lucid moment.
The rest of the time, I'm still struggling to join up all the different
valid viewpoints of this problem, to make one consistent big picture.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

917. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 12:49:39 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AD998E3.9E2BDAE6@mwci.net>
Source record: 166066

Ian White, G3SEK wrote:

> Wow, did I really say that?

Yes. I remembered it and also looked it up in my archive.

Bill W0IYH

918. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 12:52:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD99977.C70D9D38@IEEE.org>
Source record: 166067

Dick Carroll wrote:
> I thought every ham was supposed to know the difference between peak
> and average.

Point is, this happened at 100 watts. One would assume a 3kV cap could handle voltages generated using 100 watts. I learned that disc ceramic caps are not rated for that kind of service so I switched to doorknobs.
--
http://www.mindspring.com/~w6rca

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919. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 12:56:12 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bc5p0nlj1@slb7.atl.mindspring.net>
Source record: 166068

Dennis:

[snip]
> My optics references are packed, but I'm pretty sure the velocity of EM
> wave propagation in a conductor is tiny. I think the wavelength is equal
> to the skin depth multiplied by 2 * pi (this matches the radian of current
> phase shift per skin depth that Bill mentioned), so the shield of a coax
> cable will often be many wavelengths thick.
>
> When you are looking at voltages at locations separated by a substantial
> fraction of a wavelength, I think "equal" could quite possibly be plus or
> minus a phase shift. I haven't quite figured out yet how Bill's assertion
> that the voltages on both surfaces of the shield are in phase could be
> true, though I don't know that the assertion is false either.
>
> Dennis Ferguson
[snip]

Think of a coaxial cable with high leakage [Say for instance that the braid "coverage" is only 80%.], then it's not so hard to believe that the voltage on the inside of the braid equals the voltage on the outside of the braid...

Then perform the following "thought experiment".

Like your old calculus professor did, let the braid coverage change incrementally from 80% towards 100% and "take the limit" as the braid "coverage" gradually approaches 100%, what happens to the voltages on the inside of the braid?

Thoughts, comments...

-Peter K1PO

920. Re: Antenna Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 13:04:25 UTC
From: Dale Parfitt <parinc@GTE.net>
Message-ID: <3AD99C4A.3AB5E48C@GTE.net>
Source record: 165969

Frizz wrote:

> I just spent all damned day putting up a Ventenna. Since this thing would
> not fit over the one vent pipe I have, I opted for the side mounting kit
> from the same company. I ran maybe 30 or 40 feet of RG-8x to the antenna
> (as short as I could get it), hooked it up and nothing happened. When I
> transmitted on 2m (this is the 2m version) I couldn't hit a repeater a few
> miles down the road, my amplifier started buzzing, and with another radio
> transmitting into the same repeater I could barely hear it with my base
> radio. So did I waste my money on this stupid piece of junk antenna in a
> pipe? Should I go back and check my coax connection (which I have done
> repeatedly.) ? I did take my multimeter and checked the continuity across
> the coax and it was fine. Any suggestions? This really pisses me off.....

Did you place a termination at the far end of the coax to make sure the
cable/connectors are OK? This is the most common problem in any antenna
installation.

Dale W4OP

921. Re: Antenna Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 13:04:51 UTC
From: Dale Parfitt <parinc@GTE.net>
Message-ID: <3AD99C64.A78B8C@GTE.net>
Source record: 165970

Frizz wrote:

> I just spent all damned day putting up a Ventenna. Since this thing would
> not fit over the one vent pipe I have, I opted for the side mounting kit
> from the same company. I ran maybe 30 or 40 feet of RG-8x to the antenna
> (as short as I could get it), hooked it up and nothing happened. When I
> transmitted on 2m (this is the 2m version) I couldn't hit a repeater a few
> miles down the road, my amplifier started buzzing, and with another radio
> transmitting into the same repeater I could barely hear it with my base
> radio. So did I waste my money on this stupid piece of junk antenna in a
> pipe? Should I go back and check my coax connection (which I have done
> repeatedly.) ? I did take my multimeter and checked the continuity across
> the coax and it was fine. Any suggestions? This really pisses me off.....

Did you place a termination at the far end of the coax to make sure the
cable/connectors are OK? This is the most common problem in any antenna
installation.

Dale W4OP

922. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 13:06:01 UTC
From: "David J. Windisch" <davidw@copper.net>
Message-ID: <Y%gC6.96$J61.1091@newsfeed.slurp.net>
Source record: 165971

Hi, all concerned:

Could a leak, of whatever physical size, be thought of as a sorta-slot antenna, however inefficient it might be?

73, Dave, K3BHJ

923. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 13:06:09 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD99CC1.8E0D6124@IEEE.org>
Source record: 165972

NoSpamForKDJ@hotmail.com wrote:
> I'm using a MFJ antenna analyzer (model 269) to adjust a wire dipole
> antenna. The antenna seemed to be resonating low so I removed a few
> inches from each end. Currently the Rs = 50, the Xs = 0, but the SWR =
> 3.1 at 14.035 mhz. This is up from a 2.2 SWR when I began. Should the
> SWR be this high at resonance? Or, is there something else wrong?

Describe the conditions a little better. Is the SWR reading from the 269?
Describe the feedline? If the 269 is working OK, sounds like common-mode
current problems or RFI.
--
http://www.mindspring.com/~w6rca

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924. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 13:14:17 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AD99EA9.75044404@IEEE.org>
Source record: 165973

"David J. Windisch" wrote:
> Could a leak, of whatever physical size, be thought of as a sorta-slot
> antenna, however inefficient it might be?

Isn't that how Gap got it's name?
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

925. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 13:48:16 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bc8mk$4mm$1@plutonium.btinternet.com>
Source record: 165974

> I'm using a MFJ antenna analyzer (model 269) to adjust a wire
dipole
> antenna. The antenna seemed to be resonating low so I removed a
few
> inches from each end. Currently the Rs = 50, the Xs = 0, but
the SWR =
> 3.1 at 14.035 mhz. This is up from a 2.2 SWR when I began.
Should the
> SWR be this high at resonance? Or, is there something else wrong?
================================

The 269 is not accurate enough to show that an antenna is behaving exactly as theory says it should. But there's probably nothing wrong with either the meter or antenna.

There are several important things to remember about 1/2-wave dipole behaviour versus length and frequency.

(1) When the feedline impedance does not match the antenna feedpoint impedance (it never does) the length of the feed line is as important as antenna length insofar as the load on the transmitter is concerned (as indicated by the 50-ohm SWR meter at the transmitter end).

(2) As frequency is varied, minimum SWR (whether it be good or bad) always occurs at the resonant frequency of the antenna PLUS feed line, ie., of the system as a whole. Trimming the length either of the line or of the antenna will change the resonant frequency of the system. But why do you want to change the resonant frequency ?

(3) When you change the length of line or antenna you not only change the resonant frequency, ie., the frequency at which minimum SWR occurs, you also change the radiation resistance and therefore the antenna feedpoint impedance. And so at another resonant frequency the minimum SWR will change to another value. It may be either better or worse than the previous value. In your case it seems to have got worse. But this is quite normal behaviour. What actually happens can be influenced by antenna height.

(4) The probability of the feed line input impedance being precisely 50 ohms at a resonant frequency of the system is so remote you can forget it. The only way to ensure an SWR of 1-to-1 is to install an antenna tuner at the transmitter end of the feed line.

To summarise, if the resonant frequency of the dipole is in the right ballpark, as determined by its length, then leave it that way. Don't bother about what the SWR on the feedline might be. Concentrate on adjusting the tuner such that the load on the transmitter is a nice 50 ohms resistance.

One explanation of your observations is that you may be fortunate in having a very high antenna with low ground loss. If you lowered the antenna to increase ground loss you may find the feed line input resistance is the desired 50 ohms when the resonant frequency is where you want it to be.

But which do you prefer - an inefficient antenna system with the resonant frequency on your favourite operating frequency - or an efficient system which doesn't care what its resonant frequency is. But don't forget the tuner.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

926. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 14:08:00 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <4XhC6.3668$Ce4.322889@news1.rdc1.ct.home.com>
Source record: 165975

Are you using coax? Make sure the shield is well grounded to a ground rod
or better before it enters your shack.

"DL7JSK" <truckdrivingman@hotmail.com> wrote in message
news:9bbnsp$5qb$01$1@news.t-online.com...
> Ok,but what about the wire diameter ? I've heard it should be as thick as
> possible.But more than 2 mm aren't possible in my shack,since I must thru
> the window (I can't make holes in the wall)
>
> Tom
>
> "Richard L. Dunklee, Jr." <rdunklee@att.net> schrieb im Newsbeitrag
> news:3AD915D2.A816ED55@att.net...
> > Go to a ground rod or a cold water pipe. Grounding is VERY important.
> > Ground loops, rusty bolt problem, etc.. DO ONT over look a GOOD
ground.
> >
> > Richard L. Dunklee, Jr.
> > WA2ONM
> >
> >
> > DL7JSK wrote:
> >
> > > Hi OMs
> > > I have a new transceiver (Alinco DX-70),that has a grounding
screw.Must
> I
> > > use it ? I have only a heating tube in my shack.
> > >
> > > 73
> > > Tom
> >
>
>

927. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 14:46:38 UTC
From: AB2HR <ab2hr@arrl.net>
Message-ID: <b6djdt0hsgonimvdf6dsglkfb9ecssg9oh@4ax.com>
Source record: 165976

On Sun, 15 Apr 2001 03:30:30 GMT, "Richard L. Dunklee, Jr."
<rdunklee@att.net> wrote:

>Go to a ground rod or a cold water pipe. Grounding is VERY important.
>Ground loops, rusty bolt problem, etc.. DO ONT over look a GOOD ground.
>
>Richard L. Dunklee, Jr.
>WA2ONM
>
>
>DL7JSK wrote:
>
>> Hi OMs
>> I have a new transceiver (Alinco DX-70),that has a grounding screw.Must I
>> use it ? I have only a heating tube in my shack.
>>
>> 73
>> Tom

Before grounding to a cold water pipe, verify that there is no PVC
supply-side plumbing between your grounding location and the incoming
service.

73 de

Ray / AB2HR

SysOp: The Lost Chord BBS
607-733-5745
telnet: 24.95.131.236 port 6000
http://www.geocities.com/SiliconValley/Park/9257/lostchrd.html

928. Re: mobile antenna for 10-15-20 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 14:53:11 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <dddjdtkafhu4l2jl4mdil3do5laours8nr@4ax.com>
Source record: 165977

On Sat, 14 Apr 2001 00:14:43 -0400, Jerry Oxendine <joxendi@bellsouth.net>
wrote:

>I use the screwdriver type of antenna. And it's
>BIG and UGLY at a full 3" dia. *I* would go with the conventional screw
>driver and mount it at the rear or side so that the loading coil is just
>above the roofline. Most screwdrivers are around 2" dia

May I ask which kind of screwdriver you use? I hadn't realized any were that
large of a diameter.

73, Bill W7TI

929. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 15:07:21 UTC
From: richardharrison@webtv.net
Message-ID: <1465-3AD9B929-150@storefull-113.iap.bryant.webtv.net>
Source record: 165978

Dick Carroll wrote:
"I thought every ham was supposed to know the difference between peak
and average."

I`ll bet a lot of Dick Carroll`s "true hams" don`t know that average
value is only about 0.9 times the rms value.
Best regards, Richard Harrison, KB5WZI

930. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 16:01:44 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <ttgjdtof41r8qb7rheqjlh3qrin1cmtdpg@4ax.com>
Source record: 165979

On Sun, 15 Apr 2001 07:52:07 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Dick Carroll wrote:
>> I thought every ham was supposed to know the difference between peak
>> and average.
>
>Point is, this happened at 100 watts. One would assume a 3kV cap could
>handle voltages generated using 100 watts. I learned that disc ceramic
>caps are not rated for that kind of service so I switched to doorknobs.

Hi Cecil,

Most disk ceramic capacitors show a series resonance in HF. If you
are not at resonance (odd in its own right) you certainly can't count
on it acting as a capacitor in that region. SOP for board design
generally includes several types of cap across the rails to provide
what is called "bulk decoupling." The reason for the several styles
is due in large part to these components not behaving the same (as
capacitors) at all frequencies. There are even special ESR capacitors
made for "high frequency" operation (roughly 30KHz-300KHz). These
components usually are found in switchers or DC-DC converters.

And by the way, a capacitor's capacitance is generally quoted at 1KHz.
The value at other frequencies is sure to be different.

73's
Richard Clark, KB7QHC

931. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 16:03:05 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bcgjc$8fh$1@neptunium.btinternet.com>
Source record: 165980

Disc-ceramics can be manufactured with very high voltage ratings.
OK at DC and AF. But the thin-film capacitor plates and the
thin-wire connections have small current-carrying capacity. When
used in RF high power tuned circuits they burn out very easily.

The same applies to silver (plated) mica types. The advantage of a
silver-mica capacitor is its close-tolerance value obtained by
etching and its long term stability. If a sheet of mica has not
changed its shape much in the last 500 million years it is not
likely to change much more in the next 20 years of equipment life.

The relatively poor RF power factor of ceramic materials can also
cause overheating.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

932. R6000

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 16:50:57 UTC
From: N3VST <geta@life.com>
Message-ID: <yjkC6.14111$63.4181241@newsrump.sjc.telocity.net>
Source record: 165981

Has anyone had problem tuning the cushcraft R6000 for 6 meters? For some reason it won't tune the FM portion. SB is fine. Any suggestions?

--
Email is insecure. Want your boss, school, or government reading what you send?
If not go to http://www.pgpi.org/ learn how to make your email secure.

933. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 17:16:08 UTC
From: k1bqt@aol.com
Message-ID: <20010415131608.06256.00000613@ng-cu1.aol.com>
Source record: 165982

Hi--

>Currently the Rs = 50, the Xs = 0, but the SWR = 3.1 at 14.035 mhz.<

Something is clearly wrong. The resolution of the meter can be a little rough because of limited processor bit capacity, but it sure isn't THAT bad. One responder gave you the best advice:

1. Check the meter with a 50-Ohm resistive load. If you see more that 1.2:1 VSWR on a 47 - 51 ohm 1/4-watt resistor at 14 MHz, the meter is likely out of calibration. To check a 2:1 point, try a 100-ohm resistor. If it's off, contact MFJ by phone, speak to a real person, and insist on a replacement. If the SWR is low, your meter's probably fine.

2. Check the condition of the coax by terminiating it at the far end with a 50-ohm load and re-measuring. If it's good with the load connected directly to the analyzer--but off-the-wall with the coax connected to the load--you're coax may be bad.

3. If the condition only occurs when the antenna's connected, it may be RF getting into the analyzer bridge from a local high-power transmitter (any powerful broadcasters in your neighborhood?). If that turns out to be the case, you may need to look into getting a MFJ-731 tunable filter to reject the unwanted RF.

4. Common mode current on your feedline could cause a problem if the feed is very nearly 1/4-wave or 3/4-wave long (set the meter on an insulated surface, and if the SW changes when you touch the case, you've got common mode). To cure that, install a balun, or coil about 5 turns of cable up at the feedpoint and tape them together to form a choke.

Hope this helps--

73

Rick K1BQT

934. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 17:18:05 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ad9d7c9.57906766@news.aepnet.com>
Source record: 165983

On Sun, 15 Apr 2001 16:01:44 GMT, Richard Clark <kb7qhc@home.com> wrote:

[snip]

>Most disk ceramic capacitors show a series resonance in HF. If you
>are not at resonance (odd in its own right) you certainly can't count
>on it acting as a capacitor in that region. SOP for board design
>generally includes several types of cap across the rails to provide
>what is called "bulk decoupling." The reason for the several styles
>is due in large part to these components not behaving the same (as
>capacitors) at all frequencies.

There is a pitfall with this approach too. When one of the capacitors is operated above its self-resonant frequency it begins to look inductive. This "inductor" in conjunction with the other capacitors can become a parallel resonant circuit.

SImilarly, a bunch of same-value caps distributed down the lenght of a circuit trace can sometimes make a dandy lowpass filter with a cutoff frequency much higher than expected or even anticipated.

Wes Stewart N7WS

>There are even special ESR capacitors
>made for "high frequency" operation (roughly 30KHz-300KHz). These
>components usually are found in switchers or DC-DC converters.
>
>And by the way, a capacitor's capacitance is generally quoted at 1KHz.
>The value at other frequencies is sure to be different.
>
>73's
>Richard Clark, KB7QHC

935. A flame for the troll.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 17:37:06 UTC
From: JAD <jdavoli@NOSPAMerols.com>
Message-ID: <9bcm5ndgr1@bob.news.rcn.net>
Source record: 165984

Hi Bruce,

I did say "horizontal,".....several times.

If you think it "sounds like a CB term," that's fine, but why would you post that here? It serves no constructive purpose, and certainly adds nothing to help answer the guy's question.

Bruce, you have something on your QRZ.com page about being a "REAL" ham, and not a "CB plusser!" Gee, I thought real hams were helpful and humble.....

Typical lid.....

"WA8ULX" <wa8ulx@aol.com> wrote in message news:20010415010719.08430.00000397@ng-fi1.aol.com...
> >"the flat side,"
>
> What is the Flat Side? Sounds like some CB term, if you mean Horizontal why not
> say that.

936. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 17:56:15 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AD9E0BF.5351@wt.net>
Source record: 165986

DL7JSK wrote:
>
> Hi OMs
> I have a new transceiver (Alinco DX-70),that has a grounding screw.Must I
> use it ? I have only a heating tube in my shack.
>
> 73
> Tom

You don't really need a ground connection as long as your antenna is complete. Your radio is a 12v rig, so grounding for shock protection is not needed. But you should make sure the power supply that powers it is grounded. As long as you use a grounded 3 pin 110v socket for the P/S you are ok. MK
--
http://web.wt.net/~nm5k

937. Re: mobile antenna for 10-15-20 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 17:58:04 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bcnau$o2r$1@plutonium.btinternet.com>
Source record: 165985

The larger the diameter of the coil, the higher the radiating
efficiency. For the same coil height, if the coil diameter is
doubled, the loss in the coil is halved.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****
> May I ask which kind of screwdriver you use? I hadn't realized
any were that
> large of a diameter.
>
> 73, Bill W7TI

938. Re: mobile antenna for 10-15-20 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 18:12:40 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <q1pjdt0kqikn4q5j7v8i5m0m2rqdjfa7us@4ax.com>
Source record: 165987

On Sun, 15 Apr 2001 18:58:04 +0100, "Reg Edwards" <g4fgq.regp@btinternet.com>
wrote:

>The larger the diameter of the coil, the higher the radiating
>efficiency. For the same coil height, if the coil diameter is
>doubled, the loss in the coil is halved.

I'm well aware of that, but that wasn't the question. The question was what
kind of screwdriver was he using. I asked because I hadn't known of any that
large in diameter.

73, Bill W7TI

939. Re: mobile antenna for 10-15-20 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 18:19:07 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <3AD9E61B.43DC@bellsouth.net>
Source record: 165988

Hi Bill,

Mine is of my own building. I discarded the PVC in favor of black Nylon
to better resist UV rays, and allow me to run a KW--if I want-without
converting my coil to a slinky toy. I've built several of these and
have shipped them from NC to California. I'm building one now for a
ham in Vermont. The windings are #14 wire at 8 TPI. The objective was
to get the Q of a Bugcatcher and the convenience of an SD. I also make
a few of the smaller ones at a full 2" dia using the same construction
techniques.

There is at least one other MFR making 3" SD's, and that is Henry Allen
of Texas Bugcatcher. It is called the Texas Twister.

Bill, I do this as a sideline hobby since I am semi-retired. I don't do
a lot of advertising because I don't want to get into a fulltime job. I
am also afraid that if I DID advertise, I'd get more than I could handle
which would make people mad at me due to slower delivery. The ones I
DO make, I want to be sturdy and give long service. The ones I make are
thru word-of-mouth and occasional blurbs on the ham newsgroups. By stay-
ing small, pricing under the competition, I can deliver a nice antenna
without becoming over burdened, hiring employees and having all the
hassle of running a full time business.

Thanks for asking.

73

Jerry
K4KWH

PS. I am going to make a FOUR incher just as a curiosity project, but
I don't plan to market it. I have the parts, and I just want to see how
it would do.

Bill Turner wrote:
>
> On Sat, 14 Apr 2001 00:14:43 -0400, Jerry Oxendine <joxendi@bellsouth.net>
> wrote:
>
> >I use the screwdriver type of antenna. And it's
> >BIG and UGLY at a full 3" dia. *I* would go with the conventional screw
> >driver and mount it at the rear or side so that the loading coil is just
> >above the roofline. Most screwdrivers are around 2" dia
>
> ____
>

> May I ask which kind of screwdriver you use? I hadn't realized any were that
> large of a diameter.
>
> 73, Bill W7TI

940. WTB: 200 watt+ soldering iron

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 18:39:39 UTC
From: k9sqg@aol.com
Message-ID: <20010415143939.20639.00000319@ng-bk1.aol.com>
Source record: 165989

Looking for a heavy duty soldering iron, 200 watt or so, for some antenna and related projects.

Thanks.

Evan

941. Isotron antennas - comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 19:41:58 UTC
From: Bruno Quesnel <quesnelb@ve2.ele.etsmtl.ca>
Message-ID: <3AD9F986.659842ED@ve2.ele.etsmtl.ca>
Source record: 165990

Any good/bad comments on the different Isotron antennas ?

Thanks in advance

--
Bruno Quesnel va2bmg@videotron.ca
Genie Electrique quesnelb@ve2.ele.etsmtl.ca
Electrical Engineering queb1604@ele.etsmtl.ca
Ecole de Technologie Superieure VA2 BMG

942. 4 square vert. 7 Mhz possible on Flat roof 30ft up?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 20:19:20 UTC
From: "M. van Wijk" <pa5mw@home.nl>
Message-ID: <cnnC6.17998$D9.108133@dbsch1.home.nl>
Source record: 165992

Hi,

I have on my apartment a flat roof 33ft by 130ft which is 33ft up from street level. Would it be possible to set up a 4 square of verticals for 7Mhz ? I'm considering using the 1/8 wave spacing version and using one or two radials per vertical, 5 foot elevated from the roof level.

I'm living in a medium city, not too crowded, no significant higher obstructures within 2000 ft, but with a small river (canal) about 120ft wide, in parallel with the roof and about 100ft away.

I have read the spectacular and very informative book of ON4UN but cannot find the answer since verticals depend on real ground space, which is something you cannot offer near the center of a city.

I like to share your experiences on this subject.

' 73 Mark, PA5MW

943. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 20:19:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3ADA024A.FE487AD8@eznec.com>
Source record: 165991

Reg Edwards wrote:

> Let's say there will be a vertical component at ground level.
>
> Regardless of how it got there no-one has yet denied its existence.
>
> But the question of whether the RF power in the groundwave is taken
> into account when computing very-far-field radiating efficiency
> remains unanswered.
> ----
> Reg.

On about August 20, 1998, you wrote:

> Is there a computer program which correctly reports the strength of the
> vertically polarised groundwave which is radiated by a low, horizontal,
> halfwave dipole?
> --

On about April 10, 1999:

> Incidentally, from what charts I have seen, Eznec
> incorrectly computes radiation from a vertical antenna, at
> zero elevation angle, ie., the groundwave, as zero. This
> may result in misunderstandings on this particular subject.

On about March 11, 2001:

> > If that is the case, how is it that Eznec radiation patterns show
> > maximum radiation from a short grounded vertical occurs at a
> > considerable +ve elevation angle - simultaneously with zero
> > radiation at zero angle along the ground ?

I answered each of these. I see by my response to the first one that you had also asked the same question, and been answered, before August 1998. Happy trolling.

Roy Lewallen, W7EL

944. FS: Hustler Vertical HF antenna, Model BTV-6

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 20:50:52 UTC
From: aokd5fxt@cs.com
Message-ID: <20010415165052.16936.00000358@ng-cf1.news.cs.com>
Source record: 165993

For Sale: Hustler Vertical HF Antenna, Model 6-BTV. Covers
10-15-20-30-40-75-80 meter bands. Has a length of 24 feet and weighs 16.5 lbs
when fully assembled. Mounting: Vertical support up to 1.75" O.D. Power
capacity: full legal limit SSB/CW. VSWR at resonance: 1.15 to 1 or better.
Bandwidth: VSWR 2:1 or better at band edges on 10-4- meters (100 KHz. On 75 or
80 meters). This antenna can be ground mounted or can be mounted on a tower or
metal building. Radials are not supplied as per original purchase. All of
above quoted from instruction booklet. I have original assembly instructions,
parts lists, and dimensions booklet. $140 + ï¿½ shipping costs. Email me if
interested. Might trade for CSI autopatch in good condition.

Tnx
Bill, KD5FXT

945. Re: Looking for Ground Planes 101

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 21:26:56 UTC
From: Jay in the Mojave <jay123a@qnet.com>
Message-ID: <3ADA1220.E8E63D10@qnet.com>
Source record: 166001

Hello Gary: These are some very good questions in deed!

"Gary S." wrote:
>
> Hi:
>
> I'm looking to find out more about the factor involved in designing a
> ground plane, trying to deal with other, mechanical issues at the same
> time.

The meat of a Ground Plane Antenna is in two design considerations, and they are:
1- Mounting of the vertical element, i.e. How to, and what to look out for!
2- The Impedance Matching Circuit, don't use too small a wire for the coils ect, to reduce loss's.

I have built and rebuilt many CB 5/8 wavelength ground plane antennas for 20, 15, 12, 11, and 10 meters, and a few for the Commercial VHF Low Band.

The thing I have discovered is that there are significant loss's in the impedance matching devices, and the way the vertical element is mounted in the base assembly, will have unwanted stray capacitance's that are nothing but significant signal loss. Especially when a vertical element is designed to go thru a metal base assembly, being separated by a insulator, with a close distance.

I have a 6 meter base station antenna that is a 100 years old, the manufacture is unknown, maybe even home brew? This 5/8 wavelength ground plane antenna had 20 gauge wire as a step up impedance matching auto transformer. Other stations could hear weak but readable stations I could not. After looking the impedance matching coil over I decided to replace it with some silver plated 1/4" copper tubing that I had laying around. Well it didn't look like a factory installation, after I was through, but all of a sudden I could now hear a few weak stations that I couldn't before. And a local station a few miles away said that my signal had improved a few S-units. This is great! My 6 meter radio is only 10 watts, but now I can talk all over to a point with the antenna now working.

>
> Advice or steering me to reference material would be welcome.

Orr wrote a book on Vertical Antennas, and should be available at the local HRO or AES stores. Also the ARRL Antenna Book has some great

material on verticals in the Mobile section. Also look at what available
in VHF Handbooks.

>
> First, I understand that an antenna, for example a 2M mag mount, that
> is designed to work with a ground plane will not work well without.
>
> One question: the ground plane needs to be at right angles to the
> vertical antenna. Does the base have to be directly even with the
> plane, or could it be suspended a couple of inches above it?

I believe that the ground plane radials should be straight out, for
better field strength at the low angles, but I haven't measured this as
yet. I know that most VHF ground plane antennas have the radials
pointing down at around 45 degree's, and yet some have the radials out
straight.

As one of the guys said that the radials point down will make the
antennas impedance be closer to 50 ohms, and I agree with this.

> Second: as I understand, the plane should be at least 1/4 wavelength
> radius to be effective. Does it need to be solid, or would perforated
> material or strips or mesh be as effective?

Yes 1/4 wavelength works the best. I have tried many configurations on
Eznec with longer and much longer ground plane radials, and 1/4 wl works
the best so far as I have seen.

> Third: how flat does it need to be? I know the classic definition of a
> plane, but many things (including the roof of most cars) are not quite
> flat enough.

I try to have my 2 meter antenna in the center of my trucks cab, just
for that and seems to work quit well. I am sure a few inches curved off
towards the front and rear doesn't hurt anything.

Happy Easter

Jay in the Mojave

>
> TIA,
> Happy trails,
> Gary
> --
> "In three words I can sum up everything I've learned about life: it goes on."
> -Robert Frost-
>
> Gary D. Schwartz, Needham, MA, USA
> Please reply to: garyDOTschwartzATpoboxDOTcom

946. Thanks for advice

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 21:55:45 UTC
From: NoSpamForKDJ@hotmail.com
Message-ID: <3ADA18E1.728FCB70@hotmail.com>
Source record: 165994

The analyzer seems to be working OK. The antenna is up 40 feet, and the coax feedline is 36 feet. The balun is coiled coax per the ARRL handbook.

I seem to be getting out FB with the antenna, so maybe it's better than the analyzer indicates!

73

947. Mobile Mount

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 22:06:04 UTC
From: K7SAM <2smoore@nemontel.net>
Message-ID: <_UoC6.5095$u7.840407@e3500-chi1.usenetserver.com>
Source record: 165996

I am currently using hamsticks (I know they don't work that well but ya use what ya got and what ya can afford) and am looking for a mount. I made my own for an older car but want to mount a pair in the stake pockets on the new pickup to use while pulling the 5th wheel. I know that I saw them advertised at one time but can not remember where. Have searched the net and have not found a mount that will go in the stake pocket, probably just not looking for the right thing. If someone could point me in the right direction for this type of mount it would be greatly appreciated.

Sam
K7SAM

948. Re: mobile antenna for 10-15-20 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 22:06:05 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bd5rufnp1@plutonium.btinternet.com>
Source record: 165995

Bill Turner wrote -
>
> Reg Edwards wrote -
> >The larger the diameter of the coil, the higher the radiating
> >efficiency. For the same coil height, if the coil diameter is
> >doubled, the loss in the coil is halved.
>_____________________________________
>
> I'm well aware of that, but that wasn't the question. The
question was what
> kind of screwdriver was he using. I asked because I hadn't known
of any that
> large in diameter.
>

____

Sorry Bill, it was not my intention to raise doubts about your technical education. Neither was it my intention to answer your question. Only John can answer that. I was hoping to pass on to John, the original enquirer and any other interested parties, a little more information to help choose between the various manufacturers' models available just by looking at them.

Reg.

949. Re: Thanks for advice

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 22:42:42 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <8o8kdt0r0gb1iahi7b6qu380fc3r06krap@4ax.com>
Source record: 165998

On Sun, 15 Apr 2001 14:55:45 -0700, NoSpamForKDJ@hotmail.com wrote:

>The analyzer seems to be working OK. The antenna is up 40 feet, and the coax
>feedline is 36 feet. The balun is coiled coax per the ARRL handbook.
>
>I seem to be getting out FB with the antenna, so maybe it's better than the
>analyzer indicates!
>
>73
>

The analyzer is telling you the conditions on the feed line. It says
little about the antenna ifself.

That would be something like checking the air pressure in an
automobile's tires to determine how fast it will go.

Danny, K6MHE

950. Re: Thanks for advice

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-15 23:16:09 UTC
From: jgboyles@aol.com
Message-ID: <20010415191609.15221.00000344@ng-ck1.aol.com>
Source record: 165997

>I seem to be getting out FB with the antenna, so maybe it's better than the
>analyzer indicates!

Yep, the analyzer will not tell you much about how well you will get out, and with a 3.0 swr you can certainly make a lot of contacts with good signal reports. The analyzer will tell you all sorts of info about your antenna system that you can use to make your antenna better, and to check out that new design to see if it's the way you want.
If the MFJ is telling you the swr is 3.0 and R=50 ohms and X=0, then something is wrong. Paying the $250 for the 269 I would want to know what was wrong. If you are going to cut a dipole to formula and string it up and start transmitting, why bother checking with a very useful (if working right) instrument?
I have the 259b and it is the single most used piece of test equipment in the shack. If it told me what your 269 did, I would want to know the reason.
But, the name of the game is getting out, and the analyzer can help, or it can be of no help at all
73 Gary N4AST

951. Re: Mobile Mount

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 00:01:35 UTC
From: DGB <dgbcms@bayland.net>
Message-ID: <_EqC6.446$A07.143757@homer.alpha.net>
Source record: 165999

I think this is what you're referring to.

http://www.geotool.com/antmount.htm

73 Dwight W9YQ

"K7SAM" <2smoore@nemontel.net> wrote in message
news:_UoC6.5095$u7.840407@e3500-chi1.usenetserver.com...
> I am currently using hamsticks (I know they don't work
that well but ya use
> what ya got and what ya can afford) and am looking for a
mount. I made my
> own for an older car but want to mount a pair in the stake
pockets on the
> new pickup to use while pulling the 5th wheel. I know that
I saw them
> advertised at one time but can not remember where. Have
searched the net and
> have not found a mount that will go in the stake pocket,
probably just not
> looking for the right thing. If someone could point me in
the right
> direction for this type of mount it would be greatly
appreciated.
>
> Sam
> K7SAM
>
>
>

952. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 00:20:59 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <LVqC6.13233$xN4.909430@news1.sttls1.wa.home.com>
Source record: 166000

We can often look at events in more than one way and skin effect is no different. These "thought experiments" are very good tools to create a better understanding of electromagnetic phenomena.

One valuable "thought experiment" is to connect a long transmission line to a battery and a switch. Begin by connecting one side of the transmission line to one terminal of the battery. Connect one side of the switch to the second battery terminal and the other side to the transmission line. What happens when we close the switch?

A square wave will begin traveling down the transmission line at the speed of light (or at the transmission line velocity). The velocity of light can be considered as a moving wall holding back the voltage front. As the voltage front moves, the capacity between transmission line conductors will be charged. The voltage to current ratio (impedance ratio) of the cable is easily obtained and is Zo = 1/cC where Zo is the transmission line impedance, c is the speed of light, and C is the capacity per unit length. Some interesting trivia.

What is more pertinent to this discussion is the recognition that a steady current flows into and out of this transmission line so long as the wave front is traveling toward the far end of the line. The current begins very abruptly (at any point down the line) a soon as the wave front reaches the study point. The current must come from a volume located very close to the surface, because the wave does not have time to penetrate far below the surface.

We have learned that the actual velocity of the wave in the conductor is very slow (especially when compared to the speed of light) but is not zero. While we are talking about direct current from a battery, the wave front is moving giving us a time varying situation. We notice that at a location near the battery the current has been flowing for a long time, and that at a location near the wave front the current has flowed for a very short time. Logically, we can expect that the current has penetrated far below the surface near the battery, and has just barely penetrated the surface at a point near the wave front.

It is a reasonably easy task to extrapolate this situation to the alternating current situation more applicable to the discussion of this thread. We can (in our minds) simply reverse the battery leads in a regular manner and observe the effect.

Several observations can be made with this "thought experiment"

The first is that the wave front must be considered as a voltage step that travels down the conductor. It is easy to see that the "action" is between

the conductors (the charging of the capacitor) and that the current motion is near the surface of the conductor (the skin effect). It is also easy to see that there is no reason to think that the change of voltage level is restricted to any surface of the conductors. In other words, the driving force, the voltage difference across the battery, would be present between any two points that could be possibly measured between the transmission line conductors, whether parallel line or coaxial line. This last point should be a strong argument against the possibility of a "fold around" current occurring at the junction of the transmission line and the antenna.

Using this model, we can see that a considerable amount of energy is stored below the surface in the conductors of a transmission line. This occurs because the velocity of wave travel through the conductor is so slow that several wave cycles can be stored in the conductors at amateur HF frequencies. At higher frequencies, these waves are damped by resistance and become the cause of additional transmission line losses.

This "thought experiment" is just another way at looking at the transmission line problem. It can be performed in the real world, and offers one more way to test and compare our theories.

73, Roger, W7WKB

953. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 01:11:02 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bdgqr$22h$1@slb0.atl.mindspring.net>
Source record: 166002

Thread:

James Clerk Maxwell's equations, like the ideal gas laws of Sadi Carnot describe a "macro" behavior of thousands, no millions or perhaps billions, of tiny roughly independent particles. In the case of "ideal" gases these are the gas molecules. In the case of Maxwell's equations these are the electric charges, usually electrons. Certainly very tiny and there are many of them!

Even though the "macro" mathematical models yeild accurate quantitative answers and can be used to analyze and design systems accurately it is not as easy to "relate" Maxwell's multi-variable partial differential equations or Carnot's Thermodynamic equations... to individual infinitesimal particles.

It's often hard to "visualize" or perform "thought experiments" that depict molecular, atomic and subatomic behavior.

I "explain" displacement current in dielectrics to myself this way...

In the dielectric there are no "free" electrons or other mobile charges, instead the electrons or other charges in a dielectric are "bound" into the material by other forces.

The electrons in the dielectric are firmly bound into their, roughly circular, orbits and none are free to roam the material.

Since the electrons are bound in roughly circular orbits, then across that orbital diameter, the average charge represented by that electron is distributed evenly and so is "neutralized" by the postive charge in the center of the nucleus.

When a voltage is placed across the dielectric the electron orbits are "displaced" slightly and become slightly eliptical. The negatively charged electron's orbit is displaced and tends to stretch out towards the postive voltage and is pushed away from the negative voltage as applied to the dielectric.

Thus the positive nucleus is no longer in the "center" of the roughly circular orbit.

The net result of this electron orbit "distortion" is that the net negative charge, as averaged over the, now slightly distorted and elliptically shaped orbit, has been displaced toward the postive voltage applied to the dielectric.

And so... my "visualization" of Maxwell's displacement current in a dielectric is that the electron orbits are simply shifted back and forth by

the applied voltages. One can argue that this is indeed equivalent to an overall charge movement, since the average position of all of the electrons has shifted and so has their equivalent charge. Average motion of charge is current by definition!

In fact one can imagine that in a "charged" capacitor the "tension"storing the potential energy or "charge on the capacitor" is simply all the distorted electron orbits waiting to "snap" back into place.

When passing AC through a capacitor one can "visualize" all of the millions of electron orbits simply "sloshing" back and forth between two elliptical shapes each with the nucleus of the dielectric's atoms in the left or right end of the elliptical orbits.

This visualization even helps to explain the dielectric breakdown under extremely high voltages. Here the electrons orbits are pulled so far out of shape that they become detached from the atoms and are ripped out of their orbits to tear through the material and char it releasing heat and smoke, etc...

All that being said... no one knows if this "visualization" is true, or if it even takes place since no one has ever seen individual electrons, and probably never will. Just as no one has ever seen the individual molecules of a gas all combining their individual motions to accomodate the Laws of Thermodynamics. Sadi Carnot had never seen a molecule!

But for me... except for one little mystery, the distorted electron orbits picture helps me to visualize Maxwell's celebrated "Displacement Current".

I visualize it as the "displacement" of electron orbits and the motion of the average charge distribution due to that orbit distortion or displacement.

Of course when Maxwell first wrote down his equations, no one had yet even proposed the existence of electrons... and so I wonder how James visualized his "displacement current".

Oh yes... the one little mystery that my "visualization" does not explain???

Well...

Maxwell's Displacement Current also flows in a vacuum! What?

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:5141-3AD6EE7B-253@storefull-114.iap.bryant.webtv.net...
> Roy, W7EL gave a good explanation of displacement current.
>
> J.C. Maxwell is said to have worried about how to handle displacement
> current in his field equations. At the time, no experimental methods
> were known to prove that displacement current droduced a magnetic field
> just as conduction does. Maxwell included a term for displacement
> current into an equation just the same without experimental verification

> because he was so sure of his hunch.
>
> That guess was needed for radiation in free space because there`s no
> conducting material to carry current there.
>
> Best regards, Richard Harrison, KB5WZI
>

954. Re: Worth experimenting with?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 01:17:20 UTC
From: Bill Meacham <NOSPAMexray@coqui.net>
Message-ID: <3ADA4820.60F1923C@coqui.net>
Source record: 166003
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Dale Parfitt wrote:
>
> Ross Archer wrote:
>

> >
> > This one I call an "untuned fence loop", because it's mounted on the inside
> > of my fence. Four woodscrews act as
> > "supports" for a complete 360 degree rectangle of
> > wire, to which I soldered a coax jack to each end.
> > Currently, the jack is halfway up the short side,
> > which means it's probably vertically polarized.
> >
> > The lowest part of the loop can't be more than
> > 8 inches above the ground. If someone cares about dimensions, I'll be
> > happy to run out and measure it.
> > I just randomly picked convenient mounting points
> > for the wood-screws that formed a neat rectangle -
> > perhaps 25'x6' (very roughly).
> >

> > Has anybody else experimented with this sort of antenna?
> > I'll try to do more rigorous comparisons when conditions
> > are better. It does seem like a sensitive and quiet receiver
> > is required to cope with the lower signal delivered though.
>
> Interesting Ross- I would only suggest that if the loop is horizontal, then its
> field is most likely norizontal despite the feed being on a short vertical
> segment- or perhaps I don't fully comprehend the configuration. Any way- good
> go.
>
> Dale W4OP

There was an antenna in QST back in the early 70? called a DDRR
Loop?. It was based on something like an 8 foot diameter piece of
muffler tubing mounted flat above a ground plane. The article
writer highly praised it but I never heard much else about it.
Given that the 8 foot diameter was intended specifically for HF
SW, maybe Ross' configuration approaches a scheme like that scaled
for the BCB?.
Does anybody have a track record using this DDRR Loop? (I could be
wrong on the name).
--

Bill Meacham WX4A
Vieques, PR

955. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 01:28:41 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9bdhs9$s9p$0@208.207.71.169>
Source record: 166004

W6RCecilA wrote:
>
> Dick Carroll wrote:
> > I thought every ham was supposed to know the difference between peak
> > and average.
>
> Point is, this happened at 100 watts. One would assume a 3kV cap could
> handle voltages generated using 100 watts.

I iamgine your SWR was so high that it overvoltaged the cap. I read the other day that voltage and current goes up linearly with SWR- swr of 2:1 gives twice the voltage and current. 3:1 three times, etc. I was not aware of that, and if so it may explain a few things. Those high SWR's that you don't need to worry about when using low loss ladderline may have some other unpleasant side effects.

956. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 01:30:39 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9bdhvv$s9p$1@208.207.71.169>
Source record: 166005

Richard Harrison wrote:
>
> Dick Carroll wrote:
> "I thought every ham was supposed to know the difference between peak
> and average."
>
> I`ll bet a lot of Dick Carroll`s "true hams" don`t know that average
> value is only about 0.9 times the rms value.
> Best regards, Richard Harrison, KB5WZI

And even more of them have no reason to worry about that difference.

Then, what do you think the question pool jocks of today learn about it?

957. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 01:37:37 UTC
From: 2w8ji@akorn.net
Message-ID: <3ada4b39.12346409@news.accessunited.com>
Source record: 166006

At risk of getting into another LONG go nowhere
argument...displacement curremnt does NOT radiate.

On Sat, 14 Apr 2001 12:56:19 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Tom, W8JI wrote:
>
>"That isn`t true Reg. The vertical component off the ends comes from two
>things, the less than perfect ground beneath the antenna and the fact at
>any place not exactly in line with the end there is radiation."
>
>Looking at the end of a low dipole above ground is similar to looking
>into the end of a one-wire transmission line with a ground return.
>
>A transmission line with an open-circuit end has the appearance of an
>antenna having a length equal to the line-spacing.

This is the stuff CFA and DDRR antennas are made of.

Let's look a a short monopole with a large hat over a perfect
groundplane. This antenna would have the same amount of diplacement
current flowing DOWN, and the antenna element has flowing UP.

If displacement currents radiate, why does a short monopole radiate
nearly the same as a full size monopole? Why does a small loop
antenna, with a PATH for return current, have much lower radiation
resistance?

Why does a Beverage go to near-zero radiation over a nearly-perfect
ground?

Displacement currents do NOT radiate, there are no charges
accelerating in the displacement current.

73 Tom

958. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 01:59:01 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9bdjl5$451$0@208.207.71.169>
Source record: 166007

Mark Keith wrote:
>
> FAZAMY wrote:
> >
> > Since most rigs nowadays use 52 ohm coax, what can one use 72 ohm coax for.
> > I've the braid and center conductor type of 72 ohm coax, not the cable tv kind.
> >
> > 73,
> > Evan
> > KB2AMY
>
> I've used 75 ohm coax many times in a pinch. If you had a perfect match
> with 50 ohm coax, and switched, you would still be 1.4:1 swr. No
> worries. MK

And in real life you're just as likely to move from a mismatch closer
to a match.

Dick

959. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 02:02:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADA52CD.259DE5EB@IEEE.org>
Source record: 166008

Dick Carroll wrote:
> I iamgine your SWR was so high that it overvoltaged the cap.

Nope, that's not the reason, Dick. Please read Richard Clark's
posting on the subject.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

960. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 02:09:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADA5461.29EB8906@IEEE.org>
Source record: 166009

Tom W8JI wrote:
> Displacement currents do NOT radiate, there are no charges
> accelerating in the displacement current.

Consider the Controlled Current Distribution (CCD) antenna.
In a string of series caps, wouldn't all the current be
displacement current?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

961. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 02:19:51 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9bdks7$me6$7@bashir.peak.org>
Source record: 166011

NoSpamForKDJ@hotmail.com wrote:
: I'm using a MFJ antenna analyzer (model 269) to adjust a wire dipole
: antenna. The antenna seemed to be resonating low so I removed a few
: inches from each end. Currently the Rs = 50, the Xs = 0, but the SWR =
: 3.1 at 14.035 mhz. This is up from a 2.2 SWR when I began. Should the
: SWR be this high at resonance? Or, is there something else wrong?

In the first place, the impedance of your dipole at resonance should be
closer to 70 ohms, not 50.

How are you determining resonance? Are you assuming that it is resonant
when the Rs reads 50 ohms? If so, then you are doing it wrong. The
antenna is resonant when Rs is the lowest. Yes Xs should also be 0 ohms.

--
Bill Nelson (billn@peak.org)

962. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 02:27:49 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9bdlb5$me6$8@bashir.peak.org>
Source record: 166012

Peter O. Brackett <ab4bc@ix.netcom.com> wrote:

: Think of a coaxial cable with high leakage [Say for instance that the braid
: "coverage" is only 80%.], then it's not so hard to believe that the voltage
: on the inside of the braid equals the voltage on the outside of the braid...

Hm. If so, then wouldn't that mean that all the current on the inside of
the braid was flowing on the outside as well?

To me, that means that all the current on the inside of the braid would
be flowing "around the end" and flowing back along the outside of the coax.

That is the only way that the condition that the current on the inside of
the coax being equal to the current on the center conductor could be met.

--
Bill Nelson (billn@peak.org)

963. Re: Worth experimenting with?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 02:28:35 UTC
From: Dante'@inferno.net
Message-ID: <9bdlcj$p49$1@news.uky.edu>
Source record: 166010
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

In article <3ADA4820.60F1923C@coqui.net>, NOSPAMexray@coqui.net says...
>
snip
>There was an antenna in QST back in the early 70? called a DDRR
>Loop?. It was based on something like an 8 foot diameter piece of
>muffler tubing mounted flat above a ground plane. The article
>writer highly praised it but I never heard much else about it.
>Given that the 8 foot diameter was intended specifically for HF
>SW, maybe Ross' configuration approaches a scheme like that scaled
>for the BCB?.
>Does anybody have a track record using this DDRR Loop? (I could be
>wrong on the name).
>--
>---
>Bill Meacham WX4A
>Vieques, PR
>
They have a razor sharp pass band.
And can only be tunned over a very narrow frequency range with a motorized
veriable capacitor. I played with one, and it is all that the article claimed.
But hams are interested in narrow specific bands. Most SWLers listen to a lot
wider range of frequencies. I tried several tricks and could not get one to
tune wider than about 250KHz.
Unless you have a "special" frequency, like the BBC on 5.075 or WWV on 5 or 10
etc, I suspect that there are many :better" antennas.

964. Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 02:51:52 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3ADA5E48.1D7D803A@spam.me.not>
Source record: 166013

Greetings, all...

Next month, I'll be testing to get my ticket. I plan on taking the technical tests up to Extra class, and working on my code over the next year as a Technician, so I can pass the code.

Any suggestions as to where I could find practice tests, and the other related information I'll need to be sure I'll pass the tests? I'm pretty sure I can pass the Tech tests at a minimum, but I'd like to go all the way to Extra class, if possible.

TIA, and 73's

-SSB

965. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 04:10:30 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <3ADA6FF8.456B0E4A@att.net>
Source record: 166014

Curious definition of "resonance."

72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
Amateur Radio W5YR, in the 55th year and it just keeps getting better!
Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437

Bill Nelson wrote:

The
> antenna is resonant when Rs is the lowest.

966. Mobile HF Antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 04:12:47 UTC
From: Ray Hansmeier <rhansmeier@home.com>
Message-ID: <3juC6.13970$xN4.968327@news1.sttls1.wa.home.com>
Source record: 166016

I'm thinking of putting HF mobile in my truck. What is everyones experience's with HF mobile antennas. What works and what is a dummy load?

Ray

K7FU

967. Re: 4 square vert. 7 Mhz possible on Flat roof 30ft up?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 04:13:22 UTC
From: "..." <mecs@voyager.net>
Message-ID: <3ada7202$0$14450$bbae4d71@news.net-link.net>
Source record: 166018

In my experience I would settle for one vertical with more radials.
At most would use two as you would have 33 x 66 foot area for each vertical.
If you look at the efficiency charts for verticals there is no real
appreciable differerence (except for a few percent) with a vertical with 16
radials vs 120.

However, one with one or two radials (especially short ones) would have very
poor performance.

Combining four poorly performing antennas via a switching system (with its
losses)is not likely to give reasonable performance.

Instead I would opt to put one decent vertical in the middle of the roof
with sixteen radials equally spaced going out to the edges of the roof in
all directions. Many would be more than 1/4 wavelength long and quite
efficient.

Elevating the radials is not a bad idea, in fact elevated radials may
perform better than ones on the surface. The diameter of the radials is not
critical. If you do elevate them on a roof I would make them out of at
least #14 red or black wire so someone can see them and will not trip on
them or be cut by them for safety.

If you cant mount something 33' tall use a helically wound antenna.
The longer it is the better it will be especially on the receive
performance.
You will get much better perfomance if the majority of the helix is at the
top of the antenna as base loaded verticals do not perform as well.

IF you do use a helically wound antenna the tuning of your center frequency
will be very criticali, i.e. small changes in wire length may affect the
center frequency much more than you would have guessed. Be sure to place a
larger diameter conductor at the top to dissipate the voltage. I like to
connect the top to a inch (1cm) piece of copper tubing.

Best of luck.
W9EEE

M. van Wijk wrote in message ...
>Hi,
>
>I have on my apartment a flat roof 33ft by 130ft which is 33ft up from
>street level. Would it be possible to set up a 4 square of verticals for
>7Mhz ? I'm considering using the 1/8 wave spacing version and using one or
>two radials per vertical, 5 foot elevated from the roof level.
>
>I'm living in a medium city, not too crowded, no significant higher

>obstructures within 2000 ft, but with a small river (canal) about 120ft
>wide, in parallel with the roof and about 100ft away.
>
>I have read the spectacular and very informative book of ON4UN but cannot
>find the answer since verticals depend on real ground space, which is
>something you cannot offer near the center of a city.
>
>I like to share your experiences on this subject.
>
>' 73 Mark, PA5MW
>
>

968. FS 4 el 20 mtr beam in DENVER

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 04:15:07 UTC
From: Bill <m6rf@yahoo.com>
Message-ID: <3ADA71CA.2C5187F5@yahoo.com>
Source record: 166015

I have a TELEX/HyGAIN 4 element 20 meter beam for sale.

Gain is 8.2dB, front-to-back is15dB minimum to 28 dB
maximem, 50 ohm impedance, VSWR 1.2:1, will handle full
legal power, boom length is 26 feet, Maximum wind survival
is 100mph.

The beam is in excellent condition and is ON THE GROUND
ready to be picked up.

The price is $150. I live in the Denver area.

Thanks,
Bill

m6rf@yahoo.com

969. FS--20 Meter Beam in DENVER

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 04:23:42 UTC
From: Bill <m6rf@yahoo.com>
Message-ID: <3ADA73CE.CA2D511B@yahoo.com>
Source record: 166017

I have a TELEX/HyGAIN 4 element 20 meter beam for sale.

Gain is 8.2dB, front-to-back is15dB minimum to 28 dB
maximem, 50 ohm impedance, VSWR 1.2:1, will handle full
legal power, boom length is 26 feet, Maximum wind survival
is 100mph.

The beam is in excellent condition and is ON THE GROUND
ready to be picked up. And it comes with the book.

The price is $150. I live in the Denver area.

Thanks,
Bill

m6rf@yahoo.com

970. Re: 4 square vert. 7 Mhz possible on Flat roof 30ft up?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 05:02:03 UTC
From: mike.luther@ziplog.com
Message-ID: <tdkv6b202i7ea2@corp.supernews.com>
Source record: 165869

In <cnnC6.17998$D9.108133@dbsch1.home.nl>, "M. van Wijk" <pa5mw@home.nl> writes:

>Hi,

>I have on my apartment a flat roof 33ft by 130ft which is 33ft up from
>street level. Would it be possible to set up a 4 square of verticals for
>7Mhz ? I'm considering using the 1/8 wave spacing version and using one or
>two radials per vertical, 5 foot elevated from the roof level.

In my experience with elevated such arrays, in order to get reasonable directivity and a clean array you will need to use more than two radials for an element and they will have to be the full length. My 7Mhz array is elevated 9 feet off ground and uses four radials per pole.

You didn't tell us if the roof was a metal roof! If so, your better solution will likely be to try to take advantage of that..

Actually, if the direction play is favorable, it just might be that you could get a two element array working better using the roof dimensions for a better radial effort, than a full four square with a poorer layout for the radials. As well, if the direction play is favorable, you actually might be able to get a three or four element in-line array working better yet, for the same reasons!

If your roof is not metal covered, read on .. more ideas are below!

Last but not out of mind, with that available playground up there, don't throw away the idea of a Swiss Quad, fed in *VERTICAL* polarization! Your goal should be to present as much of the current portion of an element in clean profile in the vertical mode. Folding the voltage portion of the elements in to condense the array actually could work in your favor here in presenting a total height array of only sixteen feet in vertical size. To get an idea of how well that would suit you would really require only a very little work to erect only one element of a shortened, *BALANCED* radiator, such that the current portion of the element, in vertical mode, was available for test and adjustments.

One reason we tend to overlook such thingees on 7 Mhz, is that for the average person, playing with loops and things like this is a pain in the crockapotamus up a tower! You, on the other hand, are blessed with a neat nice flat perch upstairs on which to play!

I think you would be pleasantly surprized how quiet a condensed Swiss Quad is, even in vertical mode. More important, since it is a balanced antenna, there are no radials required up there! You may well even find that you can move to a condensed three element such creature, and more curiously, lightweight and all .. they can be rotated! Or they can be

reversed in throw by simply switching in and out small six inch ladder line 'extenders' that make either of the outside loops alternately a director or a reflector at will! As well, you can actually erect two condensed such creatures at right angles to each other up there. By feeding each one as needed and also simply switching the stub lines in and out, you can get a full four quadrant array that is pretty close to the four square, but without the mess of radials!

I gave up two full sized wire 3 element quads in favor of the four square a number of years ago, but mainly because maintaining them in the full sized state was a pain in the above and below!

As well, curiously, you can even use a coax power divider and phase feed both of the fixed quads in split power work and drive the pattern up the middle for eight directions, if you want. I did it for years and it works great.

>I'm living in a medium city, not too crowded, no significant higher
>obstructures within 2000 ft, but with a small river (canal) about 120ft
>wide, in parallel with the roof and about 100ft away.
>
>I have read the spectacular and very informative book of ON4UN but cannot
>find the answer since verticals depend on real ground space, which is
>something you cannot offer near the center of a city.
>
>I like to share your experiences on this subject.
>
>' 73 Mark, PA5MW

The nice thing about being a fiddler on a roof is that often you can use the perch to advantage to play just a little of the tune with one element to learn whether the match you make will be a heavenly one, Mark. Most of us never have your advantage. Try one element at a time and see what you think! I bet you will find that the vertical balanced element has just about as good a set of signal reports as one vertical element with radials up there.

Based on what you see of that, you can then know how to orchestrate the rest of the score!

--> Sleep well; OS2's still awake! ;)

Mike - W5WQN
Mike.Luther@ziplog.com
Mike.Luther@f3000.n117.z1.fidonet.org

971. Additional info

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 07:00:33 UTC
From: "M. van Wijk" <pa5mw@home.nl>
Message-ID: <lMwC6.20316$D9.116924@dbsch1.home.nl>
Source record: 165870

Thanks for the replies guys!

Some additional info:

- The building is made of stone and wood only. The roof is of wood and each of the ceilings in the apartments below contains of plaster with a thin metal meshed wire inside, to hold the plaster together. This is 1950's stuff. I guess these plaster ceilings are 1-2 feet below roof level. Not sure wether they are electrically interconnected to each neighbour or just seperate.

- I can mount (pole)structures up to max 40-50ft high in the middle of the roof.

- I already have a small mast 13ft high with a 5 el tribander on top, situated 35 feet from one short side of the building. This works superb; you worked me on 28 in the ARRL_DX_CW??

- Please do not forget that since this roof is 33 feet above street level, radials are/are not necessary at this height? You name it. Everyone has experience with radials on the ground but what about high up on a roof??

- I did have a trapped vertical some 7 years ago with 4 radials and this worked fb on 7Mhz.

- I did put up a 2el Cushcraft 402 yagi some 5 years ago on my small mast, but the low height above the roof (13ft) and street level (45ft) did not answer my demands of "Big Gun signal" and early/late band openings (off course). In fact I thought it was alsmost on par with the removed trapped vertical.

- I do want to "stand out" on 7Mhz, and since cycle 23 is declining I'm willing to ditch the 5el tribander. I use the allowed max of 400W here in the Netherlands.

- 3.5 and 1.8 Mhz are the next requirements although I see the physical restrictions I'm facing here; a single invertedl L, linearloaded vert will be possible on 3.5, IF and only if I fill the complete roof with radials I guess.

- Last but not least, I spend too much time reading (ON4UN), modelling(Elnec) and discussing all possibilities instead of just putting something up and getting on the air. Am I typical "(antenna-)builder type of ham"? Think not; DX and especial contest is what makes my clock tick here. Mostly with fellow club-hams on PI4SHB.

Thanks in advance for all your thoughts on my questions.
'73 Mark, PA5MW

972. Solarcon

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 07:11:25 UTC
From: aduffy@sprint.ca
Message-ID: <3ADA9B1D.69AC8A4B@sprint.ca>
Source record: 165871

Has anyone tried the Solarcon "Ground Zero" antenna on 10m? If so how did it compare to a regular dipole in a base or mobile application.

73. Tony
VA3ATD, London, ON

973. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 08:51:22 UTC
From: 2w8ji@akorn.net
Message-ID: <3adab222.38694998@news.accessunited.com>
Source record: 165872

On Sun, 15 Apr 2001 21:09:37 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Tom W8JI wrote:
>> Displacement currents do NOT radiate, there are no charges
>> accelerating in the displacement current.
>
>Consider the Controlled Current Distribution (CCD) antenna.
>In a string of series caps, wouldn't all the current be
>displacement current?

It is only displacement current in the dielectric of the capacitor.

In the conductors, it is "regular" current with moving charges.

73 Tom

974. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 09:03:59 UTC
From: 2w8ji@akorn.net
Message-ID: <3adab33e.38979948@news.accessunited.com>
Source record: 165874

On Sun, 15 Apr 2001 07:52:07 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>

>Point is, this happened at 100 watts. One would assume a 3kV cap could
>handle voltages generated using 100 watts. I learned that disc ceramic
>caps are not rated for that kind of service so I switched to doorknobs.
>--
>http://www.mindspring.com/~w6rca

I wouldn't "assume" that! I normally test capacitors for current and
voltage rating using a 100 watt transmitter. With 100 watts or less, I
can "blow up" some very big transmitting capacitors.

There are two causes of failure, heating and arcing.

Heating relates to ESR and current and requires time.

Arcing relates to voltage and can occur in a brief instant of time.

While all capacitors have voltage ratings, as a general rule only
special capacitors are current rated.

Capacitors are never power rated. You either had a voltage failure
(caused by applying more than the safe working voltage) or a current
failure (caused by I^2R heating).

73 Tom

975. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 09:05:50 UTC
From: 2w8ji@akorn.net
Message-ID: <3adab5a3.39592133@news.accessunited.com>
Source record: 165873

On 16 Apr 2001 02:27:49 GMT, Bill Nelson <billn@spock.peak.org> wrote:

>Peter O. Brackett <ab4bc@ix.netcom.com> wrote:
>
>: Think of a coaxial cable with high leakage [Say for instance that the braid
>: "coverage" is only 80%.], then it's not so hard to believe that the voltage
>: on the inside of the braid equals the voltage on the outside of the braid...
>
>Hm. If so, then wouldn't that mean that all the current on the inside of
>the braid was flowing on the outside as well?
>
>To me, that means that all the current on the inside of the braid would
>be flowing "around the end" and flowing back along the outside of the coax.
>
>That is the only way that the condition that the current on the inside of
>the coax being equal to the current on the center conductor could be met.
>
>--
>Bill Nelson (billn@peak.org)
>

Even on a PC board , all the "return current" bunches up near the
"outgoing current".

73 Tom

976. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 09:11:16 UTC
From: 2w8ji@akorn.net
Message-ID: <3adab668.39789958@news.accessunited.com>
Source record: 165875

On 16 Apr 2001 02:19:51 GMT, Bill Nelson <billn@spock.peak.org> wrote:

> NoSpamForKDJ@hotmail.com wrote:
>: I'm using a MFJ antenna analyzer (model 269) to adjust a wire dipole
>: antenna. The antenna seemed to be resonating low so I removed a few
>: inches from each end. Currently the Rs = 50, the Xs = 0, but the SWR =
>: 3.1 at 14.035 mhz. This is up from a 2.2 SWR when I began. Should the
>: SWR be this high at resonance? Or, is there something else wrong?
>
>In the first place, the impedance of your dipole at resonance should be
>closer to 70 ohms, not 50.
>
>How are you determining resonance? Are you assuming that it is resonant
>when the Rs reads 50 ohms? If so, then you are doing it wrong. The
>antenna is resonant when Rs is the lowest. Yes Xs should also be 0 ohms.

Resonance is ALWAYS where X=0

The impedance at the center of a dipole is almost always NOT 70 ohms,
it is usually lower.

It sounds like the meter is miscalibrated or defective. It can NOT be
common mode current. It CAN be a really close by transmitter causing
a false reading.

73 Tom

977. Re: Ford F-250 Diesel Interference on 40 Mtrs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 11:04:10 UTC
From: Jim Rodenkirch <rodenkir@spawar.navy.mil>
Message-ID: <9beju4$591$1@newpoisson.nosc.mil>
Source record: 165876

Well, Tom, I queried the Power Stroke web site as well as a Ford technical web site about one week ago and no replies yet. Hmmmmmmm, I believe we're seeing a trend here, Tom. No one wants to reply to these sorts of queries. Hmmmmmmmmm - LOL! Hey, perhaps they're taking their time at formulating a reply so that we're provided current, technically-sound information.

I'm not through with this yet! Stand by - more news at eleven. Regards, Jim R.

"Tom W8JI" <2w8ji@akorn.net> wrote in message news:3acdd81c.579969987@news.accessunited.com...
On Fri, 6 Apr 2001 09:32:42 -0400, "Jim Rodenkirch" <rodenkir@spawar.navy.mil> wrote:

I'll be back to y'all shortly.

Tom: are you subscribed to Ford's auto/truck owner web site? Also, are you familiar with the Power Stroke Registry group? Just curious if you'd persued those avenues prior to your comment about no responsiveness. Regards, Jim R.

I asked my frieds in engineering at Ford who to contact, that person was non-responsive.

I obtained another number from the dealer, that person never responded.

I e-mailed a person who was mentioned on internet, never heard anything back.

No, I didn't join any power-stroke groups. There might not have been any in 1995.

978. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 12:19:53 UTC
From: richardharrison@webtv.net
Message-ID: <29276-3ADAE369-62@storefull-117.iap.bryant.webtv.net>
Source record: 165879

Roger Sparks wrote:
"We can often look at events in more than one way and skin effect is no different."

That`s right! You can look at skin effect the right way and the wrong way.

If you look at skin effect the wrong way, your observations don`t square with reality.

The outside and the inside of the cable might have the same voltages at any point along the cable inside and outside. This can`t usually happen. If it did, a coax cable would behave no differently from a parallel-wire transmission line.

Think of what that would do to cable TV. The cable would not be able to carry Channel-2 on channel-12, and carry Channel-51 on channel-2, Everyone might get cable free by aiming a yagi at the cable.. The downside is that the cable would be full of noise and ghosts picked up along its route.

If on the other hand, the way you look at skin effect is the right way, your conclusions must fit observed reality.

The idea, that 50 volts at point (P) on the inside of a cable shield operating at HF might result in the same 50 volts on the outside of the shield opposite point (P) except in unusual circumstances, is insane.

Best regards, Richard Harrison, KB5WZI

979. Re: Cheap attenuator?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 12:21:22 UTC
From: JOHNSONRKKM@lexcominc.net
Message-ID: <3adadded.3359329@nntp.lexcominc.net>
Source record: 165877
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave

I have had good success with Radio Shack item 42-2459. This is a headphone volume control. 1/8" mini-plug on one side and 1/8" jack on the other. About 1 ft. long with volume control. Works pretty well for an attenuator at $5. It is on page 115 of current catalog - but is not pictured.

I have a local MW/AM slopper at 1440 kHz which can bleed across the entire MW band here depending on what antenna combination I am using. The attenuator can reduce input to the radio, taking out the slop and leaving audible signal of the stations that are supposed to be there.

If you have antenna with PL-259 connector - order item #1619 ($3.50) from Universal Radio. It is the SO 239-Mini Adapter. This will let you connect PL-259 connectors to the mini (1/8") jacks found on most portables. I have found lots of uses for this adapter. I've never seen them anywhere but Universal.

Russ

On Fri, 13 Apr 2001 16:22:23 -0500, Randon Loeb
<rloebusenet@cticonsulting.net> wrote:

>I have been advised to use an attenuator to help filter out shortwave
>stations that spill into the frequency that I'm trying to hear. What is
>this, how does it work, and can/should I cheaply build one, or are there
>cheap ones ($10 range) available?

980. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 12:40:31 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bep3u$9h4$1@plutonium.btinternet.com>
Source record: 165878

The antenna *PLUS* feedline is resonant when the SWR is at its
minimum value whatever the actual value of the SWR might be.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

981. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 12:55:09 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bepus$ai4$1@plutonium.btinternet.com>
Source record: 165880

Tom, don't you think it peculiar that every e.m. radiating system
is surrounded by displacement currents in the near field ?

No displacement current - no radiation !

Reg.

982. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 12:59:09 UTC
From: richardharrison@webtv.net
Message-ID: <27140-3ADAEC9D-210@storefull-116.iap.bryant.webtv.net>
Source record: 165883

Peter, K1PO wrote:
"Maxwell`s Displacement Current also flows in a vacuum!

Yes, the electric force which causes displacement current requires no medium to carry its force. Like charges repel and unlike charges attract right through the void of space. Gravity behaves similarly. Note the heavenly bodies in their orbits, or the tides here on earth. The actions happen right through the vacuum.

Displacement current is about the same through a vacuum or through air. We have no matter in the vacuum but we have atoms and electrons in the air. Our vacuum capacitors work very well.

Beyond dielectric constant, electrons in the dielectric have little effect on the fact of displacement current.

Best regards, Richard Harrison, KB5WZI

983. Re: Isotron antennas - comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 13:01:09 UTC
From: gpewitt@execpc.com
Message-ID: <3adaed92$0$18892$272ea4a1@news.execpc.com>
Source record: 165881

I have 5 of them. 80, 40, 20, 15, and 10 meters. They are mounted on
5 foot masts held in rooftop type tripods sitting in my dining room.
I regularly work Europe from my Milwaukee QTH. They are fairly narrow
in bandwidth as you would expect from such small antennas especialy on
80 meters but with an antenna tuner I get 1 to 1 swr on most bands and
close to it on the rest. After setting the tuner to the known
settings for each band I can re tune by receiver noise when I change
frequencies. More necessary on 80 than the higher bands.
I used an MFJ analyser to set up the antennas and to find the
settings on the tuner. Since I live in a condo apartment which does
not allow outside antennas I can't rig up
anything larger. The two tripods (80 and 40 on one and 20, 15 , and
10 on the other) are really in the way in my dinning room so I am
thinking of putting them out on the balcony and passing them off as
bird feeders. I am quite happy with the results and get good signal
reports.
73 Gary N9ZSV

On Sun, 15 Apr 2001 15:41:58 -0400, Bruno Quesnel
<quesnelb@ve2.ele.etsmtl.ca> wrote:

>Any good/bad comments on the different Isotron antennas ?
>
>Thanks in advance
>
>--
>Bruno Quesnel va2bmg@videotron.ca
>Genie Electrique quesnelb@ve2.ele.etsmtl.ca
>Electrical Engineering queb1604@ele.etsmtl.ca
>Ecole de Technologie Superieure VA2 BMG
>
>

Gary Pewitt N9ZSV
414 355 8147

984. Re: Worth experimenting with?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 13:16:27 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9ber6r$c69$1@neptunium.btinternet.com>
Source record: 165882
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

The DDRR is just a magloop which has toppled over. To reduce the otherwise excessive loss induced in the ground a chicken-wire screen is laid under it on the ground surface.

Much less efficient than a magloop of the same diameter. It tries to put out a horizontally polarised ground wave which, as is well known, doesn't travel very well.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

985. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 13:27:43 UTC
From: 2w8ji@akorn.net
Message-ID: <3adaf2da.55266203@news.accessunited.com>
Source record: 165884

On Mon, 16 Apr 2001 13:55:09 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Tom, don't you think it peculiar that every e.m. radiating system
>is surrounded by displacement currents in the near field ?
>
>No displacement current - no radiation !
>----
>Reg.

Reg,

Have you been into the Easter Egg nog?

Quit trolling. Go play darts.

73 Tom

986. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 13:37:33 UTC
From: richardharrison@webtv.net
Message-ID: <1465-3ADAF59D-222@storefull-113.iap.bryant.webtv.net>
Source record: 165886

Tom, W8JI wrote:
"Displacement currents do NOT radiate."

Maxwell has two principal field equations which define electromagnetic radiation in free space. The first says that a changing magnetic field produces an electric field. The second says that a changing electric field will produce a magnetic field. It was also maxwell who predicted that it would make no difference if the current were a displacement current or a conduction current. Maxwell has been proved right. Where are you going to get a conduction for a current in free space?

Of course, as Dick Carroll says, that wouldn`t be a question today`s "pool jocks" would be learn about.

Best regards, Richard Harrison, KB5WZI

987. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 13:42:12 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9besr7jit1@slb0.atl.mindspring.net>
Source record: 165885

Reg:

The frequency of the minimum value of VWSR is a good indicator of resonance, however it is a more complicated process for the meter to come up with the VSWR reading... just in case something is wrong with the meter...

Wouldn't a "safer" indication of resonance, less subject to errors and fauty meter operation, be that the antenna plus feedline is resonant when the measured reactance equals zero. Xs = 0. Of course the resistance will be whatever it will be at resonance, but the reactance has to be zero.

Just trying to be helpful.

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9bep3u$9h4$1@plutonium.btinternet.com...
> The antenna *PLUS* feedline is resonant when the SWR is at its
> minimum value whatever the actual value of the SWR might be.
> ---
> **********
> Regards, Reg, G4FGQ
> Free radio design & modelling software
> http://www.btinternet.com/~g4fgq.regp
>
> **********
>
>
>

988. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 13:57:59 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9betoqovd1@slb6.atl.mindspring.net>
Source record: 165887

Bill and Tom:

As Bill Sabin was trying to explain earlier... a voltage may exist where there is very little, even infinitesimal, current.

In the case of common mode currents flowing on the the outside of a coaxial shield, the skin effect prevents the current from penetrating deeply into the cable...so one can have a large finite common mode current on the outside of the shield, together with the accompanying voltages, and on the inside of the cable shield one has the same voltages but with vanishingly small currents flowing.

As an analogy, think of two voltage dividers driven by a pure voltage source, one consists of two 50 Ohm resistors in series, the other consists of two 50 MegOhm resistors in series. The voltage at the junction of each divider is exactly half the source voltage. However one divider sustains large currents and the other sustains infinitesimal currents. In fact one can draw almost no power from the junction of the 50 Meg Ohm divider by tapping into it with a "reasonable" size load, but can draw lots of power out of the 50 Ohm divider.

The same effect happens on the coaxial shield. The "inside" voltage is the same as the "outside" voltage but the currents and impedances are very very different. For the common mode... on coaxial cable... the current on the inside of the shield is infinitesimal, and the impedance seen there by the common mode currents is extremely high, while the voltage is the same as on the outside, where the common mode current is large and the common mode impedances are small.

In fact if differential or metallic mode currents were also present on the cable along with common mode currents, the totality of voltages and currents measured would be the superposition of the effects of both modes, the common modes and the differential modes.

Now I maintain that it is/was man's intention to never never ever excite the common modes on coaxial cable. Heh, heh.

Otherwise why would man have invented coaxial cable... for if you excite the common mode on the cable you have destroyed it's shielding effectiveness, which presumably is why man invented shielded cable, no?

That being said, men, and women, go around willy nilly exciting the common modes on coaxial cable all the time.

And that my friends... creates a very nice business for those who manufacture current mode baluns, or common mode chokes!

Thoughts, comments,

-Peter K1PO

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3adab5a3.39592133@news.accessunited.com...
> On 16 Apr 2001 02:27:49 GMT, Bill Nelson <billn@spock.peak.org> wrote:
>
> >Peter O. Brackett <ab4bc@ix.netcom.com> wrote:
> >
> >: Think of a coaxial cable with high leakage [Say for instance that the
braid
> >: "coverage" is only 80%.], then it's not so hard to believe that the
voltage
> >: on the inside of the braid equals the voltage on the outside of the
braid...
> >
> >Hm. If so, then wouldn't that mean that all the current on the inside of
> >the braid was flowing on the outside as well?
> >
> >To me, that means that all the current on the inside of the braid would
> >be flowing "around the end" and flowing back along the outside of the
coax.
> >
> >That is the only way that the condition that the current on the inside of
> >the coax being equal to the current on the center conductor could be met.
> >
> >--
> >Bill Nelson (billn@peak.org)
> >
>
> Even on a PC board , all the "return current" bunches up near the
> "outgoing current".
>
> 73 Tom
>

989. Re: Additional info

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 14:06:41 UTC
From: mike.luther@ziplog.com
Message-ID: <tdlv3hj6tvh473@corp.supernews.com>
Source record: 165888

In <lMwC6.20316$D9.116924@dbsch1.home.nl>, "M. van Wijk" <pa5mw@home.nl> writes:

>Thanks for the replies guys!

>Some additional info:

>- Please do not forget that since this roof is 33 feet above street level,
>radials are/are not necessary at this height? You name it. Everyone has
>experience with radials on the ground but what about high up on a roof??

In a crude sense, the radial portion of a vertical antenna is the 'other half' of the antenna. To that effect, you can use just one. However, since you talk later on about computer models, it should be easy to model a vertical element with one 'radial' in free space and look at the pattern. I think you will begin to see that a vertical element, up high away from the ground has a lopsided pattern if it has a 'lopsided other half!' I think you will begin to see why getting a clean and predictable pattern in a multi-element phased array would be more difficult with lopsided 'other halves!'

>- I did have a trapped vertical some 7 years ago with 4 radials and this
>worked fb on 7Mhz.

Then you are aware of the effectiveness of them at height.

>- I did put up a 2el Cushcraft 402 yagi some 5 years ago on my small mast,
>but the low height above the roof (13ft) and street level (45ft) did not
>answer my demands of "Big Gun signal" and early/late band openings (off
>course). In fact I thought it was alsmost on par with the removed trapped
>vertical.

That's about exactly what I would have expected from my experiments with the difference between horizontal and vertical polarization of low wire quads on 7 Mhz.

>- I do want to "stand out" on 7Mhz, and since cycle 23 is declining I'm
>willing to ditch the 5el tribander. I use the allowed max of 400W here in
>the Netherlands.

>- 3.5 and 1.8 Mhz are the next requirements although I see the physical
>restrictions I'm facing here; a single invertedl L, linearloaded vert will
>be possible on 3.5, IF and only if I fill the complete roof with radials I
>guess.

Which by doing so will, one would suspect, reduce the effectiveness of horizontal arrays above it that are influenced by it. Coy statement, yes, but true.

>- Last but not least, I spend too much time reading (ON4UN),
>modelling(Elnec) and discussing all possibilities instead of just putting
>something up and getting on the air. Am I typical "(antenna-)builder type of
>ham"? Think not; DX and especial contest is what makes my clock tick here.
>Mostly with fellow club-hams on PI4SHB.

If you are book oriented, see if you can find a copy of the late and great W6SAI book on quads. I'm not at my station site as I post this and that's where all these sorts of books are for me. I think I recall that this is a little orange book about 5 inches by 7 inches or so. It has all sorts of very detailed data on quads, including the pictoral description of quads with folded elements to arrive at a reduced size quad. It does not discuss, per my recall, vertical polarization feed choices, which is usually only important in low band work, and neither does ON4UN stress it for these antennas!

We 'reduce the size' of an antenna several ways. Many of us think of coils which are placed aious relative positions in elements to shorten them. We also think of linear loading techniques like you see in the Hygain 40 meter beem where a substantial part of an element has a parallel loading line near it.

A loop antenna with quarter wave sides can be thought of as two closely spaced half wave dipoles, a quarter wave spaced, the ends of which have been bent over and connected together! As an extension of that simplistic viewpoint, a three element quad can be thought of as two three element yagis, stacked at quarter wave spacing, the ends of each set of corresponding elements are simply bent over so they toucn, creating a self-fed second section!

I think you will find this exact math analysis and antenna model of the qyad in a short pig trail chapterette in W2PV's excellent book on the yagi antenna! I'm almost certain that's what I'm drawing on for my memory as I post this response to you. It's a wonderful book of tabulated computer modelling results for those that want the answers, not the work!

Linear loading or attempting to compress the 'length' of the voltage portions of the loop elements to reduce the size of a quad (loop) works, but at the expense of making the 'stack spacing' of the current portions of the resulting antenna closer yet. Performance suffers, sure, just as moving any pair of yagies closer and closer in stacking below a quarter wave would see. But the result may be worth the work, especially on lower bands .. in .. vertical .. polarization .. mode ..!

I think if you had simply been able to have turned that 2el Cushcraft 402 yagi in vertical polarization, you would have been astounded at the difference in performance! My low three element wire quads on 40 were lousy for DX until I shifted to vertical polarization and fed them so that the current sections were the vertical sections, not the horizontal sections. They made a fabulous cloud warmer Sweepstakes antenna on 40CW but changed markedly for the better in DX use when fed the other way!

>Thanks in advance for all your thoughts on my questions.
>'73 Mark, PA5MW

If you can't find a copy of the quad booklet by W6SAI to look at, the actual word-by-word description of how to make the condensed quadlette will have to wait until I can get back out to the fixed site .. ;)

--> Sleep well; OS2's still awake! ;)

Mike - W5WQN
Mike.Luther@ziplog.com
Mike.Luther@f3000.n117.z1.fidonet.org

990. Re: mobile antenna for 10-15-20 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 14:14:46 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3adafeb6$0$14439$bbae4d71@news.net-link.net>
Source record: 165889

I use either an SGC system or Icom coupler and whip on my Suburban. At present, I am having a lot of fun with the AH-4 coupler and 102" whip mounted on a sheet of aluminum bolted to the luggage racks on top of the Suburban. Works pretty good on 20/17/15/12/10/6 meters with my 706MKII. 30 and 40 are OK, but not good. I replace the whip with a Hustler mast and coil for use on 80/75 meters. Works good. I am not a purist. I don't care if it is down a dB or 2. It is not a screwdriver or bug catcher, but you can whack trees and bridges all day and not worry. It is wx proof. It is automatic. It is cheap and rugged. It is pretty fool proof. It is not too ugly. It is not as efficient as a scew/bug, but if I want to be real loud, I go home, turn on the amp and use the yagi at 100 feet. Smokes the mobiles about every time!
John S. Ciocchi wrote in message ...
>Best regards to all, hopefully someone can help. I am getting involved in HF
>mobile operation (been tempted by the incredibly small multiband rigs) I
>primarily enjoy casual operating and ragchewing. I would appreciate any
>advice on a mobile antenna setup to be mounted on the roof rack of a large
>SUV. Ease of band switching is important since I do tend to hop around a
>bit. Are there any systems that don't require stopping and getting out of
>the vehicle to fool with the antenna? If not what, in your esteemed opinions
>is the next best system? The rig will likely be an ICOM 706. Thank you all
>in advance your opinions and advice is, as always highly appreciated.
>Sincerely,
> John (KB1CZK)
> Vermont
>
>

991. Re: Mobile HF Antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 14:15:42 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3adafeef$0$14448$bbae4d71@news.net-link.net>
Source record: 165891

see earlier posts from the weekend.
Ray Hansmeier wrote in message
<3juC6.13970$xN4.968327@news1.sttls1.wa.home.com>...
>I'm thinking of putting HF mobile in my truck. What is everyones
>experience's with HF mobile antennas. What works and what is a dummy load?
>
>Ray
>
>K7FU
>
>

992. WTB: AM board for FT-101ZD

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 14:16:48 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3adaff2e$0$14439$bbae4d71@news.net-link.net>
Source record: 165890

Looking for AM board for FT-101ZD and other accessories for this rig.

993. Re: WTB: 200 watt+ soldering iron

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 14:38:38 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <hm0mdtkb889gjc7cerm969qj1a55k2c50b@4ax.com>
Source record: 165892

On 15 Apr 2001 18:39:39 GMT, k9sqg@aol.com (K9SQG) wrote:

>Looking for a heavy duty soldering iron, 200 watt or so, for some antenna and
>related projects.
>
>Thanks.
>
>Evan

For years I've used a Weller soldering gun and am very satisfied with it for soldering PL-259s and other jobs where hi power is needed. Please note there are two different Weller guns on the market - a big one and a little one. Most stores carry the little one and that is does not have enough wattage to do the job. The one you want is rated at about 250 watts (it has a two-position switch), and the one to avoid is rated about 140 watts. I've had the big one for over 40 years and it's still working fine, although no longer wins beauty contests :-)

73, Bill W7TI

994. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 14:41:00 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9bf09s$j9i$0@208.206.142.88>
Source record: 165893

"Peter O. Brackett" wrote:
>
let the braid coverage change
> incrementally from 80% towards 100% and "take the limit" as the braid
> "coverage" gradually approaches 100%, what happens to the voltages on the
> inside of the braid?

Same as when you close the slot in the loop antenna, or close the door
on the radio shop screen room...they no longer leak to the outside.

995. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 15:03:24 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ADB09BC.E950058A@mwci.net>
Source record: 165894

William E. Sabin wrote:

> Roy Lewallen wrote:
>
> > Are you saying that the phase shift (as well
> > as magnitude) of voltage from A to B *is* the same as from C to D?
>
> Yes. Definitely.
>
> Item 6) in my article is repeated:
>
> 6) The voltage along the buried path equals I1 x R + (an induced
> voltage due to flux). R is the natural resistance of the copper
> material. The voltage along the surface path is just I2 x R. The
> voltage along the surface segment and the voltage along the
> buried segment are *equal*. That is, although current decreases
> inside the wire, voltage drop along the direction of the wire
> does not decrease. There is an equilibrium between current I1 and
> induced EMF such that the voltages along paths 1 and 2 remain
> equal. But the "effective" resistance along path 1 is greater
> because of the reduced current.
>
> A little meditation will convince that the two voltages must be equal.
>
> Keep in mind that a-b and c-d are in the direction of the braid and in the
> direction of current travel. There is no reason to believe that the velocity,
> therefore the phase shift, is not the same in the equal-length segments a-b and
> c-d. It is also good common sense. If the velocities were not equal, the
> consequences would be very strange indeed.
>
> The equation in part 6) says that the voltage a-b is exactly the same as the
> voltage c-d. Johnson asserts that they are *exactly equal*. If they were not
> equal, then there would be a strong current between surfaces a-b and c-d that
> would *force* equality.
>
> This equality *requires* equal velocity, therefore equal phase shift in a-b and
> c-d.
>
> This equality of voltages, therefore equality of phase shifts, therefore equality
> of velocities, is the cornerstone of Johnson's analysis. I suggest think carefully
> before deciding it's wrong.
>
> Bill W0IYH

I have been thinking some more about this subject and would like to do a better analysis.

1a) Assume a truly rectangular region, as Johnson says in the book. My mistake was to stray away from that idea. Segment ab is exactly at the surface, and cd is buried, possibly even at the inner surface.

2a) Now the segments ac and bd are perpendicular to the surface.

3a) These segments are parallel to the flux, so *no* voltage is induced in them. That is, V(bd)=V(ac)=0. If that is so, then V(ab) has to equal V(cd) exactly. We only need to justify this, using V(bd)=V(ac)=0 as the initial, or "boundary", conditions.

4a) Review the equation in the previous part 6) above, which is repeated from a previous article.

5a) Segment ab is right at the surface and V(ab)= I(ab) x R.

6a) Now consider the segment cd below the surface. V(cd)= I(cd) x R + EMF. R is not necessarily a pure resistance, it can be an impedance of a segment ab or cd.

7a) I(cd) is not required to be the same as I(ab).

8a) The result is that the EMF induced by the flux automatically adjusts itself to guarantee that V(cd)=V(ab). That is, regardless of the value of I(cd), V(cd) is guaranteed to be exactly the same as V(ab). This result must flow directly from the boundary conditions.

That is literally what Faraday's law says. A careful scutiny of Johnson's analysis shows that Faraday's law is directly involved in *determining* the correct value of I(cd) at some depth. This analysis is predicated, first and foremost, on the "given" fact (boundary conditions) that V(ac)=V(bd)=0. From this, V(ab)=V(cd) *must* follow and Faraday's law is used to show that it actually does follow. It also produces the correct current magnitude and phase at any depth.

And this applies also to the inner surface of the braid. The transverse V(ac)=V(bd)=0 at all times. Johnson's analysis was not a piece of cake to grab hold of (at least for me) but it is beautiful and it makes sense. I am sure it is correct.

Bill W0IYH

996. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 15:07:06 UTC
From: richardharrison@webtv.net
Message-ID: <15742-3ADB0A9A-12@storefull-114.iap.bryant.webtv.net>
Source record: 165895

Tom,W68JI wrote:
"At the risk of getting into another LONG go nowhere
argument...Displacement current does NOT radiate."

The devil makes me respond.

Go-nowhere means that Tom is proved WRONG as he often is but seldom admits.

James Clerk-Maxwell said that there was indeed a magnetic field associated with a displacement current. It causes radiation.

From Griffith: "This meant that he (Maxwell) had to insert another term into the equationn which had resulted from Ampere`s rule and the Biot-Savart law in order to take into consideration the fact the area within the contour of the H (dot) ds integration (I am sorry I dont have a dot on my keyboard to properly indicate a dot product) might contain both conduction and displacement currents and that both would contribute to the intensity of the magnetic field."

Who are you going to believe? Tom? or Maxwell and Griffith?

Best regards, Richard Harrison, KB5WZI

997. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 15:26:32 UTC
From: Bart Rowlett <bart@wb6hqk.ampr.org>
Message-ID: <3ADB0F28.526F1747@wb6hqk.ampr.org>
Source record: 165896

Richard Harrison wrote:
>
> Tom, W8JI wrote:
> "Displacement currents do NOT radiate."

Tom is correct. There is a difference between the process of radiation, and the propagation of an electromagnetic wave.

The radiation process (creation of photons) requires acceleration of charges. One way to generate accelerating charges is via an AC conduction current in a wire. Another way is to launch a charge through free space into a magnetic field where it's path will be deflected (accelerated transversely) into a circular trajectory. In all cases, physical charge must be accelerated for radiation to occur.

Once radiation is created, the resulting energy will propagate in the form of an electromagnetic wave without requiring the presence of charges.

> Maxwell has two principal field equations which define electromagnetic
> radiation in free space. The first says that a changing magnetic field
> produces an electric field. The second says that a changing electric
> field will produce a magnetic field.

Maxwell's equations do not imply the causal relationship you describe. The first equation simply states that a circulating electric field exists proportional to the time rate of change of magnetic flux. If either exists, so does the other. Neither necessarily begats the other.

The second equation states that a circulating magnetic field exists proportional to the sum of the time rate of change of electric flux plus the conduction current. In free space the conduction current is nonexistent and the two equations are symmetrical. Once again, the equation does not imply electric flux causes a circulating magnetic field or vice versa.

> It was also maxwell who predicted
> that it would make no difference if the current were a displacement
> current or a conduction current.

If that were true, photons could be spontaneously generated out of nowhere.

The second equation, which is where the Displacement concept appears, states that a circulating magnetic field exists proportional to the sum of conduction plus displacement current. It's a bit of a leap to conclude that either conduction or displacement current is responsible

for radiation.

> Maxwell has been proved right.

As far as I know, Maxwell never claimed displacement current causes radiation. He did realize that the relationship resulted in the two equations consituting a solution to the wave equation in 'free space'.

Maxwell's equations, like Newton's laws of classical mechanics, approximate the behavior of natural phenomenon. For the majority of engineering applications, the errors created by treating the approximations as absolutely true are negligible, making both Newton's laws and Maxwell's equations very powerful analysis tools. However many modern technologies are dependent on more detailed knowledge of natural behavior than are provided by Newton's laws or Maxwell's equations without augmentation. e.g. bipolar transistors and nuclear reactors.

> Where
> are you going to get a conduction for a current in free space?

You can't. Convection currents (moving space charge) can exist of course.

> Of course, as Dick Carroll says, that wouldn`t be a question today`s
> "pool jocks" would be learn about.

I think it is very well established in the amateur literature that the radiation characteristics of an antenna are determined by distribution of conduction currents which is in fact correct. Some of the pool questions involve determining the radiation pattern of a multielement phased array. Working out the correct answer (as opposed to memorization) is a straightforward application of this principal and requires no more than high school algebra and trigonometry.
>
> Best regards, Richard Harrison, KB5WZI

998. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 16:15:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bf5ppvno1@slb6.atl.mindspring.net>
Source record: 165897

Dick:

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9bf09s$j9i$0@208.206.142.88...
>
>
> "Peter O. Brackett" wrote:
> >
> let the braid coverage change
> > incrementally from 80% towards 100% and "take the limit" as the braid
> > "coverage" gradually approaches 100%, what happens to the voltages on
the
> > inside of the braid?
>
>
> Same as when you close the slot in the loop antenna, or close the door
> on the radio shop screen room...they no longer leak to the outside.

But that does not mean that there is not a "voltage" on the inside related
to a voltage on the outside.

It's just that there are vanishingly small currents accompanied by nearly
infinite impedances on the inside.

In fact with very good shielding that "voltage" on the inside is extremely
difficult to measure. Even the vaunted old time VTVM [Vacuum Tube
VoltMeter] would not have a high enough impedance to measure the voltage on
the inside of the screen without disturbing it. Because the impedance is so
high there and the currents so tiny. But the voltages are there.

See a post of mine further up the thread about two voltage dividers in
parallel, one with 50 Ohm resistors and one with 50 MegOhm resistors...

And so as the slot is made smaller or the the door of the screen room closed
or the braid coverage approaches 100%, the common mode voltage remains the
same on both the outside and the inside, it's just that....

the common mode impedance becomes increasingly higher, until it approaches
infinity... and so common mode currents of any magnitude cannot be supported
on the inside, just the voltages.

Common mode voltages always "appear" on the inside, it's just that they
can't support any current because of the high common mode impedance behind
them.

That is why I say that "leaky" coax may be viewed as coaxial cable with a
low common mode impedance... as the leaks are reduced the common mode

impedance increases...

There are several ways in which the common mode of a coaxial cable may be excited... and there are several ways in which the common mode and differential modes of a coaxial cable may be "interconnected" by what I like to refer to as, common to differential mode coupling impedances.

Thoughts, comments?

-Peter K1PO

999. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 16:30:18 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bf6md$i1i$1@slb6.atl.mindspring.net>
Source record: 165898

Cecil, Tom:

I agree with Cecil, disagree with Tom... when it comes to radiation, displacement currents are no different than conduction currents.

In fact in most dielectrics, other than a pure vacuum, i.e. in the dielectric of a non-vacuum capacitor, there is in fact a conduction current, since the electron orbits in the dielectric are being distorted or displaced as the current flows back and forth.

I made a post further up this thread or another related thread wherein I outlined a method of visualizing displacement current in a non-vacuum dielectric. If this dielectric electron orbit distortion "visualization" is valid then one can be "convinced" that such displacement currents radiate since the charges in the dielectric, i.e. the average position of the charge in the electron orbits is accelerated.

This concept validates your CCD antenna comments below.

However... as I noted in my previous "displacement" current post, I would still be perplexed by a scenario where the capacitors in the CCD antenna were all vacuum dielectric capacitors. Heh, heh.

Maxwell would predict that vacuum capacitors have a displacement current the same as solid, or liquid, dielectric capacitors... however clearly there is no charge in a vacuum to be displaced... and so...

I ask... does a CCD antenna made of vacuum dielectric capacitors not radiate, while those with non-vacuum dielectric do?

What?

By the way, the electron had not yet been postulated or discovered when James Clerk Maxwell wrote down those celebrated partial differential equations!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3ADA5461.29EB8906@IEEE.org...
> Tom W8JI wrote:
> > > Displacement currents do NOT radiate, there are no charges
> > > accelerating in the displacement current.
>
> Consider the Controlled Current Distribution (CCD) antenna.
> In a string of series caps, wouldn't all the current be
> displacement current?
> --

> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1000. Coax question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 16:38:14 UTC
From: "Timothy J. Fiebig" <timothy.j.fiebig@exxonmobil.com>
Message-ID: <3ADB1FF6.2C3FCA4F@exxonmobil.com>
Source record: 165899

Hello All,

What can I expect as a life span burying coaxial cable? Are there
certain types of cable that is rate for contact with soil?

Also, any recommendations for reliable cable dealers that ship UPS?

Thanks,

Tim

1001. Re: R6000/R8/MA5B Question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 17:03:59 UTC
From: finham <finham@ntlworld.com>
Message-ID: <iEFC6.8950$xA.1353187@news2-win.server.ntlworld.com>
Source record: 165900

Hi,
have a look at the MA5B review on my web site.
www.g3zbe.freeserve.co.uk

I think you might find it useful
73
Alex

"Timothy J. Fiebig" <timothy.j.fiebig@exxonmobil.com> wrote in message
news:3AD31F79.5553C255@exxonmobil.com...
> After 3 years I need to get an antenna back up in the air. I previously
> used a butternut vertical which I was please with. However, I am now
> trying to make things simple and eliminate the radials. Are there any
> R6000 or R8 users out there who can comment on the performance of either
> of these antennas?
>
> Another consideration may be the mini beam that Cushcraft manufactures.
> Any comments on this antenna would also be appreciated.
>
> Best Wishes,
>
> Tim
>

1002. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 17:15:50 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADB28C6.8AE78D70@IEEE.org>
Source record: 165901

Tom W8JI wrote:
> It is only displacement current in the dielectric of the capacitor.
> In the conductors, it is "regular" current with moving charges.

So the current in the capacitor leads is not displacement current?
Isn't that current caused by displaced electrons?
--
http://www.mindspring.com/~w6rca

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1003. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 17:23:19 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADB2A87.62042C56@IEEE.org>
Source record: 165903

Bill Nelson wrote:
> The antenna is resonant when Rs is the lowest.

Is 0.000001 - j10000 resonant? :-)
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1004. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 17:26:04 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADB2B2C.2121C3D9@IEEE.org>
Source record: 165904

Tom W8JI wrote:
> It sounds like the meter is miscalibrated or defective. It can NOT be
> common mode current. It CAN be a really close by transmitter causing
> a false reading.

Doesn't a really close by transmitter cause common-mode currents?
--
http://www.mindspring.com/~w6rca

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1005. Roof mounf for TA-33-D

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 17:29:04 UTC
From: krishna <kkanakas@cisco.com>
Message-ID: <3ADB2BE0.39A96286@mindspring.com>
Source record: 165902
Body handling: Binary attachment payload not displayed: kumarkrishna.vcf

Hi,
I bought a used mosley TA-33-D. This is really solid aluminum.
I am in the process of restoring it and will be using all stainless
steel hardware and will make it shine :)

My roof over the garage is about 15 feet high from the ground. I want
to use a 5 feet roof mount tower. So this along with the antenna
mast will be about 15+5+5 = 25 ft from the ground.
The TA-33-D has a 12ft boom, the
longest element is about 24ft. I live in VA, where the wind speed is
about 70mph. This antenna has a windload of 6sqft.
I don't want my roof ripped apart,
after having already make the neighbours unhappy.

Any pros and cons. I might have to drop the beam installation plan if it

really needs a tower.

Thanks for your time and advice.

krish

[One or more binary attachments are retained only in the source text.]

1006. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 17:33:14 UTC
From: kb7qhc@home.com
Message-ID: <3adb27b0.1779667877@news.seanet.com>
Source record: 165905

On Mon, 16 Apr 2001 12:30:18 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>I ask... does a CCD antenna made of vacuum dielectric capacitors not
>radiate, while those with non-vacuum dielectric do?
>
>What?
>
>By the way, the electron had not yet been postulated or discovered when
>James Clerk Maxwell wrote down those celebrated partial differential
>equations!
>
>-Peter K1PO

Hi Peter,

The electron's knowledge is unnecessary as the topic can be confined to charge without reference to either polarity or physical manifestation. As for the charge in vacuum being different than the charge in another dielectric, this is why we have a dielectric constant.

If any current is required to explain the radiative properties of an antenna, it is certainly tightly coupled (the logic that is) to the physical size in relation to the wavelength it supports. The space between capacitor plates hardly qualifies except in the millimeter wavelengths (or cm for vacuum variables). More to Tom's response (I suppose) is that the displacement currents he speaks of are the broader features of the near field. These do qualify, but as Tom dismisses their utility by showing that if they did radiate they would be out of phase and cancel, necessarily presumes they must radiate.

But the logic is laboring under the same problem of definition as dissipationlessness. Displacement current for some seems to be real, and for others an academic fiction. Any appeals to either using an electron are doomed to failure at frequencies above 1KHz. The electron position as proof of current is really a very poor standard as an electron in ANY conductor hardly moves more than meters per second much less the speed of light. At HF, any "free" electron probably moves no more than a micrometer from its average position.

73's
Richard Clark, KB7QHC

1007. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 17:49:40 UTC
From: N3VST <geta@life.com>
Message-ID: <5gGC6.15221$63.5030742@newsrump.sjc.telocity.net>
Source record: 165906

http://www.qrz.com

buy code quick and you will be ready for the code test by next month as
well. Why miss out on the summer propagation.

"Sideband" <sideband@spam.me.not> wrote in message
news:3ADA5E48.1D7D803A@spam.me.not...
> Greetings, all...
>
> Next month, I'll be testing to get my ticket. I plan on taking the
> technical tests up to Extra class, and working on my code over the next
> year as a Technician, so I can pass the code.
>
> Any suggestions as to where I could find practice tests, and the other
> related information I'll need to be sure I'll pass the tests? I'm pretty
> sure I can pass the Tech tests at a minimum, but I'd like to go all the
> way to Extra class, if possible.
>
> TIA, and 73's
>
> -SSB
>

1008. Remote ATU Design

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 18:17:48 UTC
From: la8ak@online.no
Message-ID: <3adabac8.1015438546@news.online.no>
Source record: 165907

need an ATU for 21m (69') long inverted-L antenna to be used for 7, 14, 21, 28MHz - it is pretty high impedance at the feedpoint, possibly near 5000 ohms, so I hope to use the same configuration for all those bands. The ATU should be switched for pre-set positions

I am consiering the WARC bands, but already have another antenna for 30m

Suppose a single tuned circuit with tapping for feeder will work for one band, but it is problem to cover 3:1 or 4:1 frequency tuning range using only a single coil and only switching the parallel capacitors

suggestions?

73
Jan-Martin
LA8AK

1009. Re: Mobile HF Antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 18:32:38 UTC
From: Rick Scott <kf7qz@yahoo.com>
Message-ID: <3ADB3AC6.91A65B48@yahoo.com>
Source record: 165908

Ray Hansmeier wrote:
>
> I'm thinking of putting HF mobile in my truck. What is everyones
> experience's with HF mobile antennas. What works and what is a dummy load?
>
> Ray
>
> K7FU

Good Day Ray
I've been mobile hamming since I got my first licence in 76. As far as antenna's there are a myriad of them out there. But, one must always realise that in Mobile hamming, to remain reasonable in size one must sacrifice. You very well would be hard pressed to put up a 1/4 wave anything, so compact loaded antenna's are the norm. So with that in mind, Ive used tons of different antenna's. Ive used hustler and they work resonably well. Currently Im using the Pro-Am single bands and they are a bit better than hustler in my opinion. But I still have to get out to change bands. Im now in the process of building a Screwdriver type antenna as I've done some side by side comparisons and really like their performance. You can buy Screwdrivers from several different companies if you desire that route. (but they are pricey, but for multiband performance they are great). All in all most set ups work fairly well and you can work DX mobile.

Rick KF7QZ
Everett, Washington

1010. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 19:13:07 UTC
From: richardharrison@webtv.net
Message-ID: <18804-3ADB4443-7@storefull-117.iap.bryant.webtv.net>
Source record: 165914

Bill, W0IYH wrote:

"The entire skin effect isolation concept is a "loser" big time from the get-go."

Experience and common sense should persuade most observers that skin effect works very well to isolate one side of a shield from its other side.

I`ve already quoted from an ARRL 1998 Handbook, but here is more from the same book. It says on page 10.12:
"A consequence of Maxwell`s equations is that thick, near perfect conductors (such as metals) conduct a-c only to a certain depth that is proportional to the wavelength of the signal."

And on page 19.2:
"Becuse of skin effect (see Real World chapter in the handbook), current flowing in the outer conductor of a coax does so mainly on the inner surface of the outer conductor."

The handbook says on page 19.17: "Skin effect on the inside walls of the waveguide confines electromagnetic energy inside the guide, in much the same manner that the shield of a coax confines energy within the coax."

And, on page 20.7:
"Copperweld. The copper coating is necessary for RF service because steel is a relatively poor conductor. Practically all of the RF current is confined to the copper coating because of skin effect."

Finally, on page 18-3 of the new 19th edition of the ARRL antenna book:
"A waveguide is a conducting tube through which energy is transmitted in the form of electromagnetic waves. The tube is not considered as carrying a current in the same sense that the wires of a two-conductor line do, but rather as a boundary that cofines the waves in the enclosed space. Skin effect prevents any electromagnetic effects from being evident outside the guide."
Coax is only different as it supports only one propagation mode.

And that`s the way it is!

Best regards, Richard Harrison, KB5WZI

1011. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 19:14:10 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ADB4482.E7DE05FA@toast.net>
Source record: 165909

W6RCecilA wrote:

> Bill Nelson wrote:
> > The antenna is resonant when Rs is the lowest.
>
> Is 0.000001 - j10000 resonant? :-)

In short, no. :-)

john

1012. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 19:23:43 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ADB46BF.4112913D@toast.net>
Source record: 165910

Richard Clark wrote:

> On Mon, 16 Apr 2001 12:30:18 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> > >I ask... does a CCD antenna made of vacuum dielectric capacitors not
> > >radiate, while those with non-vacuum dielectric do?
> > >
> > >What?
> > >
> > >By the way, the electron had not yet been postulated or discovered when
> > >James Clerk Maxwell wrote down those celebrated partial differential
> > >equations!
> > >
> > >-Peter K1PO
>
> Hi Peter,
>
> The electron's knowledge is unnecessary as the topic can be confined
> to charge without reference to either polarity or physical
> manifestation.

That's good. If they knew, they might refuse to radiate. :-)

1013. Mobile HF antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 19:26:33 UTC
From: Marc <marcd@snet.net>
Message-ID: <3ADB4769.3E6ACD99@snet.net>
Source record: 165911

I just got an Alinco edx-2 automatic antenna tuner that is supposed to tune random wire anntennas 3 meters long for 80m to 10m use.
My question:

If I wrap a fiberglass pole (e.g. a 3/8" fiberglass chimney cleaning rod) with #12 copper wire spaced about 3/4" (about 62.4" of wire per pole) and use 2 poles screwed together(124.8" of wire - 3.17 meters), will this act like a 3.17 meter random wire, or will the fact that it's coiled affect this, and if so, how (will it look to the tuner as longer or shorter). Where can I find good references on how to

figure this out along with other antenna designs? I downloaded the trial version of EZNEC, but do not know enough to put it to effective use.

Thanks,

Marc

1014. Re: Coax question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 19:28:13 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3ADB47CD.7AADDEB6@hiwaay.net>
Source record: 165912

Yes- there are types rated for direct bury. I get ALL my wire from "The Wireman", at

e-mail- n8ug@juno.com (Press W Jones)
Web- http://thewireman.com/

He has data on his site and is good to work with.

Bill-W4BSG

"Timothy J. Fiebig" wrote:
>
> Hello All,
>
> What can I expect as a life span burying coaxial cable? Are there
> certain types of cable that is rate for contact with soil?
>
> Also, any recommendations for reliable cable dealers that ship UPS?
>
> Thanks,
>
> Tim

1015. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 19:36:09 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ADB49A9.B4D56406@mwci.net>
Source record: 165913

William E. Sabin wrote:

> Dennis Ferguson wrote:
>
> > I haven't quite figured out yet how Bill's assertion
> > that the voltages on both surfaces of the shield are in phase could be
> > true, though I don't know that the assertion is false either.
>
> I did not make that assertion. Please take another look.
>
> Bill W0IYH

Please take a look at my most recent post on Monday Apr 16. In it, I describe Johnson's analysis more accurately. The boundary conditions that Johnson uses are that the segments ac and bd are perpendicular to the surface of the braid.

Since these segments are parallel to the magnetic flux, no voltage appears on these segments, and this applies throughout the thickness of the braid. This is his starting point.

The *currents* is segments ab and cd are not in phase, but the EMF created by the flux does put the *voltages* ab and cd equal and in phase.

That is the very interesting thing that Johnson proves.

The voltage along the inner surface of the braid is really in phase with that on the outer surface, but the currents are not. The voltage on the inner surface is the *vector sum* of an IR voltage and a voltage due to flux.

The result is that an electric field appears in the dielectric material. This is then transferred by electromagnetic induction to the center wire. In this way, common mode voltage on the braid is transformer coupled *in-phase* to the center wire. The braid is just the primary of a conventional transformer.

It is interesting to visualize an ordinary power transformer. The magnetic flux is contained *almost entirely* within the laminations. But there is an electric field that exists in the free space that *encloses* (that is, loops around) the core. This field is not in contact with the core and the flux at all. But if we place a wire around the core, a voltage appears across the wire and we have a very good transformer. If we just "eye ball" a power transformer that is not covered up we can see how it is constructed.

This is really what Faraday's law is all about.

The coax is in the same category. The center wire is well separated from the bulk of the current and the flux tht are in the braid, but the center wire is very capable of responding to the electric field that is created by that current and flux. In the common mode at RF the braid and center wire are an excellent 1:1 transformer.

Bill W0IYH

1016. standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 19:58:30 UTC
From: DL7JSK <tansorg@cs.tu-berlin.de>
Message-ID: <9bfiup$7mk$05$1@news.t-online.com>
Source record: 165915

Hi OMs
Assuming I measure a SWR of 1:3.That means-when I use a 50 ohm koaxcable-my impedance is 150 ohms.How can I calculate the ERP that leaves the antenna ?

73
Tom

1017. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 20:06:07 UTC
From: Denver Braugher <Braugher@bwcc.com>
Message-ID: <3ADB50AF.EDFE4E16@bwcc.com>
Source record: 165916

> Oh yes... the one little mystery that my "visualization" does not explain???
Throughout your visualization, replace the >dielectric< with the >plates< and I think you might have a workable visualization.

1018. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 20:18:29 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <psIC6.17808$xN4.1191575@news1.sttls1.wa.home.com>
Source record: 165917

Hi Richard,

Yes, the square wave "thought experiment" seems to lead us to question the accuracy of some of the literature on skin effects. Could you be more specific by pointing to a part of the experiment that is done or analyzed incorrectly?

73, Roger, W7WKB

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:29276-3ADAE369-62@storefull-117.iap.bryant.webtv.net...
> Roger Sparks wrote:
> "We can often look at events in more than one way and skin effect is no
> different."
>
> That`s right! You can look at skin effect the right way and the wrong
> way.
>
> If you look at skin effect the wrong way, your observations don`t square
> with reality.
>
> The outside and the inside of the cable might have the same voltages at
> any point along the cable inside and outside. This can`t usually happen.
> If it did, a coax cable would behave no differently from a parallel-wire
> transmission line.
>
> Think of what that would do to cable TV. The cable would not be able to
> carry Channel-2 on channel-12, and carry Channel-51 on channel-2,
> Everyone might get cable free by aiming a yagi at the cable.. The
> downside is that the cable would be full of noise and ghosts picked up
> along its route.
>
> If on the other hand, the way you look at skin effect is the right way,
> your conclusions must fit observed reality.
>
> The idea, that 50 volts at point (P) on the inside of a cable shield
> operating at HF might result in the same 50 volts on the outside of the
> shield opposite point (P) except in unusual circumstances, is insane.
>
> Best regards, Richard Harrison, KB5WZI
>

1019. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 21:01:59 UTC
From: kb7qhc@home.com
Message-ID: <3adb5b83.1792934383@news.seanet.com>
Source record: 165918

On Mon, 16 Apr 2001 21:58:30 +0200, "DL7JSK" <tansorg@cs.tu-berlin.de>
wrote:

>Hi OMs
>Assuming I measure a SWR of 1:3.That means-when I use a 50 ohm koaxcable-my
>impedance is 150 ohms.How can I calculate the ERP that leaves the antenna ?
>
>73
> Tom
>
>

Hi Tom,

Problem here is that a 1:3 mismatch could easily be due to the load
being 16.6 Ohms (the mismatch expressed as a SWR is not concerned with
which value, simply the ratio).

Now, as for ERP; well yes it does modify that value, but only insofar
as the power delivered is not the power radiated (some of it was
reflected). If you correct the mismatch (in any of half a dozen ways)
you may recover some of that reflected power and eventually radiate it
(with consideration for losses incurred by the matching technique).

SWR may be expressed in Return Loss (-dB), and when this is added to
antenna gain (and other losses - or gains), you have a calculation you
can use to determine how much power is radiated.

Sorry for the convoluted logic of adding negative values, but today is
tax day.

73's
Richard Clark, KB7QHC

1020. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 21:29:28 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3ADB6438.90CDA171@bwcc.com>
Source record: 165919

Richard Clark wrote:
> Sorry for the convoluted logic of adding negative values, but today is
> tax day.
You'll need to file that on Form 6789-ERP "Gains and Losses From Antennas and Cabling".

1021. Re: Coax question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 21:35:13 UTC
From: Michael Melland <w9wis@charter.net>
Message-ID: <tdmpcjt91llj26@corp.supernews.com>
Source record: 165920

I've tried many of the so called "direct bury" coax..... beware...
non-contaminating doesn't mean direct bury as some advertise.

The Wireman is a good honest source..... and I think he also sells Davis RF
BuryFlex coax. I've had better luck with BuryFlex then anyother kind. Sort
of a poor mans heliax and much easier to work with. Besides... Steve Davis
is a really great person and fellow ham as well.

http:www.davisrf.com

Rehards,

Mike Melland, W9WIS

"

1022. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 21:35:25 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3ADB659D.54F78717@dialpoint.net>
Source record: 165923

YOu need to know the power of the transmitter, the losses of the transmission line and the power gain of the antenna to determin that ERP. If you have a lossey transmission line (say 200 feet of rg-58) and are operating at 144 mhz or above you will probalby have a swr around that value and almost all your power will be lost in the transmission line (probably 90 to 95 % loss). YOu could put out 10 or 1000 watts (assuming the line does not melt at 1000 watts) and the erp would be very low in either case as most of th power would be lost in the coax cable. If operating on 80 meters then the loss would not be very much, probably less than 20 percent.

DL7JSK wrote:
>
> Hi OMs
> Assuming I measure a SWR of 1:3.That means-when I use a 50 ohm koaxcable-my
> impedance is 150 ohms.How can I calculate the ERP that leaves the antenna ?
>
> 73
> Tom

1023. Re: Additional info

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 21:45:59 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bfp27$rm6$1@neptunium.btinternet.com>
Source record: 165921

When the radials of a 1/4-wave or 3/8-wave vertical antenna are
well above a lossy ground, say at a height greater than 3 or 4
percent of a wavelength, and when there are only 2 or 3 radials the
radiating efficiency is comparable with that of a 1/2-wave dipole,
ie., better than 90 percent.

Bear in mind that 90 percent efficiency equals 0.5 decibels less
than perfection, ie., an undetectable 1/12th of an S-unit.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

<mike.luther@ziplog.com> wrote in message
news:tdlv3hj6tvh473@corp.supernews.com...
> In <lMwC6.20316$D9.116924@dbsch1.home.nl>, "M. van Wijk"
<pa5mw@home.nl> writes:
>
> >Thanks for the replies guys!
>
> >Some additional info:
>
> >- Please do not forget that since this roof is 33 feet above
street level,
> >radials are/are not necessary at this height? You name it.
Everyone has
> >experience with radials on the ground but what about high up on
a roof??
>
> In a crude sense, the radial portion of a vertical antenna is the
'other
> half' of the antenna. To that effect, you can use just one.
However,
> since you talk later on about computer models, it should be easy
to
> model a vertical element with one 'radial' in free space and look
at the
> pattern. I think you will begin to see that a vertical element,
up high
> away from the ground has a lopsided pattern if it has a 'lopsided
other
> half!' I think you will begin to see why getting a clean and

> predictable pattern in a multi-element phased array would be more
> difficult with lopsided 'other halves!'
>
> >- I did have a trapped vertical some 7 years ago with 4 radials
and this
> >worked fb on 7Mhz.
>
> Then you are aware of the effectiveness of them at height.
>
> >- I did put up a 2el Cushcraft 402 yagi some 5 years ago on my
small mast,
> >but the low height above the roof (13ft) and street level (45ft)
did not
> >answer my demands of "Big Gun signal" and early/late band
openings (off
> >course). In fact I thought it was alsmost on par with the
removed trapped
> >vertical.
>
> That's about exactly what I would have expected from my
experiments with
> the difference between horizontal and vertical polarization of
low wire
> quads on 7 Mhz.
>
> >- I do want to "stand out" on 7Mhz, and since cycle 23 is
declining I'm
> >willing to ditch the 5el tribander. I use the allowed max of
400W here in
> >the Netherlands.
>
> >- 3.5 and 1.8 Mhz are the next requirements although I see the
physical
> >restrictions I'm facing here; a single invertedl L, linearloaded
vert will
> >be possible on 3.5, IF and only if I fill the complete roof with
radials I
> >guess.
>
> Which by doing so will, one would suspect, reduce the
effectiveness of
> horizontal arrays above it that are influenced by it. Coy
statement,
> yes, but true.
>
>
> >- Last but not least, I spend too much time reading (ON4UN),
> >modelling(Elnec) and discussing all possibilities instead of
just putting
> >something up and getting on the air. Am I typical

"(antenna-)builder type of
> >ham"? Think not; DX and especial contest is what makes my clock
tick here.
> >Mostly with fellow club-hams on PI4SHB.
>
> If you are book oriented, see if you can find a copy of the late
and
> great W6SAI book on quads. I'm not at my station site as I post
this
> and that's where all these sorts of books are for me. I think I
recall
> that this is a little orange book about 5 inches by 7 inches or
so. It
> has all sorts of very detailed data on quads, including the
pictoral
> description of quads with folded elements to arrive at a reduced
size
> quad. It does not discuss, per my recall, vertical polarization
feed
> choices, which is usually only important in low band work, and
neither
> does ON4UN stress it for these antennas!
>
> We 'reduce the size' of an antenna several ways. Many of us
think of
> coils which are placed aious relative positions in elements to
shorten
> them. We also think of linear loading techniques like you see in
the
> Hygain 40 meter beem where a substantial part of an element has a
> parallel loading line near it.
>
> A loop antenna with quarter wave sides can be thought of as two
closely
> spaced half wave dipoles, a quarter wave spaced, the ends of
which have
> been bent over and connected together! As an extension of that
> simplistic viewpoint, a three element quad can be thought of as
two
> three element yagis, stacked at quarter wave spacing, the ends of
each
> set of corresponding elements are simply bent over so they toucn,
> creating a self-fed second section!
>
> I think you will find this exact math analysis and antenna model
of the
> qyad in a short pig trail chapterette in W2PV's excellent book on
the
> yagi antenna! I'm almost certain that's what I'm drawing on for
my

> memory as I post this response to you. It's a wonderful book of
> tabulated computer modelling results for those that want the
answers,
> not the work!
>
> Linear loading or attempting to compress the 'length' of the
voltage
> portions of the loop elements to reduce the size of a quad (loop)
works,
> but at the expense of making the 'stack spacing' of the current
portions
> of the resulting antenna closer yet. Performance suffers, sure,
just as
> moving any pair of yagies closer and closer in stacking below a
quarter
> wave would see. But the result may be worth the work, especially
on
> lower bands .. in .. vertical .. polarization .. mode ..!
>
> I think if you had simply been able to have turned that 2el
Cushcraft 402
> yagi in vertical polarization, you would have been astounded at
the
> difference in performance! My low three element wire quads on 40
were
> lousy for DX until I shifted to vertical polarization and fed
them so
> that the current sections were the vertical sections, not the
horizontal
> sections. They made a fabulous cloud warmer Sweepstakes antenna
on 40CW
> but changed markedly for the better in DX use when fed the other
way!
>
> >Thanks in advance for all your thoughts on my questions.
> >'73 Mark, PA5MW
>
> If you can't find a copy of the quad booklet by W6SAI to look at,
the
> actual word-by-word description of how to make the condensed
quadlette
> will have to wait until I can get back out to the fixed site ..
;)
>
>
> --> Sleep well; OS2's still awake! ;)
>
> Mike - W5WQN
> Mike.Luther@ziplog.com
> Mike.Luther@f3000.n117.z1.fidonet.org

>

1024. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 22:06:09 UTC
From: richardharrison@webtv.net
Message-ID: <23708-3ADB6CD1-5@storefull-112.iap.bryant.webtv.net>
Source record: 165922

Roger, W7WKB wrote:
"Could you be more specific by pointing to a part of the experiment that is done or analyzed incorrectly?"

I have no criticism for your methods or analysis.

There is a simple determination of skin effect loss. Within the normal passband of waveguide, loss is due to current induced in its walls. No energy is escaping through the walls, despite all this silliness. The loss is proportional to the frequency and the resistance of the waveguide material. The better the conductivity, the shallower the penetration and the less the loss. So, every time the attenuation of a section of a waveguide run is made, a measure of the depth of penetration is being made.

Manufacturers and suppliers of waveguide publish loss versus frequency information. WR-137 AKA military type RG-50/U has about 2.5 db loss per 100 feet when things are normal. It`s copper and the loss corresponds to the penetration. If it doesn`t, there is something wrong with the connections, condition, construction, material, or the measuring process. I`ve made countless (I think thousands) of such measurements, and don`t recall ever having an out-of-line rigid waveguide loss. Some of the flex has been flakey at times.That means the penetration depth in copper is as calculated.

Best regards, Richard Harrison, KB5WZI

1025. Re: RF grounds for HF portable and VHF/UHF stations?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 22:23:44 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3ADB70F0.EBF@wt.net>
Source record: 165924
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

Jason Hsu wrote:
>
> Everyone has heard ad nauseum about using the vehicle chassis as a ground in
> mobile stations, the 8-foot metal rod in the ground for base stations, and the
> 1/4 wavelength terminated counterpoise wires for stations that aren't close
> enough to the grounding object (an issue on the higher HF bands).
>
> My questions:
> 1. When you aren't using a balanced antenna, what do you use as an RF ground
> when operating portable? Remember: The 8-foot ground rod is probably not an
> option when portable. And there isn't always a fire hydrant close enough.

I don't use unbalanced antennas portable. I use dipoles usually. Of
course , my mobile uses the car itself.

> 2. What do you use as an RF ground during Field Day weekend? The 8-foot
> ground rod is probably not an option. And I highly doubt that Field Day
> operators want to mess around with 9 counterpoise wires for each transceiver
> and 9 more counterpoise wires for each tuner.

Again , for field day I use full size dipoles. So no ground connection
or counterpoise is needed. Besides, field day is last place you want a
"compromise antenna". If I were to use a vertical, I'd probably use a
full sized one if possible, and just lay out as many radials as I have
wire. But I stick with dipoles. Better all around general coverage than
a vertical for the lower bands.

> 3. Are RF grounds ever used for VHF/UHF? I don't see any grounding terminals
> on my Yaesu FT-50R handheld, and I don't recall seeing the grounding terminals
> on the back of mobile VHF/UHF radios either. Do VHF/UHF base stations use RF
> grounds?

No, not really. You only need an RF ground at the antenna if it is not a
complete antenna. IE: vertical. With a complete antenna, IE: dipole, no
ground is needed at all. The rf grounds you see at VHF/UHF are in the
form of the radials, etc on the anenna if a 1/4 wave radiator. Many gain
antennas are complete in themselves, IE: 1/2 waves, isopoles,etc, and
require no radials. Only decoupling sections. You never need an rf
ground at the rig, unless the antenna is a wire that begins at the rig.
A bad choice...I don't use rf grounding of the rig. Only safety
grounding if required. RF grounding of rigs is sillyness and old wivish
as far as I'm concerned. The lack of a connection for one on VHF rigs is
not an accident. You really don't need one. The HF rigs have them
because everyone has done it that way for half a zillion years, not
because it's needed for rf purposes. Of course, the old HV rigs did need

safety grounding. But that is as simple as using a 3 prong 110v connection with the ground . I never ground my 706, but I do ground my 830 because it has a high voltage power supply that can set you free if it goes and you touch the case. I've done this before. I had an old HW-100 years ago that I was running, and it decided to blow a diode in the P/S. The chassis became hot with 1050v B+. I noticed the transformer belching at the load and reached over to turn it off. The rig was ungrounded, and I gave 1050v a try. I'm not keen on a repeat. I ground those things now. But thats pure safety grounding , not rf related in any way whatsoever. But grounding my battery run 706 would be silly and a waste of time. I've never had any rf problems with it yet either in case you wonder. Thats because I use a proper antenna setup. RF problems with hf rigs are almost always antenna/feedline related. 90% of time I would say. The other 10% are coupling to other wires, fundimental overload etc. MK
--
http://web.wt.net/~nm5k

1026. Re: RF grounds for HF portable and VHF/UHF stations?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 22:27:15 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3ADB71C3.7F5B@wt.net>
Source record: 165925
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

Jason Hsu wrote:
>
> Everyone has heard ad nauseum about using the vehicle chassis as a ground in
> mobile stations, the 8-foot metal rod in the ground for base stations, and the
> 1/4 wavelength terminated counterpoise wires for stations that aren't close
> enough to the grounding object (an issue on the higher HF bands).
>

BTW, if I did HAVE to use an unbalanced antenna, and needed a simple
counterpoise, I'd run a 1/4 WL wire just above , but not touching the
ground. A set of radials would be better though. MK
--
http://web.wt.net/~nm5k

1027. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 22:40:56 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3ADB74F8.9EB4353C@spam.me.not>
Source record: 165926

I have code quick, and morse tutor gold both. I've been working with them for over a year, each, now, and unfortunately I've made very little progress.

The local Amateur club does morse code tutor sessions on the air, on 2M, weekly, and now that I've found a HAM locally who's volunteered to Elmer for me (he's also one of the Testers here), I feel that I can actually learn code quicker in this manner...

Thanks for the pointers to qrz, too... I found the practice tests... Seems I still have some learning to do for the General and Extra class exams, but I can pass the Tech class every time.

-SSB

N3VST wrote:

> http://www.qrz.com
>
> buy code quick and you will be ready for the code test by next month as
> well. Why miss out on the summer propagation.
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3ADA5E48.1D7D803A@spam.me.not...
> > Greetings, all...
> >
> > Next month, I'll be testing to get my ticket. I plan on taking the
> > technical tests up to Extra class, and working on my code over the next
> > year as a Technician, so I can pass the code.
> >
> > Any suggestions as to where I could find practice tests, and the other
> > related information I'll need to be sure I'll pass the tests? I'm pretty
> > sure I can pass the Tech tests at a minimum, but I'd like to go all the
> > way to Extra class, if possible.
> >
> > TIA, and 73's
> >
> > -SSB
> >

1028. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 22:42:31 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3ADB7557.C7A9DD7E@spam.me.not>
Source record: 165927

ROFL!

Denver Braughler wrote:

> Richard Clark wrote:
> > Sorry for the convoluted logic of adding negative values, but today is
> > tax day.
> You'll need to file that on Form 6789-ERP "Gains and Losses From Antennas and Cabling".

1029. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 23:09:26 UTC
From: "David Michael Kelly"
Message-ID: <ukumdt47kgjc02266k954t7hahpkl037pt@4ax.com>
Source record: 165928

On Sun, 15 Apr 2001 22:51:52 -0400, Sideband <sideband@spam.me.not>
wrote:

>Any suggestions as to where I could find practice tests, and the other
>related information I'll need to be sure I'll pass the tests?

http://www.amateur-radio.org/exams.htm look at take a test for fun
section.

http://www.wvara.org/wvexam/
This site mixes the answers randomly so you don't get into a trap of
not understanding the questions.

http://homepage.mac.com/k6mam/MorsePractice/MorsePractice.html
Download the .jar file to your computer and follow the instructions on
how to get it running locally. Then you can save your settings between
practice sessions. Thanks to Martin Minow for writing the applet and
providing it free of charge.

73,

--
david
AC7LY

1030. "L/C METER 11B" BY ALMOST ALL DIGITAL ELECTRONICS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-16 23:30:20 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9bfve3cjn1@bob.news.rcn.net>
Source record: 165929

has anybody used this L/C meter & what is your opinion of it?

1031. Re: Coax question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 00:05:21 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <5NLC6.7031$Ce4.560175@news1.rdc1.ct.home.com>
Source record: 165930

Direct bury coax usually has flooded braid--the braid is impregnated with a sealant that retards oxidation and water migration.

I'd consider burying the coax in a PVC conduit to protect the outer plastic sheath from sharp rocks, etc.

Pete

1032. Re: "L/C METER 11B" BY ALMOST ALL DIGITAL ELECTRONICS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 00:41:11 UTC
From: Michael Melland <w9wis@charter.net>
Message-ID: <tdn4a55ik9ef8c@corp.supernews.com>
Source record: 165932

I've had one for about a year+..... amazing instrument, VERY accurate!
Wouldn't be without it..... it works great and it's a quality kit and not a
difficult build.

Mike, W9WIS

1033. Re: "L/C METER 11B" BY ALMOST ALL DIGITAL ELECTRONICS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 00:41:43 UTC
From: Michael Melland <w9wis@charter.net>
Message-ID: <tdn4a5lsgj668d@corp.supernews.com>
Source record: 165931

I've had one for about a year+..... amazing instrument, VERY accurate!
Wouldn't be without it..... it works great and it's a quality kit and not a
difficult build.

Mike, W9WIS

1034. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 01:20:07 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <2t5ndtkf463k2ds5ac4lrlg8jq9pohlnr2@4ax.com>
Source record: 165933

On Sun, 15 Apr 2001 21:02:53 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Dick Carroll wrote:
>> I iamgine your SWR was so high that it overvoltaged the cap.
>
>Nope, that's not the reason, Dick. Please read Richard Clark's
>posting on the subject.

Hi Cecil,

I wasn't entirely right. Bart, in e-mail, pointed out that my
observation was a product of lead length (0.3 inch) and capacitance
(really too large, the examples I quoted varied between 800 pF and
0.056 uF). Still, and all, the total circuit (as he also pointed out)
demands to be considered; and it does reveal that the blind acceptance
of a cap as a short circuit to ever increasing frequency is not
without its failure. These components (ceramic caps) also suffer
value drift terribly due to temperature variation. Z5U styles exhibit
up to -70% variation over a temperature range of 60 deg. C. XR7
styles show better specs. with only a variation of 10% and COG styles
0.1%.

It pays to know your components.

73's
Richard Clark, KB7QHC

1035. Re: "L/C METER 11B" BY ALMOST ALL DIGITAL ELECTRONICS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 01:37:39 UTC
From: QSB@QRM-QRN.net
Message-ID: <slrn9dn7j2.abf.QSB@animas.frontier.net>
Source record: 165934

On Mon, 16 Apr 2001 19:41:11 -0500, Michael Melland scribbled:
>I've had one for about a year+..... amazing instrument, VERY accurate!
>Wouldn't be without it..... it works great and it's a quality kit and
>not a difficult build.
>
>Mike, W9WIS

I'll add a "Me, too!" to Mike's followup.
(-: But, only to this one -- not his other'n. :-)

Jonesy W3DHJ
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | frontier.net | DM68mn SK

1036. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 01:48:25 UTC
From: 2w8ji@akorn.net
Message-ID: <3adba00e.99612637@news.accessunited.com>
Source record: 165935

On Mon, 16 Apr 2001 12:30:18 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Cecil, Tom:
>
>I agree with Cecil, disagree with Tom... when it comes to radiation,
>displacement currents are no different than conduction currents.
>
>In fact in most dielectrics, other than a pure vacuum, i.e. in the
>dielectric of a non-vacuum capacitor, there is in fact a conduction current,
>since the electron orbits in the dielectric are being distorted or displaced
>as the current flows back and forth.

So you are saying if we take an antenna out into space, it will quit
radiating from the "displacement currents", but when it is in
air....the results are different??

A Beverage has vertical displacement currents between the antenna and
earth. Why does it QUIT working when the ground is perfect if
displacement currents radiate?

This is the same junk-science the DDRR was based on.

73 Tom

1037. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 02:00:13 UTC
From: Randy <randyap@geocities.delete.com>
Message-ID: <7sNC6.16077$63.5267196@newsrump.sjc.telocity.net>
Source record: 165936

I like http://www.aa9pw.com for one-stop shopping. This site offers code training and testing as well as online graded sample exams for each class of license.

To get my tech license, I learned everything I needed to know from http://www.hamtutor.com/ then went to the site listed above to practice the exams.

I took Morse Code as my second exam. This gave me HF privileges and the opportunity to work the world while I studied for the General and Extra exams. Also, I considered code the most formidable part of the process and was greatly relieved to get this exam over with.

Keep in mind that CSCE's are only good for one year, so you'll have to complete all General + Extra + Code all within one year or retake the parts that are over one year old, whereas if you pass Code + General you will get a General class license and will never have to retake these exams (unless you allow your license to expire). You can later take Extra at your leisure to get your final upgrade to Extra class.

"Sideband" <sideband@spam.me.not> wrote in message news:3ADA5E48.1D7D803A@spam.me.not...
> Greetings, all...
>
> Next month, I'll be testing to get my ticket. I plan on taking the
> technical tests up to Extra class, and working on my code over the next
> year as a Technician, so I can pass the code.
>
> Any suggestions as to where I could find practice tests, and the other
> related information I'll need to be sure I'll pass the tests? I'm pretty
> sure I can pass the Tech tests at a minimum, but I'd like to go all the
> way to Extra class, if possible.
>
> TIA, and 73's
>
> -SSB
>

1038. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 02:02:30 UTC
From: 2w8ji@akorn.net
Message-ID: <3adba360.100462309@news.accessunited.com>
Source record: 165937

On Mon, 16 Apr 2001 08:37:33 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Tom, W8JI wrote:
>"Displacement currents do NOT radiate."
>
>Maxwell has two principal field equations which define electromagnetic
>radiation in free space. The first says that a changing magnetic field
>produces an electric field. The second says that a changing electric
>field will produce a magnetic field. It was also maxwell who predicted
>that it would make no difference if the current were a displacement
>current or a conduction current. Maxwell has been proved right. Where
>are you going to get a conduction for a current in free space?
>
>Of course, as Dick Carroll says, that wouldn`t be a question today`s
>"pool jocks" would be learn about.
>
>Best regards, Richard Harrison, KB5WZI

Why Richard old man, you are as charmiong as you are amazing!

In another thread you argue that we can take a time varying electric field to zero, and still have a time-varying magnetic field. Now you argue there are displacement currents in an electromagnetic wave.

Amazing science!

73 Tom

1039. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 02:11:10 UTC
From: 2w8ji@akorn.net
Message-ID: <3adba5d7.101094064@news.accessunited.com>
Source record: 165939

On Mon, 16 Apr 2001 14:13:07 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Bill, W0IYH wrote:
>
>"The entire skin effect isolation concept is a "loser" big time from the
>get-go."
>
>Experience and common sense should persuade most observers that skin
>effect works very well to isolate one side of a shield from its other
>side.

Except in the loop antenna. In the loop antenna Richard Harrison
claims the shield has no skin effect.

Of course most of us know better. Skin effect is very real.

73 Tom

1040. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 02:12:22 UTC
From: Randy <randyap@geocities.delete.com>
Message-ID: <BDNC6.16107$63.5275138@newsrump.sjc.telocity.net>
Source record: 165938

"Sideband" <sideband@spam.me.not> wrote in message
news:3ADB74F8.9EB4353C@spam.me.not...
> I have code quick, and morse tutor gold both. I've been working with them
for
> over a year, each, now, and unfortunately I've made very little progress.

One thing that helped me was to copy to paper, not to a keyboard. Also, you have to buckle down and get serious about it, or it will never happen. I piddled at code for over 30(!) years off and on before I finally got serious and learned it within a 45 day period. Put a little pressure on yourself by picking an upcoming exam date in say 45 or 60 days as a target and try your best to be ready by that date.

I've been to 3 exam sessions in the last year and found the examiners professional, courteous and helpful at all three. Their goal is for you to pass the exam and they will do all they can to help you relax and do your best.

1041. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 02:14:57 UTC
From: 2w8ji@akorn.net
Message-ID: <3adba678.101254815@news.accessunited.com>
Source record: 165940

On Mon, 16 Apr 2001 12:26:04 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Tom W8JI wrote:
>> It sounds like the meter is miscalibrated or defective. It can NOT be
>> common mode current. It CAN be a really close by transmitter causing
>> a false reading.
>
>Doesn't a really close by transmitter cause common-mode currents?

Quit trolling. It confuses people trying to actually understand the
problem.

The meter does NOT respond to common mode current, as long as the
shield is connected to the jack on the meter, because it is a
self-contained system inside a closed metal box. It can only respond
to differential mode currents on the two input terminals.

73 Tom

1042. Re: Mobile Mount

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 02:40:02 UTC
From: ik7565@erols.com
Message-ID: <3ADBAD02.4F4B9543@erols.com>
Source record: 165941

Lakeview's got 'em. (the hamstick folks)
73 de N8IK

K7SAM wrote:
>
> I am currently using hamsticks (I know they don't work that well but ya use
> what ya got and what ya can afford) and am looking for a mount. I made my
> own for an older car but want to mount a pair in the stake pockets on the
> new pickup to use while pulling the 5th wheel. I know that I saw them
> advertised at one time but can not remember where. Have searched the net and
> have not found a mount that will go in the stake pocket, probably just not
> looking for the right thing. If someone could point me in the right
> direction for this type of mount it would be greatly appreciated.
>
> Sam
> K7SAM

1043. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 02:47:45 UTC
From: ik7565@erols.com
Message-ID: <3ADBAED1.2394D3F5@erols.com>
Source record: 165942

Definitely copy on paper. Try the QSOs and callsign practice in
SuperMorse - 20 minutes a night for a month and you got it. BTW I can
copy SuperMorse all night but as soon as I get on the air I stink. The
FCC reasoning that if you can receive then you can send just ain't true
- both take practice. But it's fun so keep at it. I know I'll get
better (can't get any worse!) eventually.

73 de N8IK (a 5wpm Extra lite)

Randy wrote:
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3ADB74F8.9EB4353C@spam.me.not...
> > I have code quick, and morse tutor gold both. I've been working with them
> for
> > over a year, each, now, and unfortunately I've made very little progress.
>
> One thing that helped me was to copy to paper, not to a keyboard. Also, you
> have to buckle down and get serious about it, or it will never happen. I
> piddled at code for over 30(!) years off and on before I finally got serious
> and learned it within a 45 day period. Put a little pressure on yourself by
> picking an upcoming exam date in say 45 or 60 days as a target and try your
> best to be ready by that date.
>
> I've been to 3 exam sessions in the last year and found the examiners
> professional, courteous and helpful at all three. Their goal is for you to
> pass the exam and they will do all they can to help you relax and do your
> best.

1044. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 03:00:59 UTC
From: Robert Steele <samstee@netnet.net>
Message-ID: <LIOC6.10058$wt6.2751007@ratbert.tds.net>
Source record: 165943

try http://www.aa9pw.com/
"Sideband" <sideband@spam.me.not> wrote in message
news:3ADA5E48.1D7D803A@spam.me.not...
> Greetings, all...
>
> Next month, I'll be testing to get my ticket. I plan on taking
the
> technical tests up to Extra class, and working on my code over
the next
> year as a Technician, so I can pass the code.
>
> Any suggestions as to where I could find practice tests, and
the other
> related information I'll need to be sure I'll pass the tests?
I'm pretty
> sure I can pass the Tech tests at a minimum, but I'd like to go
all the
> way to Extra class, if possible.
>
> TIA, and 73's
>
> -SSB
>

1045. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 03:19:48 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9bgcok$m53$1@bashir.peak.org>
Source record: 165944

I wrote.

: In the first place, the impedance of your dipole at resonance should be
: closer to 70 ohms, not 50.

: How are you determining resonance? Are you assuming that it is resonant
: when the Rs reads 50 ohms? If so, then you are doing it wrong. The
: antenna is resonant when Rs is the lowest. Yes Xs should also be 0 ohms.

Oops, that was a brain fart.

I should have stated that the antenna is resonant when the impedance is
lowest.

My apologies for the confusion this may have caused.

--
Bill Nelson (billn@peak.org)

1046. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 03:21:11 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9bgcr7$m53$2@bashir.peak.org>
Source record: 165945

John O'Flaherty <oflahert@toast.net> wrote:
: W6RCecilA wrote:

:> Bill Nelson wrote:
:> > The antenna is resonant when Rs is the lowest.
:>
:> Is 0.000001 - j10000 resonant? :-)

: In short, no. :-)

Yeah, that was a brain fart, as I noted elsewhere. That should have
been "when the antenna input impedance is lowest".

--
Bill Nelson (billn@peak.org)

1047. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 03:38:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADBBAC4.5354800F@IEEE.org>
Source record: 165946

Tom W8JI wrote:
> The meter does NOT respond to common mode current, as long as the
> shield is connected to the jack on the meter, because it is a
> self-contained system inside a closed metal box. It can only respond
> to differential mode currents on the two input terminals.

Why does the reading change when touched by a human hand?
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1048. antenna wire

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 03:40:55 UTC
From: Gary Raney <tensax81@ev1.net>
Message-ID: <3ADBBB47.3D08422F@ev1.net>
Source record: 165947

I getting ready to put up a major wire antenna farm, but I don't have any spare wire. Does anyone know of a retailer that sells good antenna wire for cheap?

73 Gary KM5TY

1049. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 03:41:45 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADBBB79.677865D4@IEEE.org>
Source record: 165949

ik7565@erols.com wrote:
> The
> FCC reasoning that if you can receive then you can send just ain't true

Yep, one doesn't have to be able to spell to receive. :-)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1050. Re: Mobile HF antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 03:43:37 UTC
From: N3VST <geta@life.com>
Message-ID: <1ZOC6.16218$63.5337834@newsrump.sjc.telocity.net>
Source record: 165948

Save some time and aggravation with the building and use a hamstick, it will work the same. You just need figure out hoe to couple it to the tuner

"Marc" <marcd@snet.net> wrote in message news:3ADB4769.3E6ACD99@snet.net...
> I just got an Alinco edx-2 automatic antenna tuner that is supposed to
> tune random wire anntennas 3 meters long for 80m to 10m use.
> My question:
>
> If I wrap a fiberglass pole (e.g. a 3/8" fiberglass chimney cleaning
> rod) with #12 copper wire spaced about 3/4" (about 62.4" of wire
> per pole) and use 2 poles screwed together(124.8" of wire - 3.17
> meters), will this act like a 3.17 meter random wire, or will the
> fact that it's coiled affect this, and if so, how (will it look to the
> tuner as longer or shorter). Where can I find good references on how to
>
> figure this out along with other antenna designs? I downloaded the
> trial version of EZNEC, but do not know enough to put it to effective
> use.
>
> Thanks,
>
> Marc
>
>

1051. Re: antenna wire

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 04:00:36 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADBBFE4.6AB33F17@IEEE.org>
Source record: 165950

Gary Raney wrote:
> I getting ready to put up a major wire antenna farm, but I don't have
> any spare wire. Does anyone know of a retailer that sells good antenna
> wire for cheap?

Home Depot, etc., have 500 ft rolls of stranded #16 for less than $20.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1052. Re: antenna wire

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 04:21:44 UTC
From: N3VST <goto@arrl.org>
Message-ID: <IwPC6.16230$63.5367688@newsrump.sjc.telocity.net>
Source record: 165951

you can try a scrap yard, sometimes they have it CHEAP

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3ADBBFE4.6AB33F17@IEEE.org...
> Gary Raney wrote:
> > I getting ready to put up a major wire antenna farm, but I don't have
> > any spare wire. Does anyone know of a retailer that sells good antenna
> > wire for cheap?
>
> Home Depot, etc., have 500 ft rolls of stranded #16 for less than $20.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1053. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 04:21:55 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9bggd3$m53$4@bashir.peak.org>
Source record: 165952

Peter O. Brackett <ab4bc@ix.netcom.com> wrote:

: As Bill Sabin was trying to explain earlier... a voltage may exist where
: there is very little, even infinitesimal, current.

Sure, so what?

: In the case of common mode currents flowing on the the outside of a coaxial
: shield, the skin effect prevents the current from penetrating deeply into
: the cable...so one can have a large finite common mode current on the
: outside of the shield, together with the accompanying voltages, and on the
: inside of the cable shield one has the same voltages but with vanishingly
: small currents flowing.

But we are not talking about common mode currents here. We know that they
are highly undesireable.

I would claim that, assuming no common mode currents, it would be highly
unusual for any coax carrying an rf signal to have the same voltage on
both the inside and outside of the shield.

--
Bill Nelson (billn@peak.org)

1054. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 04:47:02 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9bghs6$2go$0@208.206.142.79>
Source record: 165953

"Peter O. Brackett" wrote:
>
> Cecil, Tom:
>
> I agree with Cecil, disagree with Tom... when it comes to radiation,
> displacement currents are no different than conduction currents.
>
> In fact in most dielectrics, other than a pure vacuum, i.e. in the
> dielectric of a non-vacuum capacitor, there is in fact a conduction current,
> since the electron orbits in the dielectric are being distorted or displaced
> as the current flows back and forth.

Strange current "flow", no? What happened to the rule that says that electrons must leave their valence orbits and move to another atom's valence orbits for current to flow?
Being jostled by forces insufficient to disloge them didn't qualify. Of such qualities are good dielectric materials made, vacuum being the top grade, as it is impossible to disloge electrons it doesn't have.
I Don't think any ammeter would register that "distortion" or "displacement", no matter how sensitive. All the electron atom-to-atom electron movement is within the capacitor's plates and none in the dielectric. Of course every physical body with mass has some effect on every other physical body...maybe that's it.

Every capacitor I ever saw that experienced current flow was destroyed at the same time, the dielectric having become a reluctant conductor.

Dick

1055. Re: Near Fields for a Monopole and 2 Fractals

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 08:42:47 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bgvlsckn1@slb6.atl.mindspring.net>
Source record: 165954

Richard:

I understand.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:702ddtgcr74iefbn36sig895drkkjihut8@4ax.com...
> On Thu, 12 Apr 2001 21:03:26 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >Thanks for those near field visualizations. In case no one has told you
> >before, you do good work!
> >
> >None of the "fractalonians" have ever shown such a comparison of near
> >fields. I am glad that you have taken the trouble to share that with us.
> >We can now readily see the "vast" difference between fractal antenna near
> >fields and the near fields of "mere mortal" antennas. If the difference
> >were any greater it would probably be worth a patent application, don't
you
> >think?
> >
> >Another excellent contribution to the field of fractal electromagnetics.
> >
> >Congratulations!
> >
> >-Peter K1PO
>
>
> Hi Peter,
>
> Thanx for the roses.
>
> I would point out that in contradiction to your general impression,
> fractals are actually pretty ordinary despite my pages'
> representations.
>
> The near-fields of the fractals in these pages are for antennas
> standing 0.25 wavelength tall. In other words, these were not
> fractals in their first resonance. Being big fractals, they would
> exhibit the more complex fields due to their geometry being large in
> relation to the wavelength.
>

> When I drive the Koch Quadratic at 11.05 MHz and look at the near
> fields, they are nearly as symmetrical as those found for the quarter
> wave monopole. There remain marked differences, but at the first
> resonance these are outweighed by the similarities.
>
> 73's
> Richard Clark, KB7QHC

1056. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 08:59:59 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bh0m2$971$1@slb6.atl.mindspring.net>
Source record: 165955

Richard:

Electrons, positive ions, protons, whatever carries charge... the fact that they might only move a tiny distance is not relative to radiation, that is the distance they move is not relative to radiation.

Rather, as you no doubt understand, it is the "acceleration" and only the "acceleration" of charges that releases photons or, stated another way, only charge "acceleration" produces radiation.

So the distance travelled by charges (either electrons or whatever carries charge), or their speed, is not relevant, only their acceleration, where acceleration = rate of change of velocity releases photons into the surrounding space. The actual distance travelled while accelerating may be infinitesimally small...

As an interesting side issue, beyond linear acceleration, the (scaler) speed of charges may be constant, but if their direction is changing while travelling at the same speed then they are accelerating as well. Since velocity is a vector and acceleration = rate of change of velocity is also a vector. If charges are forced down a non-linear shaped conductor at a constant speed, i.e. a DC current in a "curved" conductor, then radiation will also occur due to that acceleration.

To me, one of the most facinating aspects of Physics is the fact that accelerated charges produce photons!

I love it... one of the great mysteries of the Universe... why did the Creator set things up that way? And... leave it for that great Scotsman, James Clerk Maxwell to "discover" the mathematical rules that govern the occurence.

-Peter K1PO

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:3adb27b0.1779667877@news.seanet.com...
> On Mon, 16 Apr 2001 12:30:18 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> > >
> > >I ask... does a CCD antenna made of vacuum dielectric capacitors not
> > >radiate, while those with non-vacuum dielectric do?
> > >
> > >What?
> > >

> >By the way, the electron had not yet been postulated or discovered when
> >James Clerk Maxwell wrote down those celebrated partial differential
> >equations!
> >
> >-Peter K1PO
>
> Hi Peter,
>
> The electron's knowledge is unnecessary as the topic can be confined
> to charge without reference to either polarity or physical
> manifestation. As for the charge in vacuum being different than the
> charge in another dielectric, this is why we have a dielectric
> constant.
>
> If any current is required to explain the radiative properties of an
> antenna, it is certainly tightly coupled (the logic that is) to the
> physical size in relation to the wavelength it supports. The space
> between capacitor plates hardly qualifies except in the millimeter
> wavelengths (or cm for vacuum variables). More to Tom's response (I
> suppose) is that the displacement currents he speaks of are the
> broader features of the near field. These do qualify, but as Tom
> dismisses their utility by showing that if they did radiate they would
> be out of phase and cancel, necessarily presumes they must radiate.
>
> But the logic is laboring under the same problem of definition as
> dissipationlessness. Displacement current for some seems to be real,
> and for others an academic fiction. Any appeals to either using an
> electron are doomed to failure at frequencies above 1KHz. The
> electron position as proof of current is really a very poor standard
> as an electron in ANY conductor hardly moves more than meters per
> second much less the speed of light. At HF, any "free" electron
> probably moves no more than a micrometer from its average position.
>
> 73's
> Richard Clark, KB7QHC

1057. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 09:08:31 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bh166ppj1@slb4.atl.mindspring.net>
Source record: 165956

Tom:

Heh, heh...

No, I am not saying that. I was just having fun with "visualizations"...

I firmly believe that all "currents", both conduction currents and displacement currents cause radiation.

It 's just that I can "visualize" the accelerated charges in a conduction current, I just cannot "visualize" the accelerated charges of "in vacuuo" displacement currents.

Of course my "visualization" of charges is only a mental crutch that I carry around, who knows what electrons, or protons "look like" anyway?

However, often when analyzing things electric, I often ask myself, as I am writing down equations and formulae, etc.. "If I were an electron, what would I be doing now?"

Although it is absolutely unecessary for us to create wonderful electric works, we humans often seem to want to visualize the incomprensable...

James Clerk Maxwell never saw an electron, and believed that currents in metallic conductors were carried by postive charges!

Clearly Maxwell "visualized" things differently from Lord Thomson! And both "visualizations" led to the "TRUTH". Heh, heh.

-Peter K1PO

"Tom W8JI" <2w8ji@akorn.net> wrote in message news:3adba00e.99612637@news.accessunited.com...
> On Mon, 16 Apr 2001 12:30:18 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Cecil, Tom:
> >
> >I agree with Cecil, disagree with Tom... when it comes to radiation,
> >displacement currents are no different than conduction currents.
> >
> >In fact in most dielectrics, other than a pure vacuum, i.e. in the
> >dielectric of a non-vacuum capacitor, there is in fact a conduction current,
> >since the electron orbits in the dielectric are being distorted or displaced
> >as the current flows back and forth.
>

> So you are saying if we take an antenna out into space, it will quit
> radiating from the "displacement currents", but when it is in
> air....the results are different??
>
> A Beverage has vertical displacement currents between the antenna and
> earth. Why does it QUIT working when the ground is perfect if
> displacement currents radiate?
>
> This is the same junk-science the DDRR was based on.
>
> 73 Tom

1058. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 09:11:01 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bh1an$38q$1@nntp9.atl.mindspring.net>
Source record: 165957

Dick:

Agreed... I was being "fanciful", attempting to "visualize" displacement current in a dielectric.

As I pointed out elsewhere... this fanciful visualization fails in a vacuum...

But the displacement current does not... heh, heh.

-Peter K1PO

"Dick Carroll" <dixie@townsqr.com> wrote in message news:9bghs6$2go$0@208.206.142.79...
>
>
> "Peter O. Brackett" wrote:
> >
> > Cecil, Tom:
> >
> > I agree with Cecil, disagree with Tom... when it comes to radiation,
> > displacement currents are no different than conduction currents.
> >
> > In fact in most dielectrics, other than a pure vacuum, i.e. in the
> > dielectric of a non-vacuum capacitor, there is in fact a conduction current,
> > since the electron orbits in the dielectric are being distorted or displaced
> > as the current flows back and forth.
>
>
> Strange current "flow", no? What happened to the rule that says that
> electrons must leave their valence orbits and move to another atom's
> valence orbits for current to flow?
> Being jostled by forces insufficient to disloge them didn't qualify. Of
> such qualities are good dielectric materials made, vacuum being the top
> grade, as it is impossible to disloge electrons it doesn't have.
> I Don't think any ammeter would register that "distortion" or
> "displacement", no matter how sensitive. All the electron atom-to-atom
> electron movement is within the capacitor's plates and none in the
> dielectric. Of course every physical body with mass has some effect on
> every other physical body...maybe that's it.
>
> Every capacitor I ever saw that experienced current flow was destroyed
> at the same time, the dielectric having become a reluctant conductor.
>

> Dick

1059. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 09:26:50 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bh28epgh1@slb7.atl.mindspring.net>
Source record: 165958

Richard:

You know very well that skin effect and the so called "skin depth" are not "finite" in the sense that skin depth is a fixed thickness layer. Rather AC currents fall off exponentially with depth. You know that conduction currents at varying frequencies fall off exponentially with depth into a conductor, not abruptly.

The depth at which the current density falls to 1/e th of it's surface value is called the "skin depth".

However the current does not simply vanish at that depth, it continues decreasing by 1/e th of it's value at every such skin depth throughout the conductor, eventually reaching extremely low levels as this dying off of current with depth is exponential.

The current never dies off completely with depth in a conductor, it just becomes imperceptable as you go to a high enough number of "skin depths", a similar effect as the exponential charge and discharge of a capacitor through a finite resistance, the capacitor is never completely charged or discharged in any finite time...

However for all practical "engineering" purposes...

Now one can imagine that with sensitive enough instruments one could detect currents flowing on the inside of a coaxial cable shield as a remnant of currents flowing on the outside. It's just that they are flowing at an extremely high impedance level, such that most practical measuring instruments would disturb them beyond recognition.

Just because your instruments can't detect them does not mean that they are not there. For one can certainly calculate their values mathematically and even use equations to predict their imeasurablility with common instruments.

For example... if the currents on the inside of the shield are 275 dB below the same currents on the outside of the shield, they are still there, it's just that you don't have instruments to detect signals 275 dB below 1 mW, but perhaps someday... :-)

-Peter K1PO

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:18804-3ADB4443-7@storefull-117.iap.bryant.webtv.net...
> Bill, W0IYH wrote:
>
> "The entire skin effect isolation concept is a "loser" big time from the

> get-go."
>
> Experience and common sense should persuade most observers that skin
> effect works very well to isolate one side of a shield from its other
> side.
>
> I`ve already quoted from an ARRL 1998 Handbook, but here is more from
> the same book. It says on page 10.12:
> "A consequence of Maxwell`s equations is that thick, near perfect
> conductors (such as metals) conduct a-c only to a certain depth that is
> proportional to the wavelength of the signal."
>
> And on page 19.2:
> "Becuse of skin effect (see Real World chapter in the handbook), current
> flowing in the outer conductor of a coax does so mainly on the inner
> surface of the outer conductor."
>
> The handbook says on page 19.17: "Skin effect on the inside walls of the
> waveguide confines electromagnetic energy inside the guide, in much the
> same manner that the shield of a coax confines energy within the coax."
>
> And, on page 20.7:
> "Copperweld. The copper coating is necessary for RF service because
> steel is a relatively poor conductor. Practically all of the RF current
> is confined to the copper coating because of skin effect."
>
> Finally, on page 18-3 of the new 19th edition of the ARRL antenna book:
> "A waveguide is a conducting tube through which energy is transmitted in
> the form of electromagnetic waves. The tube is not considered as
> carrying a current in the same sense that the wires of a two-conductor
> line do, but rather as a boundary that cofines the waves in the enclosed
> space. Skin effect prevents any electromagnetic effects from being
> evident outside the guide."
> Coax is only different as it supports only one propagation mode.
>
> And that`s the way it is!
>
> Best regards, Richard Harrison, KB5WZI
>
>

1060. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 10:54:07 UTC
From: 2w8ji@akorn.net
Message-ID: <3adc19b3.130758018@news.accessunited.com>
Source record: 165959

On Tue, 17 Apr 2001 05:08:31 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>I firmly believe that all "currents", both conduction currents and
>displacement currents cause radiation.

Then you misunderstand what displacement current is, or you
misunderstand what causes radiation...one of the two.

>It 's just that I can "visualize" the accelerated charges in a conduction
>current, I just cannot "visualize" the accelerated charges of "in vacuuo"
>displacement currents.

That's because there aren't any charges to accelerate in a vacuum.

Displacement currents, like many things, are "created" to satisfy what
we observe...what we can understand. They are not actual currents
until they get into a conductor.

Half the problem is people assume tools that help us explain certain
actions or effects we observe are actually what happens physically.

If you look at any radiation analysis of an antenna, it is done
through analysis of current in conductors. If you read any physics
text on radiation, you'll see radition clearly comes from charge
acceleration.

Bart explained this pretty well, but textbooks do a better job.
Especially one's that are not too advanced, one's that assume you are
just learning the physics involved. The ARRL books have it right, but
do not go into much detail.

73 Tom

1061. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 10:58:33 UTC
From: 2w8ji@akorn.net
Message-ID: <3adc2152.132709708@news.accessunited.com>
Source record: 165960

On 17 Apr 2001 04:21:55 GMT, Bill Nelson <billn@spock.peak.org> wrote:

>I would claim that, assuming no common mode currents, it would be highly
>unusual for any coax carrying an rf signal to have the same voltage on
>both the inside and outside of the shield.

Unless the braid was *very* thin, or the frequency very low!

73 Tom

1062. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 11:02:07 UTC
From: 2w8ji@akorn.net
Message-ID: <3adc21f1.132868813@news.accessunited.com>
Source record: 165961

On Mon, 16 Apr 2001 22:38:44 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Tom W8JI wrote:
>> The meter does NOT respond to common mode current, as long as the
>> shield is connected to the jack on the meter, because it is a
>> self-contained system inside a closed metal box. It can only respond
>> to differential mode currents on the two input terminals.
>
>Why does the reading change when touched by a human hand?

Because you are changing the actual SWR by detuning the antenna
system.

The meter is non-responsive to common mode currents when the shield is
connected, it is the antenna SYSTEM that is actually changing when you
touch the meter case. The meter reads only the differential mode
impedance, and that is what you changed.

73 Tom

1063. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 11:07:22 UTC
From: 2w8ji@akorn.net
Message-ID: <3adc22cb.133086433@news.accessunited.com>
Source record: 165962

On 17 Apr 2001 03:19:48 GMT, Bill Nelson <billn@spock.peak.org> wrote:

>Oops, that was a brain fart.
>
>I should have stated that the antenna is resonant when the impedance is
>lowest.
>
>My apologies for the confusion this may have caused.

The system is resonant when the reactance is zero.

The antenna is resonant when the reactance at its terminals is zero.

Once you measure through a feedline, you can not tell if the antenna
is resonant or not without knowing something about the feedline. A
zero ohm reactance (resonant) antenna might not present a zero ohm
reactance load one a feedline is involved, and the lowest impedance
might not be the resonant point of the antenna.

Fortunately, resonance has little to do with system efficiency.

73 Tom

1064. Re: Mobile HF antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 12:19:14 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bhc7g$i1i$1@neptunium.btinternet.com>
Source record: 165963

It probably will not work just by bunching a lot of wire into a smaller space.

What the auto tuner is looking for is an antenna *resistance* greater than some small value. If the resistance it sees is less than the minimum it is unable to match it to 50 ohms. The tuner also hopes to find an antenna reactance *less* than some high value.

The tuner could not care less where the resistance comes from - it can be either radiation resistance or loss resistance. The loss resistance can be ground loss, antenna wire loss or a resistor soldered into the antenna.

It is the actual distance in space between one end of the antenna and the other which controls radiation resistance. The length of wire in the antenna has no other effect on resistance than to increase loss by some very small amount.

If the extra wire is in the form of a coil of it will also reduce antenna reactance which might assist the tuner to cope. The extra wire in the antenna is what really ought to be inside the tuner. Unfortunately, at the higher frequencies where the extra wire is not needed, the coil in the antenna again prevents the tuner from doing its job. The tuner is unable to switch out the unwanted loading coil.

By far the best way of increasing the effective length or height of a mobile antenna is to park the car, step out, connect one end of another 20 feet of thin, multistrand, plastic insulated wire to the existing antenna with an alligator clip and throw the other end over a bush or tree. It never fails to work.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

Marc <marcd@snet.net> wrote in message
news:3ADB4769.3E6ACD99@snet.net...
> I just got an Alinco edx-2 automatic antenna tuner that is
supposed to
> tune random wire anntennas 3 meters long for 80m to 10m use.
> My question:

>
> If I wrap a fiberglass pole (e.g. a 3/8" fiberglass chimney
cleaning
> rod) with #12 copper wire spaced about 3/4" (about 62.4" of wire
> per pole) and use 2 poles screwed together(124.8" of wire - 3.17
> meters), will this act like a 3.17 meter random wire, or will the
> fact that it's coiled affect this, and if so, how (will it look
to the
> tuner as longer or shorter). Where can I find good references on
how to
>
> figure this out along with other antenna designs? I downloaded
the
> trial version of EZNEC, but do not know enough to put it to
effective
> use.
>
> Thanks,
>
> Marc
>
>

1065. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 12:36:04 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bhd73$rv8$1@uranium.btinternet.com>
Source record: 165964

It is an old wives' tale that a Beverage would quit radiating if it
was above a perfect ground. Indeed, it is obvious it would
continue radiating with increased efficiency. 100 percent
efficiency except for wire loss. Its radiation resistance depends
only on height above ground.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

1066. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 12:43:12 UTC
From: richardharrison@webtv.net
Message-ID: <18977-3ADC3A60-75@storefull-113.iap.bryant.webtv.net>
Source record: 165967

Peter, K1PO wrote:
Just because your instruments can`t detect them does not mean that they are not there."

Agreed. But the argument was that radial conduction produced nearly the same voltage on both sides of the thickness of a conductor at r-f. It normally does not.

Not only is the amplitude usually drastically reduced, its varations along the length of the conductor are usually seriously displaced. Between the two sides of the thickness of the conductor. the weak variations lag far behind those of the stronger because the wave progress slows as it sinks more deeply into the conductor. At a sufficient depth, the phase will have shifted by 180 degrees and the current direction is reversed!

Best regards, Richard Harrison, KB5WZI

1067. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 12:51:49 UTC
From: richardharrison@webtv.net
Message-ID: <18977-3ADC3C65-78@storefull-113.iap.bryant.webtv.net>
Source record: 165966

Tom, W8JI wrote:
"In the loop antenna Richard Harrison claims the shield has no skin effect."

As I said before, Tom is often wrong, but seldom admits it.

Best regards, Richard Harrison, KB5WZI

1068. Re: Additional info

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 13:03:33 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3ADC40FB.3040902@aol.com>
Source record: 165968

Mark,

I can't offer any advice on your question, but I would certainly be interested in reading what you find out. Please post your findings, it seems an interesting "opportunity".

73,
W4KAZ

1069. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 13:09:35 UTC
From: k1bqt@aol.com
Message-ID: <20010417090935.09193.00000560@ng-cd1.aol.com>
Source record: 165965

>>Why does the reading change when touched by a human hand?<<

>Because you are changing the actual SWR by detuning the antenna
system.<

Tom is 1000% correct on this point, and I apologize if my reponse implied anything different. Under the condition I described, the metal exterior surface of the meter's case is at a voltage point on the "third leg" of the antenna (the outside of the shield). It requires only minimal capacitive loading at this point to alter the system's overall tuning.

Believe me, either the meter's way out of cal, or a powerful local signal is being picked up by the antenna and "fooling" the meter's bridge circuit.

Rick K1BQT

1070. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 13:45:45 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADC4909.ABF17BF1@IEEE.org>
Source record: 165819

"Peter O. Brackett" wrote:
> I love it... one of the great mysteries of the Universe... why did the
> Creator set things up that way?

Because if He hadn't, you wouldn't be here to ask the question.
--
http://www.mindspring.com/~w6rca

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1071. RF Ground/MFJ-931

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 13:48:27 UTC
From: "Timothy J. Fiebig" <timothy.j.fiebig@exxonmobil.com>
Message-ID: <3ADC49AB.1A8D7428@exxonmobil.com>
Source record: 165820

Hello all,

Has anyone had any experience with the MFJ-931 artificial ground? I am going to be putting my shack in a second floor bedroom. Having an RF ground concerns me.

Any comments would be appricated.

Thanks,

Tim

1072. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 13:52:47 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADC4AAF.36C87D66@IEEE.org>
Source record: 165821

Tom W8JI wrote:
>
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote:
> >I firmly believe that all "currents", both conduction currents and
> >displacement currents cause radiation.
>
> Then you misunderstand what displacement current is, or you
> misunderstand what causes radiation...one of the two.

The IEEE Dictionary doesn't have a definition for displacement current. Bart defined it for me. Half a century ago, I was taught that displacement current is the electron flow away from one plate of a capacitor when the other plate is flooded with electrons. Apparently, that is not the definition of displacement current.
--
http://www.mindspring.com/~w6rca

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1073. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 13:55:20 UTC
From: 2w8ji@akorn.net
Message-ID: <3adc4a52.143206823@news.accessunited.com>
Source record: 165822

On Tue, 17 Apr 2001 13:36:04 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>It is an old wives' tale that a Beverage would quit radiating if it
>was above a perfect ground. Indeed, it is obvious it would
>continue radiating with increased efficiency. 100 percent
>efficiency except for wire loss. Its radiation resistance depends
>only on height above ground.

You've eaten too many Easter eggs Reg, and are starting to lay some
big ones.

While it is true an UNterminated Beverage with a zero loss conductor
would radiate with 100% efficiency over perfect ground, the mode is
different.

Displacement current does not radiate Reg.

73 Tom

1074. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 14:01:34 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADC4CBE.9AA62E91@IEEE.org>
Source record: 165823

Dick Carroll wrote:
> Every capacitor I ever saw that experienced current flow was destroyed
> at the same time, the dielectric having become a reluctant conductor.

Current flow is the movement of electrons. When one plate of a capacitor
is flooded with excess electrons, the other plate is drained of electrons,
assuming a closed loop.
--
http://www.mindspring.com/~w6rca

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1075. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 14:01:51 UTC
From: 2w8ji@akorn.net
Message-ID: <3adc4b5d.143473959@news.accessunited.com>
Source record: 165824

On Tue, 17 Apr 2001 07:51:49 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Tom, W8JI wrote:
>"In the loop antenna Richard Harrison claims the shield has no skin
>effect."
>
>As I said before, Tom is often wrong, but seldom admits it.
>
>Best regards, Richard Harrison, KB5WZI

It's easy to attack others and "claim" they are wrong, but I'm waiting to see you answers on displacement currents existing in EM waves, or skin effect in shields, or displacement currents causing radiation, or being able to take a time-varying electric field to zero without taking the magnetic field to zero.

You argue in the loop antenna thread the magnetic field passes right through the shield. Now you claim skin effect isolates the inside and the outside (which I agree with).

Which way do you want it Richard, you can't have it both ways.

73 Tom

1076. Re: Coax question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 14:10:55 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <9mjodt87seqtkmgf7hf41f4if5agjr2s37@4ax.com>
Source record: 165825

On Tue, 17 Apr 2001 00:05:21 GMT, "Peter J. Bertini" <commquart@home.com> wrote:

>I'd consider burying the coax in a PVC conduit to protect the outer plastic
>sheath from sharp rocks, etc.

If you have ground-burrowing rodents such as gophers, I'd recommend metallic conduit. They'll munch right through plastic.

73, Bill W7TI

1077. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 14:12:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADC4F57.807B88AD@IEEE.org>
Source record: 165826

Tom W8JI wrote:
>
> On Mon, 16 Apr 2001 22:38:44 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >Tom W8JI wrote:
> >> The meter does NOT respond to common mode current, as long as the
> >> shield is connected to the jack on the meter, because it is a
> >> self-contained system inside a closed metal box. It can only respond
> >> to differential mode currents on the two input terminals.
> > >
> > >Why does the reading change when touched by a human hand?
> >
> > Because you are changing the actual SWR by detuning the antenna
> > system.
> >
> > The meter is non-responsive to common mode currents when the shield is
> > connected, it is the antenna SYSTEM that is actually changing when you
> > touch the meter case. The meter reads only the differential mode
> > impedance, and that is what you changed.

I guess that's one way to look at it. But when I can flood the meter chassis/circuit-common with common-mode currents by touching it, I am not going to trust the meter readings.

I thought it was not possible to "change the actual SWR" by doing something at the transmitter. If I touch the SWR meter chassis and the SWR reading decreases, are you saying that the actual SWR has decreased?
--
http://www.mindspring.com/~w6rca

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1078. Re: RF Ground/MFJ-931

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 14:16:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADC5023.99779DD1@IEEE.org>
Source record: 165827

"Timothy J. Fiebig" wrote:
> Has anyone had any experience with the MFJ-931 artificial ground? I am
> going to be putting my shack in a second floor bedroom. Having an RF
> ground concerns me.

Use a *balanced* antenna (dipole) and you won't need an RF ground.
(Artificial grounds don't provide lightning protection.)
--
http://www.mindspring.com/~w6rca

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1079. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 15:37:55 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ADC6353.6C40828@toast.net>
Source record: 165828

"Peter O. Brackett" wrote:

> If charges are forced down a non-linear shaped conductor at a
> constant speed, i.e. a DC current in a "curved" conductor, then radiation
> will also occur due to that acceleration.

Would there be any way for an ordinary person to try that, or see it? What about dc through a simple coil? Is there any radiation associated with that?

john

1080. Baluns for loop antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 16:05:36 UTC
From: Larry Gauthier <larryg5099@chartermi.net>
Message-ID: <tdoqej325me699@corp.supernews.com>
Source record: 165830

I have just built my first full-wave loop antenna - a delta loop for 30 meters, and I am delighted with it. The antenna is 99.5 feet long (1005/freq.mhz), three sided, and uses a tightly-wound 1/4 wavelength of RG-59 as a balun to match my RG-8 feedline. Good SWR, flat curve, works well, inexpensive. It significantly outperforms my multiband vertical.

So, I am now thinking of duplicating my success on 40 and 80 meters, but the thought of a 1/4 wavelength balun on each band starts to sound like a lot of wire/weight up in the air. My understanding is that the characteristic impedance of a delta loop is 100 ohms, so I need to match 100:50 ohms. What about winding a 2:1 balun on a toroid coil, rather than these hunks of RG-59? I've never tried winding my own before - what are the details? Where can I get the core materials? Any special wire I need to use? If I wind the toroid in a 2:1 turns ratio, am I done? How many turns? Can I measure this into a 100 ohm non-inductive load and if it reads 1:1 VSWR did I get it right?

Please forgive my ignorance. I have several of the ARRL antenna books ("the compendium") but none delve into the balun/toriod constructing issue in sufficient depth for my needs. If there is another reference (not a college textbook) please advise.

Thanks in advance for your time,

-larry
K8UT

1081. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 16:07:11 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ADC6A2F.F71A77AA@toast.net>
Source record: 165829

Richard Harrison wrote:

> Roger Sparks wrote:
> "We can often look at events in more than one way and skin effect is no
> different."
>
> That`s right! You can look at skin effect the right way and the wrong
> way.
>
> If you look at skin effect the wrong way, your observations don`t square
> with reality.
>
> The outside and the inside of the cable might have the same voltages at
> any point along the cable inside and outside. This can`t usually happen.
> If it did, a coax cable would behave no differently from a parallel-wire
> transmission line.
>
> Think of what that would do to cable TV. The cable would not be able to
> carry Channel-2 on channel-12, and carry Channel-51 on channel-2,
> Everyone might get cable free by aiming a yagi at the cable.. The
> downside is that the cable would be full of noise and ghosts picked up
> along its route.
>
> If on the other hand, the way you look at skin effect is the right way,
> your conclusions must fit observed reality.
>
> The idea, that 50 volts at point (P) on the inside of a cable shield
> operating at HF might result in the same 50 volts on the outside of the
> shield opposite point (P) except in unusual circumstances, is insane.

There would be the question of 50 volts with respect to what, wouldn't there? If the reference is with respect to the inner conductor, then that's not available for measurement, hence there's nothing for the outside of the coax to have a voltage with respect to. If you made a little hole in the braid, and brought out a tiny extension of the inner conductor, then between the braid and that extension you'd have whatever you had inside the cable, wouldn't you?
On the other hand, looking at voltages _along_ the braid, those would be very small over a short distance, either inside or outside the cable, wouldn't they?

john

1082. Re: Baluns for loop antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 16:16:06 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3ADC6C46.37B4BF6B@oio.net>
Source record: 165831

Larry,
Can't help with the turns ratio, but yes, a torroidal
balun will cetainly work. You can also do the same thing
with an electrical 1/4 wave of RG-11 (or RG-59). Or, by
using 'ladderline' and a tuner...
'Doc

1083. Re: antenna wire

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 16:18:51 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3ADC6CEB.32B77EEF@oio.net>
Source record: 165832

Gary Raney wrote:
>
> I getting ready to put up a major wire antenna farm, but I don't have
> any spare wire. Does anyone know of a retailer that sells good antenna
> wire for cheap?
>
> 73 Gary KM5TY

Gary,
Try a hardware store, look for electrical fence wire. Around
here it goes for about $20.00 for a 1/4 mile of the stuff. It's
galvanized, so scrape that off before soldering.
'Doc

1084. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 16:22:29 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3adc6c6f.227058296@news.aepnet.com>
Source record: 165833

On Tue, 17 Apr 2001 09:12:39 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

[snip]

>I guess that's one way to look at it. But when I can flood the meter
>chassis/circuit-common with common-mode currents by touching it, I am
>not going to trust the meter readings.
>
>I thought it was not possible to "change the actual SWR" by doing
>something at the transmitter. If I touch the SWR meter chassis and
>the SWR reading decreases, are you saying that the actual SWR has
>decreased?

If the "transmitter" is also part of the "antenna" as it is with common-mode current on the transmission line, then yes if touching it lowers the SWR, I would expect the meter to read lower too.

Wes Stewart N7WS

>--
>http://www.mindspring.com/~w6rca
>
>
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1085. Re: Baluns for loop antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 16:29:00 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ADC6F4C.A3BAF5F9@toast.net>
Source record: 165834

'Doc wrote:

> Larry,
> Can't help with the turns ratio, but yes, a torroidal
> balun will cetainly work. You can also do the same thing
> with an electrical 1/4 wave of RG-11 (or RG-59). Or, by
> using 'ladderline' and a tuner...

Would you explain how to deploy the ladderline and tuner?

john

1086. Re: Mobile HF Antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 16:37:12 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3ADC7138.717B103E@oio.net>
Source record: 165836

Ray,
It depends on what bands you want to use. A mobile antenna's efficiency is directly proportional to it's ugliness. Bigger is almost always better. If your wife says it's 'too ugly', it's probably a very good antenna.
Aside from all that, there are a few questions you need to answer. How much do you think you'll move around on the bands, or between bands? If you don't change frequency much, readjusting the antenna isn't too important (Bug Catcher). If you do a lot of 'frequency hopping', I'd take a look at the 'screw driver' antennas.
If you operate on 20 meters or above, the 'Hamsticks' will usually work fine. They aren't to efficient on 80 and 40 meters.
Price is ~not~ a good indicator for how well a mobile antenna works. While efficient antennas are probably going to be fairly expensive, all expensive antennas aren't efficent.
This may not be a lot of help, but it has some good 'points' to remember...
'Doc

1087. Re: Baluns for loop antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 16:37:19 UTC
From: Zoran Brlecic <zbrlecic@earthlink.net>
Message-ID: <3ADC71BF.4CACB89@earthlink.net>
Source record: 165835

Larry Gauthier wrote:

> I have just built my first full-wave loop antenna - a delta loop for 30
> meters, and I am delighted with it. The antenna is 99.5 feet long
> (1005/freq.mhz), three sided, and uses a tightly-wound 1/4 wavelength of
> RG-59 as a balun to match my RG-8 feedline. Good SWR, flat curve, works
> well, inexpensive. It significantly outperforms my multiband vertical.
>
> So, I am now thinking of duplicating my success on 40 and 80 meters, but the
> thought of a 1/4 wavelength balun on each band starts to sound like a lot of
> wire/weight up in the air. My understanding is that the characteristic
> impedance of a delta loop is 100 ohms, so I need to match 100:50 ohms.

Unless your 80/40m deltas are way high up above the ground, you won't be getting anywhere near a 100 Ohms. As a matter of fact, the closer they are to ground, the better the impedance match will be. Delta loops for 80 and 40 usually do not require any matching - just hook up directly. Your much bigger problem is going to be mutual coupling between these three.

73 .... Zoran WA7AA

--
Support freedom of speech, or I'll kill you!

1088. Re: Baluns for loop antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 17:26:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADC7CD1.9FF07CCC@IEEE.org>
Source record: 165837

Larry Gauthier wrote:
> Where can I get the core materials?

http://www.amidoncorp.com/f_ham.htm

Amidon has a balun kit for less than $10. Part number AB240
--
http://www.mindspring.com/~w6rca

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1089. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 17:33:26 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADC7E66.A33204F1@IEEE.org>
Source record: 165838

Wes Stewart wrote:
> If the "transmitter" is also part of the "antenna" as it is with common-mode
> current on the transmission line, then yes if touching it lowers the SWR, I
> would expect the meter to read lower too.

Wow! A whole new way of matching. If the coax balances the differential
current as it is supposed to do, exactly how does it change the ratio
between the 100 ohm load and the 50 ohm Z0?
--
http://www.mindspring.com/~w6rca

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1090. 175 MHz bended dipol

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 17:40:19 UTC
From: Samuel <osv7816@hotmail.com>
Message-ID: <7e%C6.3279$Qp1.54496@nntp1.chello.se>
Source record: 165839

How do I design a bended dipol for my TV reception on 175 MHz. (Lamda/2)
using 6 mm alutube?
Is there any free Windows/DOS program for Yagi antenna design?

--
Regards Samuel

1091. Problems tuning Butternut HF-6V

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 17:58:40 UTC
From: Don Putnick <dputnick@alumni.caltech.edu>
Message-ID: <3ADC8450.FE00F72D@alumni.caltech.edu>
Source record: 165841

It's roof-mounted with their stub-tuned radials kit. 80-40-20M tune
just fine. I have to really shorten the 15M wire to tune it,
and I can't tune 10M at all. Any helpful hints? And yes, I've already
tried the Butternut party line of dis- and re-assembly. don p KK6DP

1092. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 18:00:35 UTC
From: 2w8ji@akorn.net
Message-ID: <3adc82a1.157624243@news.accessunited.com>
Source record: 165840

On Tue, 17 Apr 2001 09:12:39 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>I thought it was not possible to "change the actual SWR" by doing
>something at the transmitter. If I touch the SWR meter chassis and
>the SWR reading decreases, are you saying that the actual SWR has
>decreased?
>--
>http://www.mindspring.com/~w6rca

Absolutely, you have changed the actual SWR.

Very few SWR meters respond directly to common mode currents. They
would have to be a horrible design to do that....and would be
unreliable in any system. When you see the meter change, it is either
because the null of the meter is not calibrated to the surge impedance
of the cable being used or because the actual SWR in the line is
changing.

If you touch the case of the 259 connected properly to a shielded
cable, and the reading changes, the reason is the outside of the
feedline is part of the antenna and radiating. You have, in effect,
changed the antenna to feedline SWR by tuning the antenna system at
the meter end of the feedline.

The meter indicates the true SWR at that point. Of course if you
remove the meter and install a transmitter, the SWR will likely change
again, because you perturb the common mode path from the antenna to
the feedline.

The cure is to not allow common mode currents to flow on the outside
of the shield away from the antenna. Then what you do to the feeder
won't change the SWR at the antenna end of the feedline.

73 Tom

1093. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 18:24:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADC8A6E.9A047C38@IEEE.org>
Source record: 165842

Tom W8JI wrote:
> Very few SWR meters respond directly to common mode currents.

The case of SWR meters are the circuit common for the DC electronics.
If the SWR meter case has RF on it, seems to me that can throw all the
DC measurements off especially measurements done by a microcontroller.
At Intel, I saw environments where RF rendered all the A/D conversion
measurements invalid.

> If you touch the case of the 259 connected properly to a shielded
> cable, and the reading changes, the reason is the outside of the
> feedline is part of the antenna and radiating. You have, in effect,
> changed the antenna to feedline SWR by tuning the antenna system at
> the meter end of the feedline.

Please define that SWR. It's obviously not a 100 ohm load divided by
a 50 ohm Z0 to get 2:1.
--
http://www.mindspring.com/~w6rca

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1094. Re: Baluns for loop antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 18:54:04 UTC
From: Ross <rwa@gateway.bogons>
Message-ID: <87zodf73xv.fsf@gateway.bogons>
Source record: 165843

"Larry Gauthier" <larryg5099@chartermi.net> writes:

> I have just built my first full-wave loop antenna - a delta loop for
> 30 meters, and I am delighted with it.

...

> It significantly outperforms my multiband vertical. So, I am now
> thinking of duplicating my success on 40 and 80 meters, but the
> thought of a 1/4 wavelength balun on each band starts to sound like
> a lot of wire/weight up in the air.

Larry,

Good to hear that it's working well for you. I've always liked deltas, and loops in general. I've run a couple of 80m deltas over the years with good results, and found (as others have said) that matching them wasn't much of an issue given how close they of practial necessity end up being to ground. A simple choke balun (just a half-dozen turns of coax through an FT240/43 core) seemed to do all that was needed for me.

I'd like to suggest that you have a look at Devoldere,OH4UN (?)'s books on low band DXing re the feed arrangment. He stresses feeding the delta a 1/4 wave down from the apex to get a properly balanced current distribution for vertical polarization (which will help you get out better) and how you can set the feed impedance by playing with the aspect ratio (height of apex vs width of base); there's also some discussion of the inverted delta. I used one for a couple of years and really liked it.

regards,
Ross ve6pdq

1095. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 19:09:05 UTC
From: kb7qhc@home.com
Message-ID: <3adc90b6.1872089482@news.seanet.com>
Source record: 165844

On Tue, 17 Apr 2001 13:24:46 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Tom W8JI wrote:
>> Very few SWR meters respond directly to common mode currents.
>
>The case of SWR meters are the circuit common for the DC electronics.
>If the SWR meter case has RF on it, seems to me that can throw all the
>DC measurements off especially measurements done by a microcontroller.
>At Intel, I saw environments where RF rendered all the A/D conversion
>measurements invalid.
>
>> If you touch the case of the 259 connected properly to a shielded
>> cable, and the reading changes, the reason is the outside of the
>> feedline is part of the antenna and radiating. You have, in effect,
>> changed the antenna to feedline SWR by tuning the antenna system at
>> the meter end of the feedline.
>
>Please define that SWR. It's obviously not a 100 ohm load divided by
>a 50 ohm Z0 to get 2:1.

Hi Cecil,

This is another case of shield effectiveness. The outside of the SWR meter case is not the same electrical point as the inside of the SWR meter case. The discussion of DC circuitry is immaterial to the measured response. The SWR circuitry can be effectively isolated from all grounds and still provide similar service readings already described in this thread.

Cecil, there is no need for an explicit value of load. Quantification is not necessary to prove the problem of Common Mode artifacts being demonstrated by your hand compounding that problem as evidenced by the SWR shift.

A microcontroller may have problems with RF, but that is simply an issue of design shortfall. I have done A/D conversion at speeds up to 25 MHz - it would be extremely hard to differentiate the 25 MHz as a clock or RF if we casually blamed RF as a source of all controller's problems (they too run in the HF regions, if not VHF/UHF and soon SHF). I could regularly measure nanowatt signal levels without interference from the clock driving either the A/D or the microcontroller. My designs exhibited very low noise levels (quite close to the cosmic noise level in fact) as I measured those nanowatt signals to an accuracy of 0.5% or better.

73's
Richard Clark, KB7QHC

1096. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 19:17:58 UTC
From: kb7qhc@home.com
Message-ID: <3add950f.1873202873@news.seanet.com>
Source record: 165845

On Tue, 17 Apr 2001 12:33:26 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Wes Stewart wrote:
>> If the "transmitter" is also part of the "antenna" as it is with common-mode
>> current on the transmission line, then yes if touching it lowers the SWR, I
>> would expect the meter to read lower too.
>
>Wow! A whole new way of matching. If the coax balances the differential
>current as it is supposed to do, exactly how does it change the ratio
>between the 100 ohm load and the 50 ohm Z0?

Hi Cecil,

No, it is the old fashion way - you change the load, SWR follows. If
you choose to become part of the load by interfering with Common Mode
artifacts with your hand....

The human body presents about 10 pF worth towards added reactance and
a variable resistance based upon if you are telling the truth or not.
An outrageous liar would probably come close to 50 Ohms (a suitable
load for the electric chair). ;-)

73's
Richard Clark, KB7QHC

1097. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 19:21:16 UTC
From: kb7qhc@home.com
Message-ID: <3ade9774.1873815844@news.seanet.com>
Source record: 165846

On Tue, 17 Apr 2001 19:09:05 GMT, kb7qhc@home.com (Richard Clark)
wrote:

>The SWR circuitry can be effectively isolated from
>all grounds and still provide similar service readings already
>described in this thread.

Hi All,

On reflection (no pun intended) this may have been an overstatement
insofar as ground isolation.

73's
Richard Clark, KB7QHC

1098. Feed System Modeling Software

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 19:21:19 UTC
From: bethdan@pacbell.net
Message-ID: <9bi53f$5eu$1@news.netmar.com>
Source record: 165847

A new package has been added to the Ray Anderson, WB6TPU, Unofficial NEC Archives page at http://www.qsl.net/wb6tpu/swindex.html (bottom of page). Here's a brief description:

XLZIZL is an Excel application that analyzes transmission lines and other components of an antenna feed system. Calculations include impedance transforms, SWR/reflection coefficient, loss, voltage and current standing waves, stress on tuner components, network attenuation (S21), and return loss (S11). Analysis results are available in worksheet format and in five different chart formats, including Smith charts.

The program can read the feedpoint impedance data files produced by EZNEC, NEC-Win Plus, and public domain NEC2D programs; it can also use measurement data or arbitrary theoretical data. Results are shown at the antenna feedpoint (or other load) and at each of up to five user-defined network elements. The network may consist of transmission lines, open or shorted stubs, baluns, capacitors, inductors, and resistors. To aid in modeling matching networks the program can create T, Pi, and L solutions using any load and input specifications.

Documentation includes a 28 page guide in the form of narrative questions and answers and a copy of the journal article "Picturing the -Rest- of Your Antenna System" (QRP Quarterly, April 2001). For users wishing to "look under the covers," the worksheets and associated Visual Basic for Applications (VBA) modules are not protected or locked in any way.

Requires Excel 97 or later.

73,
Dan AC6LA

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http://newsone.net/ -- Free reading and anonymous posting to 60,000+ groups
NewsOne.Net prohibits users from posting spam. If this or other posts
made through NewsOne.Net violate posting guidelines, email abuse@newsone.net

1099. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 19:43:57 UTC
From: atkes@imap1.asu.edu
Message-ID: <9bi6dtebu1@news.asu.edu>
Source record: 165848

John O'Flaherty (oflahert@toast.net) wrote:
: "Peter O. Brackett" wrote:

: > If charges are forced down a non-linear shaped conductor at a
: > constant speed, i.e. a DC current in a "curved" conductor, then radiation
: > will also occur due to that acceleration.

: Would there be any way for an ordinary person to try that, or see it? What about
: dc through a simple coil? Is there any radiation associated with that?

: john

It's straightforward to show that radiation like this requires
fluctuations in the density and velocity of the charges. For a normal
metal wire, where the number of electrons is roughly 10^23 per cubic
cm, the effect is unobservable. If you have access to J.D. Jackson,
Classical Electrodynamics, he suggests a simplified analysis in
problems 14.23 and 14.24.

73 Kevin w9cf

1100. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 19:59:39 UTC
From: atkes@imap1.asu.edu
Message-ID: <9bi7bb$ee2$1@news.asu.edu>
Source record: 165849

John O'Flaherty (oflahert@toast.net) wrote:

: There would be the question of 50 volts with respect to what, wouldn't
: there? If the reference is with respect to the inner conductor, then that's
: not available for measurement, hence there's nothing for the outside of the
: coax to have a voltage with respect to. If you made a little hole in the
: braid, and brought out a tiny extension of the inner conductor, then between
: the braid and that extension you'd have whatever you had inside the cable,
: wouldn't you?
: On the other hand, looking at voltages _along_ the braid, those would be
: very small over a short distance, either inside or outside the cable,
: wouldn't they?

: john

John,

It is not only with respect to what, but along which path. The voltage
difference between two points along a path is the line integral of
the electric field component along the path. That is essentially
the average electric field along the path times the path length.
Faraday's law tells you that if you take two different paths,
the voltage you will measure will be different if there is a changing
magnetic flux encircled by the two paths. Since antennas and transmission
lines nearly always have substantial magnetic fields, this whole discussion
of voltage differences between points is nonsense unless the path taken
is described. For example the voltage difference from any point on a perfect
conductor to any other point, via a path through the perfect conductor is
zero. That's because the electric field in the conductor is zero. If the
path is somewhere else, you have to specify it in general. Only if two
paths enclose zero net changing flux will they give the same answer.
For this reason, the concept of the voltage on the outside of a coaxial
cable is essentially useless. Note, for a coaxial cable operating in a TEM
or TM mode, you can specify the voltage difference between the inside of
the outer conductor and the outside of the inner conductor at the same point
along the line since any two paths in the same transverse plane will encircle
zero magnetic flux. This is the usual voltage between the conductors
specified in a coaxial cable.

73 Kevin w9cf

1101. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 20:07:20 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADCA278.8C81E300@IEEE.org>
Source record: 165850

Richard Clark wrote:
> A microcontroller may have problems with RF, but that is simply an
> issue of design shortfall.

Does the MFJ259B overcome every design shortfall? I have seen completely unbelievable readings from mine, e.g. 70 ohms, zero reactance, and the SWR is 4:1.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1102. Re: Baluns for loop antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 20:13:32 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3ADCA3EC.243D@wt.net>
Source record: 165851

Larry Gauthier wrote:
>
> I have just built my first full-wave loop antenna - a delta loop for 30
> meters, and I am delighted with it. The antenna is 99.5 feet long
> (1005/freq.mhz), three sided, and uses a tightly-wound 1/4 wavelength of
> RG-59 as a balun to match my RG-8 feedline. Good SWR, flat curve, works
> well, inexpensive. It significantly outperforms my multiband vertical.

I might make a comment...When you use a run of 75 ohm coax as you are
doing to match a higher or lower feed impedance to 50 ohm coax, it is a
transformer, not a balun. The act of rolling it into a coil turns it
into a balun/transformer. If the coax remains straight , it will not act
as a balun.

>
> So, I am now thinking of duplicating my success on 40 and 80 meters, but the
> thought of a 1/4 wavelength balun on each band starts to sound like a lot of
> wire/weight up in the air. My understanding is that the characteristic
> impedance of a delta loop is 100 ohms, so I need to match 100:50 ohms. What
> about winding a 2:1 balun on a toroid coil, rather than these hunks of
> RG-59? I've never tried winding my own before - what are the details? Where
> can I get the core materials? Any special wire I need to use? If I wind the
> toroid in a 2:1 turns ratio, am I done? How many turns? Can I measure this
> into a 100 ohm non-inductive load and if it reads 1:1 VSWR did I get it
> right?

I assume you mean running loops within loops for multibanding. I'm not
sure what would happen on that, but like one said, I bet coupling
between the elements will rear it's ugly head and confuse things. You
"might" be able to get this to work ok with a single feed and a 1:1
balun, but it may take a good bit of tweaking. Are you talking a delta
that is mounted perpendicular to the ground? Gonna need a tall
support...You'll need 50-60 ft for a 40m version if you want the base
off the ground a bit.If horizontal, I'd just run a single 80m loop fed
with ladder line , and work all bands that way. You could stick up
dipoles for 80/40 and have just as good a performance overall. Much
easier to deal with, and easy to multiband on one coax feed. Actually,
in many cases with average heights, I think you are better off with the
dipoles against upright delta loops. Most of the antenna is higher in
the air. Much of a low delta loop will be near ground in many cases.
More ground losses, etc. MK

--
http://web.wt.net/~nm5k

1103. Re: antenna wire

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 20:24:52 UTC
From: Ken Bessler <kg0wx@yahoo.com>
Message-ID: <3ADCA694.F0@yahoo.com>
Source record: 165852

Gary Raney wrote:
>
> I getting ready to put up a major wire antenna farm, but I don't have
> any spare wire. Does anyone know of a retailer that sells good
> antenna wire for cheap?
>
> 73 Gary KM5TY

Radio Shack 5 conductor rotor cable is a good buy. I've used it
for years with good results. As far as price goes, nothing at RS
is cheaper per conductor per foot. (in the 100' bundles)
--

Ken Bessler, Ham Callsign KGï¿½WX
Design Services Company
http://kg0wx.users.50megs.com/
Smoke free since 9/30/96!
ICQ# 63379650

1104. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 20:29:56 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3adca7c0.1756313@news.aepnet.com>
Source record: 165853

On Tue, 17 Apr 2001 12:33:26 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Wes Stewart wrote:
>> If the "transmitter" is also part of the "antenna" as it is with common-mode
>> current on the transmission line, then yes if touching it lowers the SWR, I
>> would expect the meter to read lower too.
>
>Wow! A whole new way of matching. If the coax balances the differential
>current as it is supposed to do, exactly how does it change the ratio
>between the 100 ohm load and the 50 ohm Z0?

I don't know where this 100 ohm load came from. Some of these threads kinda
make my eyes glaze over and I don't follow along.

You said:

>"I thought it was not possible to "change the actual SWR" by doing
>something at the transmitter. If I touch the SWR meter chassis and
>the SWR reading decreases, are you saying that the actual SWR has
>decreased?"

If, I repeat, if, there is common-mode current on the outside of the coax (for
whatever reason) then the outside of the coax is part of the radiator. When you
start touching it, you are changing the characteistics of the radiator. So why
wouldn't the indicated SWR change?

Wes N7WS
>--
>http://www.mindspring.com/~w6rca
>

1105. Re: antenna wire

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 20:36:59 UTC
From: kelly@nospam.dvol.com
Message-ID: <3adca848.20620519@news2.dvol.com>
Source record: 165854

On Mon, 16 Apr 2001 23:00:36 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:
>
>Home Depot, etc., have 500 ft rolls of stranded #16 for less than $20.
>
I paid $13.75 for a 500 foot roll of #14 stranded THHN at the Home
Depot here. Methinks Home Depot is a very decent but unrecognized
source for all kindsa ham antenna parts.

>http://www.mindspring.com/~w6rca
>
w3rv

1106. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 20:38:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADCA9C8.CE114F8A@IEEE.org>
Source record: 165855

Wes Stewart wrote:
> If, I repeat, if, there is common-mode current on the outside of the coax (for
> whatever reason) then the outside of the coax is part of the radiator. When you
> start touching it, you are changing the characteistics of the radiator. So why
> wouldn't the indicated SWR change?

Oh, the indicated SWR would certainly change. Question is, is it valid?
Seems to me, if the assumptions of the SWR/wattmeter designer are no
longer valid, the indication may no longer be valid. Shirley, you
realize that RF can invalidate an A/D conversion result?
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1107. Need article from April 84' issue of QST.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 21:06:23 UTC
From: Scott McClements <yetbbwa@grove.iup.edu>
Message-ID: <3ADCB04F.73518AE9@grove.iup.edu>
Source record: 165856

Looking for someone to fax / mail me a copy of an article from the April 84' issue of QST. I would purchase a back issue if somebody knew where I could pick one up as well.

Thanks,

Scott McClements
yetbbwa@grove.iup.edu

1108. J-pole theory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 21:13:15 UTC
From: Allen <wookie8u@hotmail.com>
Message-ID: <LI2D6.14634$ep.4369061@news1.rdc1.tn.home.com>
Source record: 165857

I've always heard of and seen J-pole antennas for VHF and UHF. But how do they work? I understand dipoles and yagi's pretty well, but this antenna is outside of my understanding. Is the small pole a director for the larger driven pole or since it is connected electrically to the larger one does it not act in this way? Any bits of explanations would be helpful and appreciated.

Thanks,
Allen

1109. MFJ-864

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 21:20:22 UTC
From: Robert Joshua Chen <rjchen@Stanford.EDU>
Message-ID: <9bic2m$38s$2@nntp.Stanford.EDU>
Source record: 165861

Does anyone know about the accuracy of the MFJ-864 for SWR measurement? I don't care so much for accurate power measurement since I use QRP levels, but I do need somewhat accurate SWR measurement across HF/VHF/UHF.

Thanks,
-Robert

--

1110. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 21:21:29 UTC
From: kb7qhc@home.com
Message-ID: <3adcb062.1880197951@news.seanet.com>
Source record: 165858

On Tue, 17 Apr 2001 15:07:20 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> A microcontroller may have problems with RF, but that is simply an
>> issue of design shortfall.
>
>Does the MFJ259B overcome every design shortfall? I have seen completely
>unbelievable readings from mine, e.g. 70 ohms, zero reactance, and the
>SWR is 4:1.

Hi Cecil,

Does the MFJ overcome every design shortfall? Does it overcome any?

I use my trusty General Radio bridge. No active components, no power
supply requirements, no processors - just unequivocal results.

It is probably 1000 times more difficult to use the first (second,
third, fourth...) time than your MFJ, but once you get into the method
of determination, you will not be handed a bogus answer. However,
much the same could be said of the MFJ. That is, once you get into
the method of determination....

It is arguable that even a loop with rectifier feeding a magnetic
compass could be made to work to determine RF characteristics.
However this is not a particularly suitable choice - just an option.

The problems you describe are more likely due to software and a
general lack of data bandwidth or A/D resolution (almost certainly
this last if not both). These sources of problems bear no relation to
your presumptions of RF getting into the processor. This is a
distinct possibility, but there are other more common issues to visit
first.

I designed the flight data recorder using a military version of the
8080; BUT I also had a 12 bit A/D converter hanging off it measuring
600 analog lines coming from every point in the airframe. So, speed
of the processor and the nature of what is being measured are no less
complex, but the added data bandwidth allowed me to meet FAA
regulations as to absolute accuracy requirements. There are many
considerations beyond hardware, and software and data bandwidth are
the principle first points of failure.

73's
Richard Clark, KB7QHC

1111. Re: "L/C METER 11B" BY ALMOST ALL DIGITAL ELECTRONICS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 21:25:33 UTC
From: Larry <n0sa@earthlink.net>
Message-ID: <hx2D6.638$vI2.51098@newsread2.prod.itd.earthlink.net>
Source record: 165859

I also have one that I built. Works very well and was easy to build. I think
it is a good deal for the money and a very handy and accurate tool to have.
Larry N0SA
marvin rosen <n3bqa@starpower.net> wrote in message
news:9bfve3cjn1@bob.news.rcn.net...
> has anybody used this L/C meter & what is your opinion of it?
>
>

1112. Re: Remote ATU Design

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 21:29:06 UTC
From: Larry <n0sa@earthlink.net>
Message-ID: <CA2D6.655$vl2.51522@newsread2.prod.itd.earthlink.net>
Source record: 165862

I tune a 25 foot tall vertical from my shack on 40 through 10 meters. I use
a set of coils switched via a few relays and a motor turned variable cap.
The cap has a pot hooked to it that is connected to a meter in the shack.
That way I can set it to any band very quickly. This is set up as an "L"
network and is very efficient.
Larry N0SA
J M Noeding <la8ak@online.no> wrote in message
news:3adabac8.1015438546@news.online.no...
> need an ATU for 21m (69') long inverted-L antenna to be used for 7,
> 14, 21, 28MHz - it is pretty high impedance at the feedpoint, possibly
> near 5000 ohms, so I hope to use the same configuration for all those
> bands. The ATU should be switched for pre-set positions
>
> I am consiering the WARC bands, but already have another antenna for
> 30m
>
> Suppose a single tuned circuit with tapping for feeder will work for
> one band, but it is problem to cover 3:1 or 4:1 frequency tuning range
> using only a single coil and only switching the parallel capacitors
>
> suggestions?
>
> 73
> Jan-Martin
> LA8AK
>

1113. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 21:33:31 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <crTcOpJcTErraSBpT0sI6NgoyQqa@4ax.com>
Source record: 165863

Sideband <sideband@spam.me.not> wrote:

>I have code quick, and morse tutor gold both. I've been working with them for
>over a year, each, now, and unfortunately I've made very little progress.

There are only 26 letters, 10 numbers, and 2 or 3 punctuation marks. If you apply yourself, you can learn it in a few days, or a few weeks, at the most. Five words a minute is easy.

If you've been working on your code a year and have made "very little progress," I'm sorry, but you haven't been working on your code :-) (From your posts, you sound like a reasonably smart person.)

As far as the written tests are concerned, I learned from the ARRL study manuals. They're as good as any, I would imagine. You can check the manuals out at the ARRL web site.

Bob
k5qwg

>
>The local Amateur club does morse code tutor sessions on the air, on 2M,
>weekly, and now that I've found a HAM locally who's volunteered to Elmer for
>me (he's also one of the Testers here), I feel that I can actually learn code
>quicker in this manner...
>
>Thanks for the pointers to qrz, too... I found the practice tests... Seems I
>still have some learning to do for the General and Extra class exams, but I
>can pass the Tech class every time.
>
>-SSB
>
>N3VST wrote:
>
>> http://www.qrz.com
>>
>> buy code quick and you will be ready for the code test by next month as
>> well. Why miss out on the summer propagation.
>>
>> "Sideband" <sideband@spam.me.not> wrote in message
>> news:3ADA5E48.1D7D803A@spam.me.not...
>> > Greetings, all...
>> >
>> > Next month, I'll be testing to get my ticket. I plan on taking the
>> > technical tests up to Extra class, and working on my code over the next
>> > year as a Technician, so I can pass the code.

>> >
>> > Any suggestions as to where I could find practice tests, and the other
>> > related information I'll need to be sure I'll pass the tests? I'm pretty
>> > sure I can pass the Tech tests at a minimum, but I'd like to go all the
>> > way to Extra class, if possible.
>> >
>> > TIA, and 73's
>> >
>> > -SSB
>> >

1114. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 21:43:53 UTC
From: 2w8ji@akorn.net
Message-ID: <3adcb817.171312563@news.accessunited.com>
Source record: 165864

On Tue, 17 Apr 2001 13:24:46 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>The case of SWR meters are the circuit common for the DC electronics.
>If the SWR meter case has RF on it, seems to me that can throw all the
>DC measurements off especially measurements done by a microcontroller.
>At Intel, I saw environments where RF rendered all the A/D conversion
>measurements invalid.

The stuff you saw at Intel is all very nice Cecil, but meaningless for
devices designed to work in RF environments.

Anyone who sold a meter that was affected as you describe would
quickly have them all back from customers.

I've never seen an SWR meter or power meter that responded to common
mode currents, although I imagine some sloppy or unbypassed layout
somewhere might behave that way.

>> If you touch the case of the 259 connected properly to a shielded
>> cable, and the reading changes, the reason is the outside of the
>> feedline is part of the antenna and radiating. You have, in effect,
>> changed the antenna to feedline SWR by tuning the antenna system at
>> the meter end of the feedline.
>
>Please define that SWR. It's obviously not a 100 ohm load divided by
>a 50 ohm Z0 to get 2:1.

I don't follow your question.

73 Tom

1115. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 21:47:16 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bie3jerd1@uranium.btinternet.com>
Source record: 165865

Tom, you said a Beverage above a perfect ground would quit
radiating. Good of you to admit you were wrong. It was only another
of your red herrings anyway. However, I will say that over a
perfect ground, or the next best thing over sea water, a Beverage
will radiate exceptionally well regardless of whether it is
terminated or not. Don't you believe Eznec ?

Returning to so-called electron current and displacement current,
they BOTH radiate (or do NOT radiate according to one's beliefs)
with exactly the same facility. Space has no means of
distinguishing between them. Don't you believe Maxwell ? ;o)

==========
>> Displacement current does not radiate Reg.
==========
Tom I agree. And neither does the other sort.

Reg.

1116. Re: J-pole theory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 21:58:11 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3ADCBC73.653C23C9@dialpoint.net>
Source record: 165867

The J Pole is a 1/2 wave length antenna. TThe short part at the end the feed line is attached to is a part of the transmission line and matching section. It should not have any effect on the actual radiation of the antenna. The function of the part at eh end is to match the very high (several thousand ohms) to the low (50 ohm) transmission line.

Allen wrote:
>
> I've always heard of and seen J-pole antennas for VHF and UHF. But how do
> they work? I understand dipoles and yagi's pretty well, but this antenna is
> outside of my understanding. Is the small pole a director for the larger
> driven pole or since it is connected electrically to the larger one does it
> not act in this way? Any bits of explanations would be helpful and
> appreciated.
>
> Thanks,
> Allen

1117. Shielding from computer RFI

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 22:20:08 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3ADCC198.53D59A55@cticonsulting.net>
Source record: 165860

What are some techniques/products to help reduce interference caused by computers in the same room as the radio and diminishing reception? What computer components tend to be major culprits? What can I do to reduce/eliminate the problem? I would like to use the computer to decode some modes, so shutting off is not an option. Also, do laptops tend to cause more or less RFI?
Thanks

1118. Re: Mobile HF Antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 22:22:53 UTC
From: n4jzh@knology.net
Message-ID: <3adcc20f.127877636@news.knology.net>
Source record: 165866

On Mon, 16 Apr 2001 04:12:47 GMT, "Ray Hansmeier"
<rhansmeier@home.com> wrote:

>I'm thinking of putting HF mobile in my truck. What is everyones
>experience's with HF mobile antennas. What works and what is a dummy load?
>
>Ray
>
>K7FU
>
>

High Sierra= Why Settle For Anything Less....
N4JZH Donnie

1119. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 23:05:34 UTC
From: 2w8ji@akorn.net
Message-ID: <3adccb08.176161868@news.accessunited.com>
Source record: 165868

On Tue, 17 Apr 2001 22:47:16 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Tom, you said a Beverage above a perfect ground would quit
>radiating. Good of you to admit you were wrong. It was only another
>of your red herrings anyway.

I know you enjoy trolling, but please don't misquote me Reg.

I said an UNterminated Beverage with a lossless conductor would
radiate with 100% efficiency.

>However, I will say that over a
>perfect ground, or the next best thing over sea water, a Beverage
>will radiate exceptionally well regardless of whether it is
>terminated or not. Don't you believe Eznec ?

Eznec does not say that. I do not say that. No one else says that
either, except perhaps you.

>Returning to so-called electron current and displacement current,
>they BOTH radiate (or do NOT radiate according to one's beliefs)
>with exactly the same facility. Space has no means of
>distinguishing between them. Don't you believe Maxwell ? ;o)

I believe Maxwell's equations when used in the areas where they apply.

I don't believe in the magical ability to obtain radiation from
charges that are not there.

73 Tom

1120. Re: J-pole theory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 23:25:55 UTC
From: AC6V <ac6v@ix.netcom.com>
Message-ID: <3ADCD102.B4D9E25C@ix.netcom.com>
Source record: 165769

All about J-Poles at URL:
http://www.frii.com/~rick/Jpole/jpole.html

Ralph Mowery wrote:

> The J Pole is a 1/2 wave length antenna. TThe short part at the end the
> feed line is attached to is a part of the transmission line and matching
> section. It should not have any effect on the actual radiation of the
> antenna. The function of the part at eh end is to match the very high
> (several thousand ohms) to the low (50 ohm) transmission line.
>
> Allen wrote:
> >
> > I've always heard of and seen J-pole antennas for VHF and UHF. But how do
> > they work? I understand dipoles and yagi's pretty well, but this antenna is
> > outside of my understanding. Is the small pole a director for the larger
> > driven pole or since it is connected electrically to the larger one does it
> > not act in this way? Any bits of explanations would be helpful and
> > appreciated.
> >
> > Thanks,
> > Allen

--
73 From Rod AC6V In San Diego
700 Ham Topics & 6,000 Links
http://ac6v.com/
I Doubt, Therefore I Might Be!!!

1121. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-17 23:36:09 UTC
From: n2ey@aol.com
Message-ID: <20010417193609.10479.00000186@nso-fa.aol.com>
Source record: 165770

Before you decide on a Morse study method, or if you're having little success,
PLEASE surf on over to:

http://primera.tamu.edu/people/TAES/mgautreaux/code1.html

and see what N1IRZ has to say.

Also check out:

http://www.joates.demon.co.uk/megs/N0HFF/contents.htm

for an excellent online book on the subject, and

http://www.ah0a.org

for code learning shareware

The above authors say it better than I can.

73 de Jim, N2EY

1122. Internet Radio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 00:12:30 UTC
From: Pete <pete@gmlnt.com>
Message-ID: <9bim5g$j0f$1@news5.svr.pol.co.uk>
Source record: 165771

CHECKOUT WWW.G3CRC.CO.UK
IN COMMUNICATIONS, INTERNET HAM RADIO

WORLD WIDE HAM RADIO
+CHECK OUT THE BBS, MEMBERSHIP IS FREE !!!!

1123. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 00:26:08 UTC
From: dennis@wawa.juniper.net
Message-ID: <9bimv0$156h$1@heap.juniper.net>
Source record: 165772

William E. Sabin <sabinw@mwci.net> wrote:
>Please take a look at my most recent post on Monday Apr 16. In it, I
>describe Johnson's analysis more accurately. The boundary conditions that
>Johnson uses are that the segments ac and bd are perpendicular to the
>surface of the braid.
>
>Since these segments are parallel to the magnetic flux, no voltage appears
>on these segments, and this applies throughout the thickness of the braid.
>This is his starting point.
>
>The *currents* is segments ab and cd are not in phase, but the EMF created
>by the flux does put the *voltages* ab and cd equal and in phase.
>
>That is the very interesting thing that Johnson proves.
>
>The voltage along the inner surface of the braid is really in phase with
>that on the outer surface, but the currents are not. The voltage on the
>inner surface is the *vector sum* of an IR voltage and a voltage due to
>flux.

I've been thinking about this, and I think I agree that this makes sense.
What I've been trying to do is to figure out are the practical implications,
since I'm not sure I'm getting the same conclusion that you seem to
be drawing (though the misunderstanding may be my own).

First, it seems to me that this analysis works the same whether the
a-b chord is on the outside of the coax shield or the inside of the coax
shield. That is, the voltage inside of and outside of the shield
should be the same whether the current is on the inside of the
shield or the outside. I'm also assuming the shield is a large
number of skin-depths thick, so that the current on the inner
surface due solely to the presence of a current on the outer surface
is essentially zero.

So the practical question is, where does the current on the a-b
chord on the outside of the coax come from in the first place? It
seems to me that there are a couple of interesting possibilities.

The first is that there is an electric potential difference between
the ends of, or two points on, the shield of the coax. For example,
a lead from a signal generator is connected to each end of the
coax. This voltage difference along the coax causes current to
flow. From your analysis the voltage will be the same on both the
outside and the inside of the coax, so if that voltage is causing the
current it seems the current will necessarily flow (in-phase) on both

the inside and outside of the coax.

The second is that the current is induced on the outside of the shield by an EM field. Suppose the coax is infinitely long, or has ground connections at each end so charges at the ends of the braid can be brought up from or delivered to ground when needed. In this case the current flow will oppose the voltage induced by the EM field, such that the I*R voltage drop is exactly equal in magnitude, but opposite in direction, to the induced voltage. The net voltage Vab will be zero and, from your analysis, the voltage Vcd will also be zero. Both the voltage and current on the inside of the shield will be zero, so in this case we've effectively shielded the inside of the coax from the EM field by burning its energy in I^2*R losses (or re-radiating it) at the outer surface of the coax.

The last interesting case is like the second case above, that the current is induced on the outside by an EM field, but this time we remove the ground connection at one end of the shield. This prevents current from flowing at that end of the shield; there is no where to get charges from and no where for them to go. As we still have an induced voltage, but the opposing current at that end of the shield is reduced, we get a voltage increase along the shield. By the analysis this voltage also appears on the inside of the shield, so from the point of view of the inside of the shield this case looks identical to the first situation with a longitudinal voltage on the shield. A current will hence flow on the inside of the shield in the direction opposite (i.e. 180 degrees out of phase) to the current flow on the outside of the shield.

>The result is that an electric field appears in the dielectric material.
>This is then transferred by electromagnetic induction to the center wire. In
>this way, common mode voltage on the braid is transformer coupled *in-phase*
>to the center wire. The braid is just the primary of a conventional
>transformer.
>
>It is interesting to visualize an ordinary power transformer. The magnetic
>flux is contained *almost entirely* within the laminations. But there is an
>electric field that exists in the free space that *encloses* (that is, loops
>around) the core. This field is not in contact with the core and the flux at
>all. But if we place a wire around the core, a voltage appears across the
>wire and we have a very good transformer. If we just "eye ball" a power
>transformer that is not covered up we can see how it is constructed.
>
>This is really what Faraday's law is all about.
>
>The coax is in the same category. The center wire is well separated from
>the bulk of the current and the flux tht are in the braid, but the center
>wire is very capable of responding to the electric field that is created by
>that current and flux. In the common mode at RF the braid and center wire

>are an excellent 1:1 transformer.

This all makes perfect sense to me, except for the last bit (which I may be misunderstanding). I can believe that the voltage is the same on the outside, the middle and the inside of the shield at the same time. I can believe that the currents along chords in the middle of the shield are phase damped by the effect of fields generated by neighbouring chords. What I don't see is how you can have a longitudinal voltage on the inside surface of the shield, immediately adjacent to dielectric, and an electric field in the adjacent dielectric, and not have a current on the inside of the shield. What did I misunderstand?

Dennis Ferguson

1124. Re: Need article from April 84' issue of QST.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 00:42:02 UTC
From: n2ey@aol.com
Message-ID: <20010417204202.10527.00000192@nso-bj.aol.com>
Source record: 165773

In article <3ADCB04F.73518AE9@grove.iup.edu>, Scott McClements
<yetbbwa@grove.iup.edu> writes:

>Looking for someone to fax / mail me a copy of an article from the April
>84' issue of QST. I would purchase a back issue if somebody knew where I
>could pick one up as well.
>
The ARRL will make you a copy for a nominal fee - I think was $3 last time I
looked. They also have some back issues. Surf over to:

http://www.arrl.org

What article is it? Some articles are online at the site.

73 de Jim, N2EY

1125. Re: Shielding from computer RFI

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 01:21:28 UTC
From: Floyd Sense <sentek@sprintmail.com>
Message-ID: <s_5D6.1542$vl2.112384@newsread2.prod.itd.earthlink.net>
Source record: 165774

Take a look at the MFJ 1026 noise canceling unit. It works pretty well on
PC generated noise.

K8AC
Floyd Sense - Angier, NC
"Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
news:3ADCC198.53D59A55@cticonsulting.net...
> What are some techniques/products to help reduce interference caused by
> computers in the same room as the radio and diminishing reception? What
> computer components tend to be major culprits? What can I do to
> reduce/eliminate the problem? I would like to use the computer to
> decode some modes, so shutting off is not an option. Also, do laptops
> tend to cause more or less RFI?
> Thanks
>

1126. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 01:38:05 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <92rpdtgkvi8enka92fjr7qsj4ntni7890r@4ax.com>
Source record: 165775

On Tue, 17 Apr 2001 04:59:59 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>To me, one of the most facinating aspects of Physics is the fact that
>accelerated charges produce photons!
>

Hi Peter,

An oft quoted effect that simply is not worth the quote.

For one it obscures the topic unecessarily; two it reveals a logical inconsistency in the other oft quoted "accelerated charge is responsible for radiation." This too, is so poorly expressed that it serves more arguments than an answer of "because" to a child's plea "why?"

An electron, the source of a negative charge, is in constant acceleration around an atom and yet does not radiate one centilla of energy. Curvelinear motion, as you point out in other posts, qualifies eminently as acceleration - and yet the arguement of radiation due to acceleration is entirely confounded here.

But back to the Photon. The only source of a Photon is the decay of an electron in an excited orbit to its ground state, or an intermediate state of lower excitation. The wavelength of the Photon is directly correlateable to the length of the path as the electron winds down from one orbit to another. This was all described by de Broglie some 80 years ago. Now, how big are your atoms such that the decay of one electron traverses a path of, say, 80 meters? :-)

I would suppose that skin effect in this regard of Photon radiation may lead to some form of non-dissipative sunburn.

73's
Richard Clark, KB7QHC

1127. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 03:01:02 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ADD036E.6CB1C6C4@mwci.net>
Source record: 165777

Dennis Ferguson wrote:

> First, it seems to me that this analysis works the same whether the
> a-b chord is on the outside of the coax shield or the inside of the coax
> shield.

My discussion concerns a common mode current on the outside of the shield. That was the subject that was brought up.

> That is, the voltage inside of and outside of the shield
> should be the same whether the current is on the inside of the
> shield or the outside.

Correct.

> I'm also assuming the shield is a large
> number of skin-depths thick, so that the current on the inner
> surface due solely to the presence of a current on the outer surface
> is essentially zero.

Correct.

> So the practical question is, where does the current on the a-b
> chord on the outside of the coax come from in the first place?

It comes from common mode current that is caused by some external source.

> From your analysis the voltage will be the same on both the
> outside and the inside of the coax, so if that voltage is causing the
> current it seems the current will necessarily flow (in-phase) on both
> the inside and outside of the coax.

No, the common mode current concentrates on the outside because of skin effect.

> Suppose the coax
> has ground connections at each end. in this case we've
> effectively shielded the inside of the coax from the EM field
> by burning its energy in I^2*R losses (or re-radiating it) at the
> outer surface of the coax.

Most of it will probably be radiated if the braid is grounded at both ends.A ground at both ends of the braid is desirable because ground provides a burial ground for the common mode current that is flowing on the outside of the braid.

> A current will hence
> flow on the inside of the shield in the direction opposite (i.e.
> 180 degrees out of phase) to the current flow on the outside of
> the shield.

That conclusion does not follow. The "current-over-the-edge-and-down-the-other side" theory is nonsense.

> >The result is that an electric field appears in the dielectric material.
> >This is then transferred by electromagnetic induction to the center wire. In
> >this way, common mode voltage on the braid is transformer coupled *in-phase*
> >to the center wire. The braid is just the primary of a conventional
> >transformer.
> >
> >It is interesting to visualize an ordinary power transformer. The magnetic
> >flux is contained *almost entirely* within the laminations. But there is an
> >electric field that exists in the free space that *encloses* (that is, loops
> >around) the core. This field is not in contact with the core and the flux at
> >all. But if we place a wire around the core, a voltage appears across the
> >wire and we have a very good transformer. If we just "eye ball" a power
> >transformer that is not covered up we can see how it is constructed.
> >
> >This is really what Faraday's law is all about.
> >
> >The coax is in the same category. The center wire is well separated from
> >the bulk of the current and the flux tht are in the braid, but the center
> >wire is very capable of responding to the electric field that is created by
> >that current and flux. In the common mode at RF the braid and center wire
> >are an excellent 1:1 transformer.
>
> What I don't see is how you can have a longitudinal
> voltage on the inside surface of the shield, immediately adjacent to
> dielectric, and an electric field in the adjacent dielectric, and not
> have a current on the inside of the shield. What did I misunderstand?

The skin effect crowds the common mode current to the outside of the braid. The current on the inside surface for the common mode situation is almost zero. But the voltage along the inside surface is not zero. It is equal to the voltage along the outside surface.The discussion of the conventional transformer provides the clues. I suggest you study it some more. In the coax, the center wire is physically separated from nearly all of the current and nearly all of the flux, nevertheless the "primary" voltage on the braid is efficiently transformer coupled to the center wire, which is the "secondary".

The fallacy that persists for some reason is that perfectly good copper braid, because of skin effect, is somehow an insulator for a voltage difference between the two surfaces.

All of the topics that you have brought up have been thoroughly discussed previously. I suggest review previous articles. I will not be able to repeat all of it in detail.

Bill W0IYH

1128. Re: Baluns for loop antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 03:07:02 UTC
From: iowadoc@micron.net
Message-ID: <iowadoc-1704012107030001@1cust172.tnt1.forest-city.ia.da.uu.net>
Source record: 165776

Larry et al:

I'm no engineer but I have spoke with several hams over the years and seen simple drawings in Doug DeMaws book on this topic. He recommended building ONE loop, for 80 meters, deploying it in a delta configuration (using a single high support, typically a tower), feed it with ladder line at one of the lower corners and tune it at the shack end with a tuner. Basically a 'one antenna, one feedline' arrangement. I am seriously thinking about such an arrangement here.

Good luck.

In article <tdoqej325me699@corp.supernews.com>, "Larry Gauthier" <larryg5099@chartermi.net> wrote:

> I have just built my first full-wave loop antenna - a delta loop for 30
> meters, and I am delighted with it. The antenna is 99.5 feet long
> (1005/freq.mhz), three sided, and uses a tightly-wound 1/4 wavelength of
> RG-59 as a balun to match my RG-8 feedline. Good SWR, flat curve, works
> well, inexpensive. It significantly outperforms my multiband vertical.
>
> So, I am now thinking of duplicating my success on 40 and 80 meters, but the
> thought of a 1/4 wavelength balun on each band starts to sound like a lot of
> wire/weight up in the air. My understanding is that the characteristic
> impedance of a delta loop is 100 ohms, so I need to match 100:50 ohms. What
> about winding a 2:1 balun on a toroid coil, rather than these hunks of
> RG-59? I've never tried winding my own before - what are the details? Where
> can I get the core materials? Any special wire I need to use? If I wind the
> toroid in a 2:1 turns ratio, am I done? How many turns? Can I measure this
> into a 100 ohm non-inductive load and if it reads 1:1 VSWR did I get it
> right?
>
> Please forgive my ignorance. I have several of the ARRL antenna books ("the
> compendium") but none delve into the balun/toriod constructing issue in
> sufficient depth for my needs. If there is another reference (not a college
> textbook) please advise.
>
> Thanks in advance for your time,
>
> -larry
> K8UT

--
"A clear conscience is a sign of a poor memory"

Clarence R Carlson
Itinerant Philosophers of Iowa, LTD

1129. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 03:09:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADD0581.227A54CA@IEEE.org>
Source record: 165778

Richard Clark wrote:
> The wavelength of the Photon
> is directly correlateable to the length of the path as the electron
> winds down from one orbit to another.

That's one kind of radiation but isn't RF radiation caused by
acceleration of free electrons?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1130. Re: J-pole theory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 03:17:16 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <0H7D6.24776$xN4.1657028@news1.sttls1.wa.home.com>
Source record: 165779

"Allen" <wookie8u@hotmail.com> wrote in message
news:Ll2D6.14634$ep.4369061@news1.rdc1.tn.home.com...
> I've always heard of and seen J-pole antennas for VHF and UHF. But how do
> they work? I understand dipoles and yagi's pretty well, but this antenna
is
> outside of my understanding. Is the small pole a director for the larger
> driven pole or since it is connected electrically to the larger one does
it
> not act in this way? Any bits of explanations would be helpful and
> appreciated.
>
> Thanks,
> Allen
>
>
Hi Allen,

I see you have some good responses so far and hope you can use some more thoughts about the J antenna.

If you add the total length of material in the J, you will see that it is nearly one wave length long. Of course you can feed a one wavelength long antenna at either high current point and the feed resistance will be in the 75 to 100 ohm range, depending upon height above ground. It makes a great horizontal antenna and works very well when folded as in the J antenna. The feed resistance is lowered when folded so the J has a resistance near to 75 ohms.

One problem with the offset fed antennas (this is one of those awkward things) is that the antenna is unbalanced and the short side has a reflected wave about one wave length (time wise) ahead of the long side. This means you need a good balun if you want to direct feed the beast.

If you want to feed it directly with 52 ohm coax, you should plan on stepping up the impedance with something like a series section impedance matching section. The formulas are in the ARRL Antenna Book.

Your next question must be "Have you done this?" No, I have not but I think it must work that way. It might be a fun experiment for you!!

The folded short element does radiate. It is easily observed with Eznec. The pattern change is very slight unless the spacing becomes fairly large.

Roy Lewallen's Eznec is a great antenna modeling program. You would have a lot of fun modeling this and other antennas.

73, Roger, W7WKB

1131. Load Z for given Zo, dB and measured Input Z.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 03:33:05 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bj1udjks1@plutonium.btinternet.com>
Source record: 165780

NOW AVAILABLE.

Updated version of PROGRAM "ZL-ZIN.exe"

Coaxial and Balanced-pair Transmission Line Calculations.

This program computes the value of the load or terminating
impedance which
must exist at the end of a transmission line of given Zo and
attenuation for
a measured line input impedance. It is tailored specially to
calculate the
feedpoint impedance of an inaccessible radio antenna from input
impedance
measurements at the readily-available transmitter end of the
feedline.

Another application is the precise design of transmission line
impedance
matching transformers.

It can also be used to correct errors perhaps due to unavoidably
long test
leads when measuring radio components at HF.

As the transmission line becomes longer it is necessary to know its
characteristics more accurately. Simple means of estimating line
characteristics are described in the notes.

This is an updated version of a program of the same name issued in
1999.
There are some minor changes in the accompanying operating notes
and a
facility to sweep measured input reactance in small increments from
the
keyboard has been added. Mathematical operations and computed
results
remain unchanged.

It is suggested you download this new version and if you already
have the
earlier issue overwrite it with this one dated 15th April 2001.

Download ZL_ZIN in a few seconds. Only 52 Kbytes. Not zipped up.
Run immediately.

****

Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

1132. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 04:21:09 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bj4j3$92d$1@uranium.btinternet.com>
Source record: 165782

Tom, this is what you said a few stages back up the thread. It's not taken out of context. It is the complete paragraph just as you wrote it -

"A Beverage has vertical displacement currents between the antenna and
earth. Why does it QUIT working when the ground is perfect if displacement currents radiate? ".

I replied that it doesn't quit. And you accuse me of trolling just because I happen to disagree. Wa Wa Wa Waaaaaaaaaaa.

Reg.

1133. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 04:35:16 UTC
From: kelly@nospam.dvol.com
Message-ID: <3add1929.49520350@news2.dvol.com>
Source record: 165781

On Tue, 17 Apr 2001 11:07:22 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:

>On 17 Apr 2001 03:19:48 GMT, Bill Nelson <billn@spock.peak.org> wrote:
>
>>Oops, that was a brain fart.
>>
>>I should have stated that the antenna is resonant when the impedance is
>>lowest.
>>
>>My apologies for the confusion this may have caused.
>
>The system is resonant when the reactance is zero.
>
>The antenna is resonant when the reactance at its terminals is zero.
>
>Once you measure through a feedline, you can not tell if the antenna
>is resonant or not without knowing something about the feedline. A
>zero ohm reactance (resonant) antenna might not present a zero ohm
>reactance load one a feedline is involved, and the lowest impedance
>might not be the resonant point of the antenna.
>
>Fortunately, resonance has little to do with system efficiency.
>
. . . somebody had to get back to the basics . .
>
>73 Tom
>
w3rv

1134. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 05:47:54 UTC
From: Roger <rdhalste@tm.net>
Message-ID: <eU9D6.139$qp.23820@newshog.newsread.com>
Source record: 165783

Currently I have three computers, two H.F. rigs (One driving an Alpha 76A)
and two duoband (144/440) rigs.

Nothing is grounded, or effectively, nothing is grounded. The only ground
on the coax cables is up at the antennas at the far end of a bit over 200
feet of coax. The antennas are grounded to the tower and it has nearly 300
feet of #2 bare copper wire tied to over a dozen 8' ground rods.

Not, that I don't prefer a ground. It's just that I have to do a lot of
digging and then repair the damage done when a back hoe hooked the ground
rod about 7 feet out from the basement wall. That ground rod was welded to
one that ran horizontally through the basement wall where it had a plate
attached for station grounding. They pulled that sucker and every thing
attached, right out through the wall.

Basically, all I have to do with the ground system is dig down and drive the
rod back through the hole in the wall (bending the rod to which it's
welded), Unfortunately the basement wall is going to take a lot more work.
Looks like I may have to replace about 10 feet of basement wall all the way
down to the footing.

Thing is, that I've not noticed a bit of difference where operating the
station is concerned.

How ever I do know that there is a big difference as to safety and
lightening protection.
I am trying to finish up the repairs before we get any big storms now that
the warmer weather is here.

Roger Halstead (K8RI) www.RogerHalstead.com
N833R World's Oldest Debonair? s# CD-2

"Richard L. Dunklee, Jr." <rdunklee@att.net> wrote in message
news:3AD915D2.A816ED55@att.net...
> Go to a ground rod or a cold water pipe. Grounding is VERY important.
> Ground loops, rusty bolt problem, etc.. DO ONT over look a GOOD ground.
>
> Richard L. Dunklee, Jr.
> WA2ONM
>
>
> DL7JSK wrote:
>
> > Hi OMs
> > I have a new transceiver (Alinco DX-70),that has a grounding screw.Must
I

> > use it ? I have only a heating tube in my shack.
> >
> > 73
> > Tom
>

1135. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 05:53:40 UTC
From: Roger <rdhalste@tm.net>
Message-ID: <EZ9D6.140$qp.23649@newshog.newsread.com>
Source record: 165784

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9bb0ob$l9v$1@nntp9.atl.mindspring.net...
> Evan:
>
> If you've got it...
>
> Just use it!
>
> In most amateur applications, you will never notice the difference between
> 73 Ohm and 50 Ohm coax feedlines in "on air" performance. If you must, to
> save face while you are working the world with your 73 Ohm coax that
"should
> really be 50 Ohms", just lie and tell the ham on the other end of your
QSO's
> that it is 50 Ohms.
>
> No one will know but you!
>
Don't lie, just tell them you are using hard line<:-))
I used to use multiple runs of 3/4 inch 75 ohm hard line for VHF and UHF.
Connectors are easy to make for the half inch and take only a little more
work for the 3/4 inch.

Roger Halstead (K8RI) www.RogerHalstead.com
N833R World's Oldest Debonair? s# CD-2

> Enjoy!
>
> Peter K1PO
>
>
> "FAZAMY" <fazamy@aol.com> wrote in message
> news:20010414152001.22764.00000214@ng-ba1.aol.com...
> > Since most rigs nowadays use 52 ohm coax, what can one use 72 ohm coax
> for.
> > I've the braid and center conductor type of 72 ohm coax, not the cable
tv
> kind.
> >
> > 73,
> > Evan
> > KB2AMY
>
>

1136. Re: Coax question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 06:05:53 UTC
From: Roger <rdhalste@tm.net>
Message-ID: <59aD6.141$qp.23839@newshog.newsread.com>
Source record: 165785

Roger Halstead (K8RI) www.RogerHalstead.com
N833R World's Oldest Debonair? s# CD-2

There is only one real problem burying coax. Water getting into the braid. Every place a shield wire crosses another is a problem waiting to happen.

That said, I've buried plain old coax for up to ten years with no problem. However it would only take one sharp edged stone, a yard tool, or any other sharp object to ruin the whole coax where the same nick would have never been noticed had the cable been of the direct burial type which uses a flooding compound to eliminate any voids in the shield where water could do its work.

The new Times Wire LMR-400 has a direct burial version and it has about the same loss as 9913, without the ability to serve as a water hose.

There are three versions of the LMR 400 cable. The regular low loss (slightly less loss than 9913 and less expensive), a flexible version (about the same loss as 9913, but with the ability to make much sharper bends and still keep the center conductor in the center), and finally the direct burial version. I believe that even the standard version can make bends with a one inch radius.

I have about a 1000 feet of the stuff installed so far.

Roger (K8RI)
"Timothy J. Fiebig" <timothy.j.fiebig@exxonmobil.com> wrote in message news:3ADB1FF6.2C3FCA4F@exxonmobil.com...
> Hello All,
>
> What can I expect as a life span burying coaxial cable? Are there
> certain types of cable that is rate for contact with soil?
>
> Also, any recommendations for reliable cable dealers that ship UPS?
>
> Thanks,
>
> Tim
>

1137. HB9CV

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 06:14:04 UTC
From: MilanCe <milan.manojlovic@ev.co.yu>
Message-ID: <9bjbu4tih1@Mercury.ev.co.yu>
Source record: 165786

I am looking for some info or link for a project of HB9CV antena
for 2m and 70cm.

Regards,

Milan YZ7PXH

1138. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 07:14:41 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3ADD3EE1.1B718EFC@spam.me.not>
Source record: 165787

Jim:

Great info. Thanks for the links. I *may* have been making some of the same mistakes listed. ::grin:: I'll try to forget everything I've learned and start over. Maybe I'll be able to get it down pat before the test, and go from CB Operator to Extra Class Ham in one shot... Who knows?

Thanks again.

-SSB (soon to have a callsign, regardless of what class it is!)

N2EY wrote:
>
> Before you decide on a Morse study method, or if you're having little success,
> PLEASE surf on over to:
>
> http://primera.tamu.edu/people/TAES/mgautreaux/code1.html
>
> and see what N1IRZ has to say.
>
> Also check out:
>
> http://www.joates.demon.co.uk/megs/N0HFF/contents.htm
>
> for an excellent online book on the subject, and
>
> http://www.ah0a.org
>
> for code learning shareware
>
> The above authors say it better than I can.
>
> 73 de Jim, N2EY

1139. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 10:21:34 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ADD6AAE.B1FFF95C@mwci.net>
Source record: 165788

Richard Harrison wrote:

> Bill, W0IYH wrote:
> "My discussion concerns a comon mode current on the outside of the
> shield."
>
> OK, and where else? The normal assumption would be that common-mode
> would be unbalanced current on both sides, or conductors, of a balanced
> line. With unbalanced coax, that makes no sense to me.

The common mode current on the outside of the braid is the common mode current that we usually see. It is caused by an unbalance in an antenna or by noise pickup from a local source, for example. I'm sure you know all about that subject.

This common mode current, multiplied by the longitudinal reactance of the braid, produces a common mode voltage on the braid.

This voltage drop along the braid is transformer coupled to the center wire, just *exactly* like in a 1:1 conventional transformer. Hopefully, these two almost identical common mode voltages cancel each other so that common mode voltage (or current) is not converted to differential mode voltage (or current). A previous article discussed this in some detail.

Fear not, Lenz's law is alive and well and watching over the entire process.

This is how a coax attenuates common mode interference. As you know, a current balun at the right location greatly improves this process.

Bill W0IYH

1140. Sony Active antenna's AN-1, AN-102, AN100A Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 10:47:41 UTC
From: Eddy <eddy.poropat@nokia.com>
Message-ID: <hheD6.7440$m17.157223@news2.nokia.com>
Source record: 165789

I have a Sony SW-7600G and want to improve the MW reception, has anybody tried any of the above antennas? Are they any good?

1141. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 10:56:23 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ADD72D7.D1C28B4E@mwci.net>
Source record: 165790

Richard Harrison wrote:

> Displacement currents, "fictitious" or not, produce a magnetic field the
> same as conduction currents.

This is perfectly correct.

In space, the magnetic (H) field and the electric (E) field interact with each other to *create* a wave that travels at the speed of light.

Maxwell's *main* idea is that the E field creates a so-called "displacement current" that then creates the H field. This is Ampere's law with Maxwell's "add-on term" that adds the displacement current. Its value is proportional to the rate of change of the E field (exactly as in a real capacitor).

It was done to satisfy the requirement that, since current is the curl of mag field H, then the divergence of current *must* equal zero, even in space.

The H field in turn then creates an E field (this is Faraday's law).

And so it goes, back and forth.

Bill W0IYH

1142. Re: Need article from April 84' issue of QST.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 11:47:21 UTC
From: w1rfi@aol.com
Message-ID: <20010418074721.26333.00000574@ng-mn1.aol.com>
Source record: 165791

>From: n2ey@aol.com (N2EY)

>>Looking for someone to fax / mail me a copy of an article from the April
>>84' issue of QST. I would purchase a back issue if somebody knew where I
>>could pick one up as well.

>The ARRL will make you a copy for a nominal fee - I think was $3 last time I
>looked. They also have some back issues. Surf over to:

The back issues are available from the ARRL Circulations Department. They charge the current cover price for back issues, though -- a bit pricey. If you only need a single article from the issue, the photocopy is a better bet. Of course, the best bet is that someone will probably make a copy for you. :-)

>What article is it? Some articles are online at the site.

There are now over 500 past QST technical articles on the ARRL web pages, although some of them are in the members-only area. Many of them are antenna-related articles, btw.

I made the decisions about which to put on the public site vs the members-only site on the basis of content -- if promulgating the info somehow benefits Amateur Radio as a whole, then the info is public. If the content primarily helps a ham with his or her personal ham activity, it is members-only. I guess it is somehow fair; those that are not interested in QST probably will understand why some of the articles are not available to them.

If any of you all have suggestions on other articles I can have put up on the Tech Info Service pages, let me know.

See http://www.arrl.org/tis/tismenu.html

73,
Ed Hare, W1RFI
ARRL Lab

1143. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 11:50:58 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <CcfD6.25791$xN4.1777646@news1.sttls1.wa.home.com>
Source record: 165792

Good Morning All,

Bill and Richard, you just gave me an idea for a test that might put this subject to bed.

The idea is to simply test the outside of the coax feed line for current using a magnetic coupled device such as the Palomar RF current meter. The balanced line will show no current but the line with a common mode current will show that current when tested with the Palomar meter.

Now if the current is only on the outside of the coax braid, then clear standing waves should be found and there should be a complete null at some point assuming the line is configured to allow a null point. The location of the null point should be predictable.

On the other hand, if the shield is really transparent to magnetic fields, then a null should NOT be possible. This would be true because an unbalanced current on the coax will remain unbalanced the entire length of the coax (unless a balun is put into the line). The null on one conductor would not be in the same location as the null on the other conductor.

There would also be null point when the common mode current was in phase on both inner and outer conductors.

Am I right in these observations?

I have the equipment but not the time to run this test in the near future. I have run this type of test a lot of times but never with this objective in mind. As I recall, a complete null was not possible, but it was easy to see the current antinodes whether they were on the inner or outer conductor.

So what do you think, would this be a valid test?

73, Roger, W7WKB

1144. F6KEH resources site renewed ! Visit it !

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 12:32:16 UTC
From: F5lcy <f5lcy@wanadoo.fr>
Message-ID: <9bk1hm$7q0$1@wanadoo.fr>
Source record: 165793

F6KEH amateur radio resouces site has been totally renewed !
You could find now and in the future :
- new links of the month
- new headings
- language of sites

Site in french, english and spanish monthly updated.

Don't hesitate visit
http://f6keh.free.fr/index_r

1145. Re: Baluns for loop antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 13:02:19 UTC
From: Larry Gauthier <larryg5099@chartermi.net>
Message-ID: <tdr42un3pls0f4@corp.supernews.com>
Source record: 165794

Thanks for all the replies. Perhaps I should have added more detail.

The 30m loop is an equilateral triangle, with one side (the driven side) being fed from the bottom and running adjacent to my new 56 foot tower [which is why I can now play with loops!]. So, I have room to run a 40 meter loop vertically (but obviously not on 80).

Thanks for all the suggestions - Ross, I can easily shift the feed point on this 30m loop so that it is fed in the center (rather than the bottom) of the vertical side. I'll give that a try and see if things improve any (they are already great). Does the feedpoint affect direction characteristics? I have not seen any diagrams on the lobes of one of these things yet. (there must be something in a recent QST... I'll dig through the indexes on the ARRL web site)

I don't have any hope of feeding all these with one piece of coax -- thought I would using a remote antenna switch to select the loop I want. Perhaps I'll end up with a loop for 30 and 40 and a standard dipole for 80.

As far as running open ladder line into the shack to a tuner - have tried that in the past and got excellent radiation reports: from the cordless phones, the timer on my wife's stove, the "touch" lamps at the neighbor's house... great propagation! ;-) Nope -- that alternative is NOT in the realm of possibilities.

-larry
K8UT

"Ross" <rwa@gateway.bogons> wrote in message
news:87zodf73xv.fsf@gateway.bogons...
>
> "Larry Gauthier" <larryg5099@chartermi.net> writes:
>
> > I have just built my first full-wave loop antenna - a delta loop for
> > 30 meters, and I am delighted with it.
>
> ...
>
> > It significantly outperforms my multiband vertical. So, I am now
> > thinking of duplicating my success on 40 and 80 meters, but the
> > thought of a 1/4 wavelength balun on each band starts to sound like
> > a lot of wire/weight up in the air.
>
> Larry,
>
> Good to hear that it's working well for you. I've always liked

> deltas, and loops in general. I've run a couple of 80m deltas over
> the years with good results, and found (as others have said) that
> matching them wasn't much of an issue given how close they of practial
> necessity end up being to ground. A simple choke balun (just a
> half-dozen turns of coax through an FT240/43 core) seemed to do all
> that was needed for me.
>
> I'd like to suggest that you have a look at Devoldere,OH4UN (?)'s
> books on low band DXing re the feed arrangment. He stresses feeding
> the delta a 1/4 wave down from the apex to get a properly balanced
> current distribution for vertical polarization (which will help you
> get out better) and how you can set the feed impedance by playing with
> the aspect ratio (height of apex vs width of base); there's also some
> discussion of the inverted delta. I used one for a couple of years and
> really liked it.
>
> regards,
> Ross ve6pdq

1146. Re: Baluns for loop antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 13:19:15 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADD9453.35A05332@IEEE.org>
Source record: 165795

Larry Gauthier wrote:
> Does the feedpoint affect direction characteristics? I
> have not seen any diagrams on the lobes of one of these things yet.

Take a look at the radiation patterns of the loops on my web page.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1147. Re: J-pole theory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 13:34:29 UTC
From: AB2HR <ab2hr@arrl.net>
Message-ID: <ft5rdt0hmhcn7mli441njh196fhv8hi55g@4ax.com>
Source record: 165796

On Tue, 17 Apr 2001 21:13:15 GMT, "Allen" <wookie8u@hotmail.com>
wrote:

>I've always heard of and seen J-pole antennas for VHF and UHF. But how do
>they work? I understand dipoles and yagi's pretty well, but this antenna is
>outside of my understanding. Is the small pole a director for the larger
>driven pole or since it is connected electrically to the larger one does it
>not act in this way? Any bits of explanations would be helpful and
>appreciated.
>
>Thanks,
>Allen
>

One element acts as the radiating element, the other as the
counterpoise. It doesn't matter which is which, either way will work,
but I usually connect the longer element to the center conductor of
the coax, the shorter element to the shield... I just built one for a
friend of mine for use on 2-meters, with a 3/4 wave radiator, received
signals went from S1 to S10 (granted, the J-Pole had a 10-boot
elevation advantage over the 1/4 wave ground plane - and in a hilly
environment, so the signal increase was not solely due to the antenna
design), and transmitted signals to the test station from S5 to full
scale (30 dB over S9). Believe me, these things work - with gain, and
are not very directional...

73 de

Ray / AB2HR

SysOp: The Lost Chord BBS
607-733-5745
telnet: 24.95.131.236 port 6000
http://www.geocities.com/SiliconValley/Park/9257/lostchrd.html

1148. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 13:59:45 UTC
From: 2w8ji@akorn.net
Message-ID: <3add9772.228500143@news.accessunited.com>
Source record: 165797

On Wed, 18 Apr 2001 05:21:09 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Tom, this is what you said a few stages back up the thread. It's
>not taken out of context. It is the complete paragraph just as you
>wrote it -
>
>"A Beverage has vertical displacement currents between the antenna
>and
>earth. Why does it QUIT working when the ground is perfect if
>displacement currents radiate? ".
>
>I replied that it doesn't quit.

It certainly does quit in the sense that the pattern is entirely
different over perfect ground. The pattern actually reverses
direction, and efficiency decreses.

I think what everyone forgets is all of these "fields" and
displacement current stuff are just models we use to help us
understand what is happening. When the model falls apart, we should
quit using it.

Using the electric field or displacement current (which is really just
a ficticious current) might be OK in some cases, but it one of those
things that easily gets us into trouble. The Beverage is a good
example.

If you look at *real* currrents in the Beverage conductor, and in the
earth below the Beverage, you won't get into problems. Let's look at
the case of a 1 wavelength long Beverage. Over lossy earth, the
Beverage radiates primarily in the direction of the termination. It is
somewhat inefficient, mine are about 15-20 dB less efficient than a
tall monopole over a good ground system in the favored direction. You
might consider the model you are trying to invoke, and say the
vertical displacement currents are causing the vertically polarized
radiation.

However, if I lay down a large counterpoise system under the Beverage,
the sensitivity drops. Not only does the sensitvity drop dramatically,
the pattern (for a ~1 WL Beverage) reverses! It appears nothing like
the original antenna, yet the electric field still would dictate the
ficticious displacement current is flowing. We would have the same
potential between the antenna and the ground screen as we had over
earth.

Factually, the pattern of a Beverage over a perfect groundplane is the same as two short verticals spaced the distance of the ends of the antenna apart. What ever phase difference and current distribution we have in those vertical ends, that's what we have for pattern. That's also what we have for efficiency.

All that displacement current along the length of the antenna from one end of the antenna to the other might as well not be there.

The same is true for a dipole.

While there are cases where we need to use the ficticious displacement current to create magnetic fields, it gets us into trouble quickly when we use it to understand antennas. That's why our textbooks stick with real current.

We may think it impressive and it might make us feel important to toss names around, but when the model we invoke falls apart easily we should stop using it.

I rtespect you enought to think you know this, and that's why I considered you as being a troll......just saying something to start a long battle. If you didn't, then I appologize. But the fact remains the model you are using does not work well.

When people start considering displacement current as a source of radiation, they will get in trouble fitting the model into the real world.

73 Tom

1149. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 14:16:13 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ADDA1AD.C6C7180A@mwci.net>
Source record: 165798

Tom,

I saw your letter in May QST. Very nice work!

Bill W0IYH

1150. Re: Isotron antennas - comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 14:29:59 UTC
From: gpewitt@execpc.com
Message-ID: <3adda56f$0$42883$272ea4a1@news.execpc.com>
Source record: 165800

One thing I forgot to mention is that the Isotron is a balanced
antenna and thus requires no counterpoise or ground.
73 Gary

On Sun, 15 Apr 2001 15:41:58 -0400, Bruno Quesnel
<quesnelb@ve2.ele.etsmtl.ca> wrote:

>Any good/bad comments on the different Isotron antennas ?
>
>Thanks in advance
>
>--
>Bruno Quesnel va2bmg@videotron.ca
>Genie Electrique quesnelb@ve2.ele.etsmtl.ca
>Electrical Engineering queb1604@ele.etsmtl.ca
>Ecole de Technologie Superieure VA2 BMG
>
>

Gary Pewitt N9ZSV
414 355 8147

1151. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 14:30:16 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ADDA4F8.24F25800@toast.net>
Source record: 165799

atkes@imap1.asu.edu wrote:

> John O'Flaherty (oflahert@toast.net) wrote:
>
> : There would be the question of 50 volts with respect to what, wouldn't
> : there? If the reference is with respect to the inner conductor, then that's
> : not available for measurement, hence there's nothing for the outside of the
> : coax to have a voltage with respect to. If you made a little hole in the
> : braid, and brought out a tiny extension of the inner conductor, then between
> : the braid and that extension you'd have whatever you had inside the cable,
> : wouldn't you?
> : On the other hand, looking at voltages _along_ the braid, those would be
> : very small over a short distance, either inside or outside the cable,
> : wouldn't they?
>
> : john
>
> John,
>
> It is not only with respect to what, but along which path. The voltage
> difference between two points along a path is the line integral of
> the electric field component along the path. That is essentially
> the average electric field along the path times the path length.
> Faraday's law tells you that if you take two different paths,
> the voltage you will measure will be different if there is a changing
> magnetic flux encircled by the two paths. Since antennas and transmission
> lines nearly always have substantial magnetic fields, this whole discussion
> of voltage differences between points is nonsense unless the path taken
> is described. For example the voltage difference from any point on a perfect
> conductor to any other point, via a path through the perfect conductor is
> zero. That's because the electric field in the conductor is zero.

That means, doesn't it, that there is no conduction or propagation at all through a perfect conductor? There is only infinite sublime reflection at its impenetrable surface. There could be a steady state current, but it could never be established because that would require a change.

> If the

> path is somewhere else, you have to specify it in general. Only if two
> paths enclose zero net changing flux will they give the same answer.
> For this reason, the concept of the voltage on the outside of a coaxial
> cable is essentially useless. Note, for a coaxial cable operating in a TEM
> or TM mode, you can specify the voltage difference between the inside of
> the outer conductor and the outside of the inner conductor at the same point

> along the line since any two paths in the same transverse plane will encircle
> zero magnetic flux. This is the usual voltage between the conductors
> specified in a coaxial cable.

The voltage between two points is a simple, easily understood concept. Some of the shielding effect of coax, it seems to me, is due to the fact that the inner conductor is masked to the outside of the cable by the shield, and thus there is no externally available reference for the presence of voltage. Of course, there are many ways to think about things that are equally true, and I don't doubt that all you have said is true. It seems to me that some of the questions about the effectiveness of skin effect could be settled by taking a piece of coax, running a sufficiently high rf current through it that it is known that there would be a measurable voltage drop along the inside of the shield, and then measuring between two points on the outside of the shield to see if that drop is measurable on the outside.

john

1152. Re: Load Z for given Zo, dB and measured Input Z.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 15:15:33 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <O3jD6.10949$u7.4057056@e3500-chi1.usenetserver.com>
Source record: 165806

Thanks for the updated program Zl_Zin, Reg. Nice work that many will appreciate.

Walt, W2DU

1153. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 15:19:16 UTC
From: 2w8ji@akorn.net
Message-ID: <3addaff9.234780513@news.accessunited.com>
Source record: 165801

On Wed, 18 Apr 2001 09:16:13 -0500, "William E. Sabin"
<sabinw@mwci.net> wrote:

>Tom,
>
>I saw your letter in May QST. Very nice work!
>
>Bill W0IYH

Thanks but I'm not sure what letter that could be, unless it is
something about PSK? I don't think I have seen my May QST yet.

73 Tom

1154. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 15:26:23 UTC
From: 2w8ji@akorn.net
Message-ID: <3addb0c0.234978783@news.accessunited.com>
Source record: 165803

On Wed, 18 Apr 2001 09:30:16 -0500, John O'Flaherty
<oflahert@toast.net> wrote:

>The voltage between two points is a simple, easily understood concept. Some of the
>shielding effect of coax, it seems to me, is due to the fact that the inner
>conductor is masked to the outside of the cable by the shield, and thus there is
>no externally available reference for the presence of voltage. Of course, there
>are many ways to think about things that are equally true, and I don't doubt that
>all you have said is true. It seems to me that some of the questions about the
>effectiveness of skin effect could be settled by taking a piece of coax, running a
>sufficiently high rf current through it that it is known that there would be a
>measurable voltage drop along the inside of the shield, and then measuring between
>two points on the outside of the shield to see if that drop is measurable on the
>outside.

Looking at current, the closest I could come to that was generating a
strong field on one side of a thin copper wall that was only a
fraction of a wavelength across.

I built a small sampling loop and used a sensitive RF voltmeter to
measure the field on the opposite side of that wall.

The field was lowest directly opposite the conductor on the opposite
side of the wall, and was maximum at the edges of the sheet. Since the
time-varying magnetic field did not pass through the sheet, we have to
assume the electric field did not.

73 Tom

1155. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 15:26:55 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ADDB23F.79D4C0BE@mwci.net>
Source record: 165802

Tom W8JI wrote:

> On Wed, 18 Apr 2001 09:16:13 -0500, "William E. Sabin"
> <sabinw@mwci.net> wrote:
>
> >Tom,
> >
> >I saw your letter in May QST. Very nice work!
> >
> >Bill W0IYH
>
> Thanks but I'm not sure what letter that could be, unless it is
> something about PSK? I don't think I have seen my May QST yet.
>
> 73 Tom

That's it.

1156. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 15:46:04 UTC
From: richardharrison@webtv.net
Message-ID: <27325-3ADDB6BC-33@storefull-111.iap.bryant.webtv.net>
Source record: 165805

Bill, W0IYH wrote:
"The common mode current on the outside of the braid is the common mode current that we usually see. It is caused by an unbalance in an antenna or by noise pickup from a local source."

I went to the new Antenna Book to see what you were talking about. My education is a half century old and we did not talk about common-mode on coax back then. Here is what I found on page 26-17:

"Current induced onto both conductors of a two-wire line is a common-mode current, since it flows in the same direction on both conductors, rather than in opposite directions as it does for transmission-line current." This is exactly as I remember from long ago.

Then: "The outer braid for a coaxial cable shields the inner conductor from such an induced current, (so far, so good) but the unwanted current on the outside braid is still called "common-mode" current." By whom? And since when? This is an outrage.
Best regards, RIchard Harrison, KB5WZI

1157. Re: Baluns for loop antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 16:01:16 UTC
From: Ross <rwa@gateway.bogons>
Message-ID: <87wv8ici43.fsf@gateway.bogons>
Source record: 165804

"Larry Gauthier" <larryg5099@chartermi.net> writes:

> The 30m loop is an equilateral triangle, with one side (the driven
> side) being fed from the bottom [...] I can easily shift the feed
> point on this 30m loop so that it is fed in the center (rather than
> the bottom) of the vertical side.

Rather than the center of the side, try 1/4 lambda (~= 7.5 meters)
down from the apex. You want a current minima at the apex to get
vertical polarization.

> [...] Does the feedpoint affect direction characteristics? I have
> not seen any diagrams on the lobes of one of these things
> yet. (there must be something in a recent QST... I'll dig through
> the indexes on the ARRL web site)

I had a look through Devoldere again last night (ON4UN, not OH4UN).
Feeding for vertical polarization brings the main lobe down very
considerably vs. feeding horizontaly. About 25 degrees vs. 60-ish.
The virtue of an inverted delta (if you have two supports!) is that
the main lobe comes down some more because the current maxima are
higher.

The pattern is bidirectional across the plane of the loop; it's about
4 dB stronger broadside than off the ends.

regards,
Ross ve6pdq

1158. Re: Need article from April 84' issue of QST.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 17:34:09 UTC
From: aduffy@sprint.ca
Message-ID: <3ADDD011.9E9946BD@sprint.ca>
Source record: 165807

Check your local library. If you know the month and year it should be pretty simple if they have that particular periodical. If not you will have to look up the topic/ title in a periodical index.

73, Tony

Scott McClements wrote:

> Looking for someone to fax / mail me a copy of an article from the April
> 84' issue of QST. I would purchase a back issue if somebody knew where I
> could pick one up as well.
>
> Thanks,
>
> Scott McClements
> yetbbwa@grove.iup.edu

1159. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 18:06:35 UTC
From: kb7qhc@home.com
Message-ID: <3addd2f0.1954579767@news.seanet.com>
Source record: 165808

On Tue, 17 Apr 2001 22:09:53 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> The wavelength of the Photon
>> is directly correlateable to the length of the path as the electron
>> winds down from one orbit to another.
>
>That's one kind of radiation but isn't RF radiation caused by
>acceleration of free electrons?

Hi Cecil,

A free electron boils off the cathode, is accelerated towards the
plate (at near light speed, the only time an electron every exceeds
what is termed "drift velocity" in a conductor) and smacks right into
it decelerating and causing heat (the dissipative Plate Resistance of
an otherwise non-dissipative metallic conductor).

Here you have a free, accelerating electron; how much radiation do you
expect from it? Heat is certainly an obvious source (as much as many
want to declaim that heat radiates).

Like I said, the usage of "accelerated charge is responsible for
radiation" is so poorly expressed that it serves more arguments than
an answer of "because" to a child's plea "why?"

In other words, this general statement is used to answer much, but to
explain nothing.

The linear acceleration is not so important as the change in direction
of current flow (another form of acceleration that is more than
obvious and yet never discussed). It is THAT change that is
significant and most writers have simply stated that ANY circuit that
exhibits an oscillation is a source of radiation. This is far more
fundamental. It allows an electron wobbling in place to the ebb and
flow of oscillation to qualify as accelerating (through the reversal
of direction, no matter how insignificant the physical distance
traversed).

73's
Richard Clark, KB7QHC

1160. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 18:16:37 UTC
From: Bart Rowlett <BHRowlett@west.raytheon.com>
Message-ID: <3ADDDA05.80930A3D@west.raytheon.com>
Source record: 165809

John O'Flaherty wrote:
>
> atkes@imap1.asu.edu wrote:
>
> > John O'Flaherty (oflahert@toast.net) wrote:
> >
> > : There would be the question of 50 volts with respect to what, wouldn't
> > : there? If the reference is with respect to the inner conductor, then that's
> > : not available for measurement, hence there's nothing for the outside of the
> > : coax to have a voltage with respect to. If you made a little hole in the
> > : braid, and brought out a tiny extension of the inner conductor, then between
> > : the braid and that extension you'd have whatever you had inside the cable,
> > : wouldn't you?
> > : On the other hand, looking at voltages _along_ the braid, those would be
> > : very small over a short distance, either inside or outside the cable,
> > : wouldn't they?
> >
> > : john
> >
> > John,
> >
> > It is not only with respect to what, but along which path. The voltage
> > difference between two points along a path is the line integral of
> > the electric field component along the path. That is essentially
> > the average electric field along the path times the path length.
> > Faraday's law tells you that if you take two different paths,
> > the voltage you will measure will be different if there is a changing
> > magnetic flux encircled by the two paths. Since antennas and transmission
> > lines nearly always have substantial magnetic fields, this whole discussion
> > of voltage differences between points is nonsense unless the path taken
> > is described. For example the voltage difference from any point on a perfect
> > conductor to any other point, via a path through the perfect conductor is
> > zero. That's because the electric field in the conductor is zero.
>
> That means, doesn't it, that there is no conduction or propagation at all through
> a perfect conductor?

That's correct. The actual energy transfer is via the electric and
magnetic fields surrounding the conductors. No energy flows within the
conductor itself since the fields are nonexistent inside. The wires in
a transmission line merely serve to guide the flow of electromagnetic
energy, somewhat analogous to the way a pipe guides the flow of
hydraulic energy.

bart
wb6hqk

1161. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 18:20:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADDDAF9.58E1A94E@IEEE.org>
Source record: 165810

Richard Clark wrote:
> The linear acceleration is not so important as the change in direction
> of current flow (another form of acceleration that is more than
> obvious and yet never discussed).

What I was questioning is your electron orbit change explaination.
Orbit changes yield predictable frequencies which are not HF RF.
Acceleration (both positive and negative) of *free* electrons is
different from quantum orbit changes since they are *free*
electrons. Were you joking when you made that orbit statement?
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1162. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 18:29:23 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADDDD03.E20FE57F@IEEE.org>
Source record: 165811

Richard Harrison wrote:
> Then: "The outer braid for a coaxial cable shields the inner conductor
> from such an induced current, (so far, so good) but the unwanted current
> on the outside braid is still called "common-mode" current." By whom?
> And since when? This is an outrage.

It's been recognized that it doesn't take two conductors for common-mode currents to exist - one conductor is sufficient. Consider a vertical made out of ladder-line open at the top. I think you would say that the current flowing in phase in the same direction in each wire is common-mode. Short the ends together and the change is negligible. The currents are still common-mode. Eliminate one wire and the change is negligible. Isn't the current still common-mode?
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1163. Re: New interesting Weather Satellite Imaging & Astronomy site.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 18:44:28 UTC
From: Patrick Croft <mai@iquest.net>
Message-ID: <3ADDE08C.13D98809@iquest.net>
Source record: 165812

Spammed to dozens of newsgroups

WSI wrote:
>
> New interesting Weather Satellite Imaging & Astronomy site.
>
> http://www.skiv100.co.uk
>
> Build your own Weather Satellite Imaging System.
>
> What you need to get started.
>
> Astronomy Information.
>
> Asteroids
>
> Black Holes
>
> What is a Light Year?
>
> Supernova?
>
> What is Escape Velocity?
>
> Latest Images.
>
> http://www.skiv100.co.uk

1164. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 19:06:36 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ADDE5BC.9D06E1E5@toast.net>
Source record: 165813

Bart Rowlett wrote:

> John O'Flaherty wrote:
> >
> > atkes@imap1.asu.edu wrote:
> >
> > > John O'Flaherty (oflahert@toast.net) wrote:
> > >
> > > : There would be the question of 50 volts with respect to what, wouldn't
> > > : there? If the reference is with respect to the inner conductor, then that's
> > > : not available for measurement, hence there's nothing for the outside of the
> > > : coax to have a voltage with respect to. If you made a little hole in the
> > > : braid, and brought out a tiny extension of the inner conductor, then between
> > > : the braid and that extension you'd have whatever you had inside the cable,
> > > : wouldn't you?
> > > : On the other hand, looking at voltages _along_ the braid, those would be
> > > : very small over a short distance, either inside or outside the cable,
> > > : wouldn't they?
> > >
> > > : john
> > >
> > > John,
> > >
> > > It is not only with respect to what, but along which path. The voltage
> > > difference between two points along a path is the line integral of
> > > the electric field component along the path. That is essentially
> > > the average electric field along the path times the path length.
> > > Faraday's law tells you that if you take two different paths,
> > > the voltage you will measure will be different if there is a changing
> > > magnetic flux encircled by the two paths. Since antennas and transmission
> > > lines nearly always have substantial magnetic fields, this whole discussion
> > > of voltage differences between points is nonsense unless the path taken
> > > is described. For example the voltage difference from any point on a perfect
> > > conductor to any other point, via a path through the perfect conductor is
> > > zero. That's because the electric field in the conductor is zero.
> >
> > That means, doesn't it, that there is no conduction or propagation at all through
> > a perfect conductor?
>
> That's correct. The actual energy transfer is via the electric and
> magnetic fields surrounding the conductors. No energy flows within the
> conductor itself since the fields are nonexistent inside. The wires in
> a transmission line merely serve to guide the flow of electromagnetic
> energy, somewhat analogous to the way a pipe guides the flow of

> hydraulic energy.

That seems too extensive a statement... with dc, and with ac at some depth depending on frequency, there is conduction, at least in conductors that are less than perfect, no? But with a perfect conductor, it seems that it should be impossible to even start a current. On the other hand, I've heard of superconductors with almost eternal circulating currents- I guess they must have been started sometime.

john

1165. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 19:13:35 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ADDE75E.1066F684@toast.net>
Source record: 165814

W6RCecilA wrote:

> Richard Harrison wrote:
> > Then: "The outer braid for a coaxial cable shields the inner conductor
> > from such an induced current, (so far, so good) but the unwanted current
> > on the outside braid is still called "common-mode" current." By whom?
> > And since when? This is an outrage.
>
> It's been recognized that it doesn't take two conductors for common-mode
> currents to exist - one conductor is sufficient. Consider a vertical made
> out of ladder-line open at the top. I think you would say that the current
> flowing in phase in the same direction in each wire is common-mode. Short
> the ends together and the change is negligible. The currents are still
> common-mode. Eliminate one wire and the change is negligible. Isn't the
> current still common-mode?

It was the two wires that there could be a difference between that made a
differential mode current possible. So a common mode current would be
identical currents in the two, that is, a current that wasn't differential.
Without the other wire, it isn't either common or differential, it's just
current.
In fact, if you could induce a current in the outer conductor without inducing
it in the inner conductor, then it would be differential, not common, and the
shielding wouldn't work.

john

1166. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 19:35:49 UTC
From: richardharrison@webtv.net
Message-ID: <29311-3ADDEC95-44@storefull-113.iap.bryant.webtv.net>
Source record: 165815

Cecil, W6RCA wrote:
"Eliminate one wire (leaving only one wire alone) and the change is negligible. Isn`t the current still common-mode?"

I don`t think so. "Com" means "with" in Portuguese. Com comes from the same ancient root as common. "Com" means not alone.

The English definition of "common" is:
"belonging equally to, or shared alike by two or more or all in question." "Common" is one of the oldest and diverse words with roots in ancient Latin, French, German, English, etc. and they share the same meaning in common.

Best regards, Richard Harrison, KB5WZI

1167. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 19:51:43 UTC
From: kb7qhc@home.com
Message-ID: <3addee1c.1961535829@news.seanet.com>
Source record: 165816

On Wed, 18 Apr 2001 10:46:04 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Bill, W0IYH wrote:
>"The common mode current on the outside of the braid is the common mode
>current that we usually see. It is caused by an unbalance in an antenna
>or by noise pickup from a local source."
>
>I went to the new Antenna Book to see what you were talking about. My
>education is a half century old and we did not talk about common-mode on
>coax back then. Here is what I found on page 26-17:
>
>"Current induced onto both conductors of a two-wire line is a
>common-mode current, since it flows in the same direction on both
>conductors, rather than in opposite directions as it does for
>transmission-line current." This is exactly as I remember from long ago.
>
>Then: "The outer braid for a coaxial cable shields the inner conductor
>from such an induced current, (so far, so good) but the unwanted current
>on the outside braid is still called "common-mode" current." By whom?
>And since when? This is an outrage.
>Best regards, RIchard Harrison, KB5WZI

Hi Richard,

There is far more comprehensive examination and discussion of Common Mode issues in those texts that are specifically related to the control of noise and the application of shields (the discussion of shields in this group hardly touches the surface).

Common Mode is properly identified in your rememberance of so long ago. The second statement that so confounds you is simply an observation of the effect from a limited perspective (that is, the statement is incomplete) more commonly discussed in this forum and often a source of considerable grief for just this problem of omission.

Common Mode, by definition, is that voltage or current referenced to Common (Duh!) and we use Ground in that regard. If the current does not flow to Common (Ground) it is not Common Mode current. If Ground is not your Common, you must reveal what you call Common, and current most flow to it to qualify.

73's
Richard Clark, KB7QHC

1168. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 19:55:21 UTC
From: kb7qhc@home.com
Message-ID: <3adef06a.1962125006@news.seanet.com>
Source record: 165817

On Wed, 18 Apr 2001 13:20:41 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> The linear acceleration is not so important as the change in direction
>> of current flow (another form of acceleration that is more than
>> obvious and yet never discussed).
>
>What I was questioning is your electron orbit change explaination.
>Orbit changes yield predictable frequencies which are not HF RF.
>Acceleration (both positive and negative) of *free* electrons is
>different from quantum orbit changes since they are *free*
>electrons. Were you joking when you made that orbit statement?

Hi Cecil,

Joking? Moi?

Research de Broglie insofar as the relativistic relationship of Photon
radiation. Orbit changes are THE source of Photons.

Free electrons are your choice, not a mandate of radiation.

73's
Richard Clark, KB7QHC

1169. Re: antenna wire

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 20:51:18 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3ADDFE45.2ABFF56C@netdoor.com>
Source record: 165818

Nobody sells nothing cheap!! Check out the RadioWorks for wire and
www.pixmann2@yahoo.com for coax.

Gary Raney wrote:

> I getting ready to put up a major wire antenna farm, but I don't have
> any spare wire. Does anyone know of a retailer that sells good antenna
> wire for cheap?
>
> 73 Gary KM5TY

1170. Speaking of antennas.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 21:02:57 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3ADE0101.27049E20@netdoor.com>
Source record: 165719

Anybody on this group ever used coax for the wire on a dipole and if so, was it worth the trouble and expense? Thanks for your experiences or hypothesis / hyposethi / hypothesis's / best guess! I'm thinking of putting up RG8-X for each leg of the dipole and fed with RG8-x+. Any suggestions on how to solder this heavy devil,like shield only or shield AND center conductor together?

Butch Magee KF5DE

1171. Re: Speaking of antennas.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 21:49:02 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <iZnD6.44326$5E3.14392283@news3.rdc1.on.home.com>
Source record: 165720

you could always make a coaxial dipole ... which is a little bit more
complicated ... rg-8x works best ... but rg-174 is ok (if thats all ya got)
ya may want to use a rope (nylon) to suspend the dipole from

--
Rob St.Denis

"Butch Magee" <lynyrd@netdoor.com> wrote in message
news:3ADE0101.27049E20@netdoor.com...
> Anybody on this group ever used coax for the wire on a dipole and if so,
> was it worth the trouble and expense? Thanks for your experiences or
> hypothesis / hyposethi / hypothesis's / best guess! I'm thinking of
> putting up RG8-X for each leg of the dipole and fed with RG8-x+. Any
> suggestions on how to solder this heavy devil,like shield only or shield
> AND center conductor together?
>
> Butch Magee KF5DE
>

1172. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 21:52:21 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADE0C95.90118A9A@IEEE.org>
Source record: 165721

Richard Clark wrote:
> Research de Broglie insofar as the relativistic relationship of Photon
> radiation. Orbit changes are THE source of Photons.

Orbit changes in the same atom or same-orbit exchanges between atoms?
--
http://www.mindspring.com/~w6rca

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1173. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 21:57:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADE0DD1.FEE6284B@IEEE.org>
Source record: 165722

Richard Harrison wrote:
>
> Cecil, W6RCA wrote:
> "Eliminate one wire (leaving only one wire alone) and the change is
> negligible. Isn`t the current still common-mode?"
>
> I don`t think so. "Com" means "with" in Portuguese. Com comes from the
> same ancient root as common. "Com" means not alone.

Common-mode currents are not what makes a dipole radiate? Common-mode currents are what makes ladder-line radiate. If you split the two conductors of ladder-line at 90 degrees to each other, the differential currents become in phase and radiate.
--
http://www.mindspring.com/~w6rca

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1174. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 22:07:58 UTC
From: kb7qhc@home.com
Message-ID: <3adf0e17.1969722761@news.seanet.com>
Source record: 165723

On Wed, 18 Apr 2001 16:52:21 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> Research de Broglie insofar as the relativistic relationship of Photon
>> radiation. Orbit changes are THE source of Photons.
>
>Orbit changes in the same atom or same-orbit exchanges between atoms?

Hi Cecil,

Now you are getting beyond the simple discussion that would be found
in the literature. However, molecules that support conduction have a
common orbit called the conduction band. In reality this conduction
band is a shared orbit of many, many allowable sub-orbits that could
in fact respond to my question to you about the size of your atom.

In other words (and this is strictly conjecture - an invention, or
hallucination on my own part), a metallic conductor of considerable
length could support the de Broglie wavelength and you could find a
path length of 80M in this molecule (the metallic antenna element).
The only consideration is that the electron moves to a lower orbit in
a spiral of 80 meters length. Again, this hypothesis is off the wall,
but may serve.

73's
Richard Clark, KB7QHC

1175. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 22:13:47 UTC
From: kb7qhc@home.com
Message-ID: <3ae0108e.1970353308@news.seanet.com>
Source record: 165724

On Wed, 18 Apr 2001 16:57:37 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Harrison wrote:
>>
>> Cecil, W6RCA wrote:
>> "Eliminate one wire (leaving only one wire alone) and the change is
>> negligible. Isn`t the current still common-mode?"
>>
>> I don`t think so. "Com" means "with" in Portuguese. Com comes from the
>> same ancient root as common. "Com" means not alone.
>
>Common-mode currents are not what makes a dipole radiate? Common-mode
>currents are what makes ladder-line radiate. If you split the two
>conductors of ladder-line at 90 degrees to each other, the differential
>currents become in phase and radiate.

Hi Cecil,

If the dipole exhibits common mode currents, then both ends are at the
same potential (WRT Common) and the currents are flowing against each
other in that pair.

When the currents join (in a parallel path) at the feed point down the
transmission line, then sure, radiation (there is no bucking of
fields).

73's
Richard Clark, KB7QHC

1176. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 22:31:06 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3ADE15AA.C699B101@eznec.com>
Source record: 165725

"Common mode" current is often more technically termed "even mode", and you'll often see it in professional literature by this name. For analytical convenience, the currents I1 and I2 on two conductors are often combined into common, or even mode current ((I1 + I2)/2) and differential, or odd mode current ((I1 - I2)/2). These terms are commonly used by working engineers, regardless of their English origins (just as "ground" has a technical meaning beyond the literal English word). When dealing with radiation, only the common mode current needs to be considered (providing the conductors are physically close to each other), since the fields from the differential contribution cancel. The distant field from any currents I1 and I2 on close, parallel, identical conductors is the same as it would be if only the common mode current were flowing on both conductors.

If one regards the shield current to be the sum of the currents on the inside and the outside of the coax, differential and common mode currents can be calculated using the above equations (with I1 as the center conductor current and I2 the shield current or vice-versa). Because the current on the inside of the shield equals the current on the center conductor, these components don't contribute to the common mode current -- only the current on the outside of the shield does. The common mode current calculated using the above equation is 1/2 the current on the outside of the cable. The field radiated from the coax is the same as if this common mode current was flowing on two conductors, or twice the common mode current was flowing on the outside of the shield. In amateur discussions, the current on the outside of the cable is called the "common mode current", even though it's numerically twice the common mode current calculated from the definitions I'm familiar with. The fact is that the current on the outside of the shield of a coax cable creates the same amount of radiation as if it were a common mode current distributed between the two conductors of a parallel-wire feedine, so "common mode current" is appropriate and descriptive.

Roy Lewallen, W7EL

Richard Harrison wrote:
>
> Cecil, W6RCA wrote:
> "Eliminate one wire (leaving only one wire alone) and the change is
> negligible. Isn`t the current still common-mode?"
>
> I don`t think so. "Com" means "with" in Portuguese. Com comes from the
> same ancient root as common. "Com" means not alone.
>
> The English definition of "common" is:

> "belonging equally to, or shared alike by two or more or all in
> question." "Common" is one of the oldest and diverse words with roots in
> ancient Latin, French, German, English, etc. and they share the same
> meaning in common.
>
> Best regards, Richard Harrison, KB5WZI

1177. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 22:35:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADE169A.5040F621@IEEE.org>
Source record: 165727

Richard Clark wrote:
> In other words (and this is strictly conjecture - an invention, or
> hallucination on my own part), a metallic conductor of considerable
> length could support the de Broglie wavelength and you could find a
> path length of 80M in this molecule (the metallic antenna element).
> The only consideration is that the electron moves to a lower orbit in
> a spiral of 80 meters length. Again, this hypothesis is off the wall,
> but may serve.

It certainly served for the laugh of the day and if I ever encounter
such a molecule, I will certainly give it an extremely wide berth. :-)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1178. Re: Speaking of antennas.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 22:38:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3ADE177A.E3EECAC2@eznec.com>
Source record: 165726

I've used RG-174 for a shortened (quarter wavelength) dipole to increase efficiency and bandwidth. I connected the center and outside conductors together, so it was just a convenient source of relatively large diameter wire. It behaves just like a plain wire with the diameter of the shield. If you use it for a half wavelength dipole, which is already very efficient, it won't improve the efficiency significantly. You'll get some increase in bandwidth over an antenna made with smaller wire. The EZNEC demo program (http://eznec.com) can quickly show you how much difference it'll make so you can decide if it's worthwhile. There are other ways to make the effective wire diameter larger, like using two or more parallel or fanned wires, which would be lighter weight and less expensive.

Roy Lewallen, W7EL

Butch Magee wrote:
>
> Anybody on this group ever used coax for the wire on a dipole and if so,
> was it worth the trouble and expense? Thanks for your experiences or
> hypothesis / hyposethi / hypothesis's / best guess! I'm thinking of
> putting up RG8-X for each leg of the dipole and fed with RG8-x+. Any
> suggestions on how to solder this heavy devil,like shield only or shield
> AND center conductor together?
>
> Butch Magee KF5DE

1179. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 22:51:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3ADE1A66.6D2C5A90@eznec.com>
Source record: 165728

As Cecil alludes to, differential currents might or might not radiate, depending on what conductors they're flowing on. What doesn't radiate are differential *fields* coming from nearly the same location. For that matter, we can change common mode currents to differential mode and vice-versa simply by redefining what we consider to be the positive direction of one of the currents. We can define common mode and differential currents for any two conductors, even ones separated by miles or light-years, although this would be an exercise more for a philosopher than an engineer. So be a little careful in declaring what common and differential mode currents will or won't do. Always remember that they're simply a mathematical convenience, and not actual currents on conductors (even though sometimes, as on the outside of coax, the actual and common mode currents are conveniently related). And it's actual currents, not mathematically contrived ones, which create fields.

Roy Lewallen, W7EL

W6RCecilA wrote:
>
> Richard Harrison wrote:
> >
> > Cecil, W6RCA wrote:
> > "Eliminate one wire (leaving only one wire alone) and the change is
> > negligible. Isn`t the current still common-mode?"
> >
> > I don`t think so. "Com" means "with" in Portuguese. Com comes from the
> > same ancient root as common. "Com" means not alone.
>
> Common-mode currents are not what makes a dipole radiate? Common-mode
> currents are what makes ladder-line radiate. If you split the two
> conductors of ladder-line at 90 degrees to each other, the differential
> currents become in phase and radiate.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1180. Re: Shielding from computer RFI

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-18 22:52:16 UTC
From: BadaBing <badabing@home.com>
Message-ID: <AUoD6.13763$B22.3002144@news1.rdc2.pa.home.com>
Source record: 165729

the PC noise is probably coming in on your AC line. Don't know how the mfj
will help that.

"Floyd Sense" <sentek@sprintmail.com> wrote in message
news:s_5D6.1542$vI2.112384@newsread2.prod.itd.earthlink.net...
> Take a look at the MFJ 1026 noise canceling unit. It works pretty well on
> PC generated noise.
>
> K8AC
> Floyd Sense - Angier, NC
> "Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
> news:3ADCC198.53D59A55@cticonsulting.net...
> > What are some techniques/products to help reduce interference caused by
> > computers in the same room as the radio and diminishing reception? What
> > computer components tend to be major culprits? What can I do to
> > reduce/eliminate the problem? I would like to use the computer to
> > decode some modes, so shutting off is not an option. Also, do laptops
> > tend to cause more or less RFI?
> > Thanks
> >
>
>

1181. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 01:12:50 UTC
From: Bart Rowlett <BHRowlett@west.raytheon.com>
Message-ID: <3ADE3B92.1A3D32E@west.raytheon.com>
Source record: 165730

John O'Flaherty wrote:
>
> Bart Rowlett wrote:
>
> > John O'Flaherty wrote:
> > >
[deleted for brevity]

> > > That means, doesn't it, that there is no conduction or propagation at all through
> > > a perfect conductor?
> >
> > That's correct. The actual energy transfer is via the electric and
> > magnetic fields surrounding the conductors. No energy flows within the
> > conductor itself since the fields are nonexistent inside. The wires in
> > a transmission line merely serve to guide the flow of electromagnetic
> > energy, somewhat analogous to the way a pipe guides the flow of
> > hydraulic energy.
>
> That seems too extensive a statement... with dc, and with ac at some depth depending on
> frequency, there is conduction, at least in conductors that are less than perfect, no?

Perfect conductors don't really exist and even superconductors have
finite current density at the surface. In most real conductors of the
sort used in RF circuitry, the fields inside the conductor are
negligible, or at least small. The so called internal inductance of a
wire represents the magnetic energy stored within the conductor as a
result of the current penetrating below the surface. Detailed analysis
of the electric and magnetic fields which do penetrate the surface
show a net energy flow (Poynting Vector) radially inward which
represents the energy converted to heat through resistive (I^2 * R)
losses.

> But with a perfect conductor, it seems that it should be impossible to even start a
> current.

Not at all.

> On the other hand, I've heard of superconductors with almost eternal
> circulating currents- I guess they must have been started sometime.

One of the standard way to start the current flowing in a
superconducting ring is to externally apply a magnetic field while the
ring is above the critical temperature. The electrical time constant
(L/R) is very much shorter than the thermal time constant and magnetic
equilibrium is obtained before the assembly is cooled to the critical
temperature. Once the ring becomes superconducting, the magnetic

field becomes 'trapped' and the external field can be removed. Removing the external field will induce a current in the ring which will result in the total magnetic flux passing through the ring to be essentially constant as long as the conditions necessary for superconductivity are maintained.

Turning the contraption off is simply a matter of carefully allowing the temperature to rise above the critical temperature. Enough thermal mass must be provided to dissipate the stored magnetic energy without physically destroying the typically delicate coil of superconductor. Often the entire superconducting wire is 'insulated' by casting it into a block of copper.

bart
wb6hqk

1182. Looking for 4El 5band Quad maybe 6El anyout there?????

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 01:37:41 UTC
From: Jack <poster@gate.net>
Message-ID: <3ADE4165.2DAA5904@gate.net>
Source record: 165732

Anyone using a 6El 5band Quad out there??????

1183. Anyone ever make a wire beam like Giovanni makes

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 01:44:57 UTC
From: Jack <poster@gate.net>
Message-ID: <3ADE4319.8265C07A@gate.net>
Source record: 165731

It looks like a Kite laying horizontal. Has wire for elements.

Jack
wb4roy

1184. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 02:09:04 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <v1gsdtcg95v9bfjve3h881dvb8ktbah5v0@4ax.com>
Source record: 165733

On Wed, 18 Apr 2001 15:51:18 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

> We can define common mode and
>differential currents for any two conductors, even ones separated by
>miles or light-years, although this would be an exercise more for a
>philosopher than an engineer. So be a little careful in declaring what
>common and differential mode currents will or won't do. Always remember

>that they're simply a mathematical convenience, and not actual currents
>on conductors (even though sometimes, as on the outside of coax, the
>actual and common mode currents are conveniently related).

Hi Roy,

If I read this correctly you maintain that Common Mode current is
another academic fiction or that it presents itself grudgingly and
examples only conform to the definition by coincidence.

73's
Richard Clark, KB7QHC

1185. Re: F6KEH resources site renewed ! Visit it !

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 02:17:32 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <fiisdtc4jq0n8vod5ol97rquparnpmjsm4@4ax.com>
Source record: 165734

On Wed, 18 Apr 2001 14:32:16 +0200, "F5lcy" <f5lcy@wanadoo.fr> wrote:

>F6KEH amateur radio resouces site has been totally renewed !
>You could find now and in the future :
>- new links of the month
>- new headings
>- language of sites
>
>Site in french, english and spanish monthly updated.
>
>Don't hesitate visit
>http://f6keh.free.fr/index_r
>
>

Hi OM,

Nice pages. Especially the Military equipment manuals links.

73's
Richard Clark, KB7QHC

1186. Re: Speaking of antennas.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 02:37:20 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3ADE513B.4060407@aol.com>
Source record: 165735

It will work just fine. I was privy to about 200 feet of "free" used cable TV coax(given me when I got the cable modem), which I put to just such a use (a couple of coaxial verticals for 10 and 15 meters and a 40 meter dipole). Shack RG-58 is also better as a dipole element than a feedline....as my Elmer taught it!

I would NOT buy coax for use as a plain dipole. There was not enough bandwidth difference for my HF rig to notice, certainly not worth an extra expense over #14 or #12 wire. If you have cable TV being installed in your neighborhood, stop and ask. Its good enough to use for the antenna elements, and they are installing new wire in our area to support internet connections. Odds are you can strike a deal for "garbage" pretty easily.

If you already have the coax, the trick is to prune to resonance in small clips. If you take off too much, you will wind up splicing more wire back on.

I peeled back the shield and soldered it too the center conductor for the dipole(four points, the far ends and the two ends in the center). For the coaxial dipoles, I striped about 2 inches of shield from the midpoint and soldered the shield to the center conductor at only two points(far end and far end side, fed with a coiled coax choke balun. A 1:1 SWR was pretty easy to get on all three antennas.

The dipole came down in a thunderstorm(the tree branch was too small), and I replaced it with a multiband dipole for 80-40-20(of #14 flexweave). The coax dipole had better bandwidth, but it was only a single band, so its not a good comparison.

If the coax was cheap(i.e. free), go for it.

73,
Keith, W4KAZ

1187. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 04:37:55 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3ADE6BA3.A576151F@eznec.com>
Source record: 165736

In my staid, literal world, no current, including common mode, "presents itself", grudgingly or otherwise. So I don't think that's what I meant. But I'm not sure. . .

Common and differential mode currents, voltages, and impedances are very useful in visualizing, understanding, and quantifying a number of phenomena. But like other tools, they can be misunderstood and misused by people who aren't aware of just what they are and what they mean.

Roy Lewallen, W7EL

Richard Clark wrote:
>
> On Wed, 18 Apr 2001 15:51:18 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
> > We can define common mode and
> >differential currents for any two conductors, even ones separated by
> >miles or light-years, although this would be an exercise more for a
> >philosopher than an engineer. So be a little careful in declaring what
> >common and differential mode currents will or won't do. Always remember
>
> >that they're simply a mathematical convenience, and not actual currents
> >on conductors (even though sometimes, as on the outside of coax, the
> >actual and common mode currents are conveniently related).
>
> Hi Roy,
>
> If I read this correctly you maintain that Common Mode current is
> another academic fiction or that it presents itself grudgingly and
> examples only conform to the definition by coincidence.
>
> 73's
> Richard Clark, KB7QHC

1188. Re: Roof mounf for TA-33-D

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 05:41:35 UTC
From: Jim Swenson <jswenson@nmmagic.com>
Message-ID: <hFCD6.1737$XQ.89060@news.uswest.net>
Source record: 165745

Krish,
Just be sure to anchor your tower well through the roof of the garage. I have used 12 inch long 3/8" carriage bolts to anchor through 2x6's which span a couple of rafters. Use some roof mastic around the bolt through-holes. Should work fine. Very sturdy. I've used a similar set up years. Screw the neighbors.
Jim, W7NJ

"krishna" <kkanakas@cisco.com> wrote in message
news:3ADB2BE0.39A96286@mindspring.com...
> Hi,
> I bought a used mosley TA-33-D. This is really solid aluminum.
> I am in the process of restoring it and will be using all stainless
> steel hardware and will make it shine :)
>
> My roof over the garage is about 15 feet high from the ground. I want
> to use a 5 feet roof mount tower. So this along with the antenna
> mast will be about 15+5+5 = 25 ft from the ground.
> The TA-33-D has a 12ft boom, the
> longest element is about 24ft. I live in VA, where the wind speed is
> about 70mph. This antenna has a windload of 6sqft.
> I don't want my roof ripped apart,
> after having already make the neighbours unhappy.
>
> Any pros and cons. I might have to drop the beam installation plan if it
>
> really needs a tower.
>
> Thanks for your time and advice.
>
> krish
>

1189. Re: J-pole theory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 05:43:22 UTC
From: Keith McQueen <kb7m@arrl.net>
Message-ID: <%VuD6.2122$AJ.409112@news.uswest.net>
Source record: 165737

The traditional J-Pole antenna is an end-fed half wave with a 1/4 wave matching section. Normally a half wave antenna when fed at the end has a very high impedance. The 1/4 shorted matching section converts the high impedance to 50 ohms. It is not as stated earlier a "counterpoise". The 1/2 wave section is resonant like a dipole. The only difference is that whereas the dipole is center-fed and has a low impedance, the J-Pole is end-fed and requires impedance matching. The gain of this antenna is the same as a vertical 1/2 wave dipole.

"AB2HR" <ab2hr@arrl.net> wrote in message
news:ft5rdt0hmhcn7mli441njh196fhv8hi55g@4ax.com...
> On Tue, 17 Apr 2001 21:13:15 GMT, "Allen" <wookie8u@hotmail.com>
> wrote:
>
> >I've always heard of and seen J-pole antennas for VHF and UHF. But how
do
> >they work? I understand dipoles and yagi's pretty well, but this antenna
is
> >outside of my understanding. Is the small pole a director for the larger
> >driven pole or since it is connected electrically to the larger one does
it
> >not act in this way? Any bits of explanations would be helpful and
> >appreciated.
> >
> >Thanks,
> >Allen
> >
>
> One element acts as the radiating element, the other as the
> counterpoise. It doesn't matter which is which, either way will work,
> but I usually connect the longer element to the center conductor of
> the coax, the shorter element to the shield... I just built one for a
> friend of mine for use on 2-meters, with a 3/4 wave radiator, received
> signals went from S1 to S10 (granted, the J-Pole had a 10-boot
> elevation advantage over the 1/4 wave ground plane - and in a hilly
> environment, so the signal increase was not solely due to the antenna
> design), and transmitted signals to the test station from S5 to full
> scale (30 dB over S9). Believe me, these things work - with gain, and
> are not very directional...
>
> 73 de
>
> Ray / AB2HR
>

> SysOp: The Lost Chord BBS
> 607-733-5745
> telnet: 24.95.131.236 port 6000
> http://www.geocities.com/SiliconValley/Park/9257/lostchrd.html

1190. Re: Shielding from computer RFI

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 07:07:36 UTC
From: buhr@stat.wisc.edu
Message-ID: <vbahezlmkp3.fsf@mozart.stat.wisc.edu>
Source record: 165738

Randon Loeb <rloebusenet@cticonsulting.net> writes:
>
> What are some techniques/products to help reduce interference caused by
> computers in the same room as the radio and diminishing reception?

There's a great set of radio electronics links at:

http://www.epanorama.net/radio.html

and right near the bottom, you'll see a set of links dealing with RF interference. Probably the best of the bunch is the "Dealing with Computer generated RFI/EMI" (a link to a sci.electronics.repair FAQ document at the http://www.repairfaq.org site), but the others are useful, too.

Kevin <buhr@stat.wisc.edu>

1191. Re: Looking for Ground Planes 101

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 09:04:04 UTC
From: clvancil@aol.com.spamnix
Message-ID: <20010419050404.07671.00000041@ng-fm1.aol.com>
Source record: 165739

Mark Keith wrote:

>Doesn't have to be flat. It can angle towards the ground and will give
>you a better match to 50 ohm coax. All the 2m 1/4 wave ground planes I
>make, I angle the radials downwards at about a 45 degree angle. This
>raises the impedance from the appx 35 ohms for flat level radials, up to
>about 50 ohms which is a good match to coax. Also you get a very slight
>increase in gain, but not likely very noticable in the real world. MK
>

I have an UHF antenna where the radials are set at 30 degrees is this for
better matching or by accident?

73,
Chris Vancil (KD7LRV)
"Limine fato impedito, perage fenestram"
"When fate closes a door go in through a window."
http://members.aol.com/CLVANCIL/MarsBalloon.html

1192. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 12:00:14 UTC
From: fractenna@aol.com
Message-ID: <20010419080014.29800.00000143@ng-ff1.aol.com>
Source record: 165740

>
>
>
>W6RCecilA wrote:
>>
>In any case, IMO, it
>> is too early to dismiss fractal antennas as useless.
>
>
> I don't think anyone has said they are 'useless'. They just aren't more
>efficient than other antennas, and sometimes they're clearly less,
>contrary to the bloated projections of some proponants. As I see it,
>that's the sham. They've been promoted as the find of the century.
>'Taint so.
>

Can you fill us in on where this 'claim' is made? The efficiency stuff is well documented at this point and publsihed in 1997, and so on. What do you take exception to? What is the quoted info that makes these "bogus claims"?

73
Phil
de N1ZKT

1193. Re: Load Z for given Zo, dB and measured Input Z.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 12:21:08 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bml74quo1@slb6.atl.mindspring.net>
Source record: 165741

Reg:

I second Walt's thanks.

Your programs are "gems" and the price is right.

-Peter K1PO

"Walter Maxwell" <w2du@iag.net> wrote in message
news:O3jD6.10949$u7.4057056@e3500-chi1.usenetserver.com...
> Thanks for the updated program Zl_Zin, Reg. Nice work that many will
> appreciate.
>
> Walt, W2DU
>
>
>

1194. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 12:38:20 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bmm7d$9bd$1@slb6.atl.mindspring.net>
Source record: 165742

[snip]
>
> The voltage between two points is a simple, easily understood concept.
Some of the
> shielding effect of coax, it seems to me, is due to the fact that the
inner
> conductor is masked to the outside of the cable by the shield, and thus
there is
> no externally available reference for the presence of voltage. Of course,
there
> are many ways to think about things that are equally true, and I don't
doubt that
> all you have said is true. It seems to me that some of the questions about
the
> effectiveness of skin effect could be settled by taking a piece of coax,
running a
> sufficiently high rf current through it that it is known that there would
be a
> measurable voltage drop along the inside of the shield, and then measuring
between
> two points on the outside of the shield to see if that drop is measurable
on the
> outside.
>
> john
>
[snip]

John, that voltage would be there on the outside for sure... however it is a pale imitation of the same voltage on the inside since it exists only behind the extremely high common mode impedance... which could be thousands of MegOhms, etc...

Attempting to "measure" that voltage on the outside of the shield will generally be infeasible, since there are very few instruments which could measure that voltage at such a high impedance level. The mere act of attaching the voltmeter with it's finite internal impedance would affect the outside the shield voltage by shunting away the extremely low current [femptoamps] that develops the voltage on the outside.

What everyone seems to be missing here is that the impedance at various layers of skin depths increases very rapidly and that after a few skin depths the impedance becomes impractically high to attempt any voltage measurements with "normal" instruments.

This does not mean that the voltage is not present.

In fact the "ratio" of the impedance and hence current levels a few skin depths deep to those on the "active" surface is measureable in another way as the common mode rejection of the cable. Another way of stating this "common mode rejection" is that it is the "shielding" effectiveness of the cable.

If the common mode rejection or shielding effectiveness of the cable is measureable as an "attenuation" of say 150 dB of shielding, or say 90 dB of shielding, or whatever... why then ....

the currents on the outside of the cable due to those on the inside will be "down" from those on the inside by that amount. Now those tiny currents are being "driven" by the same voltage on the outside as exists on the inside. That voltage is applied across the common mode impedance at that point which is much higher,by the ratio of 150 dB or 90 dB or whatever, than the corresponding impedances on the inside. And so...

If you attempt to measure those voltages at those multi-MegOhm impedance levels you will never be able to get an accurate or significant indication. The voltmeter simply is ineffective measuring a voltage developed by maybe femtoamps across multi-MegOhm impedances.

But the voltages are there nonetheless! And at the extremely low current levels required to develop them almost completely unobservable. Observation of them is obscured by the extremely high double or triple digit dB's of shielding effectiveness, aka common mode rejection.

-Peter K1PO

1195. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 14:03:15 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ADEF022.46E7A01F@toast.net>
Source record: 165743

"Peter O. Brackett" wrote:

> [snip]
> >
> > The voltage between two points is a simple, easily understood concept.
> Some of the
> > shielding effect of coax, it seems to me, is due to the fact that the
> inner
> > conductor is masked to the outside of the cable by the shield, and thus
> there is
> > no externally available reference for the presence of voltage. Of course,
> there
> > are many ways to think about things that are equally true, and I don't
> doubt that
> > all you have said is true. It seems to me that some of the questions about
> the
> > effectiveness of skin effect could be settled by taking a piece of coax,
> running a
> > sufficiently high rf current through it that it is known that there would
> be a
> > measurable voltage drop along the inside of the shield, and then measuring
> between
> > two points on the outside of the shield to see if that drop is measurable
> on the
> > outside.
> >
> > john
> >
> [snip]
>
> John, that voltage would be there on the outside for sure... however it is a
> pale imitation of the same voltage on the inside since it exists only behind
> the extremely high common mode impedance... which could be thousands of
> MegOhms, etc...
>
> Attempting to "measure" that voltage on the outside of the shield will
> generally be infeasible, since there are very few instruments which could
> measure that voltage at such a high impedance level. The mere act of
> attaching the voltmeter with it's finite internal impedance would affect the
> outside the shield voltage by shunting away the extremely low current
> [femptoamps] that develops the voltage on the outside.
>
> What everyone seems to be missing here is that the impedance at various
> layers of skin depths increases very rapidly and that after a few skin

> depths the impedance becomes impractically high to attempt any voltage
> measurements with "normal" instruments.
>
> This does not mean that the voltage is not present.
>
> In fact the "ratio" of the impedance and hence current levels a few skin
> depths deep to those on the "active" surface is measureable in another way
> as the common mode rejection of the cable. Another way of stating this
> "common mode rejection" is that it is the "shielding" effectiveness of the
> cable.
>
> If the common mode rejection or shielding effectiveness of the cable is
> measureable as an "attenuation" of say 150 dB of shielding, or say 90 dB of
> shielding, or whatever... why then ....
>
> the currents on the outside of the cable due to those on the inside will be
> "down" from those on the inside by that amount. Now those tiny currents are
> being "driven" by the same voltage on the outside as exists on the inside.
> That voltage is applied across the common mode impedance at that point which
> is much higher,by the ratio of 150 dB or 90 dB or whatever, than the
> corresponding impedances on the inside. And so...
>
> If you attempt to measure those voltages at those multi-MegOhm impedance
> levels you will never be able to get an accurate or significant indication.
> The voltmeter simply is ineffective measuring a voltage developed by maybe
> femtoamps across multi-MegOhm impedances.
>
> But the voltages are there nonetheless! And at the extremely low current
> levels required to develop them almost completely unobservable. Observation
> of them is obscured by the extremely high double or triple digit dB's of
> shielding effectiveness, aka common mode rejection.

Peter,
It seems to me that if the voltages can't be measured, then they are a fiction.
One that evaporates as the cable is even threatened with the meter leads. Or
when the humidity is high.

john

1196. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 14:08:44 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3ADEF16C.1661DB91@mwci.net>
Source record: 165744

Peter O. Brackett wrote:

> Attempting to "measure" that voltage on the outside of the shield will
> generally be infeasible, since there are very few instruments which could
> measure that voltage at such a high impedance level.

This is not true. If you attach a high (but finite) impedance voltmeter between two points on the inside of the braid the following will happen:

The voltmeter will draw enough current *through the thickness of the braid* that it will read the same voltage that it would read on the outside of the braid.

Repeat once again: The *thickness* of the braid is *not* an insulator just because of skin effect. It is a wonderful conductor.

Bill W0IYH

1197. Re: Speaking of antennas...thanks

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 14:39:16 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3ADEF893.D04314ED@netdoor.com>
Source record: 165746

I thank all who contributed information to me, all of it was good
information too! (translation of good...) Nothing was over my head.

Butch Magee KF5DE

Butch Magee wrote:

> Anybody on this group ever used coax for the wire on a dipole and if so,
> was it worth the trouble and expense? Thanks for your experiences or
> hypothesis / hyposethi / hypothesis's / best guess! I'm thinking of
> putting up RG8-X for each leg of the dipole and fed with RG8-x+. Any
> suggestions on how to solder this heavy devil,like shield only or shield
> AND center conductor together?
>
> Butch Magee KF5DE

1198. Re: Shielding from computer RFI

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 15:49:36 UTC
From: Floyd Sense <sentek@sprintmail.com>
Message-ID: <kODD6.996$cf6.112558@newsread2.prod.itd.earthlink.net>
Source record: 165747

Anything is possible, but my experience says it is likely NOT coming in on
the AC line. Radiation from the monitor and cable is much more common.

K8AC

"BadaBing" <badabing@home.com> wrote in message
news:AUoD6.13763$B22.3002144@news1.rdc2.pa.home.com...
> the PC noise is probably coming in on your AC line. Don't know how the mfj
> will help that.
>
> "Floyd Sense" <sentek@sprintmail.com> wrote in message
> news:s_5D6.1542$vI2.112384@newsread2.prod.itd.earthlink.net...
> > Take a look at the MFJ 1026 noise canceling unit. It works pretty well
on
> > PC generated noise.
> >
> > K8AC
> > Floyd Sense - Angier, NC
> > "Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
> > news:3ADCC198.53D59A55@cticonsulting.net...
> > > What are some techniques/products to help reduce interference caused
by
> > > computers in the same room as the radio and diminishing reception?
What
> > > computer components tend to be major culprits? What can I do to
> > > reduce/eliminate the problem? I would like to use the computer to
> > > decode some modes, so shutting off is not an option. Also, do laptops
> > > tend to cause more or less RFI?
> > > Thanks
> > >
> >
> >
>
>

1199. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 16:07:29 UTC
From: atkes@imap1.asu.edu
Message-ID: <9bn2g1$3cv$1@news.asu.edu>
Source record: 165748

John O'Flaherty (oflahert@toast.net) wrote:

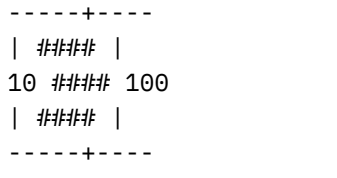
>> John,
>>
>> It is not only with respect to what, but along which path. The voltage
>> difference between two points along a path is the line integral of
>> the electric field component along the path. That is essentially
>> the average electric field along the path times the path length.
>> Faraday's law tells you that if you take two different paths,
>> the voltage you will measure will be different if there is a changing
>> magnetic flux encircled by the two paths. Since antennas and transmission
>> lines nearly always have substantial magnetic fields, this whole discussion
>> of voltage differences between points is nonsense unless the path taken
>> is described. For example the voltage difference from any point on a perfect
>> conductor to any other point, via a path through the perfect conductor is
>> zero. That's because the electric field in the conductor is zero.
>
>That means, doesn't it, that there is no conduction or propagation at
>all through a perfect conductor? There is only infinite sublime
>reflection at its impenetrable surface. There could be a steady state
>current, but it could never be established because that would require a
>change.
>

It means there is no propagation through a perfect conductor, just as
the propagation dies off exponentially with skin depth in a good
conductor. A perfect conductor is simply an extremely good conductor so
that the skin depth and loss resistance are so small that you no longer
worry about them. If it bothers you just assume an extremely good conductor.

>> If the
>> path is somewhere else, you have to specify it in general. Only if two
>> paths enclose zero net changing flux will they give the same answer.
>> For this reason, the concept of the voltage on the outside of a coaxial
>> cable is essentially useless. Note, for a coaxial cable operating in a TEM
>> or TM mode, you can specify the voltage difference between the inside of
>> the outer conductor and the outside of the inner conductor at the same point
>> along the line since any two paths in the same transverse plane will encircle
>> zero magnetic flux. This is the usual voltage between the conductors
>> specified in a coaxial cable.
>
>The voltage between two points is a simple, easily understood concept.

snip

Here is why I disagree. Imagine (or do) the following experiment.
Take two different value resistors say 10 ohms and 100 ohms. Find a
normal 50-60Hz AC transformer and solder them in series to form a loop
around the primary of the transformer. Now measure the voltage between
the two solder connections. Ascii artwork is likely to fail, but I mean
something like



where the + signs are the solder connections and the # represents the
transformer core.

When I measure this, the voltage with the test leads on the same side
of the transformer core as the 100 ohm resistor is 10 times the voltage
measured with the test leads on the 10 ohm resistor side of the
transformer core (and 180 degrees out of phase) as I expect since the
same current flows around the loop in both resistors. Notice that
depending on the path that my test leads take, my voltmeter gives
different answers for the voltage between exactly the same two solder
connections. That's why I think voltage in the presence of magnetic
fields is an easily *misunderstood* concept, while electric and
magnetic fields are simpler to understand and explain. In antennas and
transmission lines you always have magnetic fields around and you have
this poorly defined situation all the time.

73 Kevin w9cf

1200. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 16:39:42 UTC
From: kb7qhc@home.com
Message-ID: <3adf0ea5.2035400851@news.seanet.com>
Source record: 165749

On Wed, 18 Apr 2001 17:35:06 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> In other words (and this is strictly conjecture - an invention, or
>> hallucination on my own part), a metallic conductor of considerable
>> length could support the de Broglie wavelength and you could find a
>> path length of 80M in this molecule (the metallic antenna element).
>> The only consideration is that the electron moves to a lower orbit in
>> a spiral of 80 meters length. Again, this hypothesis is off the wall,
>> but may serve.
>
>It certainly served for the laugh of the day and if I ever encounter
>such a molecule, I will certainly give it an extremely wide berth. :-)

Hi Cecil,

A molecule is any number of atoms that compose a substance that is
unique (and not just a hodge-podge recipe of an atomic minestrone).

Common copper wire easily fits this. So would aluminum (both are
molecular, and both are elemental - except for the trace substances
added to harden).

All metals exhibit the property of a Conduction Band and would thus
qualify for a long path traversal for an electron to change orbits and
emit this RF Photon that so glazes over the eyes of some. It would
seem the discussion of Conduction Band is a foreign concept.

For years I have been attempting to draw this observation out. I am
somewhat at a loss to see the occasional reference to Photons so
easily expressed and then so easily abandoned when it comes time to
discuss the technical picture of this slightly askew perspective.
That it is askew is not a demerit. Such twists of perception can
bring new insight.

73's
Richard Clark, KB7QHC

1201. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 16:49:30 UTC
From: kb7qhc@home.com
Message-ID: <3ae015ad.2037200910@news.seanet.com>
Source record: 165750

On Wed, 18 Apr 2001 21:37:55 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>In my staid, literal world, no current, including common mode, "presents
>itself", grudgingly or otherwise. So I don't think that's what I meant.
>But I'm not sure. . .
>
>Common and differential mode currents, voltages, and impedances are very
>useful in visualizing, understanding, and quantifying a number of
>phenomena. But like other tools, they can be misunderstood and misused
>by people who aren't aware of just what they are and what they mean.
>
>Roy Lewallen, W7EL
>

Hi Roy,

I will stand with you full and foresquare on that last observation.
However, I am put off in the description of Common Mode as a "tool."
I have had to battle too many real instances of actual Common Mode
current flow and Common Mode potentials jacking my amplifiers to the
rail.

73's
Richard Clark, KB7QHC

1202. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 17:10:49 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADF1C19.6DF1F221@IEEE.org>
Source record: 165751

Richard Clark wrote:
> Such twists of perception can bring new insight.

Yep, I used Einstein's method of conceptually riding the waves
to gain a perspective on reflected waves.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1203. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 17:12:42 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADF1C8A.9978617@IEEE.org>
Source record: 165752

Richard Clark wrote:
> I will stand with you full and foresquare on that last observation.
> However, I am put off in the description of Common Mode as a "tool."
> I have had to battle too many real instances of actual Common Mode
> current flow and Common Mode potentials jacking my amplifiers to the
> rail.

Sometimes tools can be used to beat you over the head.
--
http://www.mindspring.com/~w6rca

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1204. Re: RF ground issue: blown out of proportion?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 18:06:08 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3ADF2910.64@wt.net>
Source record: 165753
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

Jason Hsu wrote:
>
> WARNING: This post may be offensive to the RF ground fans.
>
> Conventional wisdom says that ALL unbalanced antennas require an RF ground (not
> to be confused with the lightning ground or electrical safety ground). I can't
> help but wonder if this issue has been blown out of proportion. I now am
> wondering if an RF ground/counterpoise is not as necessary as people think for
> vertical antennas.
>
> My observations:
> 1. With my portable-instead-of-mobile DK3 Screwdriver antenna on the patio of
> my ground floor apartment, I have not had RF hot knobs (or any RFI, even with a
> fluorescent lamp inside just 3 feet away and a TV and VCR inside just 6 feet
> away) even at full power (30-50W on the wattmeter with SSB, which would
> probably be 60W-100W PEP).
> 2. The same applies for the borrowed Hamsticks on the patio (and the MINIMAL
> radial system was inferior to the 64" by 72" aluminum foil attic insulation I
> now use for a ground plane).
> 3. The only time I ever had hot RF knobs was when I used a slinky DIPOLE
> antenna indoors with high power. (NOTE: Slinky antennas BLOW CHUNKS! They
> perform terribly, and they are VERY awkward to set up due to the multiple
> supports needed.)

For a slinky to really work good, it needs some capacitive end loading
with straight wires or hats. Using a coil the whole antenna is not a
good idea.

> 4. Even at high power, I only encountered RFI with INDOOR antennas (which
> could cause RFI even at QRP levels). In the case of the slinky dummy load,
> plugging the lamp into an RF filter solved the problem. In the case of the
> wire antenna strung around the apartment, I expected and received RFI galore.
> 5. Having multiple pairs of 1/4 wavelength counterpoise wires far enough apart
> to avoid mutual coupling just isn't practical.

Having RFI problems or the lack of, doesn't really prove you don't need
a good rf ground under a vertical. The main job is to act as the lower
half of the antenna, and to reduce ground losses below the antenna. You
can have a load of ground loss with a vertical and still have no RFI
problems. With a physically short mobile vertical, the radial system
would be critical to ensure low ground losses.
>
> Additional thoughts:
> 1. An RF ground may still be necessary for wire antennas connected directly to

> the tuner/transceiver.

Sure, but I wouldn't want to operate that way.

> 2. An RF ground may still be necessary for someone using an amplifier. Of
> course, someone with an amplifier either operates mobile (and can use the
> chassis for an RF ground) or has a yard at his/her disposal and has plenty of
> leeway.

Nope. An amplifier will amplify any defects in your system and make it "look" like you might need an shack rf ground, but the real problem is still "properly fixed" by finding the problem with the antenna/feedline. Or reducing the fundimental overload in your case. An rf ground at the rig is a bandaid that doesn't even work most of the time. In your case the RFI is fundemental overload from having the antenna in the house with you. I still don't use a shack rf ground even when I run an amp. Don't need it. And I've had times when using the ground made things worse. I can get on any band where my antenna/feedline is proper, and crank my henry to the limit and I still don't have rf problems. Of course, if you had an elevated GP with an insufficient radial system, and this caused a lack of decoupling to the feedline, then yes, improving "that" RF ground at the antenna will help. But you don't have this problem too often with a ground mount vertical, even with no radials, if you have a decent ground connection at the base. But if you did, again the rf ground is improved at the antenna, not the shack. You would want to improve the decoupling from the antenna to the feedline. Hoping to bypass common mode currents to ground at the rig is not the answer. MK

--
http://web.wt.net/~nm5k

1205. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 18:46:01 UTC
From: atkes@imap1.asu.edu
Message-ID: <9bnbp9$4dg$1@news.asu.edu>
Source record: 165754

W6RCecilA (Cecil.A.Moore@IEEE.org) wrote:
: Richard Clark wrote:
: > The linear acceleration is not so important as the change in direction
: > of current flow (another form of acceleration that is more than
: > obvious and yet never discussed).

: What I was questioning is your electron orbit change explaination.
: Orbit changes yield predictable frequencies which are not HF RF.
: Acceleration (both positive and negative) of *free* electrons is
: different from quantum orbit changes since they are *free*
: electrons. Were you joking when you made that orbit statement?
: --
: http://www.mindspring.com/~w6rca

Cecil,

You are missing the difference between spontaneous emission and a
driven system.

A macroscopic system that better explains what is going on is a speaker
like the ones on your stereo system. The natural resonance frequencies
of the speaker are typically designed to be far away from the frequency
range where the speaker is used. It is driven at the audio frequencies
that you hear. The fact that these are far away from resonant
frequencies helps make the response flat and the speaker can radiate
sound just fine at these non resonant frequencies.

Similarly, the dielectric permittivity of insulators is governed by the
polarizability of the atoms. The reason that the permittivity is nearly
constant at rf frequencies is because, like the speaker, the natural
resonant frequencies are far away. There is no problem with the system
responding to the applied electric field. Nearly any quantum mechanics
book will show how to calculate the static polarizability of the
hydrogen atom (or you can see a numerical example in my notes at
http://fermi.la.asu.edu/Schroedinger/html/Schroedinger.html) The
polarizability times the electric field is the induced electric
dipole. The permittivity epsilon is given by (epsilon - epsilon_0) E =
P = dipole moment per unit volume. So it is the shift in the electron
density that gives the electronic part of the dielectric permitivitty.

To say it another way, just because a piece of wire has a lowest
natural radiation wavelength given by twice its length, doesn't mean
that radar of lower frequency won't also scatter from it. Simiilarly,
molecules respond to all frequencies, they just respond to frequencies
near their natural resonances more.

Conductors are a little harder, but again, there is no need for there to be a natural resonance for the material to respond and radiate when driven by any particular frequency.

73 Kevin w9cf

1206. Measure Zo of unknown line using your antenna analyser.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 18:54:53 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bncn0$rv0$1@uranium.btinternet.com>
Source record: 165755

The open circuit and short circuit input impedances of short lengths of transmission line when line-length is not very close to a resonance are almost pure reactances.

At frequencies where the line length is exactly an odd-number of 1/8 wavelengths long, that's as far away from resonance as you can get, the short-circuit and open-circuit input reactances are of opposite sign and of equal magitude. Very conveniently they are also equal in magnitude to line Zo.

Connect your antenna analyzer to one end of the line on the Z range. Start at a very low frequency and find the first frequency at which o/c and s/c input impedance magnitudes are equal. At that frequency the line is 1/8th wavelength long and the indicated impedance is line Zo.

For a check find the next higher frequency at which the o/c and s/c impedances are equal in magnitude. If the antenna analyser does not indicate the sign of the reactance, don't worry - you don't need to know. The line is 3/8ths wavelength long at this next higher frequency. At the next frequency it will be 5/8ths, etc.

If the measured Zo varies a little with frequency then measurements at the lower frequencies are probably more accurate because the measuring instrument is probably more accurate.

If the other end of the line is not conveniently near to the measuring end engage the services of a friend to do the open and short circuiting operation. Saves a lot of walking or climbing. But the line need not be stretched out straight. Just spread it around a lot and, if it is twin line, suspend it clear of the ground.

Knowing the 1/8th-wavelengh frequencies, the velocity factor can be found by measuring the actual length of the line in metres.

--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

1207. Re: RF ground issue: blown out of proportion?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 19:20:27 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <%TGD6.10856$Ce4.971569@news1.rdc1.ct.home.com>
Source record: 165756
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

And, you can some really nice SWR figures with a poor radial system thanks to excessive resistive ground loses as well.

None of your observations adress the issues of system resistive ground losses. It is not so much a matter of how much RF is entering the shack, but rather how much RF is lost heating soil.

Pete

"Jason Hsu" <jhsu-no-spam@cotse.com> wrote in message news:987691012.3adef804a93fa@webmail.cotse.com...
> WARNING: This post may be offensive to the RF ground fans.
>
> Conventional wisdom says that ALL unbalanced antennas require an RF ground (not
> to be confused with the lightning ground or electrical safety ground). I can't
> help but wonder if this issue has been blown out of proportion. I now am
> wondering if an RF ground/counterpoise is not as necessary as people think for
> vertical antennas.
>
> My observations:
> 1. With my portable-instead-of-mobile DK3 Screwdriver antenna on the patio of
> my ground floor apartment, I have not had RF hot knobs (or any RFI, even with a
> fluorescent lamp inside just 3 feet away and a TV and VCR inside just 6 feet
> away) even at full power (30-50W on the wattmeter with SSB, which would
> probably be 60W-100W PEP).
> 2. The same applies for the borrowed Hamsticks on the patio (and the MINIMAL
> radial system was inferior to the 64" by 72" aluminum foil attic insulation I
> now use for a ground plane).
> 3. The only time I ever had hot RF knobs was when I used a slinky DIPOLE
> antenna indoors with high power. (NOTE: Slinky antennas BLOW CHUNKS! They
> perform terribly, and they are VERY awkward to set up due to the multiple
> supports needed.)
> 4. Even at high power, I only encountered RFI with INDOOR antennas (which
> could cause RFI even at QRP levels). In the case of the slinky dummy load,

> plugging the lamp into an RF filter solved the problem. In the case of
the
> wire antenna strung around the apartment, I expected and received RFI
galore.
> 5. Having multiple pairs of 1/4 wavelength counterpoise wires far enough
apart
> to avoid mutual coupling just isn't practical.
>
> Additional thoughts:
> 1. An RF ground may still be necessary for wire antennas connected
directly to
> the tuner/transceiver.
> 2. An RF ground may still be necessary for someone using an amplifier.
Of
> course, someone with an amplifier either operates mobile (and can use the
> chassis for an RF ground) or has a yard at his/her disposal and has plenty
of
> leeway.
>
> -
> Jason Hsu, AG4DG
> jason_hsu@@@@planetmail.com
> http://www.jasonhsu.com
>

1208. Re: RF ground issue: blown out of proportion?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 19:23:58 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADF3B4E.C5FE60C2@IEEE.org>
Source record: 165757
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

Mark Keith wrote:
> Having RFI problems or the lack of, doesn't really prove you don't need
> a good rf ground under a vertical.

Current requires a closed loop. The question to ask is: Where is the
loop and how lossy are the non-antenna parts of the loop? One can
certainly decrease the RFI by using a dummy load if all one is
concerned with is RFI. One can even reduce the RFI to zero by
not transmitting. :-)
--
http://www.mindspring.com/~w6rca

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1209. Re: Measure Zo of unknown line using your antenna analyser.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 19:27:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADF3C07.29A1948@IEEE.org>
Source record: 165758

Reg Edwards wrote:
> Knowing the 1/8th-wavelengh frequencies, the velocity factor can be
> found by measuring the actual length of the line in metres.

Why can't the measurement be done using the length of a foot of
an English King? :-)
--
http://www.mindspring.com/~w6rca

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1210. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 19:32:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADF3D3D.D86F5C52@IEEE.org>
Source record: 165759

atkes@imap1.asu.edu wrote:
> Conductors are a little harder, but again, there is no need for there
> to be a natural resonance for the material to respond and radiate when
> driven by any particular frequency.

But, but, but, Kevin, Gary Coffman once took me to task for not recognizing
the difference between natural resonances and, uh, er, is it unnatural
resonances? Seriously, isn't there a difference between electrons hopping
from orbit to orbit in the same atom VS electrons hopping from orbit
to orbit in different atoms?
--
http://www.mindspring.com/~w6rca

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1211. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 19:36:47 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ADF3E4F.EC2495FE@toast.net>
Source record: 165760

atkes@imap1.asu.edu wrote:

> John O'Flaherty (oflahert@toast.net) wrote:
>
> >> John,
> >>
> >> It is not only with respect to what, but along which path. The voltage
> >> difference between two points along a path is the line integral of
> >> the electric field component along the path. That is essentially
> >> the average electric field along the path times the path length.
> >> Faraday's law tells you that if you take two different paths,
> >> the voltage you will measure will be different if there is a changing
> >> magnetic flux encircled by the two paths. Since antennas and transmission
> >> lines nearly always have substantial magnetic fields, this whole discussion
> >> of voltage differences between points is nonsense unless the path taken
> >> is described. For example the voltage difference from any point on a perfect
> >> conductor to any other point, via a path through the perfect conductor is
> >> zero. That's because the electric field in the conductor is zero.
> > >
> >That means, doesn't it, that there is no conduction or propagation at
> >all through a perfect conductor? There is only infinite sublime
> >reflection at its impenetrable surface. There could be a steady state
> >current, but it could never be established because that would require a
> >change.
> > >
>
> It means there is no propagation through a perfect conductor, just as
> the propagation dies off exponentially with skin depth in a good
> conductor. A perfect conductor is simply an extremely good conductor so
> that the skin depth and loss resistance are so small that you no longer
> worry about them. If it bothers you just assume an extremely good conductor.
>
> >> If the
> >> path is somewhere else, you have to specify it in general. Only if two
> >> paths enclose zero net changing flux will they give the same answer.
> >> For this reason, the concept of the voltage on the outside of a coaxial
> >> cable is essentially useless. Note, for a coaxial cable operating in a TEM
> >> or TM mode, you can specify the voltage difference between the inside of
> >> the outer conductor and the outside of the inner conductor at the same point
> >> along the line since any two paths in the same transverse plane will encircle
> >> zero magnetic flux. This is the usual voltage between the conductors
> >> specified in a coaxial cable.
> > >
> >The voltage between two points is a simple, easily understood concept.

>
> snip
>
> Here is why I disagree. Imagine (or do) the following experiment.
> Take two different value resistors say 10 ohms and 100 ohms. Find a
> normal 50-60Hz AC transformer and solder them in series to form a loop
> around the primary of the transformer. Now measure the voltage between
> the two solder connections. Ascii artwork is likely to fail, but I mean
> something like
> -----+----
> | ##### |
> 10 ##### 100
> | ##### |
> -----+----
> where the + signs are the solder connections and the # represents the
> transformer core.
>
> When I measure this, the voltage with the test leads on the same side
> of the transformer core as the 100 ohm resistor is 10 times the voltage
> measured with the test leads on the 10 ohm resistor side of the
> transformer core (and 180 degrees out of phase) as I expect since the
> same current flows around the loop in both resistors. Notice that
> depending on the path that my test leads take, my voltmeter gives
> different answers for the voltage between exactly the same two solder
> connections. That's why I think voltage in the presence of magnetic
> fields is an easily *misunderstood* concept, while electric and
> magnetic fields are simpler to understand and explain. In antennas and
> transmission lines you always have magnetic fields around and you have
> this poorly defined situation all the time.

If your meter leads draw no current, there would be no voltage difference if you metered at the same points. There would be a difference if you measured at the resistors themselves, but the voltage change would be found across the wires themselves (which form part of the winding of the secondary you have created), just as there is an increment as you step to each successive turn of any transformer secondary. The total of voltage around that circle will add up to zero.

john

1212. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 19:53:20 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3ADF4230.E9CEA6F@toast.net>
Source record: 165763

W6RCecilA wrote:

> Richard Clark wrote:
> > Such twists of perception can bring new insight.
>
> Yep, I used Einstein's method of conceptually riding the waves
> to gain a perspective on reflected waves.

Careful, they have helicopters with cameras that can detect that
radiation!

john

1213. Tower on barn questions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 19:54:09 UTC
From: Robert Greene <rgreene@pivot.net>
Message-ID: <3adf42d6_1@news.cybertours.com>
Source record: 165764

I've got a tall barn with a metal roof - 30' at the ridgepole, a Rohn base/roof mount, 30' of tower sections, and a 30' push up mast.

Any comments or ideas about putting these all together to get my vertical repeater antenna up to about 80'? I need to clear the surrounding tree line.

My thoughts are to bolt on the base section to one of the rafters (post & beam construction), guy the top of the 30' (3 sections) to the peak of the roof, and to the eaves on the opposite end, then use about 20' of the push up, guying to the same points.

1214. Re: Looking for Ground Planes 101

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 20:03:49 UTC
From: kb7qhc@home.com
Message-ID: <3adf43ab.2048974209@news.seanet.com>
Source record: 165765

On 19 Apr 2001 09:04:04 GMT, clvancil@aol.com.spamnix (CLVANCIL)
wrote:

>Mark Keith wrote:
>
>>Doesn't have to be flat. It can angle towards the ground and will give
>>you a better match to 50 ohm coax. All the 2m 1/4 wave ground planes I
>>make, I angle the radials downwards at about a 45 degree angle. This
>>raises the impedance from the appx 35 ohms for flat level radials, up to
>>about 50 ohms which is a good match to coax. Also you get a very slight
>>increase in gain, but not likely very noticable in the real world. MK
>>
>
>I have an UHF antenna where the radials are set at 30 degrees is this for
>better matching or by accident?
>
>73,
>Chris Vancil (KD7LRV)
>"Limine fato impedito, perage fenestram"
>"When fate closes a door go in through a window."
>http://members.aol.com/CLVANCIL/MarsBalloon.html

Hi Chris,

Yes.

OK, so much for levity. If your antenna presents poor SWR, it was an
accident, if it presents good SWR it was by design.

Sloping the radials to differing degrees will change the Z by
differing amounts and is related to the length of the radiator. The
degree of bend and the amount of SWR is almost a mechanical form of
matching to the radiator (you don't twist a knob you twist the
radial). This only goes so far though, but for your situation you
will undoubtedly find a useful arrangement if you are not already at
it.

73's
Richard Clark, KB7QHC

1215. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 20:07:16 UTC
From: kb7qhc@home.com
Message-ID: <3ae0453a.2049373042@news.seanet.com>
Source record: 165766

On Thu, 19 Apr 2001 12:12:42 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> I will stand with you full and foresquare on that last observation.
>> However, I am put off in the description of Common Mode as a "tool."
>> I have had to battle too many real instances of actual Common Mode
>> current flow and Common Mode potentials jacking my amplifiers to the
>> rail.
>
>Sometimes tools can be used to beat you over the head.

Hi Cecil,

Yeah, that accounts for all the bumps.

73's
Richard Clark, KB7QHC

1216. Re: Measure Zo of unknown line using your antenna analyser.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 20:29:34 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <niiudtgfq0d1i6u2bfv2ur6k02f08ook9k@4ax.com>
Source record: 165767

On Thu, 19 Apr 2001 14:27:03 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Why can't the measurement be done using the length of a foot of
>an English King? :-)

Would that be a CharlesFoot or a WilliamFoot? Or just a FutureFoot?

W7TI

1217. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 20:32:34 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3ADF4B62.6B8395D7@spam.me.not>
Source record: 165768

I'm still confused....

What's a Kegal Notice?

-SSB

Fractenna wrote:
>
> >
> >
> >
> >W6RCecilA wrote:
> >>
> >In any case, IMO, it
> >> is too early to dismiss fractal antennas as useless.
> >
> >
> > I don't think anyone has said they are 'useless'. They just aren't more
> >efficient than other antennas, and sometimes they're clearly less,
> >contrary to the bloated projections of some proponants. As I see it,
> >that's the sham. They've been promoted as the find of the century.
> >'Taint so.
> >
>
> Can you fill us in on where this 'claim' is made? The efficiency stuff is well
> documented at this point and publsihed in 1997, and so on. What do you take
> exception to? What is the quoted info that makes these "bogus claims"?
>
> 73
> Phil
> de N1ZKT

1218. Re: Measure Zo of unknown line using your antenna analyser.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 21:11:00 UTC
From: la8ak@online.no
Message-ID: <3adf536f.1316707715@news.online.no>
Source record: 165570

On Thu, 19 Apr 2001 14:27:03 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Reg Edwards wrote:
>> Knowing the 1/8th-wavelengh frequencies, the velocity factor can be
>> found by measuring the actual length of the line in metres.
>
>Why can't the measurement be done using the length of a foot of
>an English King? :-)

suppose Queens are more readily available, particularly for the last
two centuries....

1219. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 21:11:28 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3ADF5480.4CAC8963@bwcc.com>
Source record: 165569

"William E. Sabin" wrote:
> The voltmeter will draw enough current *through the thickness of the braid* that
> it will read the same voltage that it would read on the outside of the braid.
Yes, the act of measuring it interferes with what is really happening and makes a new current path.

1220. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 21:11:44 UTC
From: kb7qhc@home.com
Message-ID: <3ae145c2.2049509969@news.seanet.com>
Source record: 165571

On Thu, 19 Apr 2001 15:52:19 -0700, "Gene Mason" <gmason@airmail.net>
wrote:

>Richard,
> Could you elaborate on your 'interesting' last paragraph ?
>Gene KZ5V
>P.S. You might begin with an explanation of the association of FAA
>regulations and 'absolute accuracy'.
>Was the accuracy .001, 1, or 30 % ?
>Tell us about the 'low pass filters' used between the sensors and the ADC.
>Tell us how the 12 ADC is better than a 1 bit ADC.
>for starters, thanks.
>

Hi Gene,

Hmm, that's a tall order. A 1 bit ADC is simply an analog comparator
and error could be as high as 100% (you measure no signal, and yet it
exists just below the trip point). A 12 bit ADC has a resolution of 1
part in 4000 so that your error is no higher than 0.025% (with respect
to the ADC reference) if the signal is just below the trip point of
the internal comparator. So, for this example, the best accuracy
would be 0.025% for a perfect reference (no such thing). I used a
precision Voltage source that guaranteed a reference voltage that met
this (probably good to 0.01% or so). This was my "absolute" standard
(I could count on it never being out of that range of error). This is
distinct from "relative" accuracy which is based on a comparison where
you have no concern with what the value is, merely how it correlates
to another value(akin to a dB relationship).

But, this is still not the reported accuracy because the circuit
contributes error (there are many sources of error when resolutions of
voltage begin to measure in the mV). As I've pointed out in other
threads, the level of discussion in shields and Common Mode problems
are truly amateur. There are also errors due to conversions of AC
potentials. I had to monitor all legs of Servo's feeding my design
and compute the angle on the basis of phase differences (this in an
8080 remember). I would compute the angle of the control surfaces
(flaps, rudder, and all), throttle, and so on, all being fed from the
positioners on the airframe. I also had to compute the thrust from
the engines by measuring their temperature (yet another set of
sensors) and I had to have a stiff and robust current source (a
Howland circuit - if I recall accurately). Absolutely every line into
the ADC came through several MUX switches that all exhibited some path
loss (switches have resistance) AND stray capacitance that would

present a lag. On the other side of the switches was a sample and hold that also contained a capacitor that held that voltage to be converted within a time frame as it too would exhibit its own decay from the measured signal (it takes time to convert the input to an ADC and during that time, the input is slowly draining away). Even at a conversion rate of around 5 uS, the slope of decay ate away at accuracy.

One point about my "absolute" reference voltage. This was a four wire device (by my design) such that I could recover from the card edge connection of this voltage not being depressed by even the smallest contact resistance. For those unfamiliar with what I call four wire, that is simply the supply (two wires) being monitored (by two wires) such that the system always drives the monitored point to the reference potential. You would have to find a laboratory grade power supply to find this, or many open frames supplies do this.

All of these sources of error contribute towards what is called an error budget. The FAA mandates that this budget not exceed say 1% for flaps, 0.5% for temperature and so on in that manner. And worse, this is over all temperatures from -55 to 200 degrees C. And more worse, over accelerations up to 5 G's in all axis (yes, I measured acceleration in those three axis too). And it must survive impact and up to half an hour of 2000 degrees of flame. And, if under water, the water cannot intrude (and it must turn on a transponder).

The generation of Black Box that I designed was for 64 parameters (many identified above) all in one second to a continuously running recorder. I had to not only perform the conversions, I had to place the data on the bus, and then read it back before I toggled the record trigger. Then the recorder would put it on tape, back up and read it back to me for failure testing. (Again, every second, of every hour, for 24 hours before the tape overwrote itself.) And this done in an 8 bit 8080.

As a caution, do not attempt this at home.

As a warning, the numbers above are culled from the memory of the design now some 18 years distant. You will note that it is a long way from the accuracy of my 0.01% voltage reference to the error budget of 1% for flaps - this is the accumulation of error for every consideration (and there were a ton of issues to consider).

If you have ever ridden in a 757 or 767, there is about a 50% chance that my design was listening to the airframe you were sitting in.

73's
Richard Clark, KB7QHC

1221. Re: F6KEH resources site renewed ! Visit it !

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 21:23:29 UTC
From: la8ak@online.no
Message-ID: <3adf56fb.1317615796@news.online.no>
Source record: 165572

On Thu, 19 Apr 2001 02:17:32 GMT, Richard Clark <kb7qhc@home.com>
wrote:

>On Wed, 18 Apr 2001 14:32:16 +0200, "F5lcy" <f5lcy@wanadoo.fr> wrote:
>
>>F6KEH amateur radio resouces site has been totally renewed !
>>You could find now and in the future :
>>- new links of the month
>>- new headings
>>- language of sites
>>
>>Site in french, english and spanish monthly updated.
>>
>>Don't hesitate visit

>>http://f6keh.free.fr/index_r
>>
>>
>
>Hi OM,
>
>Nice pages. Especially the Military equipment manuals links.
>
>73's
>Richard Clark, KB7QHC

seldom, interesting site, UFB!
military manuals didn't work tonite, but it was valve information and
agilent and several other pages I have to study further

73
Jan-Martin
LA8AK

1222. Re: Tower on barn questions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 21:36:47 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3adf5e3c_4@news3.prserv.net>
Source record: 165574

I would look carefully at how the rafters are attached to the walls, as they may not survive upward force. Getting the guys to the ground some way is always a better idea unless the barn frame is bolted together, or new hurricane-proof construction practice is followed.

--
Crazy George
Robert Greene <rgreene@pivot.net> wrote in message
news:3adf42d6_1@news.cybertours.com...
> I've got a tall barn with a metal roof - 30' at the ridgepole, a Rohn
> base/roof mount, 30' of tower sections, and a 30' push up mast.
>
> Any comments or ideas about putting these all together to get my vertical
> repeater antenna up to about 80'? I need to clear the surrounding tree
line.
>
> My thoughts are to bolt on the base section to one of the rafters (post &
> beam construction), guy the top of the 30' (3 sections) to the peak of the
> roof, and to the eaves on the opposite end, then use about 20' of the push
> up, guying to the same points.
>
>

1223. Re: Tower on barn questions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 21:53:30 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3ADF5E5A.7A7F1093@oio.net>
Source record: 165573

Robert,
I wish it were that easy! Unfortunately, your barn
probably isn't built to take the stress of having the
tower on top of it (roof not ment to take the weight,
and definitly not built to take the stress of the guys).
Unless you want to do a lot of bracing etc, put the tower
up next to the barn. You could use the barn as a first
level brace, but that's about all I'd count on the barn
providing.
'Doc

1224. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 22:34:41 UTC
From: la8ak@online.no
Message-ID: <3adf66ba.1321647466@news.online.no>
Source record: 165575

On 16 Apr 2001 01:59:01 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>>
>> I've used 75 ohm coax many times in a pinch. If you had a perfect match
>> with 50 ohm coax, and switched, you would still be 1.4:1 swr. No
>> worries. MK
>
>
> And in real life you're just as likely to move from a mismatch closer
>to a match.
>
>Dick

somebody needs a simple world.....

for my HF trap dipole a 30m length 75 ohm cable is required for
minimum reflection to the transmitter

73
Jan-Martin
LA8AK

1225. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 22:34:41 UTC
From: la8ak@online.no
Message-ID: <3adf64a4.1321113337@news.online.no>
Source record: 165576

On Wed, 18 Apr 2001 05:53:40 GMT, "Roger" <rdhalste@tm.net> wrote:

..
>> really be 50 Ohms", just lie and tell the ham on the other end of your
>QSO's
>> that it is 50 Ohms.
>>
>> No one will know but you!
>>
>Don't lie, just tell them you are using hard line<:-))
>I used to use multiple runs of 3/4 inch 75 ohm hard line for VHF and UHF.
>Connectors are easy to make for the half inch and take only a little more
>work for the 3/4 inch.
>
>Roger Halstead (K8RI) www.RogerHalstead.com
>N833R World's Oldest Debonair? s# CD-2
>
>> Enjoy!
>>
>> Peter K1PO
>>
some amateurs need simple ideas, many around here use only simple coax
cable like RG58/U, but I would like 100 ohm cable if available as
LOW LOSS for another purpose than just between the rig and antenna, I
don't want lossy data cables, does such cables exist or will I have to
make it myself?
Also need some 25 ohm bits, believe they are commonly available

73
Jan-Martin
LA8AK

1226. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 22:52:19 UTC
From: Gene Mason <gmason@airmail.net>
Message-ID: <68929D071CFEE299.DE91388CFB177CD6.DD2F423C0ABDF3A5@lp.airnews.net>
Source record: 165761

Richard,
Could you elaborate on your 'interesting' last paragraph ?
Gene KZ5V
P.S. You might begin with an explanation of the association of FAA
regulations and 'absolute accuracy'.
Was the accuracy .001, 1, or 30 % ?
Tell us about the 'low pass filters' used between the sensors and the ADC.
Tell us how the 12 ADC is better than a 1 bit ADC.
for starters, thanks.

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3adcb062.1880197951@news.seanet.com...
> On Tue, 17 Apr 2001 15:07:20 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >Richard Clark wrote:
> >> A microcontroller may have problems with RF, but that is simply an
> >> issue of design shortfall.
> >
> >Does the MFJ259B overcome every design shortfall? I have seen completely
> >unbelievable readings from mine, e.g. 70 ohms, zero reactance, and the
> >SWR is 4:1.
>
> Hi Cecil,
>
> Does the MFJ overcome every design shortfall? Does it overcome any?
>
> I use my trusty General Radio bridge. No active components, no power
> supply requirements, no processors - just unequivocal results.
>
> It is probably 1000 times more difficult to use the first (second,
> third, fourth...) time than your MFJ, but once you get into the method
> of determination, you will not be handed a bogus answer. However,
> much the same could be said of the MFJ. That is, once you get into
> the method of determination....
>
> It is arguable that even a loop with rectifier feeding a magnetic
> compass could be made to work to determine RF characteristics.
> However this is not a particularly suitable choice - just an option.
>
> The problems you describe are more likely due to software and a
> general lack of data bandwidth or A/D resolution (almost certainly
> this last if not both). These sources of problems bear no relation to
> your presumptions of RF getting into the processor. This is a

> distinct possibility, but there are other more common issues to visit
> first.
>
> I designed the flight data recorder using a military version of the
> 8080; BUT I also had a 12 bit A/D converter hanging off it measuring
> 600 analog lines coming from every point in the airframe. So, speed
> of the processor and the nature of what is being measured are no less
> complex, but the added data bandwidth allowed me to meet FAA
> regulations as to absolute accuracy requirements. There are many
> considerations beyond hardware, and software and data bandwidth are
> the principle first points of failure.
>
> 73's
> Richard Clark, KB7QHC

1227. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 22:57:14 UTC
From: Gene Mason <gmason@airmail.net>
Message-ID: <0E06F7A5D68FA300.B8E28185B1496158.34A3EDC46583C848@lp.airnews.net>
Source record: 165762

Hi. What an impressive response to kinda a basic problem!
May I ask a dumb question (s)?
Was the impedance measurement made at the antenna feedpoint, or at the end of the coax transmission line? And how long was the transmission line, and what was the frequency? <grin>
Gene KZ5V
P.S. How can so much talent miss the obvious?

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:9bc8mk$4mm$1@plutonium.btinternet.com...
> > I'm using a MFJ antenna analyzer (model 269) to adjust a wire
> dipole
> > antenna. The antenna seemed to be resonating low so I removed a
> few
> > inches from each end. Currently the Rs = 50, the Xs = 0, but
> the SWR =
> > 3.1 at 14.035 mhz. This is up from a 2.2 SWR when I began.
> Should the
> > SWR be this high at resonance? Or, is there something else wrong?
> ================================
>
> The 269 is not accurate enough to show that an antenna is behaving
> exactly as theory says it should. But there's probably nothing
> wrong with either the meter or antenna.
>
> There are several important things to remember about 1/2-wave
> dipole behaviour versus length and frequency.
>
> (1) When the feedline impedance does not match the antenna
> feedpoint impedance (it never does) the length of the feed line is
> as important as antenna length insofar as the load on the
> transmitter is concerned (as indicated by the 50-ohm SWR meter at
> the transmitter end).
>
> (2) As frequency is varied, minimum SWR (whether it be good or
> bad) always occurs at the resonant frequency of the antenna PLUS
> feed line, ie., of the system as a whole. Trimming the length
> either of the line or of the antenna will change the resonant
> frequency of the system. But why do you want to change the
> resonant frequency ?
>
> (3) When you change the length of line or antenna you not only
> change the resonant frequency, ie., the frequency at which minimum
> SWR occurs, you also change the radiation resistance and therefore

> the antenna feedpoint impedance. And so at another resonant
> frequency the minimum SWR will change to another value. It may be
> either better or worse than the previous value. In your case it
> seems to have got worse. But this is quite normal behaviour. What
> actually happens can be influenced by antenna height.
>
> (4) The probability of the feed line input impedance being
> precisely 50 ohms at a resonant frequency of the system is so
> remote you can forget it. The only way to ensure an SWR of 1-to-1
> is to install an antenna tuner at the transmitter end of the feed
> line.
>
> To summarise, if the resonant frequency of the dipole is in the
> right ballpark, as determined by its length, then leave it that
> way. Don't bother about what the SWR on the feedline might be.
> Concentrate on adjusting the tuner such that the load on the
> transmitter is a nice 50 ohms resistance.
>
> One explanation of your observations is that you may be fortunate
> in having a very high antenna with low ground loss. If you lowered
> the antenna to increase ground loss you may find the feed line
> input resistance is the desired 50 ohms when the resonant frequency
> is where you want it to be.
>
> But which do you prefer - an inefficient antenna system with the
> resonant frequency on your favourite operating frequency - or an
> efficient system which doesn't care what its resonant frequency is.
> But don't forget the tuner.
> ----
> **********
> Regards, Reg, G4FGQ
> Free radio design & modelling software
> http://www.btinternet.com/~g4fgq.regp
>
> **********
>
>
>

1228. Another way of doing it.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-19 23:45:36 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bnt6jmbt1@uranium.btinternet.com>
Source record: 165577

Another quick way to determine Zo of a short transmission line
using a hand-held antenna analyser :-

(1) Connect your antenna analyser on the Z range to one end of
line with the other end open circuit.

(2) Starting at a very low frequency search for the lowest
frequency at which the line is 1/4-wave resonant as indicted by a
very sharp minimum Z on the meter.

(3) Note the frequency. Do NOT change the frequency. Leave the
meter connected. Terminate the line with a metal film, 5%
tolerance or better, 1/8 or 1/4 watt resistor having a value in the
same ball park as the expected value of Zo. Let this resistor = Zt
ohms.

(4) Note the indictated input impedance = Zin ohms.

(6) Line impedance Zo = Squareroot(Zt * Zin) ohms.

(7) Line velocity can be deduced from the 1/4-wave resonant
frequency and the measured physical length of line.

When measuring balanced pair or open wire lines do not hold the
meter in your hand. Avoid an impedance unbalance by suspending the
meter from the end of the line. Or just rest it on a small piece
of plastic or a matchbox.

The method works for all odd-number 1/4-wave line lengths. But if
there's any difference the lower frequencies will most likely
provide the most accurate answer. It does NOT work for any number
of 1/2 wavelength sections.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

Reg Edwards <g4fgq.regp@btinternet.com> wrote in message
news:9bncn0$rv0$1@uranium.btinternet.com...
> The open circuit and short circuit input impedances of short
> lengths of transmission line when line-length is not very close
to
> a resonance are almost pure reactances.
>

> At frequencies where the line length is exactly an odd-number of
> 1/8 wavelengths long, that's as far away from resonance as you
can
> get, the short-circuit and open-circuit input reactances are of
> opposite sign and of equal magitude. Very conveniently they are
> also equal in magnitude to line Zo.
>
> Connect your antenna analyzer to one end of the line on the Z
> range. Start at a very low frequency and find the first frequency
> at which o/c and s/c input impedance magnitudes are equal. At
that
> frequency the line is 1/8th wavelength long and the indicated
> impedance is line Zo.
>
> For a check find the next higher frequency at which the o/c and
s/c
> impedances are equal in magnitude. If the antenna analyser does
not
> indicate the sign of the reactance, don't worry - you don't need
> to know. The line is 3/8ths wavelength long at this next higher
> frequency. At the next frequency it will be 5/8ths, etc.
>
> If the measured Zo varies a little with frequency then
measurements
> at the lower frequencies are probably more accurate because the
> measuring instrument is probably more accurate.
>
> If the other end of the line is not conveniently near to the
> measuring end engage the services of a friend to do the open and
> short circuiting operation. Saves a lot of walking or climbing.
But
> the line need not be stretched out straight. Just spread it
around
> a lot and, if it is twin line, suspend it clear of the ground.
>
> Knowing the 1/8th-wavelengh frequencies, the velocity factor can
be
> found by measuring the actual length of the line in metres.
>
> --
> **********
> Regards, Reg, G4FGQ
> Free radio design & modelling software
> http://www.btinternet.com/~g4fgq.regp
>
> **********
>
>
>

1229. HF MOBILE OF THE MONTH

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 00:03:49 UTC
From: K2BJ <webmaster@k2bj.com>
Message-ID: <F1LD6.3923$rk.505450@typhoon.nyroc.rr.com>
Source record: 165579

Site devoted to HF mobile interests seeks your cool HF mobile install photos
and your story for display for the benefit and information of others in the
ham community!

-- Visit http://www.k2bj.com for details!

1230. Downloadable IOTA List - updated 19-Apr-01

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 00:09:06 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <C6LD6.64$Ci3.6210@newsread1.prod.itd.earthlink.net>
Source record: 165578
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.policy

The downloadable IOTA list has been updated as of 19-Apr-2001 23:43 UTC

Found on The IOTA List page of the site listed below. 15k zip file
(ascii text format readable with Notepad)

* also includes Top 10 Most Wanted IOTA's for each continent.

--

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

1231. Re: Shielding from computer RFI

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 00:14:50 UTC
From: ???
Message-ID: <4qvudt4j701lj5sf134b7fjmvei6bi4v5d@4ax.com>
Source record: 165580

On Thu, 19 Apr 2001 15:49:36 GMT, "Floyd Sense"
<sentek@sprintmail.com> wrote:

>Anything is possible, but my experience says it is likely NOT coming in on
>the AC line. Radiation from the monitor and cable is much more common.
>
>K8AC
>
>"BadaBing" <badabing@home.com> wrote in message
>news:AUoD6.13763$B22.3002144@news1.rdc2.pa.home.com...
>> the PC noise is probably coming in on your AC line. Don't know how the mfj
>> will help that.
>>
>> "Floyd Sense" <sentek@sprintmail.com> wrote in message
>> news:s_5D6.1542$vI2.112384@newsread2.prod.itd.earthlink.net...
>> > Take a look at the MFJ 1026 noise canceling unit. It works pretty well
>on
>> > PC generated noise.
>> >
>> > K8AC
>> > Floyd Sense - Angier, NC
>> > "Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
>> > news:3ADCC198.53D59A55@cticonsulting.net...
>> > > What are some techniques/products to help reduce interference caused
>by
>> > > computers in the same room as the radio and diminishing reception?
>What
>> > > computer components tend to be major culprits? What can I do to
>> > > reduce/eliminate the problem? I would like to use the computer to
>> > > decode some modes, so shutting off is not an option. Also, do laptops
>> > > tend to cause more or less RFI?
>> > > Thanks
>> > >
>> >
>> >
>>
>>
>

I think u are all looking up at the wrong tree. I doubt u are using a
balun at the centrefeed of ur antenna. Try one of these simple balun
and u will be suprised. 73.

AnotherHam.

1232. Re: Measure Zo of unknown line using your antenna analyser.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 00:33:26 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADF83D6.4EA26B5B@IEEE.org>
Source record: 165581

Bill Turner wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >Why can't the measurement be done using the length of a foot of
> >an English King? :-)
>
> Would that be a CharlesFoot or a WilliamFoot? Or just a FutureFoot?

I can't remember which English King it was but the foot measurement
came from the length of his foot and the inch measurement came from
the length of one of his finger/thumb joints.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1233. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 00:38:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3ADF84F5.23F4120A@IEEE.org>
Source record: 165582

John O'Flaherty wrote:
> Careful, they have helicopters with cameras that can detect that
> radiation!

I lived in Queen Creek, AZ for 12 years where there are a lot of
illegal aliens. I was laying on my patio roof one night looking
at Hale-Bopp through my binoculars when a helicopter came and
hovered over my house. I'm looking up at them through my binoculars
and they're looking down at me through their binoculars. Apparently,
they had detected my heat signature on my roof and thought an illegal
alien might be hiding there.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1234. Re: Measure Zo of unknown line using your antenna analyser.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 00:54:16 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bo1mdctr1@neptunium.btinternet.com>
Source record: 165583

W6RCecilA wrote
> Why can't the measurement be done using the length of a foot of
> an English King? :-)
==========
If you can remember which English king it was I'll make enquiries
about exhuming his remains.

1235. Re: Problems simulating G5RV antenna using EZNEC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 01:55:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3ADF9716.4EE4AE98@eznec.com>
Source record: 165584

This is the sort of question I'd ordinarily answer by email, but since the EZNEC description file was part of the posting, I'll make a few comments on the newsgroup. They apply to EZNEC v. 3.0, including the demo version.

I really wish I could discourage people from putting the source on a little short wire, but a large fraction of the models I see are constructed this way, so I'm not succeeding. NEC has trouble with this, and it's usually not necessary. I encourage all EZNEC users to read the manual chapter Building the Model/Using Sources/Source Placement. If you ever have a concern that source placement might be affecting the answer, do an Average Gain check. (See "Average Gain" in the manual index.) In this model, the Average gain (when loss is set to zero by setting Ground Type to Perfect and Wire Loss to Zero) is around 0.7 dB, depending on frequency. This isn't a large error, but will throw the indicated source resistance off by about 20%. The model can be improved by replacing wires 1-3 with a single wire with an odd number of segments and connecting the transmission line to its center. This changes the Average Gain to 0 dB, which is ideal. For this antenna, the difference isn't major, but it's enough to notice. The only other shortcoming I see with the model is that the segment length is too short at 50 MHz. Doubling the number of segments cures this but, again, it doesn't make a huge difference. With these modifications to the model, I believe that an antenna constructed like the model will give results very much like the model predicts. If this isn't in line with expectations for the antenna, then the expectations aren't realistic.

Roy Lewallen, W7EL

Jesper Wolf Jespersen wrote:
>
> I am trying to simulate the G5RV antenna using EZNEC 3 and am getting some
> strange results.
>
> The G5RV is meant to be easily tunable over the amateur bands with best
> performance in the 20 metres band.
> My simulation shows that there is a resonance at the proper place in the 20
> metres band but most of the other amateur bands show no resonance and the
> impedanses are not easily tuned out. (from 10 to 2500 ohms impedanse,
> reactanses being quite dominant).
>
> Would anyone here please look at the files attached here and tell me what I
> am doing wrong ?
>
> The files are the eznec data file and the calculatet impedanses over the

> amateur bands.
>
> Greetings from Denmark
> Jesper Wolf Jespersen
> OZ8ACE
>
> to reply in mail, remove the NOSPAM from my email address
>
> "EZNEC ver. 3.0"
> "G5RV efter Rothammel","18-04-01 20:34:01"
> "Alt Z0: ",95
> "Freq MHz","Src #","R","X","SWR (50 ohms)","SWR (alt. Z0)"
> 3.5,1,14.24431,38.81053,5.735601,7.804236
> 3.55,1,15.61395,55.09675,7.265287,8.172822

>. . .

> 51.95,1,1232.721,-801.328,35.08451,18.48215
> 52,1,1073.603,-824.1519,34.14256,17.99358
>
> Name: Min-G5RV.EZ
> Min-G5RV.EZ Type: EZNEC Files (application/x-unknown-content-type-EZ_auto_file)
> Encoding: x-uuencode

1236. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 05:32:30 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9bohle$8kf$12@bashir.peak.org>
Source record: 165585

DL7JSK <tansorg@cs.tu-berlin.de> wrote:
: Hi OMs
: Assuming I measure a SWR of 1:3.That means-when I use a 50 ohm koaxcable-my
: impedance is 150 ohms.How can I calculate the ERP that leaves the antenna ?

More properly, you would list that as a 3:1 SWR.

You can calculate the ERP if you can calculate the loss in the coax. You
also need to know the power into the coax and the gain of the antenna.

--
Bill Nelson (billn@peak.org)

1237. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 05:44:43 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9boicb$8kf$13@bashir.peak.org>
Source record: 165586

Roger Sparks <sparksrc@home.com> wrote:

: The idea is to simply test the outside of the coax feed line for current
: using a magnetic coupled device such as the Palomar RF current meter. The
: balanced line will show no current but the line with a common mode current
: will show that current when tested with the Palomar meter.

: Now if the current is only on the outside of the coax braid, then clear
: standing waves should be found and there should be a complete null at some
: point assuming the line is configured to allow a null point. The location
: of the null point should be predictable.

Not necessarily. If you look up standing waves on a conductor, you will
find that the so-called "nulls" are actually minimums. Otherwise, at every
voltage null, you would find an infinite current situation.

So true nulls do not occur on a physical conductor.

... more deleted ...

: So what do you think, would this be a valid test?

No.

--
Bill Nelson (billn@peak.org)

1238. Re: Downloadable IOTA List - updated 19-Apr-01

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 10:30:41 UTC
From: helmsman <>
Message-ID: <us30etkv7ddogkbubklv4ri0fleqeda760@4ax.com>
Source record: 165587
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.policy

On Fri, 20 Apr 2001 00:09:06 GMT, "Charles Johnston"
<ctj92@earthlink.net> wrote:
>The downloadable IOTA list has been updated as of 19-Apr-2001 23:43 UTC
>Found on The IOTA List page of the site listed below. 15k zip file
>(ascii text format readable with Notepad)
>* also includes Top 10 Most Wanted IOTA's for each continent.

Neet!
.
Help cure Cancer via Distributed Computing.
It costs you nothing.
http://www.ud.com/home.htm
==========
http://www.mindspring.com/~helmsman
http://www.bbc.co.uk
http://www.itn.co.uk

1239. Re: Problems simulating G5RV antenna using EZNEC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 11:50:48 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bp7m4dun1@neptunium.btinternet.com>
Source record: 165588

Jesper wrote -
>
> The G5RV is meant to be easily tunable over the amateur bands
with best
> performance in the 20 metres band.
==========

I'm sorry to say that's a popular misconception. The G5RV is no more easily tunable over the amateur bands than any other random arrangement of dipole plus twin feeder. It is most easily tuned on the 20 metre band because that was G5RV's intention.

If you can obtain a copy of April 2001 "Radcom" there is an article "In Practice" by G3SEK on Smith Charts which uses the feedpoint impedance of the G5RV to help illustrate the chart's uses.

To quantitatively analyse in a straightforward manner the performance of any dipole, of any wire size, at varying heights, fed via any length of twin feeder of any impedance and wire size, plus balun, plus any length of coax of any impedance, plus an L-match network, download program VARNEY.exe from website below. How the total loss is distributed between the various parts of the system is computed. Also the uH and pF values of the L-match components.

Switch frequency instantaneously and compare performance on one band with another. Sweep frequencies to discover all resonant frequencies between 1 and 50 MHz. Which of them fall into your favourite DX bands? Vary feedline and/or antenna lengths to locate resonances where YOU want them.

Most input parameters can be swept in fine increments over wide ranges while observing how losses, impedances at various points and SWRs vary. Design the antenna system to suit your own special requirements which will fit nicely into your back yard.

To illustrate useage, details of a standard G5RV antenna can be entered by a single keystroke. Use the program to get rid of the old-wives' myths.

Download VARNEY in a few seconds. Not zipped up. Run immediately. User friendly.

****
Regards, Reg, G4FGQ
Free radio design & modelling software

http://www.btinternet.com/~g4fgq.regp

****

1240. ANTENNA E GROUP OR LIST

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 11:51:05 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9bp7v3$807$1@bob.news.rcn.net>
Source record: 165589

is there a "best" e or list group to subscribe to in reference to antenna experimentation?

1241. ANTENNA E GROUP OR LIST GROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 12:12:29 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9bp978dgf1@bob.news.rcn.net>
Source record: 165590

is there a "best" e group or list to subscribe to in reference to antenna experimentation?

1242. Re: Problems simulating G5RV antenna using EZNEC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 12:45:41 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <+Yw157A19C46EAnb@ifwtech.com>
Source record: 165591

Reg Edwards wrote:
>
>If you can obtain a copy of April 2001 "Radcom" there is an article "In
>Practice" by G3SEK on Smith Charts which uses the feedpoint impedance of
>the G5RV to help illustrate the chart's uses.
>
I used Reg's VARNEY.EXE program to generate a quick set of illustrative numbers for the impedance at the bottom of the feedline, because it already has the feedline parameters built-in.

On the circular Smith chart, the impedance goes through several loops between 1.8 and 14.5MHz (where I stopped plotting). This is quite typical of any wire antenna plotted over a very wide frequency range. The impedance sweeps through the middle of the chart (low SWR) at 14MHz, but on most other frequencies it is way out near the edge (high SWR).

What is different about the G5RV is that the impedance swings a little closer to the middle on 3.5 and 7MHz also - but the SWR is still generally in the 5-10 region, so the G5RV definitely requires an ATU or a wide-range pi-network for those bands.

G5RV never said anything different. He was always horrified at the popular notion that a G5RV antenna would "match all bands" - it doesn't!

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

1243. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 12:57:18 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <OmWD6.8259$hH3.733002@bgtnsc04-news.ops.worldnet.att.net>
Source record: 165592

"DL7JSK" <tansorg@cs.tu-berlin.de> wrote in message
news:9bfiup$7mk$05$1@news.t-online.com...
> Hi OMs
> Assuming I measure a SWR of 1:3.That means-when I use a 50 ohm
koaxcable-my
> impedance is 150 ohms.How can I calculate the ERP that leaves the antenna
?
>
> 73
> Tom
>
>
>

ERP = (Antenna Gain) * (Delivered Power)

The (Antenna Gain) is dimensionless (not dBi) and the (Delivered Power) is in Watts. ERP is in Watts.

Increasing antenna SWR will reduce the power delivered to the antenna, assuming the forward power arriving at the antenna remains constant. If you know the forward power arriving at the antenna, the power delivered to the antenna is found from

(Delivered Power) = (Forward Power) * (1 - |RhoA|^2)

|RhoA| = (SWR - 1) / (SWR + 1)

Steve, VE9SRB

1244. Re: Problems simulating G5RV antenna using EZNEC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 13:31:12 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE03A20.E16FDFE0@IEEE.org>
Source record: 165593

"Ian White, G3SEK" wrote:
> G5RV never said anything different. He was always horrified at the
> popular notion that a G5RV antenna would "match all bands" - it doesn't!

One of Mr. Varney's last articles on the G5RV (ARRL Antenna Compendium #1)
suggested running open-wire feeder all the way to the tuner.

Imagine that.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1245. Re: ANTENNA E GROUP OR LIST GROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 14:37:38 UTC
From: Patrick Croft <mai@iquest.net>
Message-ID: <3AE049B2.1481A90B@iquest.net>
Source record: 165594

If you're seeking a special interest area, it would help to know what
that is; design, modeling, etc. A singular 'best' is an opinion
related to the level of interest/knowledge you're comfortable with.

Since Yahoo took over egroups the amount of junk and hassles for using
has made that path a pain. Try TowerTalk on the Contesting.com site,
and some of the links found on LB Cebik's (cebik.com) as well as ac6v's
sites. You may enjoy some of the websites that provide discussion
boards/groups as well. Try google.com for starters....sites like
hardcoredx.com and many others will pop up for you to visit.

Hope that helps.

Patrick
W9GTA

marvin rosen wrote:
>
> is there a "best" e group or list to subscribe to in reference to antenna
> experimentation?

1246. Re: Problems simulating G5RV antenna using EZNEC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 15:07:13 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae05039.151363962@news.aepnet.com>
Source record: 165595

On Fri, 20 Apr 2001 08:31:12 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>"Ian White, G3SEK" wrote:
>> G5RV never said anything different. He was always horrified at the
>> popular notion that a G5RV antenna would "match all bands" - it doesn't!
>
>One of Mr. Varney's last articles on the G5RV (ARRL Antenna Compendium #1)
>suggested running open-wire feeder all the way to the tuner.

Actually Varney suggested running open-wire all the way to the tuner in the
very first article.

Wes Stewart N7WS
>
>Imagine that.
>--
>http://www.mindspring.com/~w6rca
>
>
>-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
>http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
>------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1247. Low Input Reactance Multiband Dipoles

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 15:17:20 UTC
From: AA1LL <AA1LL_member@newsranger.com>
Message-ID: <4qYD6.4303$D4.438293@www.newsranger.com>
Source record: 165596

There is some data on the input reactance of dipoles of various lengths fed with various length feedlines at http://www.qsl.net/aa1ll. This may be of interest to those partaking in this year's antenna season activities, as well as the G5RV/NEC discussion.

73, Paul, AA1LL
Mason, NH
http://www.qsl.net/aa1ll

1248. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 15:23:25 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae05394.407760639@news.accessunited.com>
Source record: 165597

On Fri, 20 Apr 2001 12:57:18 GMT, "VE9SRB" <srbest@att.net> wrote:

>ERP = (Antenna Gain) * (Delivered Power)
>
>The (Antenna Gain) is dimensionless (not dBi) and the (Delivered Power) is
>in Watts. ERP is in Watts.
>
>Increasing antenna SWR will reduce the power delivered to the antenna,
>assuming the forward power arriving at the antenna remains constant. If you
>know the forward power arriving at the antenna, the power delivered to the
>antenna is found from
>
> (Delivered Power) = (Forward Power) * (1 - |RhoA|^2)
>
> |RhoA| = (SWR - 1) / (SWR + 1)
>
>Steve, VE9SRB

All power entering the feedline from the transmitter is radiated,
except that lost as heat in the feedline.

The effect of SWR is only to increase the loss in the feedline,
assuming the transmitter still delivers the same power to the
feedline.

I can have a 100 watt transmitter, a 10:1 SWR, a zero dB gain
antenna, and radiate nearly 100 watts ERP.

73 Tom

1249. Re: Tower on barn questions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 15:46:23 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3AE05BB7.30405@aol.com>
Source record: 165598

Better to buy a couple more sections of tower than explain
to the locals how the roof of your barn wound up on top of
your truck, with 50 feet of twisted scrap iron(and antenna)
laying on the roof of the house........

The tower sections are a LOT cheaper than the repair bills.
Also, consulting a civil engineer will likely be more
expensive than the tower sections. Barns are notorious for
quick and dirty construction methods using materials
available.

Good luck,
W4KAZ

1250. Re: Problems simulating G5RV antenna using EZNEC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 16:11:00 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <7PoE8hAU+F46EA2q@ifwtech.com>
Source record: 165601

W6RCecilA wrote:
>"Ian White, G3SEK" wrote:
>> G5RV never said anything different. He was always horrified at the
>> popular notion that a G5RV antenna would "match all bands" - it doesn't!
>
>One of Mr. Varney's last articles on the G5RV (ARRL Antenna Compendium #1)
>suggested running open-wire feeder all the way to the tuner.
>
>Imagine that.

So too did his first article. G5RV himself had no illusions about his
antenna's capabilities.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

1251. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 16:42:40 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <4GZD6.8429$hH3.747280@bgtnsc04-news.ops.worldnet.att.net>
Source record: 165599

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ae05394.407760639@news.accessunited.com...
> On Fri, 20 Apr 2001 12:57:18 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >ERP = (Antenna Gain) * (Delivered Power)
> >
> >The (Antenna Gain) is dimensionless (not dBi) and the (Delivered Power)
is
> >in Watts. ERP is in Watts.
> >
> >Increasing antenna SWR will reduce the power delivered to the antenna,
> >assuming the forward power arriving at the antenna remains constant. If
you
> >know the forward power arriving at the antenna, the power delivered to
the
> >antenna is found from
> >
> > (Delivered Power) = (Forward Power) * (1 - |RhoA|^2)
> >
> > |RhoA| = (SWR - 1) / (SWR + 1)
> >
> >Steve, VE9SRB
>
> All power entering the feedline from the transmitter is radiated,
> except that lost as heat in the feedline.
>
> The effect of SWR is only to increase the loss in the feedline,
> assuming the transmitter still delivers the same power to the
> feedline.
>
> I can have a 100 watt transmitter, a 10:1 SWR, a zero dB gain
> antenna, and radiate nearly 100 watts ERP.
>
> 73 Tom

Hi Tom:

There is a difference between "delivered power" and "forward power" in a
transmission line when the antenna SWR is greater than 1.0:1.

I do not disagree with any of your statements. It is just important for all
of us to use terms consistently. For example, what do you mean by "all
power entering the feedline"? Some people might interpret this to mean the
forward power, you interpret it to mean delivered power. The problem is
that most hams measure forward or reflected power directly. Not too many

measure delivered power directly. In your discussions, you always assume that the delivered power remains constant. You do not explain that the forward power must increase with increasing SWR to maintain a constant delivered power. You do not explain why it must change nor do you explain how it changes.

For example, if the forward power in the transmission line is 100 watts, a 10:1 SWR antenna will not radiate 100 watts of power. A 50 ohm 0 dB gain antenna will radiate 100 Watts of power when the measured forward power is 100 watts. A 10:1 SWR 0 dB gain antenna will radiate 100 Watts of power when the measured forward power is 302.5 Watts.

Tom's statements above might lead someone to believe that a high SWR does nothing other than increase cable loss and that the power delivered to the antenna does not change with increasing SWR. This is not quite correct. To maintain a constant delivered power with increasing SWR, the forward power in the transmission line must increase. To increase the forward power with increasing SWR, some form of compensation must occur in the system. The most common form of compensation is an external or internal tuner. With a matched tuner, the effective load impedance seen by the transmitter's output stages remains constant so the delivered power remains constant. Note that with changing SWR, the forward and reflected power change significantly. The compensation here is the adjustment of the tuner components with changing SWR. If an internal or external tuner is not used, then the output levels of the transmitter will have to be adjusted to increase the forward power to compensate for the change in load impedance seen by the transmitter.

Steve VE9SRB

1252. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 18:11:05 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9bpu3plhu0@208.207.71.134>
Source record: 165600

John O'Flaherty wrote:
>
> "Peter O. Brackett" wrote:
>
> > [snip]
> > >
> > > The voltage between two points is a simple, easily understood concept.
> > Some of the
> > > shielding effect of coax, it seems to me, is due to the fact that the
> > inner
> > > conductor is masked to the outside of the cable by the shield, and thus
> > there is
> > > no externally available reference for the presence of voltage. Of course,
> > there
> > > are many ways to think about things that are equally true, and I don't
> > doubt that
> > > all you have said is true. It seems to me that some of the questions about
> > the
> > > effectiveness of skin effect could be settled by taking a piece of coax,
> > running a
> > > sufficiently high rf current through it that it is known that there would
> > be a
> > > measurable voltage drop along the inside of the shield, and then measuring
> > between
> > > two points on the outside of the shield to see if that drop is measurable
> > on the
> > > outside.
> > >
> > > john
> > >
> > [snip]
> >
> > John, that voltage would be there on the outside for sure... however it is a
> > pale imitation of the same voltage on the inside since it exists only behind
> > the extremely high common mode impedance... which could be thousands of
> > MegOhms, etc...
> >
> > Attempting to "measure" that voltage on the outside of the shield will
> > generally be infeasible, since there are very few instruments which could
> > measure that voltage at such a high impedance level. The mere act of
> > attaching the voltmeter with it's finite internal impedance would affect the
> > outside the shield voltage by shunting away the extremely low current
> > [femptoamps] that develops the voltage on the outside.
> >

> > What everyone seems to be missing here is that the impedance at various
> > layers of skin depths increases very rapidly and that after a few skin
> > depths the impedance becomes impractically high to attempt any voltage
> > measurements with "normal" instruments.
> >
> > This does not mean that the voltage is not present.
> >
> > In fact the "ratio" of the impedance and hence current levels a few skin
> > depths deep to those on the "active" surface is measureable in another way
> > as the common mode rejection of the cable. Another way of stating this
> > "common mode rejection" is that it is the "shielding" effectiveness of the
> > cable.
> >
> > If the common mode rejection or shielding effectiveness of the cable is
> > measureable as an "attenuation" of say 150 dB of shielding, or say 90 dB of
> > shielding, or whatever... why then ....
> >
> > the currents on the outside of the cable due to those on the inside will be
> > "down" from those on the inside by that amount. Now those tiny currents are
> > being "driven" by the same voltage on the outside as exists on the inside.
> > That voltage is applied across the common mode impedance at that point which
> > is much higher,by the ratio of 150 dB or 90 dB or whatever, than the
> > corresponding impedances on the inside. And so...
> >
> > If you attempt to measure those voltages at those multi-MegOhm impedance
> > levels you will never be able to get an accurate or significant indication.
> > The voltmeter simply is ineffective measuring a voltage developed by maybe
> > femtoamps across multi-MegOhm impedances.
> >
> > But the voltages are there nonetheless! And at the extremely low current
> > levels required to develop them almost completely unobservable. Observation
> > of them is obscured by the extremely high double or triple digit dB's of
> > shielding effectiveness, aka common mode rejection.
>
> Peter,
> It seems to me that if the voltages can't be measured, then they are a fiction.
> One that evaporates as the cable is even threatened with the meter leads. Or
> when the humidity is high.

RF voltages developed from common mode currents that come back to the
radio operator's microphone and bite couldn't be that high impedence or
they would be disappated when they get there instread of having
sufficient "bite" to be felt.

Dick

1253. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 18:55:18 UTC
From: atkes@imap1.asu.edu
Message-ID: <9bq0mm$d7o$1@news.asu.edu>
Source record: 165602

: > snip
: >
: > Here is why I disagree. Imagine (or do) the following experiment.
: > Take two different value resistors say 10 ohms and 100 ohms. Find a
: > normal 50-60Hz AC transformer and solder them in series to form a loop
: > around the primary of the transformer. Now measure the voltage between
: > the two solder connections. Ascii artwork is likely to fail, but I mean
: > something like
: > -----+----
: > | ##### |
: > 10 ##### 100
: > | ##### |
: > -----+----
: > where the + signs are the solder connections and the # represents the
: > transformer core.
: >
: > When I measure this, the voltage with the test leads on the same side
: > of the transformer core as the 100 ohm resistor is 10 times the voltage
: > measured with the test leads on the 10 ohm resistor side of the
: > transformer core (and 180 degrees out of phase) as I expect since the
: > same current flows around the loop in both resistors. Notice that
: > depending on the path that my test leads take, my voltmeter gives
: > different answers for the voltage between exactly the same two solder
: > connections. That's why I think voltage in the presence of magnetic
: > fields is an easily *misunderstood* concept, while electric and
: > magnetic fields are simpler to understand and explain. In antennas and
: > transmission lines you always have magnetic fields around and you have
: > this poorly defined situation all the time.

: If your meter leads draw no current, there would be no voltage difference if you
: metered at the same points. There would be a difference if you measured at the
: resistors themselves, but the voltage change would be found across the wires
: themselves (which form part of the winding of the secondary you have created), just
: as there is an increment as you step to each successive turn of any transformer
: secondary. The total of voltage around that circle will add up to zero.

: john

John,

What you believe to be true violates Faraday's law which states the
total voltage as you go around a circle is the negative time rate of
change of the magnetic flux. Perhaps you might try setting this little
demonstration up and measuring it.

This demonstration is often used in Freshman/Sophmore physics courses to help students understand Faraday's law. You can find both a description of the demonstration apparatus and a description of how it works in the American Journal of Physics, the journal published by the American Association of Physics Teachers: D.R. Moorecroft, "Faraday's Law -- Demonstration of a Teaser", Am. J. Phys. 37, 221 (1969), and D.R. Moorecroft, "Faraday's Law, Potential and Voltage -- Discussion of a Teaser." In his apparatus, and the one often used in physics classes, a solenoidal magnet is used, and the voltmeter leads are more carefully dressed, left connected to the same two points, but can be swiveled from one side to another. The voltage measured changes as you swivel the voltmeter leads just like Faraday's law requires.

I think it is best done using a dual trace oscilloscope to measure the voltages for the two paths. If you have two equal resistors and make sure that capacitive coupling is negligible, you find that at an instant when you measure +V between the terminals with the first channel, you measure -V between the same two terminals with the second channel. Hardly the same voltage. If you don't have a dual trace oscilloscope, you need to use different value resistors so that the magnitudes of the voltage are different. As I said above, try it.

73 Kevin w9cf

1254. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 18:58:50 UTC
From: truelove39@aol.com
Message-ID: <20010420145850.25068.00000616@ng-mq1.aol.com>
Source record: 165603

Reg,

My sailboat's mast has twin backstays; one of them is insulated as a SSB antenna. The other (grounded) backstay is within a foot or so of the antenna backstay at the top and about 6' at the bottom. The length of the insulated portion is about 45'. I don't "get out" too well, and it's been suggested that I should insulate the grounded stay in one or possibly two places to improve transmission.

What would you recommend?

Regards,

John

1255. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 19:12:07 UTC
From: kb7qhc@home.com
Message-ID: <3ae0891c.2132287347@news.seanet.com>
Source record: 165604

On 20 Apr 2001 18:11:05 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>> Peter,
>> It seems to me that if the voltages can't be measured, then they are a fiction.
>> One that evaporates as the cable is even threatened with the meter leads. Or
>> when the humidity is high.
>
>
>
> RF voltages developed from common mode currents that come back to the
>radio operator's microphone and bite couldn't be that high impedence or
>they would be disappated when they get there instread of having
>sufficient "bite" to be felt.
>
>Dick

Hi Dick,

You are entirely correct (and Cecil has the scar to prove it). I've
found this discussion of making measurements on both side of a shield
(in one step no less) as rather a fantasy second only to the confusion
of Common Mode.

73's
Richard Clark, KB7QHC

1256. Re: antenna wire

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 19:30:09 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE08E41.2D8B@wt.net>
Source record: 165605

Brian Kelly, w3rv wrote:
>
> On Mon, 16 Apr 2001 23:00:36 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
> >
> >Home Depot, etc., have 500 ft rolls of stranded #16 for less than $20.
> >
> I paid $13.75 for a 500 foot roll of #14 stranded THHN at the Home
> Depot here. Methinks Home Depot is a very decent but unrecognized
> source for all kindsa ham antenna parts.
>
> >http://www.mindspring.com/~w6rca
> >
> w3rv

I've got one around the corner. All my antennas are made with that house wiring they sell. Most of mine are made with the #12, but I've found the #14 is really just as good. Also you can pick your color. I just bought another 500 ft roll of #14 a few weeks ago, and got "grey". Seems to be a good color. All my other ones are the "light blue". I thought maybe it would blend with the sky..I notice after using this wire for a few years that the "clear" outer covering will peel off fairly soon from sunlight, but the colored insulation seems to be pretty tough. Also you can pick from stranded or solid. I use stranded despite the rf advantage of solid. I don't think the rf difference is enough to notice, but the stranded is much stronger over time. That stuff will last for years and years. By the time the insulation ever wears off,which hasn't happened here yet, then you start over again with "fresh" uninsulated wire..:/
MK
--
http://web.wt.net/~nm5k

1257. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 20:01:58 UTC
From: atkes@imap1.asu.edu
Message-ID: <9bq4jmdlc1@news.asu.edu>
Source record: 165606

W6RCecilA (Cecil.A.Moore@IEEE.org) wrote:
: atkes@imap1.asu.edu wrote:
: > Conductors are a little harder, but again, there is no need for there
: > to be a natural resonance for the material to respond and radiate when
: > driven by any particular frequency.

: But, but, but, Kevin, Gary Coffman once took me to task for not recognizing
: the difference between natural resonances and, uh, er, is it unnatural
: resonances? Seriously, isn't there a difference between electrons hopping
: from orbit to orbit in the same atom VS electrons hopping from orbit
: to orbit in different atoms?
: --

Cecil,

I can't answer for Gary Coffman. First, the idea of electron orbits is based in old quantum theory which was never a consistent theory. I will attempt to interpret your question using standard quantum mechanics.

Let's imagine that I can ignore the nuclear motion, and the electrons start out in their many electron ground state. I now apply an oscillating electromagnetic field. The atomic fields inside materials are of the order of tens of volts per nanometer, or 10^10 volts/meter. The applied field is generally a small perturbation on the fields the electrons already see. However, with the field on, the original quantum state of the electrons will now change. Since the field is small, you can expand in powers of the field, and taking the linear term gives the usual conductivity, permittivity, permeability terms, etc. Once you formulate the question using standard quantum mechanics you find that you have a differential equation for the wave function, and the changes to the wave function. Of course for 10^23 electrons in 3 dimensions, the wave function for the electrons depends on 3*10^23 coordinates (and the spins), so obviously approximations have to be made to do the calculations. One way is to write the new wave function as a linear combination of the origin eigenstates of the system. In this formalism, all the states of the original system are handled equivalently. Of course different original states will give different contributions to the conductivity, but these states are used only as a convenient method of computation. You can in fact, use any set of states. There is no necessity of using the original set of states. In any case, thinking of this process as a set of transitions does not capture the correct physics. It is generally much closer to an adiabatic change of the electronic state. That is the state of the system smoothly changes as you apply the field.

Please realize that I have oversimplified this somewhat, but if you really care, look under "Kubo formulas" or "Linear Response" in quantum mechanics texts. A.L. Fetter and J.D. Walecka, "Quantum Theory of Many-Particle Systems", (McGraw Hill, 1971, New York), section 13 gives a concise explanation of linear respsonse. There has been a lot of progress in actually doing the calculations in the last thirty years, but the underlying formalism given there is typically used.

I hope this helps,

73 Kevin w9cf

1258. Re: Problems simulating G5RV antenna using EZNEC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 22:27:37 UTC
From: "Dan AC6LA"
Message-ID: <tJ2E6.4825$D4.500248@www.newsranger.com>
Source record: 165607

Here's an alternative to using the Varney.exe program from G4FGQ.

1. Use EZNEC to model just the antenna. As Roy suggested, this can be just a simple one-wire model with an odd number of segments, source placed on the middle segment, and segment length appropriate to the highest frequency of interest. Use the Frequency Sweep function to generate a Lastz.txt file containing feedpoint (source) impedance data over a range of choice, perhaps 2 to 30 MHz by 0.25 MHz steps.

2. Read the Lastz.txt file using XLZIZL. Look at the automatically-generated Smith chart to get a feel for the "loops" of the feedpoint impedance.

3. With XLZIZL, create any arbitrary feed system network of up to 5 elements consisting of transmission lines, baluns, and tuner components. Look at the Smith chart plot segment representing the input side of the feed system network to see what your transmitter would be "looking into" over the swept frequency range.

This post is not meant to imply that "program X is better than program Y." I use several of Reg's programs and I like them. I also sometimes model transmission lines with EZNEC. In this case the advantages of using XLZIZL might be:

a. Ability to read impedance files created by EZNEC (or other antenna modeling programs) so you can use all the power of these programs to model the wire geometry, support structures, etc.

b. Ability to create any arbitrary feed system network.

c. Transmission line parameters for over 40 types of lines are built-in, or create your own lines with custom specifications. (The Wes Stewart, N7WS, "as measured" specs for ladder line are included.) Program can be tailored to accept physical line lengths in either feet or meters. Use whichever is more intuitive for you.

d. Automatic creation of Smith charts (and several other types of charts). No need to plot points by hand on a paper Smith chart.

And the disadvantages might be:

a. Probably a steeper learning curve, since XLZIZL is not tailored to one particular type of analysis.

b. Definitely slower than Reg's (compiled) programs. On a par with other "interpreted" language programs, such as at http://www.fix.net/~jparker/norcal/software/software.htm

c. Requires Excel 97 or later.

Try 'em all!

EZNEC free demo: http://www.eznec.com/
Varney (and more): http://www.btinternet.com/~g4fgq.regp/index.html#S102
XLZIZL: http://www.qsl.net/wb6tpu/swindex.html (bottom of page)

73,
Dan AC6LA

1259. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 22:35:02 UTC
From: David Harvey <gedanate@yahoo.com>
Message-ID: <qQ2E6.3913$ff.31337@news-server.bigpond.net.au>
Source record: 165608

It must be something to do with them "KAWYERS" -- you know, people who are part of the "KEGAL SYSTEM". ;-)

1260. Re: J-pole theory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 22:41:27 UTC
From: Ian Jackson <ianjackson@g3ohx.demon.co.uk>
Message-ID: <pYVa7DAXsL46EwkT@g3ohx.demon.co.uk>
Source record: 165610

In article <%VuD6.2122$AJ.409112@news.uswest.net>, Keith McQueen
<kb7m@arrl.net> writes
>The traditional J-Pole antenna is an end-fed half wave with a 1/4 wave
>matching section. Normally a half wave antenna when fed at the end has a
>very high impedance. The 1/4 shorted matching section converts the high
>impedance to 50 ohms. It is not as stated earlier a "counterpoise". The
>1/2 wave section is resonant like a dipole. The only difference is that
>whereas the dipole is center-fed and has a low impedance, the J-Pole is
>end-fed and requires impedance matching. The gain of this antenna is the
>same as a vertical 1/2 wave dipole.
>
>"AB2HR" <ab2hr@arrl.net> wrote in message
>news:ft5rdt0hmhcn7mli441njh196fhv8hi55g@4ax.com...
>> On Tue, 17 Apr 2001 21:13:15 GMT, "Allen" <wookie8u@hotmail.com>
>> wrote:
>>
>> >I've always heard of and seen J-pole antennas for VHF and UHF. But how
>do
>> >they work? I understand dipoles and yagi's pretty well, but this antenna
>is
>> >outside of my understanding. Is the small pole a director for the larger
>> >driven pole or since it is connected electrically to the larger one does
>it
>> >not act in this way? Any bits of explanations would be helpful and
>> >appreciated.
>> >
>> >Thanks,
>> >Allen
>> >
>>
>> One element acts as the radiating element, the other as the
>> counterpoise. It doesn't matter which is which, either way will work,
>> but I usually connect the longer element to the center conductor of
>> the coax, the shorter element to the shield... I just built one for a
>> friend of mine for use on 2-meters, with a 3/4 wave radiator, received
>> signals went from S1 to S10 (granted, the J-Pole had a 10-boot
>> elevation advantage over the 1/4 wave ground plane - and in a hilly
>> environment, so the signal increase was not solely due to the antenna
>> design), and transmitted signals to the test station from S5 to full
>> scale (30 dB over S9). Believe me, these things work - with gain, and
>> are not very directional...
>>
>> 73 de
>>

>> Ray / AB2HR
>>
>> SysOp: The Lost Chord BBS
>> 607-733-5745
>> telnet: 24.95.131.236 port 6000
>> http://www.geocities.com/SiliconValley/Park/9257/lostchrd.html
>
>
This is my 'two-penneth worth' (this is English for 'two-pennyworth' aka
in Merrycan 'two cents worth' ....

Viewed from the HF world, the J-pole is a 'Zepp' antenna*. This is an
endfed halfwave, fed by a quarterwave of balanced high-impedance (ie
low-loss) transmission line. This is short-circuited at the bottom end
(a point of very low impedance), and the coax feeder is tapped up from
the short circuit end at the point where the impedance equals the
impedance of the coax. You really should not use coax (you should twin
feeder) but, in practice, you 'get away with it'.

Maybe it is best to think of it as starting as a fullwave antenna, fed
one quarterwave from the end (Fig 1).

Fig 1.
1/4w 1/4w 1/2w
0--------0 0---------0------------------------0
FEED
POINT
(low impedance)

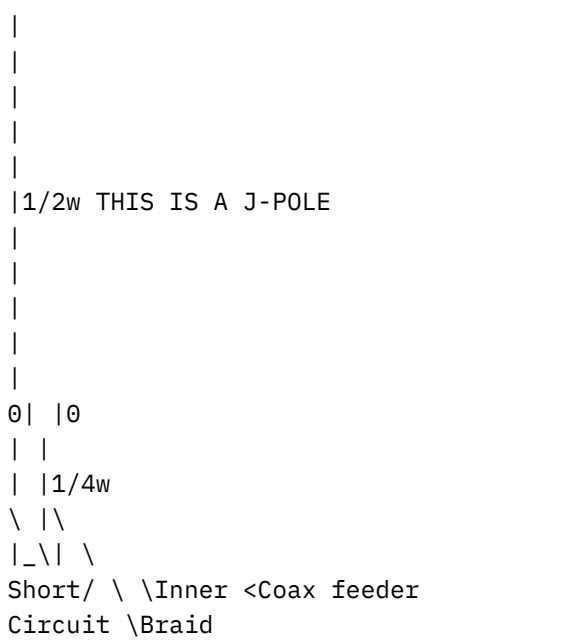
Now pull the 'quarterwave' parts of the antenna together, to form a high
impedance (eg 600 ohm), balanced transmission line (Fig 2). This is the
'traditional' Zepp antenna.

Fig 2. (high impedance) 1/2w
0| |0-------------------------0
| |
| |1/4w (say) 600 ohm twin feeder
| |
0 0
FEED
POINT
(low impedance)

A variant of this arrangement is tapping the feedpoint up the
shortcircuited quarterwave 600 ohm feeder
Fig 3. 1/2w
0| |0-------------------------0
| |
| |1/2w (say) 600 ohm twin feeder
\ |\
|_\| \
Short/ \ \Inner <---Coax feeder (connect at point where

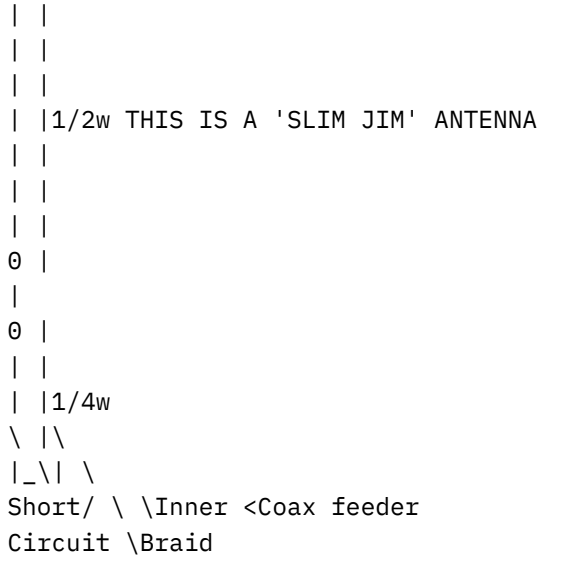
Circuit \Braid the antenna system is 50 ohms)

If you want a vertical for VHF, then 'Make it so'!!!
Fig 4.



The UK version of the J-Pole is the 'Slim Jim'. This is constructed like this (Fig 5).

Fig 5.



* An antenna which was used on the German Zeppelin airships, where there was need for an 'artifical ground'. This arrangement allowed for a low impedance feed from a transmitter to a highly efficient halfwave endfed antenna.

Do they work?
Yes...

Very, very well.
73, Ian.

1261. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 22:42:17 UTC
From: David Harvey <gedanate@yahoo.com>
Message-ID: <dX2E6.3938$ff.31473@news-server.bigpond.net.au>
Source record: 165609

If I remember correctly, the effective impedence of a quarter-wave vertical is damn near 50 Ohms, but the effective impedence of a half-wave dipole is closer to 75 Ohms... THUS it it 6 of one and half-a-dozen of the other whether you use 50-Ohm or 75-Ohm coax for a DIPOLE. Because, with 75 it matches well at the antenna end, but is a bit off at the transmitter end. With 50-Ohm it matches best at the transmitter and less at the antenna. And the match is so close anyway, even solid-state transcievers don't know the difference!

73 de vk2dmh

1262. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 22:55:12 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bqejp$1mq$1@plutonium.btinternet.com>
Source record: 165611

Steve, I think you are very much over complicating matters. But you are in good compnay. It is really quite simple.

If the antenna is not too short and the feedline, whatever it may consist of, is not too long, and all the conductors are made of copper, then it is obvious practically all the power entering the feedline MUST be radiated. As Tom has implied there's nowhere else for it to go.

The imaginary power reflections and their equally imaginary power measurements up and down the feed line and antenna wire have little effect. There's only the exceedingly low resistance of copper wire multiplied by the current squared involved. If that small loss is considered excessive then just increase wire diameters. But the fellow at the receiving end will notice no difference.

Since when has anyone seen his antenna wire, where the highest SWR on the system is usually located, glowing in the dark ? ;o)

It is necessary only that the impedance seen looking into the feedline be transformed to a purely resistive 50 ohms, plus or minus 20 percent, or whatever other resistive load the transmitter prefers to see. If the same philosophy is adopted inside the tuner as in the remainder of the system, ie., nice thick wire in big tuning coils, then who cares about SWR on the transmission line ?

The extent to which SWR on the feedline matters can be judged from the fact that very few people who swear by it know what the value of the SWR on their own feedline actually is.

Because when the so-called SWR meter is adjacent to the transmitter, which is where nearly everybody connects it, it indicates the SWR on the few inches of line between the meter and the transmitter - which is of no consequence whatsoever. Any old piece of wire would do.

It does, of course, indicate the closeness of the load presented to the transmitter to 50 ohms, which IS important. The actual parameter indicated by the meter is the magnitude of the reflection coefficient with respect to 50 ohms. The scale is calibrated 0-to-1. It is NOT the SWR on the feedline.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

1263. ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 23:05:00 UTC
From: Perseus@hol.gr
Message-ID: <3ae5b041.111389760@news.ntua.gr>
Source record: 165612

A Greek scientist have succeed with his experiments with antigravity. Maybe a cover up is imminent, so I suggest you keep a copy of his work at:

http://jnaudin.free.fr/stvexp/html/stv2caps.htm
http://jnaudin.free.fr/stvexp/html/stvcqtl.htm

http://jnaudin.free.fr/html/stvrfpend.htm
http://jnaudin.free.fr/html/stvrfpnd2.htm

http://jnaudin.free.fr/html/stvrfpnd3.htm
http://jnaudin.free.fr/html/stvrfpnd4.htm

http://jnaudin.free.fr/html/stvwdbal.htm
http://jnaudin.free.fr/stvthes/html/index.htm

http://jnaudin.free.fr/stvexp/html/stvrxp1a.htm
http://jnaudin.free.fr/stvdmdoc/stvcap.htm

http://jnaudin.free.fr/stvdmdoc/prplessp.htm
http://www.electrogravity.com/STAVROS/Stavros1.pdf

I am a child of Earth and of Starry Heaven;
But my race is of Heaven(Orphics)
E 10 E
Duke of Mystra

1264. Need clean wav recording of WWVB

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-20 23:42:42 UTC
From: Pat Tanner <tannerpa@clarkson.edu>
Message-ID: <SP3E6.10187$gl.1309887@typhoon.nyroc.rr.com>
Source record: 165613

Hey all!

I'm a college student in upstate NY. Want to do a signal processing project using the BCD data stream from WWVB (broadcast on 60KHz) out of Ft. Collins Col., problem is that my rig blew up during a lightning strike, and now I have no way to receive the signal. I was wondering if I could talk any of you guys in or near Colorado into recording a few minutes (3 to 5) of clean WWVB signal and emailing it to me at tannerpa@clarkson.edu or p_a_tanner@hotmail.com . WWVB has no vocal announcement, it's only AM DSB-SC modulation carrying a PWM BCD data stream. You'll know you got it if you hear a pulse every second. I've tried contacting WWV by telephone, as it broadcasts both vocal announcement and BCD data, however the telephone signal is the vocal announcement only. Best results probably at night. I'll send $20 to the first person who sends me a useable wav file, for their time and effort, and to express my appreciation!

73,

Pat Tanner
KC2CPA

1265. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 01:40:34 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae0e342.444548765@news.accessunited.com>
Source record: 165614

On Fri, 20 Apr 2001 16:42:40 GMT, "VE9SRB" <srbest@att.net> wrote:
>There is a difference between "delivered power" and "forward power" in a
>transmission line when the antenna SWR is greater than 1.0:1.

The important thing to know is that all power applied to the feedline
that is not dissipated in the feedline is radiated...no matter what
the SWR.

The only important effect of SWR is it might cause the transmitter to
not deliver optimum power, and it might increase loss in the feedline.

The mismatch to the transmitter is easily cured, and so the only added
loss would be due to increased losses in the feedline...most of which
relate to current increase.

There are even cases where the feedline becomes LESS lossy when
mismatched.

73 Tom

1266. FS: 1296 Loop Yagi NEW

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 03:24:59 UTC
From: bull66@aol.com
Message-ID: <20010420232459.21467.00000376@ng-fh1.aol.com>
Source record: 165616

For sale - 1296 Mhz loop yagi, never used, made by Down East Microwave.

45 elements Boom length 143 inches

For more info, check out eBay listing number 1231901197 or paste -

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?MfcISAPICommand=ViewItem&item=123
1901197

Thanks de Tom KZ3X

1267. FA: CDR Model TR-44 Ham antenna rotator system

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 04:32:41 UTC
From: GG <nbc_red@mailcity.com>
Message-ID: <3AE10DAB.89C6346A@mailcity.com>
Source record: 165617

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1231378150

1268. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 04:59:13 UTC
From: Gene Mason <gmason@airmail.net>
Message-ID: <C9BC4BA171AC1573.A9B89C589E3D6B8E.240481E6742320D4@lp.airnews.net>
Source record: 165615

Hi Richard,
Thanks for the prompt and detailed response.
If I might , let me set the record straight, the 12 bit ADC is just 12, 1bit ADC's as it has the same accuracy or more , since it uses one stage and the errors are better controlled.a ramp from a precision voltage source would do the trick.
You indicated resolution of the 12 bit ADC has something to do with the accuracy. It is a common error to confuse resolution and accuracy, but that doesnt make it right.
I question some measurement methods, you mentioned, e.g. phase measurements. Why didnt you use a PSD, phase sensitive demodulator? The output is a single dc voltage.
You didnt mention whether the sensor low pass filters were implemented, and if they were active or passive.
Also, did you stagger the scan position on the more accurate measurements?
Your project sounds very interesting, and you appear proud of your accomplishments, as well you should. I would recommend that you write a book about the project. In In your era, most air data computers were analogue. A new digital system is no small accomplishment, lots of problems to resolve. My point in summary, measurement accuracies of 1 % are usually routine, accuracies beyond that are not trivial. Thanks for taking the time for the explanations.

"Richard Clark" <kb7qhc@home.com> wrote in message news:3ae145c2.2049509969@news.seanet.com...
> On Thu, 19 Apr 2001 15:52:19 -0700, "Gene Mason" <gmason@airmail.net>
> wrote:
>
> >Richard,
> > Could you elaborate on your 'interesting' last paragraph ?
> >Gene KZ5V
> >P.S. You might begin with an explanation of the association of FAA
> >regulations and 'absolute accuracy'.
> >Was the accuracy .001, 1, or 30 % ?
> >Tell us about the 'low pass filters' used between the sensors and the ADC.
> >Tell us how the 12 ADC is better than a 1 bit ADC.
> >for starters, thanks.
> >
>
> Hi Gene,
>
> Hmm, that's a tall order. A 1 bit ADC is simply an analog comparator

> and error could be as high as 100% (you measure no signal, and yet it
> exists just below the trip point). A 12 bit ADC has a resolution of 1
> part in 4000 so that your error is no higher than 0.025% (with respect
> to the ADC reference) if the signal is just below the trip point of
> the internal comparator. So, for this example, the best accuracy
> would be 0.025% for a perfect reference (no such thing). I used a
> precision Voltage source that guaranteed a reference voltage that met
> this (probably good to 0.01% or so). This was my "absolute" standard
> (I could count on it never being out of that range of error). This is
> distinct from "relative" accuracy which is based on a comparison where
> you have no concern with what the value is, merely how it correlates
> to another value(akin to a dB relationship).
>
> But, this is still not the reported accuracy because the circuit
> contributes error (there are many sources of error when resolutions of
> voltage begin to measure in the mV). As I've pointed out in other
> threads, the level of discussion in shields and Common Mode problems
> are truly amateur. There are also errors due to conversions of AC
> potentials. I had to monitor all legs of Servo's feeding my design
> and compute the angle on the basis of phase differences (this in an
> 8080 remember). I would compute the angle of the control surfaces
> (flaps, rudder, and all), throttle, and so on, all being fed from the
> positioners on the airframe. I also had to compute the thrust from
> the engines by measuring their temperature (yet another set of
> sensors) and I had to have a stiff and robust current source (a
> Howland circuit - if I recall accurately). Absolutely every line into
> the ADC came through several MUX switches that all exhibited some path
> loss (switches have resistance) AND stray capacitance that would
> present a lag. On the other side of the switches was a sample and
> hold that also contained a capacitor that held that voltage to be
> converted within a time frame as it too would exhibit its own decay
> from the measured signal (it takes time to convert the input to an ADC
> and during that time, the input is slowly draining away). Even at a
> conversion rate of around 5 uS, the slope of decay ate away at
> accuracy.
>
> One point about my "absolute" reference voltage. This was a four wire
> device (by my design) such that I could recover from the card edge
> connection of this voltage not being depressed by even the smallest
> contact resistance. For those unfamiliar with what I call four wire,
> that is simply the supply (two wires) being monitored (by two wires)
> such that the system always drives the monitored point to the
> reference potential. You would have to find a laboratory grade power
> supply to find this, or many open frames supplies do this.
>
> All of these sources of error contribute towards what is called an
> error budget. The FAA mandates that this budget not exceed say 1% for
> flaps, 0.5% for temperature and so on in that manner. And worse, this
> is over all temperatures from -55 to 200 degrees C. And more worse,
> over accelerations up to 5 G's in all axis (yes, I measured

> acceleration in those three axis too). And it must survive impact and
> up to half an hour of 2000 degrees of flame. And, if under water, the
> water cannot intrude (and it must turn on a transponder).
>
> The generation of Black Box that I designed was for 64 parameters
> (many identified above) all in one second to a continuously running
> recorder. I had to not only perform the conversions, I had to place
> the data on the bus, and then read it back before I toggled the record
> trigger. Then the recorder would put it on tape, back up and read it
> back to me for failure testing. (Again, every second, of every hour,
> for 24 hours before the tape overwrote itself.) And this done in an 8
> bit 8080.
>
> As a caution, do not attempt this at home.
>
> As a warning, the numbers above are culled from the memory of the
> design now some 18 years distant. You will note that it is a long way
> from the accuracy of my 0.01% voltage reference to the error budget of
> 1% for flaps - this is the accumulation of error for every
> consideration (and there were a ton of issues to consider).
>
> If you have ever ridden in a 757 or 767, there is about a 50% chance
> that my design was listening to the airframe you were sitting in.
>
> 73's
> Richard Clark, KB7QHC

1269. Re: Problems simulating G5RV antenna using EZNEC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 06:36:36 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <lSHm$gA0pS46EAIY@ifwtech.com>
Source record: 165619

Dan AC6LA wrote:
>Here's an alternative to using the Varney.exe program from G4FGQ.
>
>1. Use EZNEC to model just the antenna. As Roy suggested, this can be just a
>simple one-wire model with an odd number of segments, source placed on the
>middle segment, and segment length appropriate to the highest frequency of
>interest. Use the Frequency Sweep function to generate a Lastz.txt file
>containing feedpoint (source) impedance data over a range of choice, perhaps 2
>to 30 MHz by 0.25 MHz steps.
>
>2. Read the Lastz.txt file using XLZIZL. Look at the automatically-generated
>Smith chart to get a feel for the "loops" of the feedpoint impedance.
>

Unfortunately XLZIZL wasn't available (or I wasn't aware of it) in early
February when I wrote the Smith charts article, or else I'd have tried
that too.

[...]
>
>Try 'em all!
>
Yes indeed - you can never have enough different viewpoints on antenna
modeling!

>EZNEC free demo: http://www.eznec.com/
>Varney (and more): http://www.btinternet.com/~g4fgq.regp/index.html#S102
>XLZIZL: http://www.qsl.net/wb6tpu/swindex.html (bottom of page)
>

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

1270. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 06:45:31 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9braab$r3i$0@208.207.71.151>
Source record: 165618

Tom W8JI wrote:
>
> All power entering the feedline from the transmitter is radiated,
> except that lost as heat in the feedline.
>
> The effect of SWR is only to increase the loss in the feedline,
> assuming the transmitter still delivers the same power to the
> feedline.
>
> I can have a 100 watt transmitter, a 10:1 SWR, a zero dB gain
> antenna, and radiate nearly 100 watts ERP.

Read an interesting SWR article yesterday by Carl Drumeller, W5JJ, in a 28 year old issue of 73 magazine. He went about proving that there is no such thing as reflected power. Reflected voltage and current are 90ï¿½ out of phase. Power = volts x amps x the cosine of the phase angle.
The cosine of 90 is zero, so (X watts) x (zero) = zero. Therefore no reflected power exists. Ever. (presumably so long as that 90ï¿½ phase relationship exists.)

He also mentioned something that should be obvious - the reason why coax losses are higher with higher SWR. With an SWR of 2:1 the voltage and current on the coax is twice as great as with 1:1 SWR, so that doubles dielectric loss from the doubled voltage and the 1^2 x R losses are doubled because of the doubled current flowing.
(With every increase in SWR the losses go up in direct multiples, IE with SWR of 4:1, losses are four times those with a 1:1 match.)

For some reason these facts are almost never stated so clearly.

Dick Wï¿½EX

1271. Re: KEGAL NOTICE: FRAUDULENT ACTIVITY ON THIS NEWSGROUP

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 06:49:37 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AE12D81.CDA7A109@spam.me.not>
Source record: 165620

Ah...

And here I was thinking it was an example of one of those ekstinked (sp
on purpose) species that noone's ever heard of except neobiologists and
the like. ::grin::

-SSB

David Harvey wrote:
>
> It must be something to do with them "KAWYERS" -- you know, people who are
> part of the "KEGAL SYSTEM". ;-)

1272. RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 07:42:22 UTC
From: "M.Fernando" <nop04918@mail.telepac.pt>
Message-ID: <9bre2l$98g$1@venus.telepac.pt>
Source record: 165621

Dear Friends
Tahnks for reading.
I am looking for help concerning a prblem I have here:
I have built a Windom Antenna (41 meters long) Balun 6:1 and feed with coax 50 Ohms
I have very strong RF problems in audio on 20 and 12 meters band. Can you give me some informations in order to correct it? In other hand I think if I work with a dipole there no problem concerning RF in audio, but I think Windom has more gains than a dipole... What is your opinion ?
Best 73 from Portugal
Fernando

1273. Re: J-pole theory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 07:57:46 UTC
From: Ian Jackson <ianjackson@g3ohx.demon.co.uk>
Message-ID: <wQOcJBA61T46EwHs@g3ohx.demon.co.uk>
Source record: 165622

In article <pYVa7DAXsL46EwkT@g3ohx.demon.co.uk>, Ian Jackson
<ianjackson@g3ohx.demon.co.uk> writes
>In article <%VuD6.2122$AJ.409112@news.uswest.net>, Keith McQueen
><kb7m@arrl.net> writes
>>The traditional J-Pole antenna is an end-fed half wave with a 1/4 wave
>>matching section. Normally a half wave antenna when fed at the end has a
>>very high impedance. The 1/4 shorted matching section converts the high
>>impedance to 50 ohms. It is not as stated earlier a "counterpoise". The
>>1/2 wave section is resonant like a dipole. The only difference is that
>>whereas the dipole is center-fed and has a low impedance, the J-Pole is
>>end-fed and requires impedance matching. The gain of this antenna is the
>>same as a vertical 1/2 wave dipole.
>>
>>"AB2HR" <ab2hr@arrl.net> wrote in message
>>news:ft5rdt0hmhcn7mli441njh196fhv8hi55g@4ax.com...
>>> On Tue, 17 Apr 2001 21:13:15 GMT, "Allen" <wookie8u@hotmail.com>
>>> wrote:
>>>
>>> >I've always heard of and seen J-pole antennas for VHF and UHF. But how
>>do
>>> >they work? I understand dipoles and yagi's pretty well, but this antenna
>>is
>>> >outside of my understanding. Is the small pole a director for the larger
>>> >driven pole or since it is connected electrically to the larger one does
>>it
>>> >not act in this way? Any bits of explanations would be helpful and
>>> >appreciated.
>>> >
>>> >Thanks,
>>> >Allen
>>> >
>>>
>>> One element acts as the radiating element, the other as the
>>> counterpoise. It doesn't matter which is which, either way will work,
>>> but I usually connect the longer element to the center conductor of
>>> the coax, the shorter element to the shield... I just built one for a
>>> friend of mine for use on 2-meters, with a 3/4 wave radiator, received
>>> signals went from S1 to S10 (granted, the J-Pole had a 10-boot
>>> elevation advantage over the 1/4 wave ground plane - and in a hilly
>>> environment, so the signal increase was not solely due to the antenna
>>> design), and transmitted signals to the test station from S5 to full
>>> scale (30 dB over S9). Believe me, these things work - with gain, and
>>> are not very directional...
>>>

>>> 73 de
>>>
>>> Ray / AB2HR
>>>
>>> SysOp: The Lost Chord BBS
>>> 607-733-5745
>>> telnet: 24.95.131.236 port 6000
>>> http://www.geocities.com/SiliconValley/Park/9257/lostchrd.html
>>
>>
>This is my 'two-penneth worth' (this is English for 'two-pennyworth' aka
>in Merrycan 'two cents worth' ....
>
>Viewed from the HF world, the J-pole is a 'Zepp' antenna*. This is an
>endfed halfwave, fed by a quarterwave of balanced high-impedance (ie
>low-loss) transmission line. This is short-circuited at the bottom end
>(a point of very low impedance), and the coax feeder is tapped up from
>the short circuit end at the point where the impedance equals the
>impedance of the coax. You really should not use coax (you should twin
>feeder) but, in practice, you 'get away with it'.
>
>Maybe it is best to think of it as starting as a fullwave antenna, fed
>one quarterwave from the end (Fig 1).
>
>
>Fig 1.
> 1/4w 1/4w 1/2w
> 0--------0 0---------0------------------------0
> FEED
> POINT
> (low impedance)
>
>
>Now pull the 'quarterwave' parts of the antenna together, to form a high
>impedance (eg 600 ohm), balanced transmission line (Fig 2). This is the
>'traditional' Zepp antenna.
>
>Fig 2. (high impedance) 1/2w
> 0| |0-------------------------0
> | |
> | |1/4w (say) 600 ohm twin feeder
> | |
> 0 0
> FEED
> POINT
> (low impedance)
>
>A variant of this arrangement is tapping the feedpoint up the
>shortcircuited quarterwave 600 ohm feeder
> Fig 3. 1/2w

> 0| |0-------------------------0
> | |
> | |1/2w (say) 600 ohm twin feeder
> \ |\
> |_\| \
> Short/ \ \Inner <---Coax feeder (connect at point where
> Circuit \Braid the antenna system is 50 ohms)
>
>If you want a vertical for VHF, then 'Make it so'!!!
> Fig 4.
> 0
> |
> |
> |
> |
> |
> |1/2w THIS IS A J-POLE
> |
> |
> |
> |
> |
> 0| |0
> | |
> | |1/4w
> \ |\
> |_\| \
> Short/ \ \Inner <Coax feeder
> Circuit \Braid
>
>The UK version of the J-Pole is the 'Slim Jim'. This is constructed like
>this (Fig 5).
>
> Fig 5. |--|
> | |
> | |
> | |
> | |1/2w THIS IS A 'SLIM JIM' ANTENNA
> | |
> | |
> | |
> 0 |
> |
> 0 |
> | |
> | |1/4w
> \ |\
> |_\| \
> Short/ \ \Inner <Coax feeder
> Circuit \Braid

>
>
>* An antenna which was used on the German Zeppelin airships, where there
>was need for an 'artifical ground'. This arrangement allowed for a low
>impedance feed from a transmitter to a highly efficient halfwave endfed
>antenna.
>
>Do they work?
>Yes...
>Very, very well.
>73, Ian.
>
Woops! Typo error in Fig 3. Should be

Fig 3. 1/2w
0| |0-------------------------0
| |
| |1/4w (say) 600 ohm twin feeder
\ |\
|_\| \
Short/ \ \Inner <---Coax feeder (connect at point where
Circuit \Braid the antenna system is 50 ohms)

Ian.

1274. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 08:12:07 UTC
From: Zoran Brlecic <zbrlecic@earthlink.net>
Message-ID: <3AE1415D.9F65B2BA@earthlink.net>
Source record: 165623

"I-Oannes Karahalus Filos]+[EE 10 Konx Om Panx" wrote:

> A Greek scientist have succeed with his experiments with antigravity. Maybe a
> cover up is imminent, so I suggest you keep a copy of his work at:

Damn government doesn't want people to levitate so it sends the CIA hounds to
silence the professor the same way the aliens silenced JFK. Fight the oppression!

--
Support freedom of speech, or I'll kill you!

1275. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 08:39:08 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9brgus$4bd$1@slb3.atl.mindspring.net>
Source record: 165625

Dick:

Heh, heh...

Those "common mode voltages that bite"... do not get on the outside of the shield by "leaking" through numerous skin depth layers.

We were discussing the situation of a coaxial cable that has no other common mode coupling than through the shield itself. i.e. an infinitely long coaxial cable carrying a differential signal. In this case the differential mode to common mode coupling impedance is extremely high.

"Common mode voltages that bite" in amateur practice get on the outside of the shield in an entirely different way from "leaking" through the shield, they get on the outside by differential to common mode coupling impedances caused by unbalances at antenna terminations, etc... and physical unbalance in the relationship of the feedline to the radiating antenna.

In those cases the differential mode to common mode coupling impedances are much lower and as you noted do sustain a lot more current.

-Peter K1PO

"Dick Carroll" <dixie@townsqr.com> wrote in message news:9bpu3plhu0@208.207.71.134...
>
>
> John O'Flaherty wrote:
> >
> > "Peter O. Brackett" wrote:
> >
> > > [snip]
> > > >
> > > > The voltage between two points is a simple, easily understood concept.
> > > Some of the
> > > > shielding effect of coax, it seems to me, is due to the fact that the
> > > inner
> > > > conductor is masked to the outside of the cable by the shield, and thus
> > > there is
> > > > no externally available reference for the presence of voltage. Of course,
> > > there
> > > > are many ways to think about things that are equally true, and I

don't
> > > doubt that
> > > > all you have said is true. It seems to me that some of the questions
about
> > > the
> > > > effectiveness of skin effect could be settled by taking a piece of
coax,
> > > running a
> > > > sufficiently high rf current through it that it is known that there
would
> > > be a
> > > > measurable voltage drop along the inside of the shield, and then
measuring
> > > between
> > > > two points on the outside of the shield to see if that drop is
measurable
> > > on the
> > > > outside.
> > > >
> > > > john
> > > >
> > > [snip]
> > >
> > > John, that voltage would be there on the outside for sure... however
it is a
> > > pale imitation of the same voltage on the inside since it exists only
behind
> > > the extremely high common mode impedance... which could be thousands
of
> > > MegOhms, etc...
> > >
> > > Attempting to "measure" that voltage on the outside of the shield will
> > > generally be infeasible, since there are very few instruments which
could
> > > measure that voltage at such a high impedance level. The mere act of
> > > attaching the voltmeter with it's finite internal impedance would
affect the
> > > outside the shield voltage by shunting away the extremely low current
> > > [femptoamps] that develops the voltage on the outside.
> > >
> > > What everyone seems to be missing here is that the impedance at
various
> > > layers of skin depths increases very rapidly and that after a few skin
> > > depths the impedance becomes impractically high to attempt any voltage
> > > measurements with "normal" instruments.
> > >
> > > This does not mean that the voltage is not present.
> > >
> > > In fact the "ratio" of the impedance and hence current levels a few
skin

> > > depths deep to those on the "active" surface is measureable in another
way
> > > as the common mode rejection of the cable. Another way of stating
this
> > > "common mode rejection" is that it is the "shielding" effectiveness of
the
> > > cable.
> > >
> > > If the common mode rejection or shielding effectiveness of the cable
is
> > > measureable as an "attenuation" of say 150 dB of shielding, or say 90
dB of
> > > shielding, or whatever... why then ....
> > >
> > > the currents on the outside of the cable due to those on the inside
will be
> > > "down" from those on the inside by that amount. Now those tiny
currents are
> > > being "driven" by the same voltage on the outside as exists on the
inside.
> > > That voltage is applied across the common mode impedance at that point
which
> > > is much higher,by the ratio of 150 dB or 90 dB or whatever, than the
> > > corresponding impedances on the inside. And so...
> > >
> > > If you attempt to measure those voltages at those multi-MegOhm
impedance
> > > levels you will never be able to get an accurate or significant
indication.
> > > The voltmeter simply is ineffective measuring a voltage developed by
maybe
> > > femtoamps across multi-MegOhm impedances.
> > >
> > > But the voltages are there nonetheless! And at the extremely low
current
> > > levels required to develop them almost completely unobservable.
Observation
> > > of them is obscured by the extremely high double or triple digit dB's
of
> > > shielding effectiveness, aka common mode rejection.
> >
> > Peter,
> > It seems to me that if the voltages can't be measured, then they are a
fiction.
> > One that evaporates as the cable is even threatened with the meter
leads. Or
> > when the humidity is high.
>
>
>

> RF voltages developed from common mode currents that come back to the
> radio operator's microphone and bite couldn't be that high impedence or
> they would be disappated when they get there instread of having
> sufficient "bite" to be felt.
>
> Dick

1276. Re: Need clean wav recording of WWVB

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 08:50:24 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3AE149D0.AFE0646C@haertig.com>
Source record: 165624

Hey Pat,

Just how would one record WWVB, since the modulation is incredibly low frequency AM. The modulation fundamental is 1 Hz, and perhaps there are a dozen harmonics, making a whopping 12 Hz top frequency. Certainly the audio outputs of most receivers don't go that low. The sound one hears on a receiver when listening to WWVB on a standard receiver is the background noise increasing when the WWVB signal goes low, that is, the carrier power drops 10 dB.

If you want a cheap WWVB receiver, go to Rat Snack and buy one of their "Atomic Clock" clocks and whack off the antenna pendant. The entire receiver is in the pendant. Just 4 wires, V+, Common, Signal (those 1 Hz square waves), and a turn on line that either needs to be taken low or high, I forget which.

Gray

Pat Tanner wrote:
>
> Hey all!
>
> I'm a college student in upstate NY. Want to do a signal processing project
> using the BCD data stream from WWVB (broadcast on 60KHz) out of Ft. Collins
> Col., problem is that my rig blew up during a lightning strike, and now I
> have no way to receive the signal. I was wondering if I could talk any of
> you guys in or near Colorado into recording a few minutes (3 to 5) of clean
> WWVB signal and emailing it to me at tannerpa@clarkson.edu or
> p_a_tanner@hotmail.com . WWVB has no vocal announcement, it's only AM DSB-SC
> modulation carrying a PWM BCD data stream. You'll know you got it if you
> hear a pulse every second. I've tried contacting WWV by telephone, as it
> broadcasts both vocal announcement and BCD data, however the telephone
> signal is the vocal announcement only. Best results probably at night. I'll
> send $20 to the first person who sends me a useable wav file, for their time
> and effort, and to express my appreciation!
>
> 73,
>
> Pat Tanner
> KC2CPA

--
Telecommunications Engineering
Gray Frierson Haertig & Assoc.
820 North River Street, Suite 100
Portland, Oregon 97227

503-282-2989
503-282-3181 FAX
gfh@haertig.com

1277. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 08:53:30 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9brhq1$g4j$1@slb4.atl.mindspring.net>
Source record: 165626

Richard:

Exactly... and for the infinitely long coaxial cable carrying a differential current, "The Ground" is on the outside of the shield somewhere... no where near the inside of the cable. Heh, heh... the ground at the end of the universe.

That's why, with a coaxial cable, the "common mode" current exists on the outside of the shield... that's the only way it can get to "The Ground at the End of the Universe".

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:3addee1c.1961535829@news.seanet.com...
> On Wed, 18 Apr 2001 10:46:04 -0500 (CDT), richardharrison@webtv.net
> (Richard Harrison) wrote:
>
> >Bill, W0IYH wrote:
> >"The common mode current on the outside of the braid is the common mode
> >current that we usually see. It is caused by an unbalance in an antenna
> >or by noise pickup from a local source."
> >
> >I went to the new Antenna Book to see what you were talking about. My
> >education is a half century old and we did not talk about common-mode on
> >coax back then. Here is what I found on page 26-17:
> >
> >"Current induced onto both conductors of a two-wire line is a
> >common-mode current, since it flows in the same direction on both
> >conductors, rather than in opposite directions as it does for
> >transmission-line current." This is exactly as I remember from long ago.
> >
> >Then: "The outer braid for a coaxial cable shields the inner conductor
> >from such an induced current, (so far, so good) but the unwanted current
> >on the outside braid is still called "common-mode" current." By whom?
> >And since when? This is an outrage.
> >Best regards, RIchard Harrison, KB5WZI
>
> Hi Richard,
>
> There is far more comprehensive examination and discussion of Common
> Mode issues in those texts that are specifically related to the
> control of noise and the application of shields (the discussion of
> shields in this group hardly touches the surface).
>

> Common Mode is properly identified in your rememberance of so long
> ago. The second statement that so confounds you is simply an
> observation of the effect from a limited perspective (that is, the
> statement is incomplete) more commonly discussed in this forum and
> often a source of considerable grief for just this problem of
> omission.
>
> Common Mode, by definition, is that voltage or current referenced to
> Common (Duh!) and we use Ground in that regard. If the current does
> not flow to Common (Ground) it is not Common Mode current. If Ground
> is not your Common, you must reveal what you call Common, and current
> most flow to it to qualify.
>
> 73's
> Richard Clark, KB7QHC

1278. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 09:06:33 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9brii8$5n2$1@slb3.atl.mindspring.net>
Source record: 165627

John:

Yes, if one forces charges [say electrons] to travel in a circular path, but at a constant speed, there will be photons [radiation] created in that case by centripital acceleration, but in the case of ordinary inductors it is vanishingly small... undetectable with ordinary laboratory instruments.

This effect may be quantitatively calculated, but to do so you will need to know the actual speed of the electrons comprising the current in the coil, i.e. from the number of electrons comprising the current, the current density, etc... and the radius of their path around the coil, etc... to calculate the acceleration... if you do this correctly you will find that for "ordinary" sized currents, the electron acceleration is exceedingly small and so is the centripital acceleration. You would then find that under ordinary circumstances this effect is so small at to be unovservable by "normal means".

In powerful particle accelerators or super-conducting inductors the effect is more readily observable.

-Peter K1PO

"John O'Flaherty" <oflahert@toast.net> wrote in message
news:3ADC6353.6C40828@toast.net...
> "Peter O. Brackett" wrote:
>
> > If charges are forced down a non-linear shaped conductor at a
> > constant speed, i.e. a DC current in a "curved" conductor, then
radiation
> > will also occur due to that acceleration.
>
> Would there be any way for an ordinary person to try that, or see it? What
about
> dc through a simple coil? Is there any radiation associated with that?
>
> john
>
>
>

1279. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 09:30:54 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9brk05ofl1@slb4.atl.mindspring.net>
Source record: 165628

Jan-Martin:

Re: 100 Ohm coaxial cable.

The coaxial cable used on [the old] IBM 3270 display systems was 93 Ohms.
It usually came as twinaxial cable, i.e. two 93 Ohm coaxial cables bound in
the same outside plastic covering.

It was "good" quality, I am sure there must be millions of feet of that
stuff around as "surplus" since the nearly 7 million 3270 terminals have
been largely decommissioned by now and replaced by modern PC based
terminals.

I have seen large hanks of the twinax 93 Ohm cable around from time to time
and have used some myself for ham HF purposes.

I doubt that any new 93 Ohm twinax is being manufactured today.

-Peter K1PO

"J M Noeding" <la8ak@online.no> wrote in message
news:3adf64a4.1321113337@news.online.no...
> On Wed, 18 Apr 2001 05:53:40 GMT, "Roger" <rdhalste@tm.net> wrote:
>
> ..
> >> really be 50 Ohms", just lie and tell the ham on the other end of your
> >QSO's
> >> that it is 50 Ohms.
> >>
> >> No one will know but you!
> >>
> >Don't lie, just tell them you are using hard line<:-))
> >I used to use multiple runs of 3/4 inch 75 ohm hard line for VHF and UHF.
> >Connectors are easy to make for the half inch and take only a little more
> >work for the 3/4 inch.
> >
> >Roger Halstead (K8RI) www.RogerHalstead.com
> >N833R World's Oldest Debonair? s# CD-2
> >
> >> Enjoy!
> >>
> >> Peter K1PO
> >>
> some amateurs need simple ideas, many around here use only simple coax
> cable like RG58/U, but I would like 100 ohm cable if available as
> LOW LOSS for another purpose than just between the rig and antenna, I

> don't want lossy data cables, does such cables exist or will I have to
> make it myself?
> Also need some 25 ohm bits, believe they are commonly available
>
> 73
> Jan-Martin
> LA8AK

1280. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 11:46:36 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9brrq5hbg1@neptunium.btinternet.com>
Source record: 165629

Breaking up the other guy with insulators will probably have no
effect on radiating efficiency. It will have a minor effect on the
radiating pattern. It will have a small effect on tuner settings.

More info needed please -

How do you know you don't "get out" too well ?

A good check on "getting out" is to ask how well does it "drag 'em
in" ?

Against what have you compared performance ?

A 45-feet vertical above water should be OK unless it is parked
under a bridge.

Is it salt water or fresh water ?

What is an SSB antenna ? Do you mean it is used on the 160m to 10m
bands ?

Of what materials are the guys, mast and hull made ?

Presumably it is tuned against ground. What is your ground
electrode ? How do you make contact with water ?

Regards, Reg, G4FGQ
==========

Truelove39 wrote
> Reg,
>
> My sailboat's mast has twin backstays; one of them is insulated
as a SSB
> antenna. The other (grounded) backstay is within a foot or so of
the antenna
> backstay at the top and about 6' at the bottom. The length of the
insulated
> portion is about 45'. I don't "get out" too well, and it's been
suggested that
> I should insulate the grounded stay in one or possibly two places
to improve
> transmission.
>
> What would you recommend?
>
> Regards,

>
> John
>

1281. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 11:50:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE1740A.E9C8B5AD@eznec.com>
Source record: 165630

Richard Clark wrote:

> . . .
> Common Mode, by definition, is that voltage or current referenced to
> Common (Duh!) and we use Ground in that regard. If the current does
> not flow to Common (Ground) it is not Common Mode current. If Ground
> is not your Common, you must reveal what you call Common, and current
> most flow to it to qualify.
>
> 73's
> Richard Clark, KB7QHC

No, that's neither the definition nor the meaning of common mode. Being common mode has nothing to do with ground or where the current is flowing. A common mode or even mode current is the component or portion of current that's common to two conductors, i.e., is in the same amplitude and phase on both conductors. (Numerically, it's the average of the currents on two conductors.) Similarly, a common mode or even mode voltage is simply the average of two voltages. (Phase as well as amplitude have to be included in these averages.) An even mode impedance (not usually called common mode in my experience) is often defined and used for three wire transmission lines, such as parallel microstrip lines over a ground plane, or shielded twinlead. It's the impedance you see between the two conductors and ground or shield when the conductors are connected together.

Roy Lewallen, W7EL

1282. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 12:17:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE17A52.15E93B06@IEEE.org>
Source record: 165631

"M.Fernando" wrote:
>
> Dear Friends
> Tahnks for reading.
> I am looking for help concerning a prblem I have here:
> I have built a Windom Antenna (41 meters long) Balun 6:1 and feed with
> coax 50 Ohms
> I have very strong RF problems in audio on 20 and 12 meters band. Can you
> give me some informations in order to correct it? In other hand I think if I
> work with a dipole there no problem concerning RF in audio, but I think
> Windom has more gains than a dipole... What is your opinion ?

Your coax is radiating because a Windom is an unbalanced antenna and a
6:1 voltage balun will not balance the currents. The Windom and dipole
have somewhat different radiation patterns but approximately the same
gains. I doubt that you can tell the difference between the performance
of the Windom and the dipole.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1283. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 12:27:20 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE17CA8.6FF9FCC0@IEEE.org>
Source record: 165632

Dick Carroll wrote:
> Reflected voltage and current are 90ï¿½ out of phase.
> For some reason these facts are almost never stated so clearly.

Probably because those "facts" are false. Reflected voltage and
current are 180 degrees out of phase so cos(-180) equals one.
We know for a fact that standing wave current maximum points are
1/4WL away from standing wave voltage maximum points. That would
not be true if reflected voltage and current were 90 degrees
out of phase.
--
http://www.mindspring.com/~w6rca

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1284. Re: Anyone ever make a wire beam like Giovanni makes

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 13:01:29 UTC
From: jcm <menardjc@wanadoo.fr>
Message-ID: <9bs0i3sjt1@wanadoo.fr>
Source record: 165633

It seems to be a 2 elements critical coupling "Jungle Job" beam designed
long ago by Dick BIRD G4ZU. See ARRL Antenna compendium nb ??.
I am using one, photo sent to your e-mail address.

JCM - F8ND

"Jack" <poster@gate.net> a crit dans le message news:
3ADE4319.8265C07A@gate.net...
> It looks like a Kite laying horizontal. Has wire for elements.
>
> Jack
> wb4roy
>

1285. Re: Anyone ever make a wire beam like Giovanni makes

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 13:24:22 UTC
From: Bill <billNOSPAM@hovac.com>
Message-ID: <9bs1ls$24ml$1@box9.cho.cstone.net>
Source record: 165634

Check this out http://www.antennex.com/preview/New/c8titanx.htm

Bill

"Jack" <poster@gate.net> wrote in message news:3ADE4319.8265C07A@gate.net...
> It looks like a Kite laying horizontal. Has wire for elements.
>
> Jack
> wb4roy
>

1286. Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 13:57:38 UTC
From: Jim <nospamk5ik@mindspring.com>
Message-ID: <2as2etcum2h9a9arh4ihffoas827d9s07b@4ax.com>
Source record: 165635

Once upon a time..... I recall being told, or I read it somewhere, that routing external wiring (coax feedline) this is connected to delicate equipment (RF transceiver) through a section of iron pipe buried outside the building containing the equipment would effectively choke voltage spikes that might be induced on the external wiring (shield of the coax) from near-field lightning.

Anyone in this group have applied or theoretical experience with this concept?

Is it practical? I have not seen this technique applied at common carrier or amateur repeater sites therefore I suspect there is no benefit.

Cheers.
Jim

1287. Double Discone 4 VHF listening

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 14:01:45 UTC
From: ClassicAudioVisual <cavcav2001@hotmail.com>
Message-ID: <8pgE6.121260$HR6.14060030@nnrp4.clara.net>
Source record: 165636

Saw a post in alt.radio.scanner.uk about using a "double discone" as a good antenna set-up for VHF listening.

Now how does a double discone work exactly as I'm using a discone at~the~moment but have a spare in my loft.

Am I right in thinking you use a "splitter" somewhere along your coax, or more likely at your receiver
with independent coax for each discone, which draws on both antennas?

Any comments most welcome,

Cav.

1288. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 14:34:22 UTC
From: n2ey@aol.com
Message-ID: <20010421103422.02623.00000136@nso-fp.aol.com>
Source record: 165637

In article <3ADD3EE1.1B718EFC@spam.me.not>, Sideband <sideband@spam.me.not>
writes:

>Great info. Thanks for the links. I *may* have been making some of the
>same mistakes listed. ::grin:: I'll try to forget everything I've
>learned and start over. Maybe I'll be able to get it down pat before the
>test, and go from CB Operator to Extra Class Ham in one shot... Who
>knows?
>
>Thanks again.
>
You're welcome - and good luck!

The big "secret" of learning Morse is that, for most people, it really isn't
very difficult at all if approached the right way. And today we have more
learning tools than ever before, most of which are free for the download. Gotta
luv it.

I don't know why Koch and his method hasn't gotten more "ink". I first heard of
him in a 1971 QST article, but I was already an Extra doing 25-30 wpm by then.
Maybe the fact that he was German and a psychologist had something to do with
it - the "not invented here" thing.

No license to Extra is very do-able today - go for it! Don;t hesitate to email
if you have questions or problems.

73 de Jim, N2EY

1289. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 14:44:41 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <t1hE6.38175$xN4.2808334@news1.sttls1.wa.home.com>
Source record: 165638

Peter O. Brackett wrote:

> Exactly... and for the infinitely long coaxial cable carrying a
differential
> current, "The Ground" is on the outside of the shield somewhere... no
where
> near the inside of the cable. Heh, heh... the ground at the end of the
> universe.
>
> That's why, with a coaxial cable, the "common mode" current exists on the
> outside of the shield... that's the only way it can get to "The Ground at
> the End of the Universe".
>
> -Peter K1PO

Hi Peter,

My understanding is that the differential current is the current which flows on a transmission line when a voltage is applied between the two transmission line conductors. The differential currents would be balanced and 180 degrees out of phase. The ratio of voltage to current would be the Zo of the transmission line.

The concept of GROUND in this situation may not be the same as the concept of NEUTRAL. GROUND is usually the earth. The braid of the coax is often connected to earth.

NEUTRAL is the mid point of the voltage applied to the transmission line when an AC voltage is being applied. The NEUTRAL for a transmission line can be found by placing two equal resistors (connected in series) between the feed points of the transmission line. The voltage reading across each resistor will be the same. Taking the connection point of the two resistors as the common measuring point, then the instantaneous voltages will be equal but the signs will be opposite, proving that the connection of the two resistors is the NEUTRAL point.

It is interesting to observe that GROUND and the shield of a coax line (if they are connected) both are raised to some voltage compared to NEUTRAL when the transmission line is energized with an alternating voltage.

73, Roger, W7WKB

1290. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 15:25:18 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <yDhE6.9895$hH3.851738@bgtnsc04-news.ops.worldnet.att.net>
Source record: 165639

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ae0e342.444548765@news.accessunited.com...
> On Fri, 20 Apr 2001 16:42:40 GMT, "VE9SRB" <srbest@att.net> wrote:
> >There is a difference between "delivered power" and "forward power" in a
> >transmission line when the antenna SWR is greater than 1.0:1.
>
> The important thing to know is that all power applied to the feedline
> that is not dissipated in the feedline is radiated...no matter what
> the SWR.
>
> The only important effect of SWR is it might cause the transmitter to
> not deliver optimum power, and it might increase loss in the feedline.
>
>
> The mismatch to the transmitter is easily cured, and so the only added
> loss would be due to increased losses in the feedline...most of which
> relate to current increase.
>
> There are even cases where the feedline becomes LESS lossy when
> mismatched.
>
> 73 Tom

You're tricky with words. I hope this isn't just a troll.

If "applied power" is "delivered power" I agree. However, you can't just make this statement as if SWR has no effect on what happens at the transmitter. Some form of compensation must occur. You either need a matched tuner or you need to adjust the transmitter's output level to compenaste for the increase in SWR.

If you adjust a transmitter with no internal tuner circuit to deliver 100 watts of power to a Zo load, and then replace the Zo load with a mismatched load, it will not deliver 100 watts of power to the mismatched load. Your statements imply that it will.

Steve VE9SRB

1291. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 15:28:41 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <JGhE6.9901$hH3.853439@bgtnsc04-news.ops.worldnet.att.net>
Source record: 165640

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9braab$r3i$0@208.207.71.151...
>
>
> Tom W8JI wrote:
> >
> > All power entering the feedline from the transmitter is radiated,
> > except that lost as heat in the feedline.
> >
> > The effect of SWR is only to increase the loss in the feedline,
> > assuming the transmitter still delivers the same power to the
> > feedline.
> >
> > I can have a 100 watt transmitter, a 10:1 SWR, a zero dB gain
> > antenna, and radiate nearly 100 watts ERP.
>
>
> Read an interesting SWR article yesterday by Carl Drumeller, W5JJ, in a
> 28 year old issue of 73 magazine. He went about proving that there is no
> such thing as reflected power. Reflected voltage and current are 90° out
> of phase. Power = volts x amps x the cosine of the phase angle.
> The cosine of 90 is zero, so (X watts) x (zero) = zero. Therefore no
> reflected power exists. Ever. (presumably so long as that 90° phase
> relationship exists.)
>
> He also mentioned something that should be obvious - the reason why
> coax losses are higher with higher SWR. With an SWR of 2:1 the voltage
> and current on the coax is twice as great as with 1:1 SWR, so that
> doubles dielectric loss from the doubled voltage and the 1^2 x R losses
> are doubled because of the doubled current flowing.
> (With every increase in SWR the losses go up in direct multiples, IE
> with SWR of 4:1, losses are four times those with a 1:1 match.)
>
> For some reason these facts are almost never stated so clearly.
>
> Dick W°EX

Hi Dick:

These "facts" are also technically wrong and do not all represent what is
really happening in a transmission line with reflected power.

Reflected power is very real, that's why the loss in the coax increases.
Some portion of the forward power is lost as it travels to the antenna and

some portion of the reflected power is lost as it travels towards the transmitter.

Steve VE9SRB

1292. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 15:40:01 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <IRhE6.29190$IJ1.2492756@bgtnsc05-news.ops.worldnet.att.net>
Source record: 165641

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9bqejp$1mq$1@plutonium.btinternet.com...
> Steve, I think you are very much over complicating matters. But you
> are in good compnay. It is really quite simple.
>
> If the antenna is not too short and the feedline, whatever it may
> consist of, is not too long, and all the conductors are made of
> copper, then it is obvious practically all the power entering the
> feedline MUST be radiated. As Tom has implied there's nowhere else
> for it to go.
>
> The imaginary power reflections and their equally imaginary power
> measurements up and down the feed line and antenna wire have little
> effect. There's only the exceedingly low resistance of copper wire
> multiplied by the current squared involved. If that small loss is
> considered excessive then just increase wire diameters. But the
> fellow at the receiving end will notice no difference.
>
> Since when has anyone seen his antenna wire, where the highest SWR
> on the system is usually located, glowing in the dark ? ;o)
>
> It is necessary only that the impedance seen looking into the
> feedline be transformed to a purely resistive 50 ohms, plus or
> minus 20 percent, or whatever other resistive load the transmitter
> prefers to see. If the same philosophy is adopted inside the tuner
> as in the remainder of the system, ie., nice thick wire in big
> tuning coils, then who cares about SWR on the transmission line ?
>
> The extent to which SWR on the feedline matters can be judged from
> the fact that very few people who swear by it know what the value
> of the SWR on their own feedline actually is.
>
> Because when the so-called SWR meter is adjacent to the
> transmitter, which is where nearly everybody connects it, it
> indicates the SWR on the few inches of line between the meter and
> the transmitter - which is of no consequence whatsoever. Any old
> piece of wire would do.
>
> It does, of course, indicate the closeness of the load presented to
> the transmitter to 50 ohms, which IS important. The actual
> parameter indicated by the meter is the magnitude of the reflection
> coefficient with respect to 50 ohms. The scale is calibrated
> 0-to-1. It is NOT the SWR on the feedline.
> ----

> **********
> Regards, Reg, G4FGQ
> Free radio design & modelling software
> http://www.btinternet.com/~g4fgq.regp
>
> **********
>

Reg,

SWR and reflected power are not imaginary. Reflected power is very real and has a significant effect on what happens in a transmission line system.

If you don't believe me, disable or by pass the tuner in your transmitter or system. Set your transmitter to deliver maximum power into 1/2 wavelength long transmission line with a Zo load connected at the end. Then replace the Zo load with a short circuit. Turn on your transmitter. How much power is "delivered" to the transmission line? How's the transmitter doing?

Steve VE9SRB

1293. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 15:58:41 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE1AE31.F2F10FDF@toast.net>
Source record: 165642

"Peter O. Brackett" wrote:

> John:
>
> Yes, if one forces charges [say electrons] to travel in a circular path, but
> at a constant speed, there will be photons [radiation] created in that case
> by centripital acceleration, but in the case of ordinary inductors it is
> vanishingly small... undetectable with ordinary laboratory instruments.
>
> This effect may be quantitatively calculated, but to do so you will need to
> know the actual speed of the electrons comprising the current in the coil,
> i.e. from the number of electrons comprising the current, the current
> density, etc... and the radius of their path around the coil, etc... to
> calculate the acceleration... if you do this correctly you will find that
> for "ordinary" sized currents, the electron acceleration is exceedingly
> small and so is the centripital acceleration. You would then find that
> under ordinary circumstances this effect is so small at to be unovservable
> by "normal means".
>
> In powerful particle accelerators or super-conducting inductors the effect
> is more readily observable.
>
> -Peter K1PO
>
> "John O'Flaherty" <oflahert@toast.net> wrote in message
> news:3ADC6353.6C40828@toast.net...
> > "Peter O. Brackett" wrote:
> >
> > > If charges are forced down a non-linear shaped conductor at a
> > > constant speed, i.e. a DC current in a "curved" conductor, then
> radiation
> > > will also occur due to that acceleration.
> >
> > Would there be any way for an ordinary person to try that, or see it? What
> about
> > dc through a simple coil? Is there any radiation associated with that?
> >
> > john
> >
> >
> >

That is fascinating. I wonder what the frequency of such radiation would be (in the case of dc through a coil), and whether it would be a broad band of frequencies as in thermal radiation (say, separate radiation from each of the

electrons involved). Also, radiation has to take place as one photon, minimum... I wonder if that would be a very low energy photon, or one only every once in a while, or what.

john

1294. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 16:10:08 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <i9b3etc0bktsqv4360dihcndouopqs18oj@4ax.com>
Source record: 165643

On Sat, 21 Apr 2001 04:50:34 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Richard Clark wrote:
>
>> . . .
>> Common Mode, by definition, is that voltage or current referenced to
>> Common (Duh!) and we use Ground in that regard. If the current does
>> not flow to Common (Ground) it is not Common Mode current. If Ground
>> is not your Common, you must reveal what you call Common, and current
>> most flow to it to qualify.
>>
>> 73's
>> Richard Clark, KB7QHC
>
>No, that's neither the definition nor the meaning of common mode. Being
>common mode has nothing to do with ground or where the current is
>flowing. A common mode or even mode current is the component or portion
>of current that's common to two conductors, i.e., is in the same
>amplitude and phase on both conductors. (Numerically, it's the average
>of the currents on two conductors.) Similarly, a common mode or even
>mode voltage is simply the average of two voltages. (Phase as well as
>amplitude have to be included in these averages.) An even mode impedance
>(not usually called common mode in my experience) is often defined and
>used for three wire transmission lines, such as parallel microstrip
>lines over a ground plane, or shielded twinlead. It's the impedance you
>see between the two conductors and ground or shield when the conductors
>are connected together.
>
>Roy Lewallen, W7EL

Hi Roy,

Your examples are excellant, but they are only that, and not
definition.

However, the dismissal from the discussion of the complete circuit
>common mode has nothing to do with ground or where the current is
>flowing.
cannot stand.

73's
Richard Clark, KB7QHC

1295. Re: Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 16:34:04 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AE1B67C.864DDC@oio.net>
Source record: 165644

Jim,
I would tend to doubt if it would be affective. It
would be too easy! I imagine it would act like a choke
wound on an iron core. To make it a linear choke, it
would take quite a run of iron pipe! And as you said,
I've never seen it in use in an amateur or commercial
station either. It would almost make me want to take
up plumbing... or, at least selling pipe.
'Doc

1296. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 16:37:58 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AE1B766.DFFE6F12@oio.net>
Source record: 165645

Dear 'Duke',

> I am a child of Earth and of Starry Heaven;
> But my race is of Heaven(Orphics)
> E 10 E
> Duke of Mystra

I'm afraid that isn't all you may be....
'Doc

1297. Re: Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 17:30:24 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <QsjE6.13413$Ce4.1295455@news1.rdc1.ct.home.com>
Source record: 165646

Seems the theory would be that the spike would be minimized by the induced eddy currents in the iron piping. Galvanized electrical conduit comes to mind as being a more practical substitute to water pipe... This still doesn't answer the question how effective a suppressor the pipe is, however...

Peter

"'Doc" <w5lz@oio.net> wrote in message news:3AE1B67C.864DDC@oio.net...
> Jim,
> I would tend to doubt if it would be affective. It
> would be too easy! I imagine it would act like a choke
> wound on an iron core. To make it a linear choke, it
> would take quite a run of iron pipe! And as you said,
> I've never seen it in use in an amateur or commercial
> station either. It would almost make me want to take
> up plumbing... or, at least selling pipe.
> 'Doc

1298. Re: Downloadable IOTA List - updated 19-Apr-01

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 17:43:48 UTC
From: Jarno Savonen <oh6nj@nic.fi>
Message-ID: <yzjE6.2746$d23.44333@uutiset.nic.fi>
Source record: 165647
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.policy

Tip: It would be much more usable, if it were also on packetcluster-format
(.ful) See: http://www.qrz.com/download/packet/iota.zip

In .ful-format it would be suitable with almost every DX-cluster software.

73 de Jarno, OH6NJ

> Found on The IOTA List page of the site listed below. 15k zip file
> (ascii text format readable with Notepad)
>
> * also includes Top 10 Most Wanted IOTA's for each continent.

1299. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 18:09:05 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <oac3etgcadh7v048bkn8nh7u5vkdh4tta3@4ax.com>
Source record: 165648

On Sat, 21 Apr 2001 14:44:41 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:
>
>Hi Peter,
>
>My understanding is that the differential current is the current which flows
>on a transmission line when a voltage is applied between the two
>transmission line conductors. The differential currents would be balanced
>and 180 degrees out of phase. The ratio of voltage to current would be the
>Zo of the transmission line.
>
>The concept of GROUND in this situation may not be the same as the concept
>of NEUTRAL. GROUND is usually the earth. The braid of the coax is often
>connected to earth.
>
>NEUTRAL is the mid point of the voltage applied to the transmission line
>when an AC voltage is being applied. The NEUTRAL for a transmission line
>can be found by placing two equal resistors (connected in series) between
>the feed points of the transmission line. The voltage reading across each
>resistor will be the same. Taking the connection point of the two resistors
>as the common measuring point, then the instantaneous voltages will be equal
>but the signs will be opposite, proving that the connection of the two
>resistors is the NEUTRAL point.
>
>It is interesting to observe that GROUND and the shield of a coax line (if
>they are connected) both are raised to some voltage compared to NEUTRAL when
>the transmission line is energized with an alternating voltage.
>
>73, Roger, W7WKB
>

Hi Roger,

You posting goes directly to the requirement to view the entire system
and not just the individual element.

The next step is the introduction of the Common Mode problem.

If we are to confine our discussion to twin lead transmission lines
over earth (Common), a most real and suitable constraint, AND we were
to introduce the topic of Common Mode; it then follows there are two
circuits being discussed.

There is the original circuit of the transmission line. There is the
added circuit of the transmission line and earth (Common).

Common Mode only becomes a topic of discussion through mishap. It is an indication of a problem. That problem is when the second circuit obtains a source to drive it.

Let's enlarge the scope to include the source and load (both balanced) with our transmission line. Being balanced often simply means neither side of the circuit goes to earth (Common). This would be adequate, but we will allow this and that we have both sides of the transmission line in balance with earth (Common). Again, we have a system with two circuits where there is no source found within the Common Mode circuit.

So what's the problem?

The classical discussion (often at 60 Hz) simple notes that ground, earth, Common is not perfect and potentials or currents exist within that circuit and are introduced into our original circuit. In other words, there is a gradient of potential between both ends of the transmission line with respect to this faulty earth, ground, Common. The causes are legion.

The point of the matter is that this new, real, practical but annoying source presents the original circuit with an elevated potential with respect to earth (Common - hence Common Mode Voltage).

Now a point must be made. To introduce this new source, I had to defile earth (Common). Properly, earth (Common), is meant to be from the point of view of the measure which for the practical purposes of our discussion is earth (Common) back at the source. For this 60Hz classic example (cast to HF to support the actual mechanics), at the far end of the transmission line the earth(Defiled Common) appears to be the hot end of the new source capacitively coupling to the load.

IF the original circuit is balanced, THEN both sides of the transmission line are lifted equally, current flows as a consequence (as Common Mode Current), BUT the original circuit is insensate because the same current flows in both sides of the transmission line back to the source. In other words Common Mode is not a problem, but it exists and is simply unnoticed. Further, as the source end is also capacitively coupled to earth (Common) there is the tacit presumption that this too is equal to the coupling of the load to earth(Common) and we have a doubly balanced system. In fact, this describes the complete HF Common Mode circuit (for the 60 Hz example).

However, just as there is no such thing as a perfect ground, earth, Common; then neither is perfect balance achieved in this vale of tears. With an imbalance, the induced currents are presented to the original circuit which is now either aiding them, or bucking them. The causes are legion.

It is enough to define Common Mode here. The discussion of those legion of causes will certainly follow.

73's
Richard Clark, KB7QHC

1300. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 18:43:33 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bslhj$q52$1@neptunium.btinternet.com>
Source record: 165650

Why do you set of old wives unnecessarily over-complicate matters ?

The common mode current is simply that which flows when both, or
any other number of conductors, are considered to be in parallel,
ie., they behave as ONE conductor insofar as the external effects,
radiation etc., are concerned.

In any individual conductor, the current is simply the sum of the
normal current plus (or minus) the common mode stuff.

==========

Roy Lewallen wrote -
> Richard Clark wrote:
> > . . .
> > Common Mode, by definition, is that voltage or current
referenced to
> > Common (Duh!) and we use Ground in that regard. If the current
does
> > not flow to Common (Ground) it is not Common Mode current. If
Ground
> > is not your Common, you must reveal what you call Common, and
current
> > most flow to it to qualify.
> >
> > 73's
> > Richard Clark, KB7QHC
>
> No, that's neither the definition nor the meaning of common mode.
Being
> common mode has nothing to do with ground or where the current is
> flowing. A common mode or even mode current is the component or
portion
> of current that's common to two conductors, i.e., is in the same
> amplitude and phase on both conductors. (Numerically, it's the
average
> of the currents on two conductors.) Similarly, a common mode or
even
> mode voltage is simply the average of two voltages. (Phase as
well as
> amplitude have to be included in these averages.) An even mode
impedance
> (not usually called common mode in my experience) is often
defined and
> used for three wire transmission lines, such as parallel

microstrip
> lines over a ground plane, or shielded twinlead. It's the
impedance you
> see between the two conductors and ground or shield when the
conductors
> are connected together.
>
> Roy Lewallen, W7EL

1301. Re: Any uses for 72 ohm coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 19:02:29 UTC
From: Wrangler <>
Message-ID: <e5m3et0sjuo51vv6op7ofihs2jtmopha4k@4ax.com>
Source record: 165649

If you have a pi-net match as for tube rigs and homebrew narrow band
solid state rigs, there is no issue. However, that accounts for a
small percentage of rigs nowadays.

On Fri, 20 Apr 2001 22:42:17 GMT, "David Harvey" <gedanate@yahoo.com>
wrote:

>If I remember correctly, the effective impedence of a quarter-wave vertical
>is damn near 50 Ohms, but the effective impedence of a half-wave dipole is
>closer to 75 Ohms... THUS it it 6 of one and half-a-dozen of the other
>whether you use 50-Ohm or 75-Ohm coax for a DIPOLE. Because, with 75 it
>matches well at the antenna end, but is a bit off at the transmitter end.
>With 50-Ohm it matches best at the transmitter and less at the antenna. And
>the match is so close anyway, even solid-state transcievers don't know the
>difference!
>
>73 de vk2dmh
>

1302. Search

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 19:18:08 UTC
From: Siddhartha <jrm7287@frontiernet.net>
Message-ID: <9bsmdpvea1@node17.cwnet.frontiernet.net>
Source record: 165651

Searching for the URL for a web page. Incomplete or inaccurate address is:
CB_antennas.tripole.com your help will be appreciated.

1303. Re: 137 Mhz antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 19:31:18 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <F5mE6.18356$u7.7891431@e3500-chi1.usenetserver.com>
Source record: 165653

Look at www.iag.net/~w2du and you will find info there for building a quadrifilar helix antenna. The dimensions are given in wavelengths (lambda).

You will also find my R&D report of more than a thousand different configurations of the quadrifilar, from which the configuration presently flying on all NOAA polar-orbiting weather spacecraft (TIROS N) includes all frequencies of receive and transmit: 121.5 and 243 MHz for search and rescue reception, 137 for APT, 1.690 GHz for search and rescue transmission to ground stations, 1.9++GHz for video transmission to ground stations.

Hope you find it if interest.

Walt, W2DU

1304. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 20:13:15 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bspg3$ot8$1@uranium.btinternet.com>
Source record: 165652

Please KISS

1305. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 20:37:52 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AE1EFA0.70AC652@spam.me.not>
Source record: 165654

Jim:

Thanks for the kind words... Maybe some day soon you'll be hearing me keying up on 40 meters calling CQ from South Central MI. I do hope one of the members of this NG is on the other side of my first DX QSO.

When I do pass the test, I'll definitely be forwarding my callsign. ::grin::

I've got the written tests for Technician and General class licked. At a minimum, I'll be a Technician first, and then work on the code for a couple months on the air.

The problem right now is equipment. I know how I'm going to work the antennae... but I'm not an affluent person. Money's a bit tight, so I'm going to need to find some good, but inexpensive equipment upon which to transmit. I'm not unfamiliar with a soldering iron, so something that "almost" works would be good enough, provided I can fix it.

Any ideas?

-SSB

N2EY wrote:
>
> In article <3ADD3EE1.1B718EFC@spam.me.not>, Sideband <sideband@spam.me.not>
> writes:
>
> >Great info. Thanks for the links. I *may* have been making some of the
> >same mistakes listed. ::grin:: I'll try to forget everything I've
> >learned and start over. Maybe I'll be able to get it down pat before the
> >test, and go from CB Operator to Extra Class Ham in one shot... Who
> >knows?
> >
> >Thanks again.
> >
> You're welcome - and good luck!
>
> The big "secret" of learning Morse is that, for most people, it really isn't
> very difficult at all if approached the right way. And today we have more
> learning tools than ever before, most of which are free for the download. Gotta
> luv it.
>
> I don't know why Koch and his method hasn't gotten more "ink". I first heard of
> him in a 1971 QST article, but I was already an Extra doing 25-30 wpm by then.
> Maybe the fact that he was German and a psychologist had something to do with

> it - the "not invented here" thing.
>
> No license to Extra is very do-able today - go for it! Don;t hesitate to email
> if you have questions or problems.
>
> 73 de Jim, N2EY
>
>

1306. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 20:59:48 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <8xmE6.29676$IJ1.2521611@bgtnsc05-news.ops.worldnet.att.net>
Source record: 165655

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9bspg3$ot8$1@uranium.btinternet.com...
> Please KISS
>
>

How simple would you like it explained?

1307. FS - Diamond Mobile Mounts

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 21:35:29 UTC
From: kk4tl@aol.com
Message-ID: <20010421173529.16852.00000441@ng-fi1.aol.com>
Source record: 165656

I have the following mobile mounts for sale.

Diamond K400C mount with SO-239 Connector with Diamond C-110 10ft cable extension (Total cable length - 16.5 ft.) Like new - Used only briefly - $65.00 Shipped Postal Priority USA.

Diamond K400 3/8C mount with 3/8" x 24 thread Connector with Diamond C-110 10ft cable extension (Total cable length - 16.5 ft.) New - Never used - Mounted to check for completeness only - $65.00 Shipped Postal Priority USA.

Save some .. get both for $120.00 shipped Postal Priority USA. Details at http://www.rfparts.com/diamond/k601.html#400

Email direct if interested. KK4TL@AOL.COM

1308. FS - Comet Mobile Tri-bander

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 21:40:42 UTC
From: kk4tl@aol.com
Message-ID: <20010421174042.16852.00000442@ng-fi1.aol.com>
Source record: 165657

Comet SB-15 tribander for sale. New - Mounted for checkout and removed. Never used. Covers 6 meters, 2 meters and 440 mhz bands. Details at .. http://cometantenna.com/mobile.html $70.00 shipped Priority Postal USA.

Email direct if interested to KK4TL@AOL.COM

1309. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 21:45:44 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE1FF88.F6004068@toast.net>
Source record: 165658

Tom W8JI wrote:

> On Fri, 20 Apr 2001 16:42:40 GMT, "VE9SRB" <srbest@att.net> wrote:
> >There is a difference between "delivered power" and "forward power" in a
> >transmission line when the antenna SWR is greater than 1.0:1.
>
> The important thing to know is that all power applied to the feedline
> that is not dissipated in the feedline is radiated...no matter what
> the SWR.
>
> The only important effect of SWR is it might cause the transmitter to
> not deliver optimum power, and it might increase loss in the feedline.
>
> The mismatch to the transmitter is easily cured, and so the only added
> loss would be due to increased losses in the feedline...most of which
> relate to current increase.
>
> There are even cases where the feedline becomes LESS lossy when
> mismatched.

After the mismatch to the transmitter is cured, by a tuner, then all the power applied to the feedline is radiated or dissipated. Ok; does the swr at the feedline affect how much of the power is radiated at the antenna, as opposed to along the feedline?

john

1310. FS - Diamond Mobile Mounts

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 22:04:52 UTC
From: kk4tl@aol.com
Message-ID: <20010421180452.03374.00000896@ng-fi1.aol.com>
Source record: 165659

I have the following mobile mounts for sale.

Diamond K400C mount with SO-239 Connector with Diamond C-110 10ft cable extension (Total cable length - 16.5 ft.) Like new - Used only briefly - $65.00 Shipped Postal Priority USA. ($85.00+shpg. from AES & HRO.)

Diamond K400 3/8C mount with 3/8" x 24 thread Connector with Diamond C-110 10ft cable extension (Total cable length - 16.5 ft.) New - Never used - Mounted to check for completeness only - $65.00 Shipped Postal Priority USA. ($85.00+shpg. from AES & HRO.)

Save some .. get both for $120.00 shipped Postal Priority USA. Details at http://www.rfparts.com/diamond/k601.html#400

Email direct if interested. KK4TL@AOL.COM . Payment by check, money order or PayPal, your choice.

1311. FS - Comet Mobile Tri-bander

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 22:10:07 UTC
From: kk4tl@aol.com
Message-ID: <20010421181007.03374.00000897@ng-fi1.aol.com>
Source record: 165660

Comet SB-15 tribander for sale. New - Mounted for checkout and removed. Never used. Covers 6 meters, 2 meters and 440 mhz bands. Details at .. http://cometantenna.com/mobile.html $70.00 shipped Priority Postal USA. ($80.00+Shpg at AES, $90.00+Shpg at HRO & Hamstation.) Payment by check, money order or Pay-Pal. Your choice. Email direct if interested to KK4TL@AOL.COM

1312. Re: Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 22:12:26 UTC
From: Allen <wookie8u@hotmail.com>
Message-ID: <eBnE6.9098$U4.2235795@news1.rdc1.tn.home.com>
Source record: 165661

I'm not certain, but thinking of the physics of it I came to this conclusion: I think your wanting some kind of induced back emf to resist voltage spikes on the outer conductor, right? Well these back emfs are produced by a changing magnetic field perpindicular to a conducting loop. This magnetic field would be produced by the above said current from the spike. Current produces a magnetic field circullarly around the current line. So if my thinking is right, then this mag. field would not be perpendicular to the plane of loops made by the pipe (thinking of the pipe as a wire that has been wound into a pipe shape (solenoid) with each loop of wire needing a change in mag field perp. to it to produce an induced emf). I probably went off the deep end with my thinking but hey that's what problem solving's all about right? I agree with the idea of just wrapping the wire around this pipe. This would essentially create an inductor which would impede voltage spikes. Good luck.

Allen

1313. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 22:21:51 UTC
From: Perseus@hol.gr
Message-ID: <3ae500f8.30444211@news.ntua.gr>
Source record: 165662

Whats up Doc ? :) Dont be afraid. I,m a <real> Duke even if the title smell
bad to you. Straight blood line from the Duke of Mystra who came from
Konstantinopolis at 1200 (High General of Byzantine army) to suport and
protect the brother of Emperor Komninos and Peloponnisos (Kingdom of Mystra)
from the Turks. His name was Nikolos Filos . (Nick Friend).
Its also a member of this family who had create the <Filiki Eteria> the company
who had start the fight against the Turks and finally succeed the indepedence
of Greece from the Turks at 1821.
Ofcourse i am more than this (not what you have in your mind :) but this is
another story ;)
Have a nice day Doc.
73 de Duke :)
On Sat, 21 Apr 2001 11:37:58 -0500, 'Doc <w5lz@oio.net> wrote:

>
>Dear 'Duke',
>
>> I am a child of Earth and of Starry Heaven;
>> But my race is of Heaven(Orphics)
>> E 10 E
>> Duke of Mystra
>
> I'm afraid that isn't all you may be....
> 'Doc

I am a child of Earth and of Starry Heaven;
But my race is of Heaven(Orphics)
E 10 E
Duke of Mystra

1314. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 22:43:18 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae1988d.235428827@news.aepnet.com>
Source record: 165664

On 21 Apr 2001 06:45:31 GMT, Dick Carroll <dixie@townsqr.com> wrote:

[snip]
>
>
> Read an interesting SWR article yesterday by Carl Drumeller, W5JJ, in a
>28 year old issue of 73 magazine. He went about proving that there is no
>such thing as reflected power. Reflected voltage and current are 90° out
>of phase. Power = volts x amps x the cosine of the phase angle.
>The cosine of 90 is zero, so (X watts) x (zero) = zero. Therefore no
>reflected power exists. Ever. (presumably so long as that 90° phase
>relationship exists.)

I can (and have thousands of times) use(d) a directional coupler and a thermocouple or thermistor power sensor to measure reflected power. Either of these two sensors responds only to temperature rise, they don't know a volt from an amp. If this power is fictitious, why does the termination in the sensor heat up????

>
> He also mentioned something that should be obvious - the reason why
>coax losses are higher with higher SWR. With an SWR of 2:1 the voltage
>and current on the coax is twice as great as with 1:1 SWR, so that
>doubles dielectric loss from the doubled voltage and the 1^2 x R losses
>are doubled because of the doubled current flowing.
>(With every increase in SWR the losses go up in direct multiples, IE
>with SWR of 4:1, losses are four times those with a 1:1 match.)

Baffle gab. These reflected volts and amps are supposed to be 90 degrees out of phase with respect to each other, right? I think you would have to agree that the forward volts and amps are in phase with each other, so what is this special relationship that allows the total voltage and the total current to add in phase, while at the same time the reflected components have their 90 degree relationship. This is truly magical.

Furthermore, since the VSWR (ratio between the minimum and maximum voltages) is 2:1, the magnitude of the reflected voltage (rho) must be 0.3333.

$$VSWR = \frac{1 + .3333}{1 - .3333} = 2.0$$

How can the author say the voltage is doubled? According to him, 1 plus 0.3333 equals two. Must be that special 90 degree relationship at work. <g>

>
> For some reason these facts are almost never stated so clearly.

These facts are not stated clearly, because they are not facts.

Wes Stewart N7WS
>
>Dick W&#65533;EX

1315. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 22:53:01 UTC
From: truelove39@aol.com
Message-ID: <20010421185301.16908.00000816@ng-fo1.aol.com>
Source record: 165663

Reg,

Thank you for the reply.

Friends on boats in the same anchorage as I (Eastern Caribbean) can talk to their friends in the States with no problem whereas I am barely heard and vice-versa.

The antenna is at about a 45 drgree angle. The water is salt.

I have a good ground and the SWR is 1.3:1 at worst on 4mHz and usually 1:1 on other freqs. The rig is an SEA 235R with the 1610 coupler. The coupler and xmtr are grounded with 3" copper foil run separately to a point on the engine block. The backstay is 3/8" 316 stainless wire, end-fed with GTO.

The hull is fiberglass.

The frequencies allocated for marine use are in the 2,4,6,8,12,16 and 22 mHz regions; all USB. We use 4,6,& 8 the most. Usually talk to the states just after sundown on 6.209, 6.212 or 6.215.

Regards,
John

1316. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-21 22:59:38 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <uhoE6.13886$Ce4.1340911@news1.rdc1.ct.home.com>
Source record: 165665

Do you have a lead keel?

Pete

"Truelove39" <truelove39@aol.com> wrote in message
news:20010421185301.16908.00000816@ng-fo1.aol.com...
> Reg,
>
> Thank you for the reply.
>
> Friends on boats in the same anchorage as I (Eastern Caribbean) can talk
to
> their friends in the States with no problem whereas I am barely heard and
> vice-versa.
>
> The antenna is at about a 45 drgree angle. The water is salt.
>
> I have a good ground and the SWR is 1.3:1 at worst on 4mHz and usually 1:1
on
> other freqs. The rig is an SEA 235R with the 1610 coupler. The coupler
and
> xmtr are grounded with 3" copper foil run separately to a point on the
engine
> block. The backstay is 3/8" 316 stainless wire, end-fed with GTO.
>
> The hull is fiberglass.
>
> The frequencies allocated for marine use are in the 2,4,6,8,12,16 and 22
mHz
> regions; all USB. We use 4,6,& 8 the most. Usually talk to the states just
> after sundown on 6.209, 6.212 or 6.215.
>
> Regards,
> John

1317. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 00:40:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE22865.A63B11BC@eznec.com>
Source record: 165666

Richard Clark wrote:
> . . .

> Hi Roy,
>
> Your examples are excellant, but they are only that, and not
> definition.
>
> However, the dismissal from the discussion of the complete circuit
> >common mode has nothing to do with ground or where the current is
> >flowing.
> cannot stand.
>
> 73's
> Richard Clark, KB7QHC

The definition I gave is consistent with the definition in the IEEE Dictionary(*), and all of the several papers I've read on the topic. For common usage of "common mode", see any operational amplifier data sheet for measurement of common mode rejection ratio. Numerous application notes, particularly those dealing with differential or instrumentation amplifiers, discuss this topic in great detail. A very good discussion can be found in Fredericksen, _Intuitive IC Op Amps_ (National Semiconductor, 1984), section 3.3, "Response to the Common-Mode Input Signal", and section 3.4, "Differential and Common-Mode Input Impedance". Another good source is Tobey, Graeme, and Huelsman's _Operational Amplifiers_ (Burr-Brown, 1971). The first chapter of this book contains separate sections about the common mode and differential response of differential amplifiers.

How do you define common mode, and what's the source of the definition?

Roy Lewallen, W7EL

(*) I don't agree entirely with all definitions in the IEEE dictionary, since they often don't seem to follow common usage very well. But in this case the definition does agree with common use. From the IEEE Standard Dictionary of Electrical and Electronics Terms, Third Edition:

common-mode(1) (general). The instantaneous algebraic average of two signals applied to a balanced circuit, both signals referred to a common reference. (2) (in-phase signal) (medical electronics). A signal applied equally and in phase to the inputs of a balanced amplifier or other differential device.

1318. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 01:20:38 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae23065.529844719@news.accessunited.com>
Source record: 165667

On Sat, 21 Apr 2001 16:45:44 -0500, John O'Flaherty
<oflahert@toast.net> wrote:

>After the mismatch to the transmitter is cured, by a tuner, then all the
>power applied to the feedline is radiated or dissipated. Ok; does the swr at
>the feedline affect how much of the power is radiated at the antenna, as
>opposed to along the feedline?
>
>john

Radiation along the feedline is not related to SWR on the feedline. It
is the common mode current that causes radiation, and that has nothing
to do with SWR on the feedline.

The only effect of SWR is to make the transmitter "uncomfortable" with
the load it sees, and to increase feedline loss *if* current or
voltage changes amplitude in a direction that increases loss.

In an electrically short feedline, it is possible to decrease loss
with a mismatch. One case where this would happen is in a line where
conductor resistance dominates, and the line is less than 1/4 wl long.
If the load moves in a direction to decrease current in the line...the
line has less loss. This is true even though SWR increases.

73 Tom

1319. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 01:21:06 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <3AE231C0.58E52BD9@att.net>
Source record: 165668

In all fairness, Carl wrote a number of "technical" articles in 73 that in hindsight were on highly shaky ground. I would take any of his findings and/or conclusions with a large dose of salt.

72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
Amateur Radio W5YR, in the 55th year and it just keeps getting better!
Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437

Dick Carroll wrote:

> Read an interesting SWR article yesterday by Carl Drumeller, W5JJ, in a
> 28 year old issue of 73 magazine. He went about proving that there is no
> such thing as reflected power. Reflected voltage and current are 90ï¿½ out
> of phase. Power = volts x amps x the cosine of the phase angle.
> The cosine of 90 is zero, so (X watts) x (zero) = zero. Therefore no
> reflected power exists. Ever. (presumably so long as that 90ï¿½ phase
> relationship exists.)
>
> He also mentioned something that should be obvious - the reason why
> coax losses are higher with higher SWR. With an SWR of 2:1 the voltage
> and current on the coax is twice as great as with 1:1 SWR, so that
> doubles dielectric loss from the doubled voltage and the 1^2 x R losses
> are doubled because of the doubled current flowing.
> (With every increase in SWR the losses go up in direct multiples, IE
> with SWR of 4:1, losses are four times those with a 1:1 match.)
>
> For some reason these facts are almost never stated so clearly.

1320. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 01:26:12 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae23267.530358269@news.accessunited.com>
Source record: 165669

On Sat, 21 Apr 2001 15:25:18 GMT, "VE9SRB" <srbest@att.net> wrote:

>If you adjust a transmitter with no internal tuner circuit to deliver 100
>watts of power to a Zo load, and then replace the Zo load with a mismatched
>load, it will not deliver 100 watts of power to the mismatched load. Your
>statements imply that it will.

I did not say that or imply that.

I simply said the effect of SWR is *generally* to increase loss in the
feedline, and mismatch the transmitter.

There are cases where a mismatch can reduce feedline loss.

73 Tom

1321. Re: Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 01:35:59 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae2338c.530651578@news.accessunited.com>
Source record: 165670

On Sat, 21 Apr 2001 22:12:26 GMT, "Allen" <wookie8u@hotmail.com>
wrote:

>problem solving's all about right? I agree with the idea of just wrapping
>the wire around this pipe. This would essentially create an inductor which
>would impede voltage spikes. Good luck.

We shouldn't forget eddy currents, and their effect. The inductance
of a coil with an unlaminated or non-powdered iron "core" actually
decreases at all frequencies except dc....because the eddy currents
generate a counter field that opposes coil flux.

A solenoid coil of coax on a PVC form would have more impedance to
lightning than the same coil over an iron pipe, or steel conduit.

Since most lightning takes the form of common-mode currents on the
outside of the shield, directly burying the coax or enclosing it in
metallic pipe that is directly buried would help dissipate some energy
by providing an alternate path to earth. It doesn't matter what
material the conduit is, as long as it is conductive, or even if it is
there. As a matter of fact, it is better to not have it there, and
have the coax directly buried.

73 Tom

1322. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 01:41:00 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AE236AC.B864997D@oio.net>
Source record: 165671

"Duke",
The title really doesn't affect me at all, and
had nothing to do with my comment. I was speaking
about the subject of your post, and your belief(?)
in it...
'Doc

1323. Re: Need article from April 84' issue of QST.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 02:07:21 UTC
From: n2ey@aol.com
Message-ID: <20010421220721.13993.00000186@nso-bh.aol.com>
Source record: 165672

In article <20010418074721.26333.00000574@ng-mn1.aol.com>, w1rfi@aol.com (W1RFI) writes:

>>From: n2ey@aol.com (N2EY)
>
>>>Looking for someone to fax / mail me a copy of an article from the April
>>>84' issue of QST. I would purchase a back issue if somebody knew where I
>>>could pick one up as well.
>
>>The ARRL will make you a copy for a nominal fee - I think was $3 last time I
>>looked. They also have some back issues. Surf over to:
>
>The back issues are available from the ARRL Circulations Department.

They don't have the ones I need, though. Not for sale, anyway!

>They
>charge the current cover price for back issues, though -- a bit pricey. If
>you
>only need a single article from the issue, the photocopy is a better bet. Of
>course, the best bet is that someone will probably make a copy for you. :-)

And violate the copyright?!?

The very BEST bets, I think, are:

- Look/ask around at hamfests for back issues
- Check ebay and the sale/swap ngs and reflectors (recent issues usually go cheap)
- buy the CD and get 5 years worth (pricey, but hey, it's 60 issues).

>
>>What article is it? Some articles are online at the site.
>
>There are now over 500 past QST technical articles on the ARRL web pages,
>although some of them are in the members-only area. Many of them are
>antenna-related articles, btw.

500 - WOW! I apologize for the "faint praise"! I checked it out, and lots of good stuff on practically any topic you can name.

500 articles is but a small sample of the total number of QST articles published since Vol.1 No.1.

73 de Jim, N2EY

1324. FS: Hygain T2X Tailtwister antenna rotor

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 02:30:35 UTC
From: jonweiner@aol.com
Message-ID: <20010421223035.28269.00000961@ng-ch1.aol.com>
Source record: 165673

For Sale: Excellent condition Hygain T2X Tailtwister antenna rotor. In the original carton with original insturction manual. Works perfectly. Price $390. plus shipping from Greenville, SC.

Jon
K1VVC

1325. My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 02:47:37 UTC
From: Mark Langberg <mlangberg@mediaone.net>
Message-ID: <dDrE6.34895$uh5.986062@typhoon.mw.mediaone.net>
Source record: 165674

I just got my General license and have a Yaesu FT-100D. I've never transmitted on HF yet and want to put up a simple and cheap "all band" antenna so I can experiment with all the available bands to find out what areas/bands I enjoy before I commit to a more specific (or expensive) rig and antenna. (I'm not quite sure what specific area of amateur radio I'll like.) I was told to put up a 136' dipole fed with ladder line and use an antenna tuner for a generally well performing antenna system for "all bands". Do you agree that this is a good choice for a first "all band" antenna? What tuners do you recommend?

1326. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 03:32:37 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010421233237.25300.00000507@ng-mh1.aol.com>
Source record: 165675

Although I can not specifically tell you some good tuners, when you are given a few names, check out http://www.eham.net and look at the reviews. They have tons of reviews on ham equipment by everyday hams. I've found it to be very useful for comparing different brands of the same products.
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
http://vhfradiobuff.tripod.com
http://egroups.com/group/2mallmode
http://egroups.com/group/6mallmode

1327. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 04:14:24 UTC
From: mailfrmpa@aol.com
Message-ID: <20010422001424.23423.00000087@ng-fj1.aol.com>
Source record: 165676

>I just got my General license

>and want to put up a simple and cheap "all band"
>antenna

With the requirement of "simple and cheap" I would say the antenna suggested is the best alternative. But while the antenna will be cheap, the tuner may not be so cheap!

My personal suggestion for a tuner, considering your rig, would be a Dentron A160-10. I have seen these on Ebay for as little as $50, surely a great bargain! You will, of course, be tempted to buy some piece of MFJ equipment, which may or may not be a good deal. There are plenty of opinions on that score, but my personal experience has not been good, so I can't recommend them.

Finally, many beginners put up some kind of "all-band" vertical as a first antenna. In doing so they pay more for the antenna, but might not need a tuner. My personal experience with verticals vs open wire fed nonresonant dipoles, is that the dipole will run rings around the vertical.

A question you also need to consider is, "how am I going to support the antenna in the air?"

Martin
K0MB

1328. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 04:23:43 UTC
From: kd1jt@arrl.net
Message-ID: <3ae25c10.54672378@news.mybizz.net>
Source record: 165677

On Sun, 22 Apr 2001 02:47:37 GMT, "Mark Langberg"
<mlangberg@mediaone.net> wrote:

>I just got my General license and have a Yaesu FT-100D.

Congrats on both!

>I've never
>transmitted on HF yet and want to put up a simple and cheap "all band"
>antenna so I can experiment with all the available bands to find out what
>areas/bands I enjoy before I commit to a more specific (or expensive) rig
>and antenna. (I'm not quite sure what specific area of amateur radio I'll
>like.) I was told to put up a 136' dipole fed with ladder line and use an
>antenna tuner for a generally well performing antenna system for "all
>bands". Do you agree that this is a good choice for a first "all band"
>antenna?

Yep ... that'll be fine. You don't necessarily need 136 feet, but
that will get to the bottom of 80 meters, and can be fed for 160 with
a little modification in the shack.

>What tuners do you recommend?

I have a general aversion to MFJ products, but they're the most
commonly available tuner on the market. Check out the Vectronics
DLP300 ... good value. If auto-tuners interest you, check out LDG
electronics ...

Unless you're planning on running over 100 watts, any of the commonly
available tuners will work fine. Look for cross needle metering on
whatever you choose.

1329. Re: Article on Coaxial Traps

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 04:35:02 UTC
From: n2ey@aol.com
Message-ID: <20010422003502.06351.00000214@nso-bk.aol.com>
Source record: 165679

In article <3AE21F3C.CF1189A3@home.com>, Irv Finkleman <finkirvNOSPAM@home.com>
writes:

>I was wondering if anyone could possibly scan and e-mail me a copy of the
>article on Coaxial Traps from QST December 1984?; Or can anyone lead me to a
site
>with
>pertinent info. Thanks loads for any assistance.

Hello,

That's the N4UU article. Great stuff, but you don't need the article itself.

Just take a look here:

http://www.nucleus.com/~field/

and download "coaxtrap.zip" ==> useful to calculate traps with different types
of cable

You need to unzip and install it, but that's easy - it's just a plain Windows
application.

I have downloaded this and it works GREAT!!!! It is based on the N4UU article
in QST for December, 1984.

Thanks, to Franki, ON4CLN, who pointed me to it. Saves a lot of cut and try
work.

If you want the traps to be right on, you still have to do some cut and try,
but the software gets you very close on the first go.

Here is the basic design from the N4UU article The traps consist of coax cable
wrapped around PVC pipe. The ends of the coax are stripped, the braid unraveled
and twisted into a lead. The braid at one end of the winding is connected to
the center conductor at the other end. The remaining braid and center conductor
are the leads to the trap. In other words, a DC current flowing through the
trap would flow through the center conductor from on end of the trap to the
other, then go back to the starting end and flow through the braid in the same
direction. The cable is secured by pushing its ends through holes in the PVC
pipe.

Note that traps made this way are asymmetrical - the way in which they are
connected affects the antenna performance! I use the convention "center
conductor always goes to center (feedpoint) of the antenna" but some may work
better the other way. It is important to connect both traps so that the same
ends are towards the feedpoint.

Here are some tips:

1) These traps must be grid-dipped to check resonance. There is enough variability in different brands of coax and PVC pipe that you have to check resonance, and adjust as needed.
2) Trap resonance must be adjusted without the antenna attached. Even short wires will mess it up. Dip first, then add short antenna leads to make a finished trap.
3) I use the best RG-58 I can find, with stranded center conductor. Foam coax is no good for this job.
4) Traps must be connected symmetrically, as described above.
5) You will probably have to fuss with it a few times to get resonance where you want it.
6) Make one test trap to get the hang of it. Buy a decent quantity of coax and PVC pipe (lots more than you need) and understand that you are going to ruin some materials before you get it right.
7) Weatherproof the finished traps with several coats of clear Krylon spray after adjustment.
8) "Split bolt" or "Burndy" connectors make the job of finding the right antenna wire lengths easier. Once you have the lengths down, the joints can be soldered sand the split bolt connectors removed.

73 de Jim, N2EY

1330. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 04:35:03 UTC
From: n2ey@aol.com
Message-ID: <20010422003503.06351.00000215@nso-bk.aol.com>
Source record: 165678

In article <3AE1EFA0.70AC652@spam.me.not>, Sideband <sideband@spam.me.not>
writes:

>Jim:
>
>Thanks for the kind words... Maybe some day soon you'll be hearing me
>keying up on 40 meters calling CQ from South Central MI. I do hope one
>of the members of this NG is on the other side of my first DX QSO.

Well, if you consider south central Michigan to southeast Pennsylvania to be
DX, I'll give it a go with ya...
>
>When I do pass the test, I'll definitely be forwarding my callsign.
>::grin::
>
All right!!

>I've got the written tests for Technician and General class licked. At a
>minimum, I'll be a Technician first, and then work on the code for a
>couple months on the air.

If you've got the writtens licked, do the code NOW and give 'em all a shot at
once. You might just walk out with a General on your first go.
>
>The problem right now is equipment. I know how I'm going to work the
>antennae... but I'm not an affluent person. Money's a bit tight, so I'm
>going to need to find some good, but inexpensive equipment upon which to
>transmit. I'm not unfamiliar with a soldering iron, so something that
>"almost" works would be good enough, provided I can fix it.
>
>Any ideas?

How much money is "a bit tight"? There's a whole range of gear out there.

Some general rules:

1) You don't need all of the bells and whistles just to get started, but you DO
need good basic radio performance.

2) Good used ham rigs are a way to save big bucks. While a six year old
computer is basically a good doorstop, a six year old ham rig is barely broken
in unless it's been abused.

3) To avoid costly mistakes, it's a good idea to join the ARRL and read the
Product Reviews in QST. If you're a member, you can look up the reviews on
their website - they have every review since 1980 there, but you have to be a
member to access them. Their reviews are not just rehashes of the ads, too.

They actually buy the product, test it in their lab and on the air, and post all the measured numbers. They have a shield room full of top quality test gear for the purpose. I've been there - they really put the equipment under test through its paces.

http://www.arrl.org

4) See if you can hook up with a local ham club for Field Day at the end of June. Field Day groups are usually looking for operators and loggers, and if there is a control operator present you don't need to be licensed to work the radio. You can take a turn at the various operating positions and get to try out the equipment they set up under harsh operating conditions without having to buy a thing.

Good luck!

73 de Jim, N2EY

1331. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 04:48:36 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AE262A4.F48D5D0F@hiwaay.net>
Source record: 165681

Mark- Congratulations- you are at an excellent place- ready to start what will be (I hope) an exciting activity.
1. The antenna choice is fine- I have one (135 ft, fed with ladder line)and a tuner. I does a lot, except be great on 160. Dont let anyone talk you into a G5RV or a Windom, unless you understand what they really do. (less than most proponents think)
2. you will need a tuner sooner or later, and it makes life in the multi-band world very much simpler. Get a used one now- upgrade later when you understand more.
3. I used an MFJ949 tuner for a long time- now have it in the closet, and have an MFJ986 in play.
There is MUCH MFJ bashing, but- my experience has been good, and there few better bargains. MFJ has made many items available that are otherwise expensive. Visit their site (www.mfjenterprises.com) for an easy education- including looking at the tuner operating manuals.
4. look for a used tuner- go to ebay and search for "antenna tuner" (do not use the quotes, and do not use the plural) the names "versa tuner II', and 949 are valid. there are many other models in the same range. The 949 is good to about 300 Watts - will load coax and ladder line, and has an internal dummy load, and cross-needle metering.

Good luck- look for W4BSG (me, Bill)

Mark Langberg wrote:
>
> I just got my General license and have a Yaesu FT-100D. I've never
> transmitted on HF yet and want to put up a simple and cheap "all band"
> antenna so I can experiment with all the available bands to find out what
> areas/bands I enjoy before I commit to a more specific (or expensive) rig
> and antenna. (I'm not quite sure what specific area of amateur radio I'll
> like.) I was told to put up a 136' dipole fed with ladder line and use an
> antenna tuner for a generally well performing antenna system for "all
> bands". Do you agree that this is a good choice for a first "all band"
> antenna? What tuners do you recommend?

1332. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 04:49:12 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9btnrmdno1@slb6.atl.mindspring.net>
Source record: 165680

Roy:

The "average" of the voltages must have some "reference". i.e. all voltages are measured with respect to some other potential.

The "common mode" currents and voltages Icm and Vcm are defined as: Icm = (I1 + I2)/2 is the average of I1 and I2, or Vcm = (V1 + V2)/2 is the average of V1 and V2.

but... what is the "reference" from which V1 and V2 are measured, etc...?

The differential voltage is Vd = (V1 - V2) while the common mode voltage is Vcm = (V1 -V2)/2....

But V1 and V2 must be measured with respect to some common potential. Chose one... i.e. a ground voltage or common mode voltage, or the voltage at the end of the universe. It matters not what... but to measure V1, one must connect his or her voltmeter from a common point to the conductor on which V1 is located to measure V1, and one must connect his or her voltmeter from the same common point to the conductor on which V2 is located to measure V2, and then one "calculates" the common mode and differential mode voltages Vcm and Vd using the formulae above. The "common mode" reference is essential to this process.

The common mode currents Icm flow outbound and inbound and they must have a path back to the common mode exciter, this path is throught the common ground.

This is the "common ground" or what I refered to up the thread as "The Ground at the End of the Universe". Choose it as you wish, but you must choose something to be the reference.

On a coaxial cable driving an antenna and carrying currents on the outside of the shield, the return currents for that outside shield current must be flowing back to the common mode exciter through that common ground.

Meanwhile the differential mode currents on the inner conductor and the inside of the shield are blissfully flowing out and back superimposed with the common mode current.

The common mode and differential modes are "connected" by that ephemeral common mode to differential mode impedance which is often difficult to measure but which exists nonetheless.

I like to think of every system as having both a set of common modes and a set of differential modes and as well a set of cross coupling common mode to differential mode coupling impedances. If these differential to common mode coupling impedances are extremely high then the two modes are lightly

coupled and the common mode rejection ratio is high, or the common mode response is low, depending upon whether you are interested in ingress or egress phenomena.

I always "visualize" leaky coaxial cable as having a low common mode to differential mode coupling impedance.

Similarily I "visualize" the skin effect on the shield as creating an extremely high but still finite common mode to differential mode coupling impedance.

-Peter K1PO

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:3AE1740A.E9C8B5AD@eznec.com...
> Richard Clark wrote:
>
> > . . .
> > Common Mode, by definition, is that voltage or current referenced to
> > Common (Duh!) and we use Ground in that regard. If the current does
> > not flow to Common (Ground) it is not Common Mode current. If Ground
> > is not your Common, you must reveal what you call Common, and current
> > most flow to it to qualify.
> >
> > 73's
> > Richard Clark, KB7QHC
>
> No, that's neither the definition nor the meaning of common mode. Being
> common mode has nothing to do with ground or where the current is
> flowing. A common mode or even mode current is the component or portion
> of current that's common to two conductors, i.e., is in the same
> amplitude and phase on both conductors. (Numerically, it's the average
> of the currents on two conductors.) Similarly, a common mode or even
> mode voltage is simply the average of two voltages. (Phase as well as
> amplitude have to be included in these averages.) An even mode impedance
> (not usually called common mode in my experience) is often defined and
> used for three wire transmission lines, such as parallel microstrip
> lines over a ground plane, or shielded twinlead. It's the impedance you
> see between the two conductors and ground or shield when the conductors
> are connected together.
>
> Roy Lewallen, W7EL

1333. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 04:57:10 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE264A6.AB49A58B@IEEE.org>
Source record: 165686

Mark Langberg wrote:
> I just got my General license and have a Yaesu FT-100D. I've never
> transmitted on HF yet and want to put up a simple and cheap "all band"
> antenna so I can experiment with all the available bands to find out what
> areas/bands I enjoy before I commit to a more specific (or expensive) rig
> and antenna. (I'm not quite sure what specific area of amateur radio I'll
> like.) I was told to put up a 136' dipole fed with ladder line and use an
> antenna tuner for a generally well performing antenna system for "all
> bands". Do you agree that this is a good choice for a first "all band"
> antenna? What tuners do you recommend?

There's information on just such an antenna on my web page. It will tell
you that the optimum ladder-line length for such an antenna is around
100 ft.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1334. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 04:59:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9btoff$327$1@slb4.atl.mindspring.net>
Source record: 165682

Reg:

Mathematically, the common mode stuff, or as you say the stuff where they act as one conductor is simply the "average" of the two...

Quantitatively, as Lord Kelvin would have wished us to express such things, the common modes are expressed as:

Vcm = (V1 + V2)/2 or Icm = (I1 + I2)/2

Thus Vcm is that which is "common" to V1 and V2, nothing more, nothing less. i.e. the "average" of the two. Measure V1 then measure V2 and take the average, that's the common mode voltage.

And the differential voltage is simply the difference between the two...

Vd = (V1 - V2)

Measure V1 and measure V2 and take the difference between the two...

Nothing more nothing less....

Measure them, or calculate them, that's what they are... the common modes and the differential modes.

As Archimedes said two millenia ago, "give me but a place to stand..." that is the common ground from which V1 and V2 are measured.

Lord Kelvin would be proud! NO OLD Wives! Just clear lucid definitions and a method for measurement and validation.

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:9bslhj$q52$1@neptunium.btinternet.com...
> Why do you set of old wives unnecessarily over-complicate matters ?
>
> The common mode current is simply that which flows when both, or
> any other number of conductors, are considered to be in parallel,
> ie., they behave as ONE conductor insofar as the external effects,
> radiation etc., are concerned.
>
> In any individual conductor, the current is simply the sum of the
> normal current plus (or minus) the common mode stuff.
>
> ==
>
> Roy Lewallen wrote -

> > Richard Clark wrote:
> > > . . .
> > > Common Mode, by definition, is that voltage or current
> referenced to
> > > Common (Duh!) and we use Ground in that regard. If the current
> does
> > > not flow to Common (Ground) it is not Common Mode current. If
> Ground
> > > is not your Common, you must reveal what you call Common, and
> current
> > > most flow to it to qualify.
> > >
> > > 73's
> > > Richard Clark, KB7QHC
> >
> > No, that's neither the definition nor the meaning of common mode.
> Being
> > common mode has nothing to do with ground or where the current is
> > flowing. A common mode or even mode current is the component or
> portion
> > of current that's common to two conductors, i.e., is in the same
> > amplitude and phase on both conductors. (Numerically, it's the
> average
> > of the currents on two conductors.) Similarly, a common mode or
> even
> > mode voltage is simply the average of two voltages. (Phase as
> well as
> > amplitude have to be included in these averages.) An even mode
> impedance
> > (not usually called common mode in my experience) is often
> defined and
> > used for three wire transmission lines, such as parallel
> microstrip
> > lines over a ground plane, or shielded twinlead. It's the
> impedance you
> > see between the two conductors and ground or shield when the
> conductors
> > are connected together.
> >
> > Roy Lewallen, W7EL
>
>

1335. Re: Shielding by Skin Effect

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 05:04:51 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9btop1pjh1@slb0.atl.mindspring.net>
Source record: 165683

John:

This effect is known as "cycletron radiation" check it out in advanced
Physics textbooks.

-Peter K1PO

"John O'Flaherty" <oflahert@toast.net> wrote in message
news:3AE1AE31.F2F10FDF@toast.net...
> "Peter O. Brackett" wrote:
>
> > John:
> >
> > Yes, if one forces charges [say electrons] to travel in a circular path,
but
> > at a constant speed, there will be photons [radiation] created in that
case
> > by centripital acceleration, but in the case of ordinary inductors it is
> > vanishingly small... undetectable with ordinary laboratory instruments.
> >
> > This effect may be quantitatively calculated, but to do so you will need
to
> > know the actual speed of the electrons comprising the current in the
coil,
> > i.e. from the number of electrons comprising the current, the current
> > density, etc... and the radius of their path around the coil, etc... to
> > calculate the acceleration... if you do this correctly you will find
that
> > for "ordinary" sized currents, the electron acceleration is exceedingly
> > small and so is the centripital acceleration. You would then find that
> > under ordinary circumstances this effect is so small at to be
unovservable
> > by "normal means".
> >
> > In powerful particle accelerators or super-conducting inductors the
effect
> > is more readily observable.
> >
> > -Peter K1PO
> >
> > "John O'Flaherty" <oflahert@toast.net> wrote in message
> > news:3ADC6353.6C40828@toast.net...
> > > "Peter O. Brackett" wrote:
> > >
> > > > If charges are forced down a non-linear shaped conductor at a

> > > > constant speed, i.e. a DC current in a "curved" conductor, then
> > radiation
> > > > will also occur due to that acceleration.
> > >
> > > Would there be any way for an ordinary person to try that, or see it?
What
> > about
> > > dc through a simple coil? Is there any radiation associated with that?
> > >
> > > john
> > >
> > >
> > >
>
> That is fascinating. I wonder what the frequency of such radiation would
be (in
> the case of dc through a coil), and whether it would be a broad band of
> frequencies as in thermal radiation (say, separate radiation from each of
the
> electrons involved). Also, radiation has to take place as one photon,
minimum...
> I wonder if that would be a very low energy photon, or one only every once
in a
> while, or what.
>
> john
>
>

1336. Re: Article on Coaxial Traps

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 05:43:54 UTC
From: Irv Finkleman <finkirvNOSPAM@home.com>
Message-ID: <3AE26F8C.1FBBF9A4@home.com>
Source record: 165685

N2EY wrote:

> In article <3AE21F3C.CF1189A3@home.com>, Irv Finkleman <finkirvNOSPAM@home.com>
> writes:
>
> >I was wondering if anyone could possibly scan and e-mail me a copy of the
> >article on Coaxial Traps from QST December 1984?; Or can anyone lead me to a
> site
> >with
> >pertinent info. Thanks loads for any assistance.
>
> Hello,
>
> That's the N4UU article. Great stuff, but you don't need the article itself.
>
> Just take a look here:
>
> http://www.nucleus.com/~field/
>
> and download "coaxtrap.zip" ==> useful to calculate traps with different types
> of cable
>
> You need to unzip and install it, but that's easy - it's just a plain Windows
> application.
>
> I have downloaded this and it works GREAT!!!! It is based on the N4UU article
> in QST for December, 1984.
>
> Thanks, to Franki, ON4CLN, who pointed me to it. Saves a lot of cut and try
> work.
>
> If you want the traps to be right on, you still have to do some cut and try,
> but the software gets you very close on the first go.
>
> Here is the basic design from the N4UU article The traps consist of coax cable
> wrapped around PVC pipe. The ends of the coax are stripped, the braid unraveled
> and twisted into a lead. The braid at one end of the winding is connected to
> the center conductor at the other end. The remaining braid and center conductor
> are the leads to the trap. In other words, a DC current flowing through the
> trap would flow through the center conductor from on end of the trap to the
> other, then go back to the starting end and flow through the braid in the same
> direction. The cable is secured by pushing its ends through holes in the PVC
> pipe.
>

> Note that traps made this way are asymmetrical - the way in which they are
> connected affects the antenna performance! I use the convention "center
> conductor always goes to center (feedpoint) of the antenna" but some may work
> better the other way. It is important to connect both traps so that the same
> ends are towards the feedpoint.
>
> Here are some tips:
>
> 1) These traps must be grid-dipped to check resonance. There is enough
> variability in different brands of coax and PVC pipe that you have to check
> resonance, and adjust as needed.
> 2) Trap resonance must be adjusted without the antenna attached. Even short
> wires will mess it up. Dip first, then add short antenna leads to make a
> finished trap.
> 3) I use the best RG-58 I can find, with stranded center conductor. Foam coax
> is no good for this job.
> 4) Traps must be connected symmetrically, as described above.
> 5) You will probably have to fuss with it a few times to get resonance where
> you want it.
> 6) Make one test trap to get the hang of it. Buy a decent quantity of coax and
> PVC pipe (lots more than you need) and understand that you are going to ruin
> some materials before you get it right.
> 7) Weatherproof the finished traps with several coats of clear Krylon spray
> after adjustment.
> 8) "Split bolt" or "Burndy" connectors make the job of finding the right
> antenna wire lengths easier. Once you have the lengths down, the joints can be
> soldered sand the split bolt connectors removed.
>
> 73 de Jim, N2EY

Thanks Jim, Your info, combined with that of other replies I received
will be very helpful. It's pure coincidence that the author of the Coax
Trap program, Tony Field, lives here in Calgary. Again, Thanks es 73

--

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

Please delete NOSPAM from my e-mail address when replying. Thanks!

1337. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 05:44:33 UTC
From: John Moriarity <k6qq@hdo.net>
Message-ID: <te4rrfdtbb1k3b@corp.supernews.com>
Source record: 165684

> I just got my General license and have a Yaesu FT-100D...

Congratulations! Your antenna choice will do well
as a first antenna.

I strongly suggest you look for an old Johnson
"Match Box". These are usually available for
$100 or so (for the small 275 watt version) and
were designed for use with balanced line feeders.

I've used the Johnson tuners for many years with
great success. (I've been a ham for 50 years, and
an Electrical engineer for 38.)

If you should have trouble matching your antenna
on some band, (and that is very possible, with any
tuner), add a few feet of feedline and try again.

Good luck, and above all, have fun!

73,

John, K6QQ

1338. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 06:23:39 UTC
From: Allen <wookie8u@hotmail.com>
Message-ID: <LNuE6.11080$U4.2591444@news1.rdc1.tn.home.com>
Source record: 165687

I just got my General too. If you are looking for a quick and inexpensive way to get on the air, I would just put up a dipole. I put one up for 20m and have worked nearly 40 countries in the past month or so and have had plenty of fun catching some QSO's stateside. Granted, I'm limited to one band right now, but 20m is a good place (as far as i can tell) to get your feet wet. I figure in due time, I'll upgrade to multi-band operation, but for now, this is a ton of fun and keeping me plenty entertained. Good luck.

allen

1339. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 07:01:00 UTC
From: Perseus@hol.gr
Message-ID: <3ae2801a.1305665@news.ntua.gr>
Source record: 165688

Paul ,there is not at all belief. Its prooven from the results of the
experiments and it works.
I suggest you spend some time and read the links, and trust me,
you will like it because after all its highly related to amateur radio
and especially with antennas.

On Sat, 21 Apr 2001 20:41:00 -0500, 'Doc <w5lz@oio.net> wrote:

>"Duke",
> The title really doesn't affect me at all, and
>had nothing to do with my comment. I was speaking
>about the subject of your post, and your belief(?)
>in it...
> 'Doc

I am a child of Earth and of Starry Heaven;
But my race is of Heaven(Orphics)
E 10 E
Duke of Mystra

1340. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 07:14:54 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <OxvE6.41349$xN4.3060285@news1.sttls1.wa.home.com>
Source record: 165689

It seems to me that we really have three types of transmission line currents:

1) Differential mode. The desired mode of transmission line operation wherein the currents are equal and opposite, resulting in no external radiation.

2) Common mode. The mode of operation wherein both transmission line conductors carry in phase currents or are excited by a source equally. An example is where the two conductors are tied together and fed as a single wire against ground. Common mode currents will be a source of transmission line radiation.

3) Unbalanced mode. The mode of operation wherein some element of the antenna, transmission line, or driving circuit is recognized as being the source of unequal currents or voltages which must exist on the transmission line. An example would be the transmission line feeding an offset fed dipole.

Most of the discussion on this thread has been about the causes, cures, and existence of currents which are present in the unbalanced mode.

The ARRL Antenna Book is pretty clear in stating that a common mode current is an unbalanced current. The example they give is the current which flows on the outside of a coaxial line which while unbalanced, is still called a "Common-mode current. Under the definitions above, this current would be an Unbalanced Mode current.

73, Roger, W7WKB

1341. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 07:45:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE28C2C.9515A812@eznec.com>
Source record: 165690

Allen makes a very good point. I recall many years ago chatting with someone at a party who said she would like to "get into" backpacking, but couldn't until some time in the distant future when she could afford a complete collection of all the latest equipment. My wife and I had been backpacking for years, starting with an army surplus pack, old sleeping bags, G.I. blanket, and a few other inexpensive essentials. So we had been doing it, and enjoying it, while this other person was waiting until everything was just right before she started. Mark's approach certainly isn't unreasonable, but Allen is right -- you can get on the air in an hour or two with a dipole, and be operating while you're waiting for the tuner to show up on ebay or the ladder line to arrive from the Wireman.

Roy Lewallen, W7EL

Allen wrote:
>
> I just got my General too. If you are looking for a quick and inexpensive
> way to get on the air, I would just put up a dipole. I put one up for 20m
> and have worked nearly 40 countries in the past month or so and have had
> plenty of fun catching some QSO's stateside. Granted, I'm limited to one
> band right now, but 20m is a good place (as far as i can tell) to get your
> feet wet. I figure in due time, I'll upgrade to multi-band operation, but
> for now, this is a ton of fun and keeping me plenty entertained. Good luck.
>
> allen

1342. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 08:10:27 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bu4cp$1re$1@plutonium.btinternet.com>
Source record: 165692

VE9SRB <srbest@att.net> wrote in message
news:lRhE6.29190$IJ1.2492756@bgtnsc05-news.ops.worldnet.att.net...
>
> "Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
> news:9bqejp$1mq$1@plutonium.btinternet.com...
> > Steve, I think you are very much over complicating matters. But
you
> > are in good compnay. It is really quite simple.
> >
> > If the antenna is not too short and the feedline, whatever it
may
> > consist of, is not too long, and all the conductors are made of
> > copper, then it is obvious practically all the power entering
the
> > feedline MUST be radiated. As Tom has implied there's nowhere
else
> > for it to go.
> >
> > The imaginary power reflections and their equally imaginary
power
> > measurements up and down the feed line and antenna wire have
little
> > effect. There's only the exceedingly low resistance of copper
wire
> > multiplied by the current squared involved. If that small loss
is
> > considered excessive then just increase wire diameters. But
the
> > fellow at the receiving end will notice no difference.
> >
> > Since when has anyone seen his antenna wire, where the highest
SWR
> > on the system is usually located, glowing in the dark ? ;o)
> >
> > It is necessary only that the impedance seen looking into the
> > feedline be transformed to a purely resistive 50 ohms, plus or
> > minus 20 percent, or whatever other resistive load the
transmitter
> > prefers to see. If the same philosophy is adopted inside the
tuner
> > as in the remainder of the system, ie., nice thick wire in big
> > tuning coils, then who cares about SWR on the transmission line
?
> >

> > The extent to which SWR on the feedline matters can be judged
from
> > the fact that very few people who swear by it know what the
value
> > of the SWR on their own feedline actually is.
> >
> > Because when the so-called SWR meter is adjacent to the
> > transmitter, which is where nearly everybody connects it, it
> > indicates the SWR on the few inches of line between the meter
and
> > the transmitter - which is of no consequence whatsoever. Any
old
> > piece of wire would do.
> >
> > It does, of course, indicate the closeness of the load
presented to
> > the transmitter to 50 ohms, which IS important. The actual
> > parameter indicated by the meter is the magnitude of the
reflection
> > coefficient with respect to 50 ohms. The scale is calibrated
> > 0-to-1. It is NOT the SWR on the feedline.
> > ----
>
> Reg,
>
> SWR and reflected power are not imaginary. Reflected power is
very real and
> has a significant effect on what happens in a transmission line
system.
>
> If you don't believe me, disable or by pass the tuner in your
transmitter or
> system. Set your transmitter to deliver maximum power into 1/2
wavelength
> long transmission line with a Zo load connected at the end. Then
replace
> the Zo load with a short circuit. Turn on your transmitter. How
much power
> is "delivered" to the transmission line? How's the transmitter
doing?
==========

Steve, we are not at present concerned with how the transmitter is
doing or how much power is delivered to the transmission line.

We are concerned with what fraction of the power delivered to the
line is radiated. If the antenna wire is not too short and the
feeder is not too long then that fraction will be close to unity,
regardless of reflections, real or imagined.

The antenna should not be blamed for shortcomings or inefficiency
in the tuner or transmitter.

Reg.

1343. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 08:31:44 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AE296F0.BF5DAF9A@spam.me.not>
Source record: 165691

Jim:

A bit tight... How best to describe it. Basically, at my job, I take home a little under $300 a week, USD. After bills, car maintenance, et al, there's not a whole lot left over...

As for "bells and whistles," I was looking at the Kenwood site, and really got to drooling over the TS-B2000. It'll be some time before I'll be able to afford one, I'm sure, but I do have the computer equipment to control it, and I really don't need the control face to use the radio if a computer is nearby...

At a minimum, for starters, I guess I need a 2/440 set, and an HF set for when I get my General/Extra ticket. I don't need the bells and whistles, like DSP, digital readouts, and the like... I just need a couple of good, solid, inexpensive sets. Tubes or Solid State? Either or. I know how both work, somewhat, and like I said before, I'm not afraid of a soldering iron. Given a set of schematics and a DVOM (which I have), I think I can fix most minor glitches.

Maybe someone out there has an old set that isn't working quite up to snuff they'd be willing to let go?

I can hope anyway...

-SSB

1344. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 09:39:22 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9bu8sa$m0k$1@bashir.peak.org>
Source record: 165695

On 21 Apr 2001 06:45:31 GMT, Dick Carroll <dixie@townsqr.com> wrote:

:Read an interesting SWR article yesterday by Carl Drumeller, W5JJ, in a
:28 year old issue of 73 magazine. He went about proving that there is no
:such thing as reflected power. Reflected voltage and current are 90 out
:of phase. Power = volts x amps x the cosine of the phase angle.
:The cosine of 90 is zero, so (X watts) x (zero) = zero. Therefore no
:reflected power exists. Ever. (presumably so long as that 90 phase
:relationship exists.)

Read a more recent reference. Drumeller was wrong.

: He also mentioned something that should be obvious - the reason why
:coax losses are higher with higher SWR. With an SWR of 2:1 the voltage
:and current on the coax is twice as great as with 1:1 SWR, so that
:doubles dielectric loss from the doubled voltage and the 1^2 x R losses
:are doubled because of the doubled current flowing.
:(With every increase in SWR the losses go up in direct multiples, IE
:with SWR of 4:1, losses are four times those with a 1:1 match.)

Again, this is wrong. For example, if I recall correctly, when there is
a 2:1 mismatch, the added coax losses are only about 11% greater than when
there is a 1:1 match.

Even a 20:1 mismatch will not produce that 6 dB loss that would be 4 times
the loss.

To get that, you need to start out with about a 4 dB coax loss. Now, with
about a 16:1 SWR, you will get that 6 dB additional loss.

What is the consequence of this?

If your transmission line is nearly lossless, such as will open-wire,
then you can have a 20:1 (or even higher) SWR and still have almost zero
transmission line loss.

Articles in Ham magazines/books can be wrong. So can those in the
professional publications. The above article is an example.

--
Bill Nelson (billn@peak.org)

1345. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 09:55:52 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9bu9r8$m0k$2@bashir.peak.org>
Source record: 165693

Truelove39 <truelove39@aol.com> wrote:

: I have a good ground and the SWR is 1.3:1 at worst on 4mHz and usually 1:1 on
: other freqs. The rig is an SEA 235R with the 1610 coupler. The coupler and
: xmtr are grounded with 3" copper foil run separately to a point on the engine
: block. The backstay is 3/8" 316 stainless wire, end-fed with GTO.

: The hull is fiberglass.

How is your grounding to the ocean itself? Does the boat have a counterpoise
ground?

The antenna and tuner should not be grounded to the motor. They should both
be grounded to a common point which is where your ocean ground occurs. The
motor should also be grounded to this common point - as should many other
items on the boat.

Obtaining proper rf ground on a fiberglass or wood boat is not trivial.
There are books available that cover the subject in detail. I would suggest
that you purchase one or two of them.

Whatever you do, don't mess with the integrity of the other backstay. It
is not the cause of your problems.

--
Bill Nelson (billn@peak.org)

1346. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 10:12:04 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9buambfss1@uranium.btinternet.com>
Source record: 165694

Mark, you have received good advice. Keep the multiband antenna system as simple as possible, of no critical length either of antenna wire or feed line. The higher the feedline impedance the better. 600-ohm open-wire is nice stuff.

A dipole length in the 120 to 150 feet ballpark, centre fed, will be fine except on 160m. But on 160m, by connecting the pair of feedline wires together the antenna can be tuned up as a T. The feedline will then radiate as a vertical (or sloper) with the dipole behaving as top-capacitance loading.

You are correct to attach importance to the tuner. The higher the power which the manufacturer says the tuner will handle the better. Not that you may intend to use it at maximum power. A higher power tuner will have a lower loss and be more efficient at whatever power you use it at.

The most important characteristics of a tuner are the range of impedances which it is capable to transforming to 50 ohms, and the range of frequencies to which the capability applies.

The most common tuner circuit is a T network. Two series variable capacitors and a shunt inductance between them. For multiband operation choose the model which has the largest capacitor values. 450pF is nice. Then choose the model which has the largest inductance value. If its a roller inductor then 40 micro-henry is fine.

These relatively large values of L and C, with their associated minimum settings, may restrict the top frequency range. But during most of the time of the day, and of the month of the year, and of the 11-year sun spot cycle, the 10m band is dead anyway.

An investment in a wide-range tuner is a good long-term investment. But read on - - -

You can have more fun and learn more by experimenting with home brewed tuners. Just get two high voltage variable capacitors. Wind coils with enamelled copper wire on toilet roll tubes or plastic drain pipes. A handfull of alligator clips will also be found very usefull. No need to enclose the parts in a box. Just let them lie on the window ledge where the antenna comes into the shack. With the alligator clips you will not be restricted to a T or any other network congfiguration.
--
****

Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

Mark Langberg <mlangberg@mediaone.net> wrote in message
news:dDrE6.34895$uh5.986062@typhoon.mw.mediaone.net...
> I just got my General license and have a Yaesu FT-100D. I've
never
> transmitted on HF yet and want to put up a simple and cheap "all
band"
> antenna so I can experiment with all the available bands to find
out what
> areas/bands I enjoy before I commit to a more specific (or
expensive) rig
> and antenna. (I'm not quite sure what specific area of amateur
radio I'll
> like.) I was told to put up a 136' dipole fed with ladder line
and use an
> antenna tuner for a generally well performing antenna system for
"all
> bands". Do you agree that this is a good choice for a first "all
band"
> antenna? What tuners do you recommend?
>
>

1347. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 12:08:21 UTC
From: DL7JSK <tansorg@cs.tu-berlin.de>
Message-ID: <9buhkbpja07$1@news.t-online.com>
Source record: 165696

Take the koaxcable,make some turns around a ferrite core.Btw,hope you
isolated the hanging-up-points

73
Tom
p.s.: does anybody know why the windom antenna is called windom ?

"M.Fernando" <nop04918@mail.telepac.pt> schrieb im Newsbeitrag
news:9bre2l$98g$1@venus.telepac.pt...
> Dear Friends
> Tahnks for reading.
> I am looking for help concerning a prblem I have here:
> I have built a Windom Antenna (41 meters long) Balun 6:1 and feed with
> coax 50 Ohms
> I have very strong RF problems in audio on 20 and 12 meters band. Can you
> give me some informations in order to correct it? In other hand I think if
I
> work with a dipole there no problem concerning RF in audio, but I think
> Windom has more gains than a dipole... What is your opinion ?
> Best 73 from Portugal
> Fernando
>
>

1348. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 13:39:46 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <ltviOvet9ULYvlpjVKpZ4JrQQmtn@4ax.com>
Source record: 165697

Sideband <sideband@spam.me.not> wrote:

>Jim:
>
>A bit tight... How best to describe it. Basically, at my job, I take
>home a little under $300 a week, USD. After bills, car maintenance, et
>al, there's not a whole lot left over...
>
>As for "bells and whistles," I was looking at the Kenwood site, and
>really got to drooling over the TS-B2000. It'll be some time before I'll
>be able to afford one, I'm sure, but I do have the computer equipment to
>control it, and I really don't need the control face to use the radio if
>a computer is nearby...
>
>At a minimum, for starters, I guess I need a 2/440 set, and an HF set
>for when I get my General/Extra ticket. I don't need the bells and
>whistles, like DSP, digital readouts, and the like... I just need a
>couple of good, solid, inexpensive sets. Tubes or Solid State? Either
>or. I know how both work, somewhat, and like I said before, I'm not
>afraid of a soldering iron. Given a set of schematics and a DVOM (which
>I have), I think I can fix most minor glitches.
>
>Maybe someone out there has an old set that isn't working quite up to
>snuff they'd be willing to let go?

There's an awful lot of hf & vhf stuff on eBay that's auctioning off at reasonable prices, less than $500 or so. If you subscribe to QST, you can access their product reviews at their web site, http://www.arrl.org for any ham rig manufactured during the last couple of decades, going back to 1980 or so. You might try:

http://listings.ebay.com/aw/listings/list/all/category4670/index.html

...for the ham radio listings, although, if you can find any hams locally, it's always better to buy from somebody you know than a stranger :-)

Good luck!

Bob
k5qwsg

>
>I can hope anyway...
>
>-SSB

1349. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 13:46:58 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae2df7d.574675074@news.accessunited.com>
Source record: 165698

On Sun, 22 Apr 2001 07:14:54 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:

>It seems to me that we really have three types of transmission line
>currents:
>
>1) Differential mode. The desired mode of transmission line operation
>wherein the currents are equal and opposite, resulting in no external
>radiation.
>
>2) Common mode. The mode of operation wherein both transmission line
>conductors carry in phase currents or are excited by a source equally. An
>example is where the two conductors are tied together and fed as a single
>wire against ground. Common mode currents will be a source of transmission
>line radiation.
>
>3) Unbalanced mode. The mode of operation wherein some element of the
>antenna, transmission line, or driving circuit is recognized as being the
>source of unequal currents or voltages which must exist on the transmission
>line. An example would be the transmission line feeding an offset fed
>dipole.

There are two types, differential mode and common mode. Your
unbalanced mode description in number three is really common mode.

Even coaxial lines must have exactly equal and opposite phase currents
leaving the line terminals and entering the line from the other end,
or they will radiate. External fields can also induce common mode
currents.

Unbalanced belongs in the context where we are discussing current
and/or voltage balance. Not mixed in with common and differential
modes.

73 Tom

1350. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 13:50:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE2E1A3.F6DE2501@IEEE.org>
Source record: 165699

Roy Lewallen wrote:
> ... but Allen is right -- you can get
> on the air in an hour or two with a dipole, and be operating while
> you're waiting for the tuner to show up on ebay or the ladder line to
> arrive from the Wireman.

Why can't you use ladder-line on a dipole? :-)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1351. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 13:57:48 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE2E35C.64B11EC5@IEEE.org>
Source record: 165700

Reg Edwards wrote:
> The antenna should not be blamed for shortcomings or inefficiency
> in the tuner or transmitter.

Why not just specify the efficiency of the particular antenna under
discussion? Could be 98% for a copper wire dipole or 1% for a Hamstick.
--
http://www.mindspring.com/~w6rca

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1352. What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 14:05:42 UTC
From: Mad Dog <lgssl@netzero.net>
Message-ID: <9buojs$b2d5n$1@ID-20128.news.dfncis.de>
Source record: 165701

between the old A99 and the new Imax99 1/2wave vertical dipole?

--
714 Sandpile,
The Mad Dog wavin' good bye

1353. Looking for a Wire Grid User

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 14:10:47 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <jfp5etkitofnm8lrm2an13bt2gl2d9fq2q@4ax.com>
Source record: 165708

I would like to get in contact -via email- with anyone using WireGrid
antenna modeling software.

73
Danny, K6MHE

1354. Velocity Factory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 14:15:33 UTC
From: Mad Dog <lgssl@netzero.net>
Message-ID: <9bup6h$b8uff$1@ID-20128.news.dfncis.de>
Source record: 165703

Some people say that polyethylene has a VF of .66 and foam has a VF of .78,
i use RG8/X
which has a stranded center conductor wrapped in polyethylene. My research
tells me that
this cable has a VF of .78, what gives here? What is the real scoop on VF
and how is it determined? What factors are involved in the equation?
Thanx....

--
714 Sandpile,
The Mad Dog wavin' good bye

1355. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 14:19:10 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AE2E85E.F9477F54@mwci.net>
Source record: 165704

iowadoc@micron.net wrote:

> Wasn't Windom the name of an amateur who had something to do with
> designing or encouraging the antenna's use??

See QST July 1926 article by Loren G. Windom W8GZ

Bill W0IYH

1356. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 14:20:19 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE2E8A3.920D98A6@IEEE.org>
Source record: 165705

"William E. Sabin" wrote:
>
> iowadoc@micron.net wrote:
>
> > Wasn't Windom the name of an amateur who had something to do with
> > designing or encouraging the antenna's use??
>
> See QST July 1926 article by Loren G. Windom W8GZ

Also the 1957 ARRL publication, "The radio amateur's handbook".
--
http://www.mindspring.com/~w6rca

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1357. Re: Velocity Factory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 14:23:30 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE2E962.2A15198C@IEEE.org>
Source record: 165706

Mad Dog wrote:
>
> Some people say that polyethylene has a VF of .66 and foam has a VF of .78,
> i use RG8/X
> which has a stranded center conductor wrapped in polyethylene. My research
> tells me that
> this cable has a VF of .78, what gives here? What is the real scoop on VF
> and how is it determined? What factors are involved in the equation?

RG-8X has a "foam polyethylene dielectric", according to The Wireman.
--
http://www.mindspring.com/~w6rca

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1358. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 14:26:10 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AE2EA02.4E8D50BA@mwci.net>
Source record: 165707

William E. Sabin wrote:

> iowadoc@micron.net wrote:
>
> > Wasn't Windom the name of an amateur who had something to do with
> > designing or encouraging the antenna's use??
>
> See QST July 1926 article by Loren G. Windom W8GZ
>
> Bill W0IYH

The archives in the basement of Shambaugh library has it.

Bill W0IYH

1359. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 15:09:40 UTC
From: iowadoc@micron.net
Message-ID: <iowadoc-2204010909400001@1cust75.tnt1.forest-city.ia.da.uu.net>
Source record: 165702

A couple of years ago I "read up" on the windom. AFAIK the original windom
was not what the modern version is. It consisted of a single wire running
out of the shack to an overhead, horizontally oriented wire, and the
feeder wire attached off center. Our new 'windoms' are often referred to
off center fed dipoles. I don't think anyones ever claimed, successfully,
that a windom has gain over a well made dipole, especially the original
windom.
Wasn't Windom the name of an amateur who had something to do with
designing or encouraging the antenna's use??

In article <9buhkbpja07$1@news.t-online.com>, "DL7JSK"
<tansorg@cs.tu-berlin.de> wrote:

> Take the koaxcable,make some turns around a ferrite core.Btw,hope you
> isolated the hanging-up-points
>
> 73
> Tom
> p.s.: does anybody know why the windom antenna is called windom ?
>
> "M.Fernando" <nop04918@mail.telepac.pt> schrieb im Newsbeitrag
> news:9bre2l$98g$1@venus.telepac.pt...
> > Dear Friends
> > Tahnks for reading.
> > I am looking for help concerning a prblem I have here:
> > I have built a Windom Antenna (41 meters long) Balun 6:1 and feed with
> > coax 50 Ohms
> > I have very strong RF problems in audio on 20 and 12 meters band. Can you
> > give me some informations in order to correct it? In other hand I think if
> I
> > work with a dipole there no problem concerning RF in audio, but I think
> > Windom has more gains than a dipole... What is your opinion ?
> > Best 73 from Portugal
> > Fernando
> >
> >

--
"A clear conscience is a sign of a poor memory"

Clarence R Carlson
Itinerant Philosophers of Iowa, LTD

1360. Re: Velocity Factory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 15:24:49 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <mpt5etoh24gvgnilc4k6mq1lsns5256sjo@4ax.com>
Source record: 165711

On coax cable that I have checked I rarely find that the VF is exactly
as that specified. It is easy enough to check using an antenna
analyzer or a grid dip meter.

Danny,
K6MHE

On Sun, 22 Apr 2001 10:15:33 -0400, "Mad Dog" <lgssl@netzero.net>
wrote:

>Some people say that polyethylene has a VF of .66 and foam has a VF of .78,
>i use RG8/X
>which has a stranded center conductor wrapped in polyethylene. My research
>tells me that
>this cable has a VF of .78, what gives here? What is the real scoop on VF
>and how is it determined? What factors are involved in the equation?
>Thanx....

1361. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 15:45:51 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE2FCAE.4C4391FB@toast.net>
Source record: 165709

Tom W8JI wrote:

> On Sat, 21 Apr 2001 16:45:44 -0500, John O'Flaherty
> <oflahert@toast.net> wrote:
>
> >After the mismatch to the transmitter is cured, by a tuner, then all the
> >power applied to the feedline is radiated or dissipated. Ok; does the swr at
> >the feedline affect how much of the power is radiated at the antenna, as
> >opposed to along the feedline?
> >
> >john
>
> Radiation along the feedline is not related to SWR on the feedline. It
> is the common mode current that causes radiation, and that has nothing
> to do with SWR on the feedline.
>
> The only effect of SWR is to make the transmitter "uncomfortable" with
> the load it sees, and to increase feedline loss *if* current or
> voltage changes amplitude in a direction that increases loss.
>
> In an electrically short feedline, it is possible to decrease loss
> with a mismatch. One case where this would happen is in a line where
> conductor resistance dominates, and the line is less than 1/4 wl long.
> If the load moves in a direction to decrease current in the line...the
> line has less loss. This is true even though SWR increases.

Then, the only importance of swr presented at the feedline would be whether it lies within the range of correction of the tuner? Would a tuner compensating for the more extreme values of swr (assuming that it could correct them to 50 ohms for the transmitter), would that tuner, with its settings, have higher losses than a tuner compensating for less extreme values of swr presented at the feedline?

john

1362. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 15:53:11 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE2FE67.65CE0ACB@toast.net>
Source record: 165710

Roger Sparks wrote:

> It seems to me that we really have three types of transmission line
> currents:
>
> 1) Differential mode. The desired mode of transmission line operation
> wherein the currents are equal and opposite, resulting in no external
> radiation.
>
> 2) Common mode. The mode of operation wherein both transmission line
> conductors carry in phase currents or are excited by a source equally. An
> example is where the two conductors are tied together and fed as a single
> wire against ground. Common mode currents will be a source of transmission
> line radiation.
>
> 3) Unbalanced mode. The mode of operation wherein some element of the
> antenna, transmission line, or driving circuit is recognized as being the
> source of unequal currents or voltages which must exist on the transmission
> line. An example would be the transmission line feeding an offset fed
> dipole.
>
> Most of the discussion on this thread has been about the causes, cures, and
> existence of currents which are present in the unbalanced mode.
>
> The ARRL Antenna Book is pretty clear in stating that a common mode current
> is an unbalanced current. The example they give is the current which flows
> on the outside of a coaxial line which while unbalanced, is still called a
> "Common-mode current. Under the definitions above, this current would be
> an Unbalanced Mode current.

Wouldn't the unbalanced current, by transformer action between the inner and outer conductor, be automatically divided equally between the inner and outer conductors?

john

1363. Re: Velocity Factory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 16:35:59 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3AE3086F.81759A7C@dialpoint.net>
Source record: 165715

The major determination of the VF is the material around a conductor carring RF. In coax is the the insulating material between the center wire and the shield. The numbers see in pirnt are just typical and may vary somewhat even in a single roll of coax. The same goes with the impedance of the cable.

Mad Dog wrote:
>
> Some people say that polyethylene has a VF of .66 and foam has a VF of .78,
> i use RG8/X
> which has a stranded center conductor wrapped in polyethylene. My research
> tells me that
> this cable has a VF of .78, what gives here? What is the real scoop on VF
> and how is it determined? What factors are involved in the equation?
>

1364. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 16:39:17 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AE30935.C013F7B6@oio.net>
Source record: 165713

Mad Dog wrote:
>
> between the old A99 and the new Imax99 1/2wave vertical dipole?
>
> --
> 714 Sandpile,
> The Mad Dog wavin' good bye

Probably the name...
'Doc

1365. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 16:39:59 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3AE3095F.965E6204@haertig.com>
Source record: 165712

Geez, Cec,

You're not paying attention again. The ladder line hasn't arrived from
The Wireman yet!

(c:

Gray

W6RCecilA wrote:
>
> Roy Lewallen wrote:
> > ... but Allen is right -- you can get
> > on the air in an hour or two with a dipole, and be operating while
> > you're waiting for the tuner to show up on ebay or the ladder line to
> > arrive from the Wireman.
>
> Why can't you use ladder-line on a dipole? :-)
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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--
Telecommunications Engineering
Gray Frierson Haertig & Assoc.
820 North River Street, Suite 100
Portland, Oregon 97227
503-282-2989
503-282-3181 FAX
gfh@haertig.com

1366. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 16:50:09 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AE30BC1.2AA6C659@oio.net>
Source record: 165714

Went back and re-visited the links. Nothing in the
experiment relates to antigravity anymore than an
"Ottis" elevator does. Bit of a 'reach' to call it
'anti-gravity'...
'Doc

1367. Screwdriver Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 17:47:09 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <3AE3191D.5056@bellsouth.net>
Source record: 165716

I build a version of the screwdriver antenna. I have advertised them here in the past. The antennas are called "The Carolina Cyclone" and come in 2 models: Cyclone I is a FULL 2" diameter, uses NO PVC anywhere and is wound with #14 wire at 8 TPI for increased efficiency and power handling--up to 700 watts. Cyclone II is a full 3" diameter using the same construction technique and approximates the efficiency characteristics of the popular Bugcatchers with the convenience of the SD. Power handling is up to full legal limit. I have one Cyclone I in stock, left over from a hamfest here in NC yesterday. Of course, I am already building more! If you are in the market for a screwdriver antenna, please allow me the opportunity to who you one of these fine antennas. Reply via direct email for details.

Jerry
K4KWH

1368. last protel ckrack

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 18:05:45 UTC
From: oN <konjfig@si.se>
Message-ID: <9bv6n6$i0f$1@news.EUnet.yu>
Source record: 165717

on yu.eunet.binares

1369. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 18:32:55 UTC
From: truelove39@aol.com
Message-ID: <20010422143255.27223.00001061@ng-ch1.aol.com>
Source record: 165718

The keel is encapsulated lead, but I can't get to it (electrically).

SEA came up with the counterpoise grounding to the engine based on their tests. Previously, I had tried running 3" foil all around (especually under the feed point) on the inside of the hull and connecting it to all the thru-hulls, etc. The way it is now is much better. The problem is that my boat's hull is so thick that the foil doesn't couple to the sea as it does in most boats. (Think I read this in Gordon West's book). So the ground is by virtue of the propeller shaft and prop.

The only other ground on the boat is the Dynaplate which is a dedicated lightning ground for the mast. Conventional wisdom precludes connecting anything else to it.

I have in fact read just about everything available on counterpoises for boats and have tried most of the suggestions. The current scheme is not worse than any I have tried, so I am looking elsewhere. The SWR suggests that the power is getting to the antenna and that the counterpoise is adequate, no?

It's difficult for me to believe that a grounded wire parallel to and within a few feet of the antenna won't be absorbing some portion of the signal.

John

1370. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 18:36:09 UTC
From: kg4ggx@aol.com
Message-ID: <20010422143609.14479.00000518@ng-cu1.aol.com>
Source record: 165519

The A 99 is a half wave vertical. The IMAX 2000, is a 5/8 wave vertical. I have compared both and the IMAX is more broad banded, and performs better as a 5/8 wave has a little more gain. I currently use my IMAX 2000 with very good results comparing to dipoles, on 10, and 12 meters with a low swr on both bands with out the need for any tuning.I have used it to break pile ups that the dipole wouldn't, for such contacts as China , and Korea. It also does very well on 15 meters with a tuner. Is it worth the extra cost? That's up to you.Good Luck!
73 Rob

1371. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 18:43:28 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <NuGE6.19496$u7.9064820@e3500-chi1.usenetserver.com>
Source record: 165523

Professor William E. Everitt of the Engineering Dept of Ohio State, and one of his colleagues in the Department originated the off-center fed antenna, and performed the experiments with it. As a young kid, Loren Windom was present and helped with the experiment, but he not originate it.

The antenna was dubbed the 'Windom' in the amateur community because he introduced it in the July 1926 QST article just by Bill Sabin.

Walt Maxwell, W2DU

1372. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 18:46:34 UTC
From: Mad Dog <lgssl@netzero.net>
Message-ID: <9bv93a$b9qh0$1@ID-20128.news.dfncis.de>
Source record: 165521

I give up, no-where did i mention 5/8wave.
I am comparing the old A99 verses the new and improved Imax99.
Both are 1/2wave vertical dipoles.
I guess everybody has'nt seen the new 1/2wave Antron is making......

--
714 Sandpile,
The Mad Dog wavin' good bye
"KG4GGX" <kg4ggx@aol.com> wrote in message
news:20010422143609.14479.00000518@ng-cu1.aol.com...
> The A 99 is a half wave vertical. The IMAX 2000, is a 5/8 wave vertical. I
have
> compared both and the IMAX is more broad banded, and performs better as a
5/8
> wave has a little more gain. I currently use my IMAX 2000 with very good
> results comparing to dipoles, on 10, and 12 meters with a low swr on both
bands
> with out the need for any tuning.I have used it to break pile ups that the
> dipole wouldn't, for such contacts as China , and Korea. It also does very
well
> on 15 meters with a tuner. Is it worth the extra cost? That's up to
you.Good
> Luck!
> 73 Rob

1373. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 18:47:16 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <UGFE6.15660$Ce4.1486957@news1.rdc1.ct.home.com>
Source record: 165520

There was an article dealing with sailboats in Communications Quarterly Magazine several years back. My memory is dim, but I think the gentleman who wrote the article mentioned something about using the keel as a ground, even though it was encapsulated.

pete

"Truelove39" <truelove39@aol.com> wrote in message news:20010422143255.27223.00001061@ng-ch1.aol.com...
> The keel is encapsulated lead, but I can't get to it (electrically).
>
> SEA came up with the counterpoise grounding to the engine based on their tests.
> Previously, I had tried running 3" foil all around (especually under the feed
> point) on the inside of the hull and connecting it to all the thru-hulls, etc.
> The way it is now is much better. The problem is that my boat's hull is so
> thick that the foil doesn't couple to the sea as it does in most boats. (Think
> I read this in Gordon West's book). So the ground is by virtue of the propeller
> shaft and prop.
>
> The only other ground on the boat is the Dynaplate which is a dedicated
> lightning ground for the mast. Conventional wisdom precludes connecting
> anything else to it.
>
> I have in fact read just about everything available on counterpoises for boats
> and have tried most of the suggestions. The current scheme is not worse than
> any I have tried, so I am looking elsewhere. The SWR suggests that the power is
> getting to the antenna and that the counterpoise is adequate, no?
>
> It's difficult for me to believe that a grounded wire parallel to and within a
> few feet of the antenna won't be absorbing some portion of the signal.
>
> John

1374. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 18:58:12 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <8RFE6.15679$Ce4.1489063@news1.rdc1.ct.home.com>
Source record: 165522

Doc!!

This may mean the end of the need for rotors! Think of the possibilities!

Pete ;)\

"'Doc" <w5lz@oio.net> wrote in message news:3AE30BC1.2AA6C659@oio.net...
>
>
> Went back and re-visited the links. Nothing in the
> experiment relates to antigravity anymore than an
> "Ottis" elevator does. Bit of a 'reach' to call it
> 'anti-gravity'...
> 'Doc

1375. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 19:46:49 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE33529.A4D9E549@IEEE.org>
Source record: 165524

Gray Frierson Haertig wrote:
> You're not paying attention again. The ladder line hasn't arrived from
> The Wireman yet!

And neither has the coax. :-)
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1376. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 19:51:28 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE33640.8D3D96D5@IEEE.org>
Source record: 165525

John O'Flaherty wrote:
> Would a tuner compensating for
> the more extreme values of swr (assuming that it could correct them to 50 ohms
> for the transmitter), would that tuner, with its settings, have higher losses
> than a tuner compensating for less extreme values of swr presented at the
> feedline?

In general, the lower the impedance presented to the tuner, the lossier
is the tuner. The tuner has relatively low loss when matching a 300 ohm
folded dipole, for instance, to 50 ohms.
--
http://www.mindspring.com/~w6rca

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-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1377. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 20:08:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bvdmvnlb1@slb7.atl.mindspring.net>
Source record: 165526

Steve:

Some of those "terms" are new to me...

I think the "explanations" that I offer below are what Tom was trying to say...

The following terms which seem to have established a large following amongst the "scattering parameter" crowd are more familiar to me. These folks usually speak of Incident Waves and use the literal "A" or "a" as a symbol, and the Reflected Waves where they use the literal "B" or "b" as a symbol. Then, for a two port network, the reflected wave vector B is related to the incident wave vector A by the scattering matrix S as:

B = SA (Think of S as a generalized reflection coefficient.)

This matrix formality generalizes easily to the N-Port network case.

In the one port or scaler case this simply reduces to b = s11*a or b = rho*a where s11=rho is the scaler reflection coefficient.

In this "scattering formalism" one finds the following names and terms in wide use:

Pi = Incident Power ~ That ficticious power which would be delivered to a perfectly matched load. i.e. a load where the load's impedance is the exact complex conjugate of the internal impedance of the source.

Note: That, unless things are perfectly matched, this ficticious power is not really present in most measurement situations, it is merely a "fiction" used to support the formalism or visualization of what is happening.
Incident Voltage ~ Is that voltage which would be applied from the voltage generator to it's internal impedance and the load in series together if perfectly matched. i.e. for example, if the load is a perfect resistance R and the generator also has a perfect internal resistance of R then the incident voltage Vi = a is the voltage applied to the total resistance 2*R, causing a current of I = Vi/(2*R) to flow. If R is taken as the "reference impedance" for the calculation, then with V the voltage developed across the load, the incident voltage is simply "a = V + IR" and the reflected voltage is simply "b = V - IR".

Pt = Transmitted Power ~ That actual power which is delivered to the load under any condition. i.e. that power dissipated (Dare I use that word?) by the real part of the load impedance. This is the "only" real power present in the formalism unless perfect matching is achieved since the Incident Power is a fiction, and the reflected power is simply a "calculated" quantitiy... Pr = Pi - Pt. No direct primary instruments actually measure

a "reflected power" it simply does not exist to be measured! What reflected power meters really do is measure something else and use that "something else" to calculate and present a "reading" of Reflected Power.

Pr = Reflected Power ~ That fiticitious power which results from the calculation... Pr = Pi - Pt.

In all of this, for any practical situation where there is not a perfect match, then there is only one real power present and that is Pt, the power transmitted into and dissipated by the load. The other two "powers" are either ficticious Pi, or derived from a real power and a ficticious power by the above calculation.

Pi is only present in practice and achieved if perfect matching is achieved i.e. the load and generator have comlex conjugate impedances with non-zero real parts, and then Pi is the power delivered to twice the real part of that matched load.

If perfect matching is not achieved, i.e. the load Z is not the complex conjugate of the generator's internal impedance, why then...

In the unmatched case, one can still measure a value for Pt, by measuring the power dissipated in the real part of the load impedance. Do this by measuring the voltage and current across and through the real part of the load. In this unmatched case the other two powers Pi and Pr, reflected and incideent voltages, currents, etc... are mere artifices... which are calculated from the reference impedance and the actual voltages and currents...

These calculations may be done "off line" after making suitable measurements of voltage and current, or they may be made "on line" by suitable "analog or digital computers" often called reflected power meters or SWR meters. A Bird Wattmeter is nothing more nor less than an analog computer which measures the V and I at the load and calculates for display values of otherwise ficticious powers.

All one has to do is to make two simple measurements using two simple instruments, a voltmeter and an ammeter.

Simply measure the voltage V across the load, and measure the current I through the load.

Then select an appropriate "reference impedance" usually but not necessarily a pure resistance value (often it is R = 50 Ohms), let's simply call it R. But if desired R could be any impedance other than a pure resistance. Incidently, R may or may not be related to the problem at hand, although usually one chooses R to equal some convenient value such as a transmission line surge resistance or a generator internal resistance.

Now write down the two measured values V and I, and using the selected reference impedance R the analog or digital computer simply uses V and I to make (or indicate) the results of the following two computations.

b = V - IR (reflected voltage)
a = V + IR (incdent voltage)

From a and b and V and I and using your, somewhat arbitrary R, you can
calculate all the fanciful powers you might wish to help with
"visualization"... but only one power Pt gets delivered to the load!

The others are ficticious.

Thoughts comments...

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message
news:4GZD6.8429$hH3.747280@bgtnsc04-news.ops.worldnet.att.net...
>
> "Tom W8JI" <2w8ji@akorn.net> wrote in message
> news:3ae05394.407760639@news.accessunited.com...
> > On Fri, 20 Apr 2001 12:57:18 GMT, "VE9SRB" <srbest@att.net> wrote:
> >
> > >ERP = (Antenna Gain) * (Delivered Power)
> > >
> > >The (Antenna Gain) is dimensionless (not dBi) and the (Delivered Power)
> is
> > >in Watts. ERP is in Watts.
> > >
> > >Increasing antenna SWR will reduce the power delivered to the antenna,
> > >assuming the forward power arriving at the antenna remains constant.
If
> you
> > >know the forward power arriving at the antenna, the power delivered to
> the
> > >antenna is found from
> > >
> > > (Delivered Power) = (Forward Power) * (1 - |RhoA|^2)
> > >
> > > |RhoA| = (SWR - 1) / (SWR + 1)
> > >
> > >Steve, VE9SRB
> >
> > All power entering the feedline from the transmitter is radiated,
> > except that lost as heat in the feedline.
> >
> > The effect of SWR is only to increase the loss in the feedline,
> > assuming the transmitter still delivers the same power to the
> > feedline.
> >
> > I can have a 100 watt transmitter, a 10:1 SWR, a zero dB gain
> > antenna, and radiate nearly 100 watts ERP.
> >
> > 73 Tom
>
> Hi Tom:

>
> There is a difference between "delivered power" and "forward power" in a
> transmission line when the antenna SWR is greater than 1.0:1.
>
> I do not disagree with any of your statements. It is just important for
all
> of us to use terms consistently. For example, what do you mean by "all
> power entering the feedline"? Some people might interpret this to mean
the
> forward power, you interpret it to mean delivered power. The problem is
> that most hams measure forward or reflected power directly. Not too many
> measure delivered power directly. In your discussions, you always assume
> that the delivered power remains constant. You do not explain that the
> forward power must increase with increasing SWR to maintain a constant
> delivered power. You do not explain why it must change nor do you explain
> how it changes.
>
> For example, if the forward power in the transmission line is 100 watts, a
> 10:1 SWR antenna will not radiate 100 watts of power. A 50 ohm 0 dB gain
> antenna will radiate 100 Watts of power when the measured forward power is
> 100 watts. A 10:1 SWR 0 dB gain antenna will radiate 100 Watts of power
> when the measured forward power is 302.5 Watts.
>
> Tom's statements above might lead someone to believe that a high SWR does
> nothing other than increase cable loss and that the power delivered to the
> antenna does not change with increasing SWR. This is not quite correct.
To
> maintain a constant delivered power with increasing SWR, the forward power
> in the transmission line must increase. To increase the forward power
with
> increasing SWR, some form of compensation must occur in the system. The
> most common form of compensation is an external or internal tuner. With a
> matched tuner, the effective load impedance seen by the transmitter's
output
> stages remains constant so the delivered power remains constant. Note
that
> with changing SWR, the forward and reflected power change significantly.
> The compensation here is the adjustment of the tuner components with
> changing SWR. If an internal or external tuner is not used, then the
output
> levels of the transmitter will have to be adjusted to increase the forward
> power to compensate for the change in load impedance seen by the
> transmitter.
>
> Steve VE9SRB
>
>
>
>
>

1378. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 20:33:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bvf78ag1@slb2.atl.mindspring.net>
Source record: 165527

Steve:

There is a very deep symantic problem here associated with the words "travel" and "travelling". This is a great source of confusion for beginners and it comes from trying to reconcile two visualizations, the travelling wave visualization, or transient case where energy is the more appropriate metric as compared to power, and the steady state case where power is the more appropriate metric. Sort of like the Fourier Transform, LaPlace Transform dichotomy, both views are useful and represent "the truth" but one is more appropriate and easy to use for transient analysis, while the other is more appropriate and easier to use for the steady state.

For how do beginners visualize power but as energy expended per unit time, a continuous flow, not a passing phenomena....

How can a power travel? An quantum of energy can travel, but power????

Voltages and currents can travel as "waves", but power per se does not travel How can one visualize volts times amps as traveling?

How can a power... say Forward Power lose some of itself along the way and then be called the same thing?

How can a power... say Reflected Power lose some of itself along the way and still be called the same thing?

Power is a quantity that can be calculated at a point where one can measure an I and a V and perform the calculation P = V*I*cos(theta), but does that formulae travel?

And... if you move up or down a distance from the first point you will measure a different I and V and theta and calcualate a different set of powers.

At each point along a transmission line, one may measure an I and a V and use a reference impedance R to calculate forward and reflected voltages and currents and from those to calculate the Power being transmitted at that point, Pt and from that one can pose a ficticious incident power Pi, appropriate to that point, and calculate a reflected power Pr for that point.

For Pt = V*I*cos(theta) can be calculated at a point from the V and I "waves" at that point...

and then....

Pr = Pi - Pt

In any practical case, a little further on you will get slightly different values for Pt, Pi, Pr, etc...

They are not "travelling" and "losing" stuff as they travel, that visualization is a symantic nightmare in the steady state, in the steady state, they exist at each and every point on the line, and one measures and calculates different values along the way.

Your visualization is perhaps appropriate to a line excited by an impulse or a step voltage or current excitation, and the calculation of energy contained in a travelling wave... e.g. a soliton like phenomena, but for the steady state it merely serves to confuse.

IMHO...

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message
news:JGhE6.9901$hH3.853439@bgtnsc04-news.ops.worldnet.att.net...
>
> "Dick Carroll" <dixie@townsqr.com> wrote in message
> news:9braab$r3i$0@208.207.71.151...
> >
> >
> > Tom W8JI wrote:
> > >
> > > All power entering the feedline from the transmitter is radiated,
> > > except that lost as heat in the feedline.
> > >
> > > The effect of SWR is only to increase the loss in the feedline,
> > > assuming the transmitter still delivers the same power to the
> > > feedline.
> > >
> > > I can have a 100 watt transmitter, a 10:1 SWR, a zero dB gain
> > > antenna, and radiate nearly 100 watts ERP.
> >
> >
> > Read an interesting SWR article yesterday by Carl Drumeller, W5JJ, in a
> > 28 year old issue of 73 magazine. He went about proving that there is no
> > such thing as reflected power. Reflected voltage and current are 90° out
> > of phase. Power = volts x amps x the cosine of the phase angle.
> > The cosine of 90 is zero, so (X watts) x (zero) = zero. Therefore no
> > reflected power exists. Ever. (presumably so long as that 90° phase
> > relationship exists.)
> >
> > He also mentioned something that should be obvious - the reason why
> > coax losses are higher with higher SWR. With an SWR of 2:1 the voltage
> > and current on the coax is twice as great as with 1:1 SWR, so that
> > doubles dielectric loss from the doubled voltage and the 1^2 x R losses
> > are doubled because of the doubled current flowing.
> > (With every increase in SWR the losses go up in direct multiples, IE
> > with SWR of 4:1, losses are four times those with a 1:1 match.)

> >
> > For some reason these facts are almost never stated so clearly.
> >
> > Dick W&#65533;EX
>
> Hi Dick:
>
> These "facts" are also technically wrong and do not all represent what is
> really happening in a transmission line with reflected power.
>
> Reflected power is very real, that's why the loss in the coax increases.
> Some portion of the forward power is lost as it travels to the antenna and
> some portion of the reflected power is lost as it travels towards the
> transmitter.
>
> Steve VE9SRB
>
>

1379. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 20:52:45 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bvgagnhc1@slb5.atl.mindspring.net>
Source record: 165528

Wes:

[snip]
"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
news:3ae1988d.235428827@news.aepnet.com...
> On 21 Apr 2001 06:45:31 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>
> [snip]
>
> I can (and have thousands of times) use(d) a directional coupler and a
> thermocouple or thermistor power sensor to measure reflected power.
Either of
> these two sensors responds only to temperature rise, they don't know a
volt from
> an amp. If this power is fictitious, why does the termination in the
sensor
> heat up????
>
[snip]

A sampling directional coupler for amateur use is an analog computer which computes and delivers values for reflected and incident voltages at a point on a line it does not actually separate and deliver large quantities of power through its' ports. A thermistor coupled to such indicated voltages and/or currents will certainly respond.

A full power, lossless, directional coupler, rather than a simple sampling directional coupler, is an extremely difficult and expensive thing to construct. Not many are available to the amateur. It is extremely difficult to resolve wave directions without invoking losses and very expensive apparatus.

Such a device would have four ports on it, two for the "straight through" path and two directional ports to pull off the "travelling" waves. It would allow one to connect it to two 100 Ohm dummy loads, one to each of the "directional ports", and connect the "through ports" into the center of 50 feet of transmission line and then place a 100 watt transmitter at each end of the 50 feet of line and then it would separate out the two into their respective dummy loads.

Then the power going from left to right would be traveling in the left to right direction, and the power going from right to left would be going in the right to left direction, and the directional coupler would resolve them, but where would the "reflected" power be??? It would be nowhere since it is still a fiction!

Where do you buy those directional couplers? The ones that can separate large amounts of power flowing in two directions? Iv'e never seen one, and I can only imagine how hard it would be to design and build.

Please tell us what was the make and model of the directional couplers for "re-routing" rather than "sampling" directional power to which you refer.

And what were their losses, etc...

Otherwise your thermistor sensors were no more than simply indicating the results of a sampled and calculated voltage or current, they were not actually terminating an "imaginary" reflected power!

-Peter K1PO

1380. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 20:53:49 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bvgcbith1@slb6.atl.mindspring.net>
Source record: 165529

Bill et al:

You are right, Drumeller is WRONG!

Just because it's written down doesn't make it right.

-Peter K1PO

"Bill Nelson" <billn@spock.peak.org> wrote in message
news:9bu8sa$m0k$1@bashir.peak.org...
> On 21 Apr 2001 06:45:31 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>
> :Read an interesting SWR article yesterday by Carl Drumeller, W5JJ, in a
> :28 year old issue of 73 magazine. He went about proving that there is no
> :such thing as reflected power. Reflected voltage and current are 90 out
> :of phase. Power = volts x amps x the cosine of the phase angle.
> :The cosine of 90 is zero, so (X watts) x (zero) = zero. Therefore no
> :reflected power exists. Ever. (presumably so long as that 90 phase
> :relationship exists.)
>
> Read a more recent reference. Drumeller was wrong.
>
> : He also mentioned something that should be obvious - the reason why
> :coax losses are higher with higher SWR. With an SWR of 2:1 the voltage
> :and current on the coax is twice as great as with 1:1 SWR, so that
> :doubles dielectric loss from the doubled voltage and the 1^2 x R losses
> :are doubled because of the doubled current flowing.
> :(With every increase in SWR the losses go up in direct multiples, IE
> :with SWR of 4:1, losses are four times those with a 1:1 match.)
>
> Again, this is wrong. For example, if I recall correctly, when there is
> a 2:1 mismatch, the added coax losses are only about 11% greater than when
> there is a 1:1 match.
>
> Even a 20:1 mismatch will not produce that 6 dB loss that would be 4 times
> the loss.
>
> To get that, you need to start out with about a 4 dB coax loss. Now, with
> about a 16:1 SWR, you will get that 6 dB additional loss.
>
> What is the consequence of this?
>
> If your transmission line is nearly lossless, such as will open-wire,
> then you can have a 20:1 (or even higher) SWR and still have almost zero
> transmission line loss.

>
> Articles in Ham magazines/books can be wrong. So can those in the
> professional publications. The above article is an example.
>
> --
> Bill Nelson (billn@peak.org)
>

1381. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 20:58:29 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9bvglc$qk4$1@slb4.atl.mindspring.net>
Source record: 165530

George:

Heh, heh... ironically Carl was right in one respect...

Reflected power is ficticious, or as he apparently said, imaginary.

But not for the reason he apparently espoused, reflected voltage being orthogonal to reflected current! Balderdash!

Reflected power is ficticious because it is just a mathematical artifice used to help folks to visualize wave phenomena.

Pr = Pi - Pt

It's really simple. Reflected power Pr is just the result of subracting a real power Pt from another ficticious quantity the incident power Pi.

It's imaginary because it is a "made up" value.

Carl probably heard that somewhere and was trying to justify it using complex arithmetic.... heh, heh.

-Peter K1PO

"George, W5YR" <w5yr@att.net> wrote in message
news:3AE231C0.58E52BD9@att.net...
> In all fairness, Carl wrote a number of "technical" articles in 73 that in
> hindsight were on highly shaky ground. I would take any of his findings
> and/or conclusions with a large dose of salt.
>
> 72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
> Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
> Amateur Radio W5YR, in the 55th year and it just keeps getting better!
> Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437
>
>
> Dick Carroll wrote:
>
> > Read an interesting SWR article yesterday by Carl Drumeller, W5JJ, in a
> > 28 year old issue of 73 magazine. He went about proving that there is no
> > such thing as reflected power. Reflected voltage and current are 90° out
> > of phase. Power = volts x amps x the cosine of the phase angle.
> > The cosine of 90 is zero, so (X watts) x (zero) = zero. Therefore no
> > reflected power exists. Ever. (presumably so long as that 90° phase
> > relationship exists.)
> >
> > He also mentioned something that should be obvious - the reason why

> > coax losses are higher with higher SWR. With an SWR of 2:1 the voltage
> > and current on the coax is twice as great as with 1:1 SWR, so that
> > doubles dielectric loss from the doubled voltage and the 1^2 x R losses
> > are doubled because of the doubled current flowing.
> > (With every increase in SWR the losses go up in direct multiples, IE
> > with SWR of 4:1, losses are four times those with a 1:1 match.)
> >
> > For some reason these facts are almost never stated so clearly.

1382. Re: Velocity Factory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 21:30:34 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9bvid1btj1@plutonium.btinternet.com>
Source record: 165531

Mad Dog <lgssl@netzero.net> wrote in message
news:9bup6h$b8uff$1@ID-20128.news.dfncis.de...
> Some people say that polyethylene has a VF of .66 and foam has a
VF of .78,
> i use RG8/X
> which has a stranded center conductor wrapped in polyethylene. My
research
> tells me that
> this cable has a VF of .78, what gives here? What is the real
scoop on VF
> and how is it determined? What factors are involved in the
equation?
> Thanx....
==========
For solid polyethylene the VF = 0.665 for ALL coaxial cable
impedances.

When the polyethylene is foamed, ie., mixed with air (VF=1), the VF depends on the proportions of air and Pe which can vary between one manufacturer and another and one imedance and another. You have to believe what the mnfr says it is. Or measure it, which is extremely simple with one of these handheld antenna analysers plus, preferably, a metric measuring tape.

Why metric ? Well, ever since the first edition of the ARRL Handbook, wavelengths have been measured in meters.

Sometimes the coaxial inner conductor is supported on Pe disks spaced about 1" apart. VF then depends on disk thickness and spacing. Sometimes the inner is supported on a Pe cord which spirals around the inner. Cord diameter is equal to the difference between the inner and outer conductor diameters.

Cecil has a King's Foot tape. Unfortunately he can't remember which king it was.

Reg.

1383. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 21:40:52 UTC
From: la8ak@online.no
Message-ID: <3ae335a5.8191287@news.online.no>
Source record: 165532

On Sun, 22 Apr 2001 09:19:10 -0500, "William E. Sabin"
<sabinw@mwci.net> wrote:

>
>
>iowadoc@micron.net wrote:
>
>> Wasn't Windom the name of an amateur who had something to do with
>> designing or encouraging the antenna's use??
>
>See QST July 1926 article by Loren G. Windom W8GZ
>
>Bill W0IYH
>
Always believed Windom antenna is the same as W WO antenna which in
turn is what we used to call 1/3-Hertz in Europe, first appeared with
single wire feeder and later changed to balanced (or coax) - the
simpler version of antenna got a bad reputation in the 60's for
causing TVI because it was fed from transmitters with parallel tuned
output stage with marginal harmonic suppression

73, Jan-Martin LA8AK

1384. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 21:40:52 UTC
From: la8ak@online.no
Message-ID: <3ae33768.8643018@news.online.no>
Source record: 165533

On Sun, 22 Apr 2001 10:45:51 -0500, John O'Flaherty
<oflahert@toast.net> wrote:

>Then, the only importance of swr presented at the feedline would be whether it
>lies within the range of correction of the tuner? Would a tuner compensating for
>the more extreme values of swr (assuming that it could correct them to 50 ohms
>for the transmitter), would that tuner, with its settings, have higher losses
>than a tuner compensating for less extreme values of swr presented at the
>feedline?
>
>john
>
it is a table showing that VSWR losses are not as high as most
believe, but increases with VSWR, it is based on a article which
appeared in the late 70's in QST and has been repeated a few times in
Technical Topics by G3VA

So it is a good rule to avoid higher VSWR than 2:1 or 3:1 in the
shack, but everything worse than 1.5:1 complicates the operation - if
a tuner must be tuned over the band

73
Jan-Martin
LA8AK

1385. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 21:56:32 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE35390.AB6434AC@eznec.com>
Source record: 165534

Sure you can use ladder line on a dipole. You can make a dipole non-resonant. You can feed a dipole off center. You can use ladder line to feed Yagis, verticals, and small loops. But the quickest and easiest way to get on the air, in my humble opinion, is to put up a resonant dipole and feed it with coax. Then you can use any length of line, don't need to worry about it lying on the ground, getting wet, running through trees, or whatever. Coax is cheap and readily available, and you can put on a connector to plug it right into your rig. You'll get a decent impedance match regardless of the line length. I recommend using a current balun, which can be as simple as coiling up a few turns of the coax near the feedpoint. The ARRL Handbook has some suitable dimensions. But you can often get by without one with no obvious ill effects.

When the new ham's ladder line arrives, he can work on the puzzle of how to connect it to the rig, how to make a balun at the rig, how to make the line an odd number of half wavelengths so he can get a good impedance match to the rig. (Or, he can learn about Smith charts and stubs.) Then, after he's done all that and replaced the coax with ladder line, he won't find a half dB of improvement. When it rains, in fact, he'll likely see a degradation.

This is all in the context of getting on the air quickly on a single band and without a tuner. When a tuner is purchased or built, the ladder line makes sense.

Roy Lewallen, W7EL

W6RCecilA wrote:
>
> Roy Lewallen wrote:
> > ... but Allen is right -- you can get
> > on the air in an hour or two with a dipole, and be operating while
> > you're waiting for the tuner to show up on ebay or the ladder line to
> > arrive from the Wireman.
>
> Why can't you use ladder-line on a dipole? :-)
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1386. Re: Velocity Factory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 22:08:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE35662.C7E92269@eznec.com>
Source record: 165535

The velocity factor is numerically 1/sqrt(k) where k is the dielectric constant of the material between the conductors. This works out to be 0.66 for solid polyethylene and 1 for air. The solid polyethylene cables I've measured have been pretty close to 0.66. Some cables, including RG-8X, have foamed polyethylene insulation. This has air or gas bubbles in it, which reduces the effective dielectric constant. The reason for doing this is that it allows a larger center conductor for a given cable size and impedance, which lowers the loss. It also makes the cable more flexible. Because the effective dielectric constant is lower, the velocity factor is higher than for solid polyethylene insulation. (Solid polyethylene is translucent and yellowish. Foamed poly is white.) The manufacturers don't seem to be able to control the bubbles very well, though, since the velocity factor tends to vary quite a bit in foamed poly cables. In the few I've measured, I found the VF to be lower in just about all cases than the manufacturer's spec, and varying from lot to lot. So if VF is important, I recommend measuring the particular piece of foamed poly cable you'll be using, using solid polyethylene cable, or planning on some cut-and-try.

Roy Lewallen, W7EL

Mad Dog wrote:
>
> Some people say that polyethylene has a VF of .66 and foam has a VF of .78,
> i use RG8/X
> which has a stranded center conductor wrapped in polyethylene. My research
> tells me that
> this cable has a VF of .78, what gives here? What is the real scoop on VF
> and how is it determined? What factors are involved in the equation?
> Thanx....
>
> --
> 714 Sandpile,
> The Mad Dog wavin' good bye

1387. Re: Need clean wav recording of WWVB

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 22:24:03 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3ae39963_3@news3.prserv.net>
Source record: 165556

Gray Frierson Haertig <gfh@haertig.com> wrote in message
news:3AE149D0.AFE0646C@haertig.com...
>
> Hey Pat,
>
> Just how would one record WWVB, since the modulation is incredibly low
> frequency AM(?)

Digitally as a WAV file, using SSB detection and a 300 Hz offset into a
sound card.

These kids don't know any RF, geez! Its digital, or it ain't worth messing
with. Hook up an actual receiver, even if it is RatShack? No way, man!
Next question?

George W5VPQ

1388. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 22:39:41 UTC
From: mailfrmpa@aol.com
Message-ID: <20010422183941.12207.00000702@ng-bd1.aol.com>
Source record: 165536

>This is all in the context of getting on the air quickly on a single
>band and without a tuner.

Yes, it is. And the spec's he laid out in his first post were "cheap, ALL
BAND."

K0MB

1389. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 23:15:58 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae36629.352375699@news.aepnet.com>
Source record: 165537

On Sun, 22 Apr 2001 16:52:45 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
wrote:

>Wes:
>
>[snip]
>"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
>news:3ae1988d.235428827@news.aepnet.com...
>> On 21 Apr 2001 06:45:31 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>>
>> [snip]
>>
>> I can (and have thousands of times) use(d) a directional coupler and a
>> thermocouple or thermistor power sensor to measure reflected power.
>Either of
>> these two sensors responds only to temperature rise, they don't know a
>volt from
>> an amp. If this power is fictitious, why does the termination in the
>sensor
>> heat up????
>>
>[snip]
>
>A sampling directional coupler for amateur use is an analog computer which
>computes and delivers values for reflected and incident voltages at a point
>on a line it does not actually separate and deliver large quantities of
>power through its' ports. A thermistor coupled to such indicated voltages
>and/or currents will certainly respond.

No, a directional coupler is *not* an analog computer. There are available 3 dB
directional couplers that split the power and deliver it to two ports. A 3 dB
hybrid for instance is *directional*. Thermistors respond to temperature. The
power sensor has in it a termination that gets warm when power is applied. It
is not "computing" anything, it is measuring temperature, and its time constant
is many orders of magnitude greater than the applied frequency.
>
>A full power, lossless, directional coupler, rather than a simple sampling
>directional coupler, is an extremely difficult and expensive thing to
>construct. Not many are available to the amateur. It is extremely
>difficult to resolve wave directions without invoking losses and very
>expensive apparatus.

There is no such thing as a "lossless" directional coupler. Some of the
avaliable power is coupled to the coupled port and is "lost" to the through
port.

>
>Such a device would have four ports on it, two for the "straight through"
>path and two directional ports to pull off the "travelling" waves. It would
>allow one to connect it to two 100 Ohm dummy loads, one to each of the
>"directional ports", and connect the "through ports" into the center of 50
>feet of transmission line and then place a 100 watt transmitter at each end
>of the 50 feet of line and then it would separate out the two into their
>respective dummy loads.
>
>Then the power going from left to right would be traveling in the left to
>right direction, and the power going from right to left would be going in
>the right to left direction, and the directional coupler would resolve them,
>but where would the "reflected" power be??? It would be nowhere since it is
>still a fiction!

I'm late getting ready to meet friends for dinner, so I don't have time to wade
through that.

>
>Where do you buy those directional couplers? The ones that can separate
>large amounts of power flowing in two directions? Iv'e never seen one, and
>I can only imagine how hard it would be to design and build.

H-P, now Agilent makes them. I'm retired now and haven't kept up with the
industry and the way companies buy and sell each other, at the moment I can't
give you other names, but they are many.
>
>Please tell us what was the make and model of the directional couplers for
>"re-routing" rather than "sampling" directional power to which you refer.

H-P
>
>And what were their losses, etc...
>
>Otherwise your thermistor sensors were no more than simply indicating the
>results of a sampled and calculated voltage or current, they were not
>actually terminating an "imaginary" reflected power!

As I said, I'm short on time, so for now, I'll just say, baffle stuff.

N7WS

ps. When an F-14 pilot accidently turns on his AWG-9 radar inside the metal
hanger and the reflected power burns out the receiver front end, is the power
"imaginary?"

>
>
>
>-Peter K1PO
>
>
>

>

1390. Thanx Cecil,Dan,Ralph,Reg & Roy

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 23:20:30 UTC
From: Mad Dog <lgssl@netzero.net>
Message-ID: <9bvp5f$b9ubc$1@ID-20128.news.dfncis.de>
Source record: 165539

For the helpful information y'all supplied. This RG8/X has a
foamed/polyethylene insulator
that is solid white, i guess it's back to the drawing board to determine the
V/F.
Or i could switch to a different brand that has a low loss,high shielding
and consistent V/F
such as Times LMR400. The system i am building is for 11meter use but i am
engineering
the rig piece by piece for minimal loss and stray RF.
Thanx again Gentleman.....
--
714 Sandpile,
The Mad Dog wavin' good bye

1391. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 23:21:41 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AE36785.B1844EE5@mwci.net>
Source record: 165538

J M Noeding wrote:

> On Sun, 22 Apr 2001 09:19:10 -0500, "William E. Sabin"
> <sabinw@mwci.net> wrote:
>
> >
> >
> >iowadoc@micron.net wrote:
> >
> >> Wasn't Windom the name of an amateur who had something to do with
> >> designing or encouraging the antenna's use??
> >
> >See QST July 1926 article by Loren G. Windom W8GZ
> >
> >Bill W0IYH
> >
> Always believed Windom antenna is the same as Wï¿½WO antenna which in
> turn is what we used to call 1/3-Hertz in Europe, first appeared with
> single wire feeder and later changed to balanced (or coax) - the
> simpler version of antenna got a bad reputation in the 60's for
> causing TVI because it was fed from transmitters with parallel tuned
> output stage with marginal harmonic suppression
>
> 73, Jan-Martin LA8AK

The reference that I gave is correct. The QST technical index verifies it. The year was July 1926 and I have seen the article. Various incarnations have appeared over the years. Windom slid the vertical wire along the horizontal part using a "trolley" arrangement until he found a flat response on the feed line that was fitted with current indicators of some kind. That became the Windom formula.

Since then it has been called the Windom antenna (rightly or wrongly I couldn't care less). Loren was a prominent and popular amateur for many years and the Hams named it in his honor.

Bill W0IYH

1392. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-22 23:48:59 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AE36DEB.FB276221@mwci.net>
Source record: 165540

Walter Maxwell wrote:

> Professor William E. Everitt

It's William L. Everitt.

> of the Engineering Dept of Ohio State, and one
> of his colleagues in the Department originated the off-center fed antenna,
> and performed the experiments with it. As a young kid, Loren Windom was
> present and helped with the experiment, but he not originate it.
>
> The antenna was dubbed the 'Windom' in the amateur community because he
> introduced it in the July 1926 QST article just by Bill Sabin.
>
> Walt Maxwell, W2DU

1393. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 00:02:52 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AE3712C.CE463B3@mwci.net>
Source record: 165541

William E. Sabin wrote:

> Walter Maxwell wrote:
>
> > Professor William E. Everitt
>
> It's William L. Everitt.
>
> > of the Engineering Dept of Ohio State, and one
> > of his colleagues in the Department originated the off-center fed antenna,
> > and performed the experiments with it. As a young kid, Loren Windom was
> > present and helped with the experiment, but he not originate it.
> >
> > The antenna was dubbed the 'Windom' in the amateur community because he
> > introduced it in the July 1926 QST article just by Bill Sabin.
> >
> > Walt Maxwell, W2DU

Correction: The antenna article by Windom was in the September 1929 QST. The July 1926 article by Windom was entitled "Working Australia with a UV199". I got the dates mixed up.

Bill W0IYH

1394. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 00:16:15 UTC
From: N3VST <not@chance.com>
Message-ID: <auKE6.6409$0d.2665043@newsrump.sjc.telocity.net>
Source record: 165542

I thought a group of scientist were able to make a small frog defy gravity
in a lab using extremely power magnetic energy. That is no secret and there
is nothing to cover up...
"Peter J. Bertini" <commquart@home.com> wrote in message
news:8RFE6.15679$Ce4.1489063@news1.rdc1.ct.home.com...
> Doc!!
>
> This may mean the end of the need for rotors! Think of the possibilities!
>
> Pete ;)\
>
>
> "'Doc" <w5lz@oio.net> wrote in message news:3AE30BC1.2AA6C659@oio.net...
> >
> >
> > Went back and re-visited the links. Nothing in the
> > experiment relates to antigravity anymore than an
> > "Ottis" elevator does. Bit of a 'reach' to call it
> > 'anti-gravity'...
> > 'Doc
>
>

1395. Re: Computer Question?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 00:19:19 UTC
From: Liz Marr <tech@cc-ent.com>
Message-ID: <9bvsea$bk769$1@ID-79785.news.dfncis.de>
Source record: 165543

A good place to look up these types of things is:

http://www.annoyances.org

And choose your Windows version.

"J Titcomb" <kimoloka@hawaii.rr.com> wrote in message
news:8aTA6.5225$hr6.836461@typhoon.hawaii.rr.com...

> How can I get rid of the Microsoft Networking logon prompt that pops up
> every time Windows starts? I know all you have to do is click Cancel, or
> ESC, to continue loading Windows, but why do I have to keep doing this
every
> single time? Is there a way to get rid of the prompt altogether?

1396. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 00:27:30 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE376F2.1882@wt.net>
Source record: 165545

Sideband <sideband@spam.me.not> wrote:

> >
> >As for "bells and whistles," I was looking at the Kenwood site, and
> >really got to drooling over the TS-B2000. It'll be some time before I'll
> >be able to afford one, I'm sure, but I do have the computer equipment to
> >control it, and I really don't need the control face to use the radio if
> >a computer is nearby...

You can do pretty much the same thing with a 706g or a ft-100 except no
full duplex. Less than half the price of a ts-2000.
> >
> >At a minimum, for starters, I guess I need a 2/440 set, and an HF set
> >for when I get my General/Extra ticket. I don't need the bells and
> >whistles, like DSP, digital readouts, and the like... I just need a
> >couple of good, solid, inexpensive sets. Tubes or Solid State? Either
> >or. I know how both work, somewhat, and like I said before, I'm not
> >afraid of a soldering iron. Given a set of schematics and a DVOM (which
> >I have), I think I can fix most minor glitches.

Normally, I'd tell most starting at HF to get a decent older solid state
HF rig. There are a gazzilion..Examples would be like ic-730,ic-735,
ts-430, ts-440, etc, etc. You can get a good running 735 for about
400-450 or so . But then if you would add the vhf/uhf gear which could
push you on up there. In a way, I think a 706g would be a good starter
rig for you if you want HF and VHF/UHF. Not exactly cheap at appx 900$
new, but alot cheaper than a ts-2000. You can get used 706's and
706mk2's from 500-700 or so range. But no uhf on those two models. I
bought a 706mk2g about 2 months ago, and have been pretty happy with it
so far. It's good enough to use as a single rig .And the receiver does
30 hz-200 mhz, 400-470 mhz also. So it makes a real good scanner. Scans
fast too. It's no high performance contest rig of course, but I doubt
you really need one. I know I don't... For average use, it's just fine.
It's small too, so can be used mobile and portable real easy. You will
need 12v power though. I use a battery and a 12v charger myself here at
the house. The 706g is a lot of radio for the size. And the price isn't
too bad considering what you'd pay for all seperate rigs.
But saying that, you can get on HF for dirt cheap if you find an old rig
like a ts-520 or whatever. The last one of those I had, I sold for 225$.

> >
> >Maybe someone out there has an old set that isn't working quite up to
> >snuff they'd be willing to let go?

There should be plenty out there. You probably hear about most of them
on the air. Also about the code, the quicker you get legal and actually

start working cw, the better off you will be as far as getting your speed up. With the 5 wpm they have now, no worries.. MK

--
http://web.wt.net/~nm5k

1397. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 00:33:36 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3AE37A4D.5030208@aol.com>
Source record: 165546

Congrats Mark.

Allen gives good advice. Don't wait to get a tuner. If you have a piece of coax for a feed line, you can put up a dipole for any individual band. No tuner needed. Let the spacing of your supports(trees?) determine the lowest frequency you try first.

If you approach the antenna as a "temporary" installation, you can cut wire for several bands. Just use pulleys to raise and lower the antenna to swap bands, and plan on leaving each up for a couple of weeks (days, months, whatever...). Use brass wing nuts to attach the wire in the center. Just remember, it is also good practice for field day.....

After you decide which bands you like best, THEN decide what sort of permanent installation is best.

Note: Higher freq HF bands have been sporadic for the past couple of weeks, so you may want to check propagation and solar activity reports before jumping onto 10 meters.

Hope you have fun with the radio.
73,
W4KAZ

1398. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 00:38:45 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae37694.613359839@news.accessunited.com>
Source record: 165544

On Sun, 22 Apr 2001 10:45:51 -0500, John O'Flaherty
<oflahert@toast.net> wrote:

>Then, the only importance of swr presented at the feedline would be whether it
>lies within the range of correction of the tuner?

You want a low loss line, if the line is long and you have standing
waves.

For very short lines, SWR does not always increase line loss. I think
that would only apply in cases where the line is significantly less
than 1/2 wl long. Maybe someone else has looked at it.

>Would a tuner compensating for
>the more extreme values of swr (assuming that it could correct them to 50 ohms
>for the transmitter), would that tuner, with its settings, have higher losses
>than a tuner compensating for less extreme values of swr presented at the
>feedline?

"T" network tuner loss decreases as load impedance increases. The
latest issue of QST has a article where the autor selected an
unreasonably low impedance to demonstrate how "lossy" a T network is.
Then he uses an L network to indicate it has much less loss.

Unfortunately the comparison probably misleads people and perpetuates
the myth that L networks are "good networks", because the L network
component values although theoretically correct are unreasonable in a
practical tuner. If you had the same latitude with component values in
the T network, it would have virtually the same loss.

The bottom line is T network tuners really aren't that lossy unless
you:

1.) Use less capacitance than you need to match the load
2.) Have a really low load impedance.

Every system, no matter what it is, has tradeoffs. Pi-networks and L
networks have restricted matching ranges for practical component
sizes, and T networks will let you match about anything but the loss
can be high under some conditions.

73 Tom

1399. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 00:50:34 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae37ad6.614450609@news.accessunited.com>
Source record: 165547

On 22 Apr 2001 18:36:09 GMT, kg4ggx@aol.com (KG4GGX) wrote:

>The A 99 is a half wave vertical. The IMAX 2000, is a 5/8 wave vertical. I have
>compared both and the IMAX is more broad banded, and performs better as a 5/8
>wave has a little more gain

Interesting.

A 5/8 wl antenna has NO gain over a 1/2 wl antenna when it is up in
the air. In many or most cases, it has slightly less gain.

5/8 wave antennas are a good sales pitch, to get people's money.
That's because people wrongly think the 5/8 wave has "3 dB gain" over
a 1/2 wave antenna.

The 5/8th wave has about 3 dB gain over a 1/4 wl vertical when both
are ***ground mounted over a perfect very large groundplane***. It has
0db over the quarter-wave when both are up off the ground, or the
ground is poor or small (like the four radials of a typical GP
antenna).

73 Tom

1400. Re: Velocity Factory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 00:56:07 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae37c86.614882356@news.accessunited.com>
Source record: 165548

On Sun, 22 Apr 2001 10:15:33 -0400, "Mad Dog" <lgssl@netzero.net>
wrote:

>Some people say that polyethylene has a VF of .66 and foam has a VF of .78,
>i use RG8/X
>which has a stranded center conductor wrapped in polyethylene. My research
>tells me that
>this cable has a VF of .78, what gives here?

It isn't the fact it is foam that makes the difference, it is how much
air is in the foam that matters.

Foamed polyethelyne cables can range from VF .70 up to .90 or
higher...depending on the ratio of polyethelyne to air in the foam.

I have some foamed hardline here that is .91 VF, and some foam RG-8X
that is only .75 VF.

The best idea is to measure the cable, if you can't find accurate
specs.

73 Tom

1401. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 02:13:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE38FD3.8FAE3129@IEEE.org>
Source record: 165549

Roy Lewallen wrote:
> But the quickest and easiest
> way to get on the air, in my humble opinion, is to put up a resonant
> dipole and feed it with coax.

The thing that made your statement humorous is that you didn't even
mention coax. :-)

> > Roy Lewallen wrote:
> > > ... but Allen is right -- you can get
> > > on the air in an hour or two with a dipole, and be operating while
> > > you're waiting for the tuner to show up on ebay or the ladder line to
> > > arrive from the Wireman.

> W6RCA wrote:
> > Why can't you use ladder-line on a dipole? :-)
--
http://www.mindspring.com/~w6rca

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1402. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 02:22:01 UTC
From: Roger <rdhalste@tm.net>
Message-ID: <dIME6.4575$Uu6.414502@monger.newsread.com>
Source record: 165550

I like to think of SWR in these terms:

As an example:

1. Given 100 watts into the coax
2. Given the antenna reflects 50% of the power:
3. Given an imaginary lossless coax.
4. Assuming that the transmitter is able to tune out the reactance and put that 100 watts into the coax .(goes back to #1)

Going cycle by cycle:

The 100 watts will enter the coax and when it gets to the antenna 50 watts will be radiated and 50 watts will be reflected.
When the 50 watts gets back to the transmitter it will be reflected "in phase" with the 100 watts coming out of the transmitter.
There is now 150 watts on the coax and we end up with 75 watts radiated and 75 watts reflected.
When the 75 watts gets back to the transmitter it will be reflected and added to that 100 watts coming out of the transmitter...etc..

What will happen is that the transmitter will keep on dumping 100 watts into the coax, which will end up with 200 watts (it can be measured) and the antenna will be radiating 100 watts even though it always reflects 50% of the power reaching it.

Now, if we move to a real coax, what will happen is that for each traverse of the coax we have to subtract (or vectorialy add) the loss in watts.

This is an over simplification, but it works.

Roger Halstead (K8RI) www.RogerHalstead.com
N833R World's Oldest Debonair? s# CD-2

"VE9SRB" <srbest@att.net> wrote in message
news:4GZD6.8429$hH3.747280@bgtnsc04-news.ops.worldnet.att.net...
>
> "Tom W8JI" <2w8ji@akorn.net> wrote in message
> news:3ae05394.407760639@news.accessunited.com...
> > On Fri, 20 Apr 2001 12:57:18 GMT, "VE9SRB" <srbest@att.net> wrote:
> >
> > >ERP = (Antenna Gain) * (Delivered Power)
> > >
> > >The (Antenna Gain) is dimensionless (not dBi) and the (Delivered Power)
> is
> > >in Watts. ERP is in Watts.
> > >

> > >Increasing antenna SWR will reduce the power delivered to the antenna,
> > >assuming the forward power arriving at the antenna remains constant.
If
> you
> > >know the forward power arriving at the antenna, the power delivered to
> the
> > >antenna is found from
> > >
> > > (Delivered Power) = (Forward Power) * (1 - |RhoA|^2)
> > >
> > > |RhoA| = (SWR - 1) / (SWR + 1)
> > >
> > >Steve, VE9SRB
> >
> > All power entering the feedline from the transmitter is radiated,
> > except that lost as heat in the feedline.
> >
> > The effect of SWR is only to increase the loss in the feedline,
> > assuming the transmitter still delivers the same power to the
> > feedline.
> >
> > I can have a 100 watt transmitter, a 10:1 SWR, a zero dB gain
> > antenna, and radiate nearly 100 watts ERP.
> >
> > 73 Tom
>
> Hi Tom:
>
> There is a difference between "delivered power" and "forward power" in a
> transmission line when the antenna SWR is greater than 1.0:1.
>
> I do not disagree with any of your statements. It is just important for
all
> of us to use terms consistently. For example, what do you mean by "all
> power entering the feedline"? Some people might interpret this to mean
the
> forward power, you interpret it to mean delivered power. The problem is
> that most hams measure forward or reflected power directly. Not too many
> measure delivered power directly. In your discussions, you always assume
> that the delivered power remains constant. You do not explain that the
> forward power must increase with increasing SWR to maintain a constant
> delivered power. You do not explain why it must change nor do you explain
> how it changes.
>
> For example, if the forward power in the transmission line is 100 watts, a
> 10:1 SWR antenna will not radiate 100 watts of power. A 50 ohm 0 dB gain
> antenna will radiate 100 Watts of power when the measured forward power is
> 100 watts. A 10:1 SWR 0 dB gain antenna will radiate 100 Watts of power
> when the measured forward power is 302.5 Watts.
>

> Tom's statements above might lead someone to believe that a high SWR does
> nothing other than increase cable loss and that the power delivered to the
> antenna does not change with increasing SWR. This is not quite correct.
To
> maintain a constant delivered power with increasing SWR, the forward power
> in the transmission line must increase. To increase the forward power
with
> increasing SWR, some form of compensation must occur in the system. The
> most common form of compensation is an external or internal tuner. With a
> matched tuner, the effective load impedance seen by the transmitter's
output
> stages remains constant so the delivered power remains constant. Note
that
> with changing SWR, the forward and reflected power change significantly.
> The compensation here is the adjustment of the tuner components with
> changing SWR. If an internal or external tuner is not used, then the
output
> levels of the transmitter will have to be adjusted to increase the forward
> power to compensate for the change in load impedance seen by the
> transmitter.
>
> Steve VE9SRB
>
>
>
>
>

1403. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 02:25:17 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE3928D.421B37CB@IEEE.org>
Source record: 165551

"Peter O. Brackett" wrote:
> Voltages and currents can travel as "waves", but power per se does not
> travel How can one visualize volts times amps as traveling?

In a pulse. The coax keeps the voltage and current in phase and the
power associated with the pulse couldn't possibly be anywhere else
except where the pulse is.

> They are not "travelling" and "losing" stuff as they travel, that
> visualization is a symantic nightmare in the steady state, in the steady
> state, they exist at each and every point on the line, and one measures and
> calculates different values along the way.

Any high frequency modulation is still traveling. Consider TV ghosting.
Steady state, while very useful, does not tell the entire story.
--
http://www.mindspring.com/~w6rca

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1404. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 02:27:43 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE3931F.C8BBBE6C@IEEE.org>
Source record: 165553

"Peter O. Brackett" wrote:
> Where do you buy those directional couplers? The ones that can separate
> large amounts of power flowing in two directions?

Would a signal generator which presents 50 ohms to reflected waves have
one of these beasts built in?
--
http://www.mindspring.com/~w6rca

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1405. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 02:28:42 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <urME6.43148$xN4.3343497@news1.sttls1.wa.home.com>
Source record: 165552

John O'Flaherty wrote:

> Wouldn't the unbalanced current, by transformer action between the inner
and
> outer conductor, be automatically divided equally between the inner and
outer
> conductors?
>
> john
>
Hi John,

Your question goes to the heart of the matter, and reflects the difficulty of understanding the situation. Stated another way, it seems like unbalance should become balanced due to natural electrical processes.

Of course if it did we would not need baluns.

Both currents and voltages begin somewhere, meaning they have a source that must be located some place removed from the transmission line. (An exception is transmission line losses which will not be covered in this posting) Given that the driving source is located away from the transmission line, then the signal must travel over time to reach the transmission line, and must travel over at least two conductors or pathways. If the pathways are equal in length, then both transmission line conductors are excited equally
and opposite, resulting in a differential mode current.

If the path lengths are unequal, then one side of the transmission line will be excited before the other and an unbalanced current will flow in the transmission line. Yes, inductive and capacity coupling will transfer energy to the lagging leg, but the current in the lagging leg will be out of phase with
the current in the leading leg by some angle other than 180 degrees. The magnitude of the current might even be the same but the phase angle can never be 180 degrees, thereby turning the unbalanced current into a balanced differential current.

This situation is easily created by putting
an inductor in series on one path leg between the source voltage and the transmission line. The inductor delays the current in the side it is on.

We are careful to avoid this situation when we build a transmitter but it may occur to a small extent just because we might forget to pay attention to a small detail like an unequal lead length between a transistor and the beginning of the coaxial line. This situation occurs frequently in antennas

due to unequal dipole side lengths or unequal proximity to nearby objects. It can become very severe if the transmission line is dressed near one side of a dipole.

You might wonder why the transmission line can not bring the two currents into the desired 180 degree phase relationship. To accomplish this we would need to change the location of the currents on the transmission line by advancing one current and retarding the other. We can not do that with a straight transmission line because neither conductor can act on itself.

On the other hand, if the transmission line is coiled, then each conductor CAN act on itself as well as on the other conductor. This occurs because the fields travel to all nearby conductors including lengths of the transmission line not yet reached by the traveling wave. (but are part of the coil) The coiled coaxial balun does exactly this and accomplishes the retarding of one current and the advancement of the second current to bring the currents back into the desired 180 degree phase relationship.

I hope I answered the right question, and that this is logical to you.

73, Roger, W7WKB

1406. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 02:33:48 UTC
From: Perseus@hol.gr
Message-ID: <3ae39155.1819398@news.ntua.gr>
Source record: 165554

Yes, you are right. But in this experiment they had made the body
of the frog full of iron and the surce of simpe magnetism was out of the body.
In the experiment of Stavros we have loss of weight with simple RF.
Not from out side source but from within the body.
That works when the body (antenna) is L/4 of the wave length.
And thats antigravity. Electromagnetism who affects gravity.
Ofcourse this is the first step. The complete undarstanding of this <law>
and the development will bring us and the wanted hovering.

On Sun, 22 Apr 2001 20:16:15 -0400, "N3VST" <not@chance.com> wrote:

>I thought a group of scientist were able to make a small frog defy gravity
>in a lab using extremely power magnetic energy. That is no secret and there
>is nothing to cover up...
>"Peter J. Bertini" <commquart@home.com> wrote in message
>news:8RFE6.15679$Ce4.1489063@news1.rdc1.ct.home.com...
>> Doc!!
>>
>> This may mean the end of the need for rotors! Think of the possibilities!
>>
>> Pete ;)\
>>
>>
>> "'Doc" <w5lz@oio.net> wrote in message news:3AE30BC1.2AA6C659@oio.net...
>> >
>> >
>> > Went back and re-visited the links. Nothing in the
>> > experiment relates to antigravity anymore than an
>> > "Ottis" elevator does. Bit of a 'reach' to call it
>> > 'anti-gravity'...
>> > 'Doc
>>
>>
>
>
>

I am a child of Earth and of Starry Heaven;
But my race is of Heaven(Orphics)
E 10 E
Duke of Mystra

1407. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 02:42:32 UTC
From: Perseus@hol.gr
Message-ID: <3ae4953c.2818952@news.ntua.gr>
Source record: 165555

Rotors only ? :)
Imaging your group of antennas hovering over your home at Whatever High
you want. A hovering repeater and you under with only your HT. Heh.

On Sun, 22 Apr 2001 18:58:12 GMT, "Peter J. Bertini" <commquart@home.com>
wrote:

>Doc!!
>
>This may mean the end of the need for rotors! Think of the possibilities!
>
>Pete ;)\
>
>
>"'Doc" <w5lz@oio.net> wrote in message news:3AE30BC1.2AA6C659@oio.net...
>>
>>
>> Went back and re-visited the links. Nothing in the
>> experiment relates to antigravity anymore than an
>> "Ottis" elevator does. Bit of a 'reach' to call it
>> 'anti-gravity'...
>> 'Doc
>

I am a child of Earth and of Starry Heaven;
But my race is of Heaven(Orphics)
E 10 E
Duke of Mystra

1408. Question-My First Antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 04:01:44 UTC
From: Mary Anne Olsen <wolsen@erols.com>
Message-ID: <3AE3A927.E386A933@erols.com>
Source record: 165557

What if the maximum antenna supports are only say 40 feet and the lot size is 50 by 75 feet. What antenna would you recommend? Bill N3TVU

1409. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 04:41:03 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9c0bovfhe3@bashir.peak.org>
Source record: 165558

Truelove39 <truelove39@aol.com> wrote:

: SEA came up with the counterpoise grounding to the engine based on their tests.
: Previously, I had tried running 3" foil all around (especually under the feed
: point) on the inside of the hull and connecting it to all the thru-hulls, etc.
: The way it is now is much better. The problem is that my boat's hull is so
: thick that the foil doesn't couple to the sea as it does in most boats. (Think
: I read this in Gordon West's book). So the ground is by virtue of the propeller
: shaft and prop.

A counterpoise does not need coupling to a ground.

: The only other ground on the boat is the Dynaplate which is a dedicated
: lightning ground for the mast. Conventional wisdom precludes connecting
: anything else to it.

Hm. It would seem to me that the Dynaplate should be your common ground
point for all rf. Not having it connected to the ground for the rest of
your system is asking for problems. You need the propeller etc at the
same ground potential as the Dynaplate.

: I have in fact read just about everything available on counterpoises for boats
: and have tried most of the suggestions. The current scheme is not worse than
: any I have tried, so I am looking elsewhere. The SWR suggests that the power is
: getting to the antenna and that the counterpoise is adequate, no?

It partly depends on where you are making the SWR measurement. If it is before
the tuner, then it simply means that your tuner is providing a 50 ohm load to
the transmitter. It says nothing about out efficient a radiator you have on
the other side of the tuner. For example, you could remove the tuner and
antenna and replace them with a 50 ohm dummy load. You would get a 1:1 SWR
indication, but the signal transmitted would be minute.

It is possible that the tuner is absorbing most of your power and radiating it
as heat.

: It's difficult for me to believe that a grounded wire parallel to and within a
: few feet of the antenna won't be absorbing some portion of the signal.

Sure, it will absorb a small amount of the signal. But not anywhere near the
amount needed to produce the poor transmission/reception that you report.

I would suspect there is a problem with your antenna - such as the top end of
it being shorted to the mast, or where the antenna is fed through the deck to
the backstay, or to the bottom portion of the backstay.

You should be able to disconnect the antenna from the tuner - then check for
a DC short to various items.

--
Bill Nelson (billn@peak.org)

1410. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 05:22:55 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c0e6t$o92$1@slb3.atl.mindspring.net>
Source record: 165559

Wes:

Have fun at dinner...

You are correct.

It can be proved (theoretically) that a lossless directional coupler cannot be implemented in practice. The development of that proof will teach one a lot about travelling waves and their measurements. There will always be at least the 3dB losses that you allude to and likely even more.

The lossless directional coupler is sort of like the "perpetual motion" machine...

Many "inventors" have tried to design the perfect lossless directional coupler. All are doomed to failure.

Now perhaps a lossless "circulator"... well....

As to the "reflected power" burning out the aircraft radar, are you referring to the "mismatch" presented to the transmitter screwing up the power amplifier or the strong local echo burning out the radar receiver front end?

In a perfectly matched system the reflected power is zero. And so that ficticious power cannot burn out anything under perfect matching.

Now in a mismatched system, the voltages and or currents across the load and or generator can become excessive and destroy components. i.e. if a load is replaced by a short circuit, or an open circuit, etc...

One could ascribe such destruction to the "reflected power" I suppose, but there is really no "reflected power" flowing back to "destroy" componenets, just excessive V and/or I from the attempt to force too much transmitted power into the mismatched load. "Reflected Power" is just another way of stating those facts.

For the reflected power is defined to be:

Pr = Pi - Pt

Where Pr is the "reflected power", and Pt is "transmitted power" or the actual power delivered to and "dissipated" in the load, and Pi is the incident power.

Since in most situations Pi is never actually developed, rather it is a "reference" power... Pi would be the power absorbed by the series connection of the internal generator resistance and the external load resistance if perfectly matched... then Pr is itself only an artifice merely calculated as

the mathematical difference between the "reference power" Pi and the actual power absorbed by the real part of the load impedance, Pt.

Why does this seem so difficult to some? Why does it even need a physical visualization? Pr = Pi - Pt, nothing more nothing less.

The so called reflected voltage "b", reflected with respect to a reference impedance R, at a point where one measures a voltage V and a current I is given simply by:

b = V - IR (This voltage does not really exist, it is merely a linear transformation of the actual "real" V and I at that point.

If one wishes to do so, a "reflected current" call it Iref can be calculated using Ohm's law with the reference impedance R, simply as:

Iref = b/R. (This current does not really exist, it is merely a mathematical construction using the actual voltage V, the actual current I and the reference impedance R)

Then the ficticious reflected power Pr could be calculated by:

Pr = b*Iref*cos(theta) where theta is the angle between b and Iref.

A little straightforward high school algebra will show that this Pr is the same as the Pr defined above...

i.e. Pr = Pi - Pt = b*Iref*cos(theta).

All this to prove my assertion that what most are calling reflected power is little more than a mathematical artifice and that it has little or no actual physical reality.

This does not mean that reflections and reflected waves have no existence, they most certainly do...

It is just that in an actual mismatched measurement set up, the so called "reflected power" is not an actual power per se... rather it is an useful artifice to help us to make other calculations. One cannot measure Pr directly in a mismatched measurement set up... because it doesn't exist. Similarily one cannot measure Pi directly in a mismatched measurement set up because it doesn't exist. The only time that Pi exists is when the load and generator have impedances which are perfect complex conjugates. In that case and that case only Pi is the power that is poured into the sum of the real parts of the load and generator impedances.

How can you measure this incident power with a thermistor? The thermistor would have to be both the internal resistance of the generator as well as the load resistance and so I maintain that you can never measure Pi directly, only indirectly. Similarily for Pr. The only one of these three powers that can be measure direcly would be Pt the transmitted power, and you would do that by placing your thermistor/sensor in the circuit as the real part of the load impedance.

The only "reality" in a circuit is the actual voltage V and current I as measured by voltmeters and ammeters, everything else is an "artifice" constructed to help us visualize what is happening. The electrons in a transmission line at the point where you measure V carry so many joules of energy per couloumb and they do not know what is at the end of the transmission line until they get there...

Use a soldering iron to attach the voltmeter across the conductors where V exists, and use the pliers and a soldering iron to cut open the conductor and attach the ammeter to read the I that exists... real stuff. Voltage and Current at a point on the line are real. The real power Pt delivered to the real part of the load impedance is real.

Reflected stuff well... I'm not so sure that it is real. Can't see it on an oscilloscope, all I can see on a scope is a voltage across the line. I don't see waves? Reflected stuff... It is useful, and under some circumstance it might correspond to something real, but it doesn't have to be real to be useful.

-Peter K1PO

-Peter K1PO

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
news:3ae36629.352375699@news.aepnet.com...
> On Sun, 22 Apr 2001 16:52:45 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com>
> wrote:
>
> >Wes:
> >
> >[snip]
> >"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
> >news:3ae1988d.235428827@news.aepnet.com...
> >> On 21 Apr 2001 06:45:31 GMT, Dick Carroll <dixie@townsqr.com> wrote:
> >>
> >> [snip]
> >>
> >> I can (and have thousands of times) use(d) a directional coupler and
a
> >> thermocouple or thermistor power sensor to measure reflected power.
> >Either of
> >> these two sensors responds only to temperature rise, they don't know a
> >volt from
> >> an amp. If this power is fictitious, why does the termination in the
> >sensor
> >> heat up????
> >>
> >[snip]
> >
> >A sampling directional coupler for amateur use is an analog computer
which
> >computes and delivers values for reflected and incident voltages at a

point
> >on a line it does not actually separate and deliver large quantities of
> >power through its' ports. A thermistor coupled to such indicated
voltages
> >and/or currents will certainly respond.
>
> No, a directional coupler is *not* an analog computer. There are
available 3 dB
> directional couplers that split the power and deliver it to two ports. A
3 dB
> hybrid for instance is *directional*. Thermistors respond to temperature.
The
> power sensor has in it a termination that gets warm when power is applied.
It
> is not "computing" anything, it is measuring temperature, and its time
constant
> is many orders of magnitude greater than the applied frequency.
> >
> >A full power, lossless, directional coupler, rather than a simple
sampling
> >directional coupler, is an extremely difficult and expensive thing to
> >construct. Not many are available to the amateur. It is extremely
> >difficult to resolve wave directions without invoking losses and very
> >expensive apparatus.
>
> There is no such thing as a "lossless" directional coupler. Some of the
> avaliable power is coupled to the coupled port and is "lost" to the
through
> port.
> >
> >Such a device would have four ports on it, two for the "straight through"
> >path and two directional ports to pull off the "travelling" waves. It
would
> >allow one to connect it to two 100 Ohm dummy loads, one to each of the
> >"directional ports", and connect the "through ports" into the center of
50
> >feet of transmission line and then place a 100 watt transmitter at each
end
> >of the 50 feet of line and then it would separate out the two into their
> >respective dummy loads.
> >
> >Then the power going from left to right would be traveling in the left
to
> >right direction, and the power going from right to left would be going in
> >the right to left direction, and the directional coupler would resolve
them,
> >but where would the "reflected" power be??? It would be nowhere since it
is
> >still a fiction!
>

> I'm late getting ready to meet friends for dinner, so I don't have time to
wade
> through that.
>
> >
> >Where do you buy those directional couplers? The ones that can separate
> >large amounts of power flowing in two directions? Iv'e never seen one,
and
> >I can only imagine how hard it would be to design and build.
>
> H-P, now Agilent makes them. I'm retired now and haven't kept up with the
> industry and the way companies buy and sell each other, at the moment I
can't
> give you other names, but they are many.
> >
> >Please tell us what was the make and model of the directional couplers
for
> >"re-routing" rather than "sampling" directional power to which you
refer.
>
> H-P
> >
> >And what were their losses, etc...
> >
> >Otherwise your thermistor sensors were no more than simply indicating the
> >results of a sampled and calculated voltage or current, they were not
> >actually terminating an "imaginary" reflected power!
>
> As I said, I'm short on time, so for now, I'll just say, baffle stuff.
>
>
> N7WS
>
> ps. When an F-14 pilot accidently turns on his AWG-9 radar inside the
metal
> hanger and the reflected power burns out the receiver front end, is the
power
> "imaginary?"
>
> >
> >
> >
> >-Peter K1PO
> >
> >
> >
> >
>
>

1411. what do you think about ....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 07:49:23 UTC
From: f4ckv@radioamateur.org
Message-ID: <78RE6.51$SN7.117876@nnrp6.proxad.net>
Source record: 165560

73 to all

I would like to get some info to know what do you think about my antenna project:

For HF band I'll make an 320 m delta loop at 10m. hight it would be a 2 lambda loop on 160 m , 107 m per side, the laod would be with to wire with 12 cm spacing.

many thanks for any info

f4ckv@radioamateur.org

1412. Re: Question-My First Antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 09:17:20 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9c0rq5kpd1@plutonium.btinternet.com>
Source record: 165561

Bill asked -
> What if the maximum antenna supports are only say 40 feet and the
lot
> size is 50 by 75 feet. What antenna would you recommend? Bill
N3TVU
==========
End-fed Inverted-L or Inverted U. Overall length as long as
possible. Try for 150 feet.

Up from ground level to house roof or chimney, then across to the
40 feet support.

Tune against ground. All bands from 160m upwards.

Ground electrode = hot and cold domestic plumbing system plus power
supply ground plus any other metal in the ground.

You will wonder how you ever managed without it.

Reg.

1413. A3WS high SWR?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 11:46:28 UTC
From: jjmartin@nccw.net
Message-ID: <3ae4144e.179399@news.nccw.net>
Source record: 165562

Has anyone else had high SWR problems with the A3WS during wet
weather? In my case, when the sun comes out it goes back to normal.
Which means I have had no luck finding the cause.

Jim W8AC

1414. T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 11:50:25 UTC
From: "Timothy J. Fiebig" <timothy.j.fiebig@exxonmobil.com>
Message-ID: <3AE41700.C61B8BB6@exxonmobil.com>
Source record: 165563

Looking for comments on the performance of the T.G.M Mini Quad antenna MQ-1. Does anyone own one or has owned one. Also would like to hear about the Curshcraft mini beam.

Thanks,

tjf

1415. Best coax for VHF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 12:05:41 UTC
From: Todd <n9xrg@hotmail.com>
Message-ID: <vc68etka1545s86lm7ka6strodqui22h8d@4ax.com>
Source record: 165564

I am, to be honest, confused about all the information as to which coax is best for 2 meter operation. I am getting ready to set up my station and I was thinking about using LMR-400. Any advice would be appreciated.

73,

N9XRG

1416. END FED ANT QUESTION

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 12:05:57 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9c15raadb1@bob.news.rcn.net>
Source record: 165565

i was looking at an ant site by the late G3YCC.....he describes &
illustrates an end fed horizontal ant using coax feed line..would it be
possible to make an 80-10 mtr version of this ant? (even if i have to use a
tuner in the shack)..

1417. Re: END FED ANT QUESTION

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 12:24:19 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9c16tneui1@bob.news.rcn.net>
Source record: 165566

maybe i should reexamine my question! is there such a thing as an end fed
80-10 mtr ant using coax as the feed line?
"marvin rosen" <n3bqa@starpower.net> wrote in message
news:9c15raadb1@bob.news.rcn.net...
> i was looking at an ant site by the late G3YCC.....he describes &
> illustrates an end fed horizontal ant using coax feed line..would it be
> possible to make an 80-10 mtr version of this ant? (even if i have to use
a
> tuner in the shack)..
>
>

1418. Re: Best coax for VHF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 12:28:22 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010423082822.19713.00000790@ng-de1.aol.com>
Source record: 165567

>I am, to be honest, confused about all the information as to which
>coax is best for 2 meter operation. I am getting ready to set up my
>station and I was thinking about using LMR-400. Any advice would be
>appreciated.

The length of the coax run is important. How far is your antenna from your
radio?
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
http://vhfradiobuff.tripod.com
http://egroups.com/group/2mallmode
http://egroups.com/group/6mallmode

1419. Re: T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 12:54:00 UTC
From: k4ia@aol.com
Message-ID: <20010423085400.08179.00000564@ng-cl1.aol.com>
Source record: 165568

I am very happy with my TGM. So are the other owners. Check out the reviews on eHam. Very unobtrusive and very effective.

If you would like a picture of mine, send me an email.
Radio K4IA
Buck
Fredericksburg, Virginia USA

REAL CHEAP Long Distance 4.9 cents/min Interstate and REAL CHEAP Intrastate, International, Toll Free, Callback, Calling Cards, Pagers and more Tune to http://www.ld.net/?bucksavers

1420. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 13:20:06 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <a_VE6.32639$IJ1.2785964@bgtnsc05-news.ops.worldnet.att.net>
Source record: 165469

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ae23267.530358269@news.accessunited.com...
> On Sat, 21 Apr 2001 15:25:18 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >If you adjust a transmitter with no internal tuner circuit to deliver 100
> >watts of power to a Zo load, and then replace the Zo load with a
mismatched
> >load, it will not deliver 100 watts of power to the mismatched load.
Your
> >statements imply that it will.
>
> I did not say that or imply that.
>
> I simply said the effect of SWR is *generally* to increase loss in the
> feedline, and mismatch the transmitter.
>
> There are cases where a mismatch can reduce feedline loss.
>
> 73 Tom

What you said was the following:

"The important thing to know is that all power applied to the feedline
that is not dissipated in the feedline is radiated...no matter what
the SWR.

The only important effect of SWR is it might cause the transmitter to
not deliver optimum power, and it might increase loss in the feedline."

Your statement is correct but ambiguous in that it appears to imply that SWR has little affect (other than to "*generally* increase cable loss") on what is happening in the system or at the antenna. Your statement essentially says this: If you deliverer 100 watts of power to a matched load and you deliver 100 watts of power to a mismatched load, then you are delivering 100 watts of power to both loads even though the SWR's are different. While correct, it trivializes what has to change in the system in order to deliver the same amount of power to both loads. To deliver the same power to a mismatched load as you deliver to a matched load, you have to increase the forward power in the transmission line to compensate for the reflections that occur at the antenna.

Another very important aspect of high SWR that you neglect to mention is the affect that it may have on antenna matching networks, antenna traps, RF devices, components, etc.

Consider this example. Let's assume two hams install the same antenna. One sets it up correctly in a clear area. He measures a feedpoint SWR of 1.0:1. Perfect (unrealistic perhaps, but perfect). He then connects his transmitter, turns it on and then sets the forward power at the transmitter output to 1000 watts. Let's assume the cable has .25 dB matched loss. The forward power arriving at, and delivered to the antenna is 944 Watts. The magnitude of the delivered or applied voltage at the antenna is 217 V. The power loss in the cable connecting the transmitter and the antenna is 56 Watts.

Ham #2 sets up his antenna. He sets it up incorrectly in a very cluttered area. He measures a feedpoint SWR of 10:1. So what, he read on RRAA that if he uses a tuner he can tune this SWR to 1.0:1, and still set the transmitter to deliver 1000 watts of power to the "system". (The power delivered to the antenna will be lower as a result of tuner and cable loss.) So he sets up the tuner to a 1.0:1 SWR and measures a forward power of 1000 watts into the tuner. Let's now consider what happens at the antenna and in the cable connecting the tuner to the antenna. I will assume he bought one of those new "lossless" tuners. He measures a forward power of 2479 watts at the tuner output. He measures a reflected power of 1479 watts at the tuner output. 1000 Watts of delivered power. At the antenna, he measures a forward power of 2340 Watts and a reflected power of 1567 Watts. The actual power delivered to the antenna is now 773 Watts, less than ham #1. The total power loss in the cable increases to 227 Watts. A significant increase over the 56 Watts lost in the cable with the matched antenna. (more on this in a moment). The other major problem that exists now is that he may be (or is) overdriving the antenna even though he actually delivers less power to it. The forward power arriving at the antenna is now 2430 watts not 944 watts. The forward voltage arriving at the antenna has a magnitude of 349 V. There is also a reflected voltage at the antenna with a magnitude of 285 V. The total voltage (magnitude) applied to the antenna can be as high as 634 V or as low 64 Volts. The current will be correspondingly lower or higher. It is because of these changes in voltage and current that manufacturers of antennas and electronic devices specify power ratings under a "matched" condition.

As for the significant increase in cable loss two things have happened. First, to compensate for the increase in SWR, the forward power in the line had to increase from 1000 Watts to 2479 Watts. The total power lost in the line due to the forward traveling wave increases from 56 Watts to 139 Watts. Additionally, there is a very real reflected wave created at the antenna. The total power lost in the cable from the reflected wave traveling back to the tuner is 88 Watts (1567 - 1479). The total loss in the line is 227 Watts.

Steve VE9SRB

1421. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 13:30:37 UTC
From: richardharrison@webtv.net
Message-ID: <15069-3AE42E7D-41@storefull-112.iap.bryant.webtv.net>
Source record: 165471

Tom, W8JI wrote:
"A 5/8 wl antenna has NO gain over a 1/2 wl antenna when it is up in the air."

The gain of a thin center-fed dipole rises steadily from 0 db at 1/2 wl to about 1.5 db at a full-wavelegth. At greater length, the gain falls then rises again.

At 5/8 wl the antenna up in the air has a slight gain in its best direction over a !/2 wl antenna.

Best regards, Richard Harrison, KB5WZI

1422. Cushcraft R-7000 Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 13:36:56 UTC
From: AC6V <ac6v@ix.netcom.com>
Message-ID: <3AE42FF7.A7CD857F@ix.netcom.com>
Source record: 165470

My trusty R-7000, after 2 years of troublefree operation, now has terrible VSWR from 17 meters through 40 meters. Suspect I blew a trap, but which one?? The 15M thru 10M operation is fine. I suspect the 20M trap. Anyone have this problem???

--
73 From Rod AC6V In San Diego
700 Ham Topics & 6,000 Links
http://ac6v.com/
I Doubt, Therefore I Might Be!!!

1423. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 13:55:07 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <%uWE6.31953$RF1.2727141@bgtnsc06-news.ops.worldnet.att.net>
Source record: 165472

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9bvf78ag1@slb2.atl.mindspring.net...
> Steve:
>
> There is a very deep symantic problem here associated with the words
> "travel" and "travelling". This is a great source of confusion for
> beginners and it comes from trying to reconcile two visualizations, the
> travelling wave visualization, or transient case where energy is the more
> appropriate metric as compared to power, and the steady state case where
> power is the more appropriate metric. Sort of like the Fourier Transform,
> LaPlace Transform dichotomy, both views are useful and represent "the
truth"
> but one is more appropriate and easy to use for transient analysis, while
> the other is more appropriate and easier to use for the steady state.
>
> For how do beginners visualize power but as energy expended per unit time,
a
> continuous flow, not a passing phenomena....
>
> How can a power travel? An quantum of energy can travel, but power????
>
> Voltages and currents can travel as "waves", but power per se does not
> travel How can one visualize volts times amps as traveling?
>
> How can a power... say Forward Power lose some of itself along the way and
> then be called the same thing?
>
> How can a power... say Reflected Power lose some of itself along the way
and
> still be called the same thing?
>
> Power is a quantity that can be calculated at a point where one can
measure
> an I and a V and perform the calculation P = V*I*cos(theta), but does that
> formulae travel?
>

We define forward and rearward traveling voltage and current in a
transmission line. Associated with these are the derived quantities of
forward and rearward traveling power. It's no more complicated than that.

> And... if you move up or down a distance from the first point you will
> measure a different I and V and theta and calcualate a different set of
> powers.
>

Only if the transmission line has loss.

Additionally, for the forward and rearward traveling waves, theta never changes, even if the line has loss. You may be confusing "total" or "delivered" power with forward and reflected power.

> At each point along a transmission line, one may measure an I and a V and
> use a reference impedance R to calculate forward and reflected voltages
and
> currents and from those to calculate the Power being transmitted at that
> point, Pt and from that one can pose a ficticious incident power Pi,
> appropriate to that point, and calculate a reflected power Pr for that
> point.
>
> For Pt = V*I*cos(theta) can be calculated at a point from the V and I
> "waves" at that point...
>
> and then....
>
> Pr = Pi - Pt
>
> In any practical case, a little further on you will get slightly different
> values for Pt, Pi, Pr, etc...
>

In any transmission line, the forward traveling voltage and current are related as follows: Vfwd/Ifwd = Zo. The rearward (reflected) traveling voltage and current are related as follows: Vref/Iref = Zo.

Forward Power = Pfwd = |Vfwd| |Ifwd| Cos(theta), where theta is the phase angle of Zo.

Rearward Power = Pref = |Vref| |Iref| Cos (theta), where theta is the phase angle of Zo.

The total voltage at any point on the line is Vtot = Vfwd + Vref. The total current at any point on the line is Itot = Ifwd - Iref (my math preference for those who use Itot = Ifwd + Iref). The line impedance at any point on the line is Z = Vtot/Itot.

The total or delivered power at any point on the line is Ptot = Pdel = |Vtot| |Itot| Cos (theta), where theta is the phase angle of Z. Note also that Pdel = Pfwd - Pref.

If the transmission line has zero loss, forward V and I change over the line length, but forward power does not. Rearward V and I change over the length of the line but rearward power does not.

If the line has loss, then the forward power will diminish as a function of the distance the forward power travels away from the transmitter. At the same time, the reflected or rearward traveling power will diminish as a function of the distance it travels away from the antenna.

> They are not "travelling" and "losing" stuff as they travel, that
> visualization is a symantic nightmare in the steady state, in the steady
> state, they exist at each and every point on the line, and one measures
and
> calculates different values along the way.
>

If the line has loss, then forward and rearward power diminish as they
travel away from theie respective reference point of origin.

> Your visualization is perhaps appropriate to a line excited by an impulse
or
> a step voltage or current excitation, and the calculation of energy
> contained in a travelling wave... e.g. a soliton like phenomena, but for
the
> steady state it merely serves to confuse.
>

The "visualizations" that I discuss are very valid for steady state
conditions. The total steady state voltage and current at any point on a
transmission line are the vector sum of the forward and rearward traveling
waves.

> IMHO...
>
> -Peter K1PO
>
>

Steve. VE9SRB

1424. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 13:55:10 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c1c7d$3pv$1@nntp9.atl.mindspring.net>
Source record: 165473

Steve:

[snip]
>
> Your statement is correct but ambiguous in that it appears to imply that
SWR
> has little affect (other than to "*generally* increase cable loss") on
what
> is happening in the system or at the antenna. Your statement essentially
> says this: If you deliverer 100 watts of power to a matched load and you
> deliver 100 watts of power to a mismatched load, then you are delivering
100
> watts of power to both loads even though the SWR's are different. While
> correct, it trivializes what has to change in the system in order to
deliver
> the same amount of power to both loads. To deliver the same power to a
> mismatched load as you deliver to a matched load, you have to increase the
> forward power in the transmission line to compensate for the reflections
> that occur at the antenna.
[snip]

Matched load, or unmatched load...

I agree with Tom's viewpoint.

Tom said, "the transmitter puts out 100 watts" in both cases. Thus 100
watts is delivered to the load. The transmitter sources 100 watts. The
load accepts 100 watts.

If the load is an antenna of high efficiencey then 100 watts is radiated.
What could be more simple?

What is your point? You are making things more complex than they need to
be.

What exactly is this "forward power" of which you speak?

If by "forward power" you mean the incident power, the power delivered by an
ideal source to a perfectly matched load, then I ask so what?

I agree with Tom... all of this forward power, reflected power, transmitted
power, stuff is a nice theoretical construct, (Pr = Pi - Pt, reflected power
equals incident power minus transmitted or delivered power.) to help one
visualize what's happening, but it's really not very important to radio
operation.

Put an oscilloscope lead across the transmission line and look at the signals. What do you see? You see voltages and currents at that point. Place an AC (RF) voltmeter across the transmission line, you measure an rms voltage at that point. You don't see waves or power sloshing first one way and then the other...

At a single point on the transmission line (your choice) measure V and I (rms values), then using an assumed or actual "surge resistance" value R, calculate the forward and reflected voltages "a" and "b" at that point, to your hearts content...

a = V + IR "The incident voltage"
b = V - IR "The reflected voltage"

It's all very nice, and pleasing if it makes you comfortable, but not very "real"!

In steady state, at a macro level, even a and b "look the same" on an oscilloscope as do V and I. They are nothing more nor less than linear combinations of each other! "a" is voltage plus current times R, and "b" is voltage minus current times R. Not very illuminating. You can't even tell which direction a and b are going by looking at a scope display of a and b.

Why make everything so complicated, all that is important is to use a low loss line, attatch that line to a high efficiency antenna and put the power into it... ta da... efficient communications ensues.

If you must, then use your VSWR bridge at the transmitter output, which simply measures "b = V - IR" at the transmitter output between the transmitter and the antenna tuner. Heck you could use it to tell you when you have adjusted the load, using the tuner, to make your transmitter's VSWR shutdown circuitry happy.

-Peter K1PO

1425. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 14:10:41 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <BJWE6.31962$RF1.2727474@bgtnsc06-news.ops.worldnet.att.net>
Source record: 165474

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9bvglc$qk4$1@slb4.atl.mindspring.net...
> George:
>
> Heh, heh... ironically Carl was right in one respect...
>
> Reflected power is ficticious, or as he apparently said, imaginary.
>
> But not for the reason he apparently espoused, reflected voltage being
> orthogonal to reflected current! Balderdash!
>
> Reflected power is ficticious because it is just a mathematical artifice
> used to help folks to visualize wave phenomena.
>
> Pr = Pi - Pt
>
> It's really simple. Reflected power Pr is just the result of subracting a
> real power Pt from another ficticious quantity the incident power Pi.
>
> It's imaginary because it is a "made up" value.
>
> Carl probably heard that somewhere and was trying to justify it using
> complex arithmetic.... heh, heh.
>
> -Peter K1PO
>

Reflected power is not made up, imaginary or fictitious. It is very very real. The delivered power is the result of subtracting reflected power from forward power, not the other way around.

Here's a simple example that I hope illustrates the impact and reality of reflected power.

Lets assume that you have a transmitter, a matched antenna and a coaxial cable with a total matched loss of 3 dB. You set the *forward* power at the transmitter output to be 1000 watts. The power arriving at the antenna is 500 Watts. 500 watts of power is delivered to the antenna and 500 watts of power is lost as the forward wave travels from the transmitter to the antenna.

Now you replace the matched antenna with a 500 ohm antenna (10:1 SWR - rhoA is approx. 0.82). You then again set the *forward* power at the transmitter output to 1000 Watts. The forward power arriving at the antenna is 500 Watts because 500 watts of forward power was lost as the forward wave

traveled from the transmitter to the antenna. The amount of power reflected at the antenna is approx equal to 335 Watts. The power delivered to the antenna is 165 Watts. 167.5 watts of rearward traveling power is lost as the 335 Watts of reflected power travels from the antenna to the transmitter. The forward power measured at the transmitter output is 1000 Watts. The rearward power measured at the transmitter output is 167.5 Watts. 832.5 Watts of total power is delivered to the system. 165 Watts of power is delivered to the antenna. 667.5 Watts of power is lost in the transmission line because of the 500 Watts of forward power loss and the 167.5 Watts of reflected power loss.

Reflected power is not an imaginary or "made up" concept.

Steve VE9SRB

1426. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 14:19:04 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <sRWE6.31972$RF1.2727807@bgtnsc06-news.ops.worldnet.att.net>
Source record: 165475

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9c1c7d$3pv$1@nntp9.atl.mindspring.net...
> Steve:
>
> [snip]
> >
> > Your statement is correct but ambiguous in that it appears to imply that
> SWR
> > has little affect (other than to "*generally* increase cable loss") on
> what
> > is happening in the system or at the antenna. Your statement
essentially
> > says this: If you deliverer 100 watts of power to a matched load and
you
> > deliver 100 watts of power to a mismatched load, then you are delivering
> 100
> > watts of power to both loads even though the SWR's are different. While
> > correct, it trivializes what has to change in the system in order to
> deliver
> > the same amount of power to both loads. To deliver the same power to a
> > mismatched load as you deliver to a matched load, you have to increase
the
> > forward power in the transmission line to compensate for the reflections
> > that occur at the antenna.
> [snip]
>
> Matched load, or unmatched load...
>
> I agree with Tom's viewpoint.
>
> Tom said, "the transmitter puts out 100 watts" in both cases. Thus 100
> watts is delivered to the load. The transmitter sources 100 watts. The
> load accepts 100 watts.
>
> If the load is an antenna of high efficiencey then 100 watts is radiated.
> What could be more simple?
>
> What is your point? You are making things more complex than they need to
> be.
>
> What exactly is this "forward power" of which you speak?
>
> If by "forward power" you mean the incident power, the power delivered by
an

> ideal source to a perfectly matched load, then I ask so what?
>
> I agree with Tom... all of this forward power, reflected power,
transmitted
> power, stuff is a nice theoretical construct, (Pr = Pi - Pt, reflected
power
> equals incident power minus transmitted or delivered power.) to help one
> visualize what's happening, but it's really not very important to radio
> operation.
>
> Put an oscilloscope lead across the transmission line and look at the
> signals. What do you see? You see voltages and currents at that point.
> Place an AC (RF) voltmeter across the transmission line, you measure an
rms
> voltage at that point. You don't see waves or power sloshing first one
way
> and then the other...
>
> At a single point on the transmission line (your choice) measure V and I
> (rms values), then using an assumed or actual "surge resistance" value R,
> calculate the forward and reflected voltages "a" and "b" at that point, to
> your hearts content...
>
> a = V + IR "The incident voltage"
> b = V - IR "The reflected voltage"
>
> It's all very nice, and pleasing if it makes you comfortable, but not very
> "real"!
>
> In steady state, at a macro level, even a and b "look the same" on an
> oscilloscope as do V and I. They are nothing more nor less than linear
> combinations of each other! "a" is voltage plus current times R, and "b"
is
> voltage minus current times R. Not very illuminating. You can't even
tell
> which direction a and b are going by looking at a scope display of a and
b.
>
> Why make everything so complicated, all that is important is to use a low
> loss line, attatch that line to a high efficiency antenna and put the
power
> into it... ta da... efficient communications ensues.
>
> If you must, then use your VSWR bridge at the transmitter output, which
> simply measures "b = V - IR" at the transmitter output between the
> transmitter and the antenna tuner. Heck you could use it to tell you when
> you have adjusted the load, using the tuner, to make your transmitter's
VSWR
> shutdown circuitry happy.
>

> -Peter K1PO
>

The big "so, what" Peter is that all this forward power, reflected power, transmitted power stuff is really what's happening in a transmission line system. If you don't think understanding it is important for you that's fine, but please don't then tell everybody that "reflected power" is imaginary.

Your statements are technical wrong and misleading.

Steve VE9SRB

1427. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 14:27:43 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE43BDF.30DA63C7@toast.net>
Source record: 165477

"Peter O. Brackett" wrote:

> George:
>
> Heh, heh... ironically Carl was right in one respect...
>
> Reflected power is ficticious, or as he apparently said, imaginary.
>
> But not for the reason he apparently espoused, reflected voltage being
> orthogonal to reflected current! Balderdash!
>
> Reflected power is ficticious because it is just a mathematical artifice
> used to help folks to visualize wave phenomena.
>
> Pr = Pi - Pt
>
> It's really simple. Reflected power Pr is just the result of subracting a
> real power Pt from another ficticious quantity the incident power Pi.
>
> It's imaginary because it is a "made up" value.
>
> Carl probably heard that somewhere and was trying to justify it using
> complex arithmetic.... heh, heh.

It occurs to me that if you send a narrow pulse down a long enough transmission line, shorted at the end, that you will clearly see a reflected pulse at the entry end at some delay time later. It can be viewed on an oscilloscope, which is just a fancy voltmeter, and so is as real as what is measured by any voltmeter or ammeter.

john

1428. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 14:28:17 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <5_WE6.31978$RF1.2726955@bgtnsc06-news.ops.worldnet.att.net>
Source record: 165476

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ae23065.529844719@news.accessunited.com...
> On Sat, 21 Apr 2001 16:45:44 -0500, John O'Flaherty
> <oflahert@toast.net> wrote:
>
>
> In an electrically short feedline, it is possible to decrease loss
> with a mismatch. One case where this would happen is in a line where
> conductor resistance dominates, and the line is less than 1/4 wl long.
> If the load moves in a direction to decrease current in the line...the
> line has less loss. This is true even though SWR increases.
>
> 73 Tom

Your statement about current and conductor loss is correct but you need to provide more information as to SWR, forward power, reflected power and delivered power so that everyone understands what really happens. Be specific with some numbers. This is as ambiguous as your statement that when you deliver 100 watts of power to a matched load and 100 watts of power to a mismatched load, you are delivering the same power to both.

Steve VE9SRB

1429. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 14:28:41 UTC
From: richardharrison@webtv.net
Message-ID: <674-3AE43C19-46@storefull-117.iap.bryant.webtv.net>
Source record: 165480

Roger, W7WKB wrote:
"You might wonder why the transmission line can not bring the two currents into the desired 180 degree relationship."

Yes, each conductor has self-inductance and mutual-inductance. Lenz`s law is in order and if the line is long, the phase at opposing points on the line tends to become nearly exactly out-of-phase.

Best regards, Richard Harrison, KB5WZI

1430. Re: Cushcraft R-7000 Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 14:36:25 UTC
From: KA2D <ka2d@arrl.net>
Message-ID: <J5XE6.46478$Xr.5408620@news02.optonline.net>
Source record: 165479

Ron

Check the 20M trap. The screw that attaches the outer case
of the trap is probably loss or pulled out of the plastic.

Hopes this helps. One of our club members has had this
problem a few times.

73 -Tom KA2D

PS Thanks for all the info on your web page.

"AC6V" <ac6v@ix.netcom.com> wrote in message
news:3AE42FF7.A7CD857F@ix.netcom.com...
> My trusty R-7000, after 2 years of troublefree operation,
now has
> terrible VSWR from 17 meters through 40 meters. Suspect I
blew a trap,
> but which one?? The 15M thru 10M operation is fine. I
suspect the 20M
> trap. Anyone have this problem???
>
> --
> 73 From Rod AC6V In San Diego
> 700 Ham Topics & 6,000 Links
> http://ac6v.com/
> I Doubt, Therefore I Might Be!!!
>
>

1431. Re: Skin effect on a coax braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 14:36:55 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae43ab3.663574828@news.accessunited.com>
Source record: 165478

On Mon, 23 Apr 2001 02:28:42 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:

>Both currents and voltages begin somewhere, meaning they have a source that
>must be located some place removed from the transmission line. (An
>exception is transmission line losses which will not be covered in this
>posting) Given that the driving source is located away from the transmission
>line, then the signal must travel over time to reach the transmission line,
>and must travel over at least two conductors or pathways. If the pathways
>are equal in length, then both transmission line conductors are excited
>equally
>and opposite, resulting in a differential mode current.

Not true. Balanced and unbalanced refers to the voltage at the ends of
the lines referenced to what would be a common point of reference like
earth. Current inside the line is ALWAYS balanced with coaxial lines,
but you can get into trouble if the voltage isn't perfectly unbalanced
(the shield at exactly zero volts compared to the world around the
cable at that point) or if the current entering and leaving the center
and the shield at the end terminals is not exactly equal and opposite.

For a balanced line, both currents and voltages must be equal and
exactly opposite compared to the world outside the feedline.

For a unbalanced line, currents muste be exactly equal and opposite
but voltage on the shield must be zero compared to the world around
the shield at each end.

I really don't see how path length fits in the definition, because I
can have equal path lengths and large amounts of unbalance in the
system.

>You might wonder why the transmission line can not bring the two currents
>into the desired 180 degree phase relationship. To accomplish this we would
>need to change the location of the currents on the transmission line by
>advancing one current and retarding the other. We can not do that with a
>straight transmission line because neither conductor can act on itself.

Coaxial lines with shields more than several skin depths thick do
this. At any point in the line, the current inside the shield and the
center conductor are virtually equal and opposite. All differential
current flows on the outside of the cable.

That is why a choke balun is effective in makintg both balanced AND
unbalanced feedline behave "properly".

73 Tom

1432. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 14:49:39 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae43f9e.408053187@news.aepnet.com>
Source record: 165482

On Sun, 22 Apr 2001 14:46:49 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Gray Frierson Haertig wrote:
>> You're not paying attention again. The ladder line hasn't arrived from
>> The Wireman yet!
>
>And neither has the coax. :-)
>--
>http://www.mindspring.com/~w6rca

But you can buy coax at Kmart, Walmart, Home Depot, Radio Shack, Ace Hardware and probably the full-service gas station down the street. If fact, if we could revert to part of the fifties, the gas station would probably be giving away 50' of RG-8 with each fill-up.

Wes Stewart, N7WS
>
>
>-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
>http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
>-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1433. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 14:50:50 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae43e35.664472992@news.accessunited.com>
Source record: 165481

On Mon, 23 Apr 2001 13:20:06 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>is happening in the system or at the antenna. Your statement essentially
>says this: If you deliverer 100 watts of power to a matched load and you
>deliver 100 watts of power to a mismatched load, then you are delivering 100
>watts of power to both loads even though the SWR's are different. While
>correct, it trivializes what has to change in the system in order to deliver
>the same amount of power to both loads. To deliver the same power to a
>mismatched load as you deliver to a matched load, you have to increase the
>forward power in the transmission line to compensate for the reflections
>that occur at the antenna.

Your statement overcomplicates what needs to be a simple matter,
especially in the case of someone trying to understand how his system
behaves.

>Another very important aspect of high SWR that you neglect to mention is the
>affect that it may have on antenna matching networks, antenna traps, RF
>devices, components, etc.

SWR does not affect traps, since they are located after the mismatch
point. It would take a book to explain how it affects other
components. In some cases it reduces stress, and in other cases it can
increase stress.

>Consider this example. Let's assume two hams install the same antenna. One
>sets it up correctly in a clear area. He measures a feedpoint SWR of 1.0:1.
>Perfect (unrealistic perhaps, but perfect). He then connects his
>transmitter, turns it on and then sets the forward power at the transmitter
>output to 1000 watts. Let's assume the cable has .25 dB matched loss. The
>forward power arriving at, and delivered to the antenna is 944 Watts. The
>magnitude of the delivered or applied voltage at the antenna is 217 V. The
>power loss in the cable connecting the transmitter and the antenna is 56
>Watts.

>Ham #2 sets up his antenna. He sets it up incorrectly in a very cluttered
>area. He measures a feedpoint SWR of 10:1. So what, he read on RRAA that
>if he uses a tuner he can tune this SWR to 1.0:1, and still set the
>transmitter to deliver 1000 watts of power to the "system". (The power
>delivered to the antenna will be lower as a result of tuner and cable loss.)
>So he sets up the tuner to a 1.0:1 SWR and measures a forward power of 1000
>watts into the tuner. Let's now consider what happens at the antenna and in
>the cable connecting the tuner to the antenna. I will assume he bought one
>of those new "lossless" tuners. He measures a forward power of 2479 watts
>at the tuner output. He measures a reflected power of 1479 watts at the

>tuner output. 1000 Watts of delivered power. At the antenna, he measures a
>forward power of 2340 Watts and a reflected power of 1567 Watts. The actual
>power delivered to the antenna is now 773 Watts, less than ham #1. The
>total power loss in the cable increases to 227 Watts.

That is true, if the feedline is a significant part of a wavelength
long. In that case there will be standing waves that go though at
least the major part of one cycle...and you loss estimates will apply.

But it does not disagree with what I said at all.

The only effect of SWR is to increase loss in the transmission line
(in cases where the line is long) and mismatch the transmitter.

>A significant
>increase over the 56 Watts lost in the cable with the matched antenna. (more
>on this in a moment). The other major problem that exists now is that he
>may be (or is) overdriving the antenna even though he actually delivers less
>power to it.

Nonsense. Let's not be silly Steve.

If I have an antenna designed for 50 ohms and I feed it with 450 ohm
line or 75 ohm line NOTHING in the antenna changes. It is NOT
"stressful" for the antenna.

>The forward power arriving at the antenna is now 2430 watts
>not 944 watts. The forward voltage arriving at the antenna has a magnitude
>of 349 V. There is also a reflected voltage at the antenna with a
>magnitude of 285 V. The total voltage (magnitude) applied to the antenna
>can be as high as 634 V or as low 64 Volts. The current will be
>correspondingly lower or higher. It is because of these changes in voltage
>and current that manufacturers of antennas and electronic devices specify
>power ratings under a "matched" condition.

Nonsense.

The reason manufacturers specify power ratings at a matched condition
is because the power rating of an antenna can vary with frequency, so
they want power to be determined at the design frequency. It has
absolutely NOTHING to do with standing waves on the feeder.

The only effect of standing waves on the feeder is IN the feeder, or
the source feeding the line.

73 Tom

1434. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 14:56:19 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae441b4.665367893@news.accessunited.com>
Source record: 165483

On 23 Apr 2001 04:41:03 GMT, Bill Nelson <billn@spock.peak.org> wrote:

>: I have in fact read just about everything available on counterpoises for boats
>: and have tried most of the suggestions. The current scheme is not worse than
>: any I have tried, so I am looking elsewhere. The SWR suggests that the power is
>: getting to the antenna and that the counterpoise is adequate, no?
>
>It partly depends on where you are making the SWR measurement. If it is before
>the tuner, then it simply means that your tuner is providing a 50 ohm load to
>the transmitter. It says nothing about out efficient a radiator you have on
>the other side of the tuner. For example, you could remove the tuner and
>antenna and replace them with a 50 ohm dummy load. You would get a 1:1 SWR
>indication, but the signal transmitted would be minute.

SWR does not indicate system efficiency.

>It is possible that the tuner is absorbing most of your power and radiating it
>as heat.

But unlikely. In most cases the tuner would fail if power were being
"ate up" in the tuner. Unless you run very low power or have a very
big tuner.

>: It's difficult for me to believe that a grounded wire parallel to and within a
>: few feet of the antenna won't be absorbing some portion of the signal.
>
>Sure, it will absorb a small amount of the signal. But not anywhere near the
>amount needed to produce the poor transmission/reception that you report.

It certainly can be causing big problems. It greatly affects the
pattern of the antenna, and can make the radiation resistance very
low....leaving him with mainly loss-related resistances to load into.

73 Tom

1435. Re: Best coax for VHF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 15:15:52 UTC
From: Todd Hargis <hargis@mail.org>
Message-ID: <MEXE6.3$%M3.155@newsfeed.slurp.net>
Source record: 165484

The length will be about 80 feet.

n9xrg

"VHFRadioBuff" <vhfradiobuff@aol.comspamsux> wrote in message
news:20010423082822.19713.00000790@ng-de1.aol.com...
> >I am, to be honest, confused about all the information as to which
> >coax is best for 2 meter operation. I am getting ready to set up my
> >station and I was thinking about using LMR-400. Any advice would be
> >appreciated.
>
> The length of the coax run is important. How far is your antenna from your
> radio?
> =-
> 73! de KC2SSB (ex: KF4KHC/HL9HCT)
> http://vhfradiobuff.tripod.com
> http://egroups.com/group/2mallmode
> http://egroups.com/group/6mallmode

1436. Random Longwire Question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 15:24:51 UTC
From: ClassicAudioVisual <cavcav2001@hotmail.com>
Message-ID: <988039577.477291@dionysos>
Source record: 165485

Hello,

I'm thinking of extending my existing longwire, currently it runs from the corner of my house to a pole situated at the end of my garden. The wire is approximately 25' long.

What if I extended the wire from the pole to the other end of the house creating a inverted V shape thus extending the wire to 50' in length.

Would this work?

Kind regards,

Cav.

1437. Beverage did not work, why??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 15:28:17 UTC
From: "M. van Wijk" <pa5mw@home.nl>
Message-ID: <lSXE6.60549$D9.371937@dbsch1.home.nl>
Source record: 165486

Hi,

We're summing up all the experiences from our februari PACC contest experiences before starting new experiments upon from this summer. One of the main problems we encountered is that our first ever build beverage did not deliver what we expected on 80 mtrs. In fact it was always 10dB down in signal compared to our full size vertical, and (more important here) did never deliver any better S/N ratio on whatever signal.
Some build facts on the beverage:

Length: +/- 175 mtrs, then we ran out of wire.
Wire: 0.25mm diameter enamelled copper
Placed on top of 2.4mtr bamboo sticks every 15 mtrs.
The bamboo sticks were mounted to low fence poles (0.7mtrs high). The fence consists of some 300mtrs typical single fence wire.
Direction was ESE, and the end was deliberately left open so we received in two directions.
One side was connected to a 1:9 transformer on a amidon core (this was tested on a antenna analyzer for correct 50 to 450 transforming) with a connection to ground (1.5mtr copper waterpipe into wet soil). The connected coax was some 50mtrs RG213 alike.
The seperation between the beverage and our main vertical was more than 100mtrs, the local soil (farm grass land) was very wet.

Some extra remarks:

The two-way receiving direction is necessary as we have no other room to erect beverages (west direction cannot be used at all, only some S or SW)
Earlier tries with K9AY loops etc. have delivered even less results.

Besides the wire thickness which introduces a significant high impedance and perhaps the wire fence I see not much wrong here??

Please supply any relevant info which perhaps might serve our described situation and practical possibilities.

Thank you in advance!

'73 Mark, PA5MW / PI4SHB

1438. Re: Tower on barn questions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 16:22:28 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3ae4574e$0$88189$bbae4d71@news.net-link.net>
Source record: 165488

Buy 5 more tower sections and more guy wire. You will able to provide
better lightning grounding to the tower than if you have the mess you
describe mounted on the barn roof. Your barn will be less likely to catch
on fire when (not if) you take a hit and the roof will be more likely to
stay put in a storm. You will also be able to put more antennas on the
tower, add more height to it, and sleep easier at night.
Robert Greene wrote in message <3adf42d6_1@news.cybertours.com>...
>I've got a tall barn with a metal roof - 30' at the ridgepole, a Rohn
>base/roof mount, 30' of tower sections, and a 30' push up mast.
>
>Any comments or ideas about putting these all together to get my vertical
>repeater antenna up to about 80'? I need to clear the surrounding tree
line.
>
>My thoughts are to bolt on the base section to one of the rafters (post &
>beam construction), guy the top of the 30' (3 sections) to the peak of the
>roof, and to the eaves on the opposite end, then use about 20' of the push
>up, guying to the same points.
>
>

1439. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 16:24:09 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae456a8.670733078@news.accessunited.com>
Source record: 165487

On Mon, 23 Apr 2001 14:28:17 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>Your statement about current and conductor loss is correct but you need to
>provide more information as to SWR, forward power, reflected power and
>delivered power so that everyone understands what really happens. Be
>specific with some numbers. This is as ambiguous as your statement that
>when you deliver 100 watts of power to a matched load and 100 watts of power
>to a mismatched load, you are delivering the same power to both.
>
>Steve VE9SRB

I don't have time to write a book, and most likely the fellow asking
the question doesn't want to read a book anyway.

He probably wants the most simple answer that is correct and gives him
a feel for what is happening.

73 Tom

1440. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 16:37:25 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae457ae.670994454@news.accessunited.com>
Source record: 165489

On Mon, 23 Apr 2001 08:30:37 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Tom, W8JI wrote:
>"A 5/8 wl antenna has NO gain over a 1/2 wl antenna when it is up in the
>air."
>
>The gain of a thin center-fed dipole rises steadily from 0 db at 1/2 wl
>to about 1.5 db at a full-wavelegth. At greater length, the gain falls
>then rises again.
>
>At 5/8 wl the antenna up in the air has a slight gain in its best
>direction over a !/2 wl antenna.
>
>Best regards, Richard Harrison, KB5WZI

I was speaking in the context of signal at low wave angles.

A 5/8 wl antenna has about gain over a 1/4 wl antenna because of the the ground reflection at some distance from the antenna. That gain, which appears at a zero degree wave angle, vanishes when the antenna is elevated above ground or if the groundplane is small (less than a few wavelengths), sparse (a few radials instead of a virtual sheet of conductor), or lossy (dirt instead of a good conductor).

The typical 5/8 wl antenna does NOT exibit the same pattern as a vertical dipole (which ou example uses) because it is NOT center fed. It is end-fed, and that causes the second current maxima that starts to appear to be out-of-phase with the main current maxima. What actually happens in the real world of antennas, if you replace a 1/4 wl groundplane with a 5/8th wave antenna, is the useful gain along the horizon at best remains about the same. At worse the gain decreases at useful wave angles.

There is no reason to use a 5/8th wl element in a vertical antenna that is mounted high above ground, or mounted over a poor or small ground. It is a myth that 5/8 wave antenna have 3 dB gain over 1/2 wl antennas, or any useful gain, in real world applications above low frequencies (where the ground might look near perfect and the antenna is ground mounted).

73 Tom

1441. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 16:45:21 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <B_YE6.513$AU4.50541@bgtnsc04-news.ops.worldnet.att.net>
Source record: 165490

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ae43e35.664472992@news.accessunited.com...
> On Mon, 23 Apr 2001 13:20:06 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >is happening in the system or at the antenna. Your statement essentially
> >says this: If you deliverer 100 watts of power to a matched load and you
> >deliver 100 watts of power to a mismatched load, then you are delivering
100
> >watts of power to both loads even though the SWR's are different. While
> >correct, it trivializes what has to change in the system in order to
deliver
> >the same amount of power to both loads. To deliver the same power to a
> >mismatched load as you deliver to a matched load, you have to increase
the
> >forward power in the transmission line to compensate for the reflections
> >that occur at the antenna.
>
> Your statement overcomplicates what needs to be a simple matter,
> especially in the case of someone trying to understand how his system
> behaves.
>
> >Another very important aspect of high SWR that you neglect to mention is
the
> >affect that it may have on antenna matching networks, antenna traps, RF
> >devices, components, etc.
>
> SWR does not affect traps, since they are located after the mismatch
> point. It would take a book to explain how it affects other
> components. In some cases it reduces stress, and in other cases it can
> increase stress.
>

You are making this too simple a matter. You simply assume that the same total power is delivered to the antenna in each case without considering what has to change in the system to make this happen. For some reason, you do not want to state or recognize that to deliver the same power to the antenna in each case, the total applied voltage and current at the antenna feedpoint change.

If you detune an antenna such that the SWR increases, then the total applied voltage and current at the antenna feedpoint much change in order to maintain the same delivered power. Depending on the actual feedpoint impedance, the total applied voltage or current will either increase or decrease. If the total feedpoint voltage and current change, then the

voltage and current along the antenna structure will change as well. This will affect the traps even though they may be "located after the mismatch".

> >Consider this example. Let's assume two hams install the same antenna. One
> >sets it up correctly in a clear area. He measures a feedpoint SWR of 1.0:1.
> >Perfect (unrealistic perhaps, but perfect). He then connects his
> >transmitter, turns it on and then sets the forward power at the transmitter
> >output to 1000 watts. Let's assume the cable has .25 dB matched loss. The
> >forward power arriving at, and delivered to the antenna is 944 Watts. The
> >magnitude of the delivered or applied voltage at the antenna is 217 V. The
> >power loss in the cable connecting the transmitter and the antenna is 56
> >Watts.
>
> >Ham #2 sets up his antenna. He sets it up incorrectly in a very cluttered
> >area. He measures a feedpoint SWR of 10:1. So what, he read on RRAA that
> >if he uses a tuner he can tune this SWR to 1.0:1, and still set the
> >transmitter to deliver 1000 watts of power to the "system". (The power
> >delivered to the antenna will be lower as a result of tuner and cable loss.)
> >So he sets up the tuner to a 1.0:1 SWR and measures a forward power of 1000
> >watts into the tuner. Let's now consider what happens at the antenna and in
> >the cable connecting the tuner to the antenna. I will assume he bought one
> >of those new "lossless" tuners. He measures a forward power of 2479 watts
> >at the tuner output. He measures a reflected power of 1479 watts at the
> >tuner output. 1000 Watts of delivered power. At the antenna, he measures a
> >forward power of 2340 Watts and a reflected power of 1567 Watts. The actual
> >power delivered to the antenna is now 773 Watts, less than ham #1. The
> >total power loss in the cable increases to 227 Watts.
>
> That is true, if the feedline is a significant part of a wavelength
> long. In that case there will be standing waves that go though at
> least the major part of one cycle...and you loss estimates will apply.
>
> But it does not disagree with what I said at all.
>
> The only effect of SWR is to increase loss in the transmission line

> (in cases where the line is long) and mismatch the transmitter.
>
> >A significant
> >increase over the 56 Watts lost in the cable with the matched antenna.
(more
> >on this in a moment). The other major problem that exists now is that he
> >may be (or is) overdriving the antenna even though he actually delivers
less
> >power to it.
>
> Nonsense. Let's not be silly Steve.
>
> If I have an antenna designed for 50 ohms and I feed it with 450 ohm
> line or 75 ohm line NOTHING in the antenna changes. It is NOT
> "stressful" for the antenna.
>

Tom, you are either confused about the subject we are discussing or this is just one big troll.

We have not been discussing a situation where the antenna impedance remains constant and we change the feed cable Zo. We have been discussing a situation where the antenna impedance changes and the cable Zo remains the same. Considering the same delivered power in each case has different implications for the antenna.

1) Same antenna impedance - different Zo. Za = 50 ohms. 1000 Watts delivered.

If Zo is 50 ohms, then the forward power arriving at the antenna is 1000 Watts. There is no reflected power. The total applied voltage and current are 223.6 V and 4.47 A, respectively.

If Zo is 450 ohms, then the forward power arriving at the antenna is 2778 Watts. The reflected power is 1778 Watts. The total applied voltage and current are 223.6 V and 4.47 A, respectively.

In this case, since the antenna impedance is the same, the total applied voltage and current do not change. Why would they?

2) Same Zo = 50 ohms. 1000 delivered.

If Za is 50 ohms, then the forward power arriving at the antenna is 1000 Watts. There is no reflected power. The total applied voltage and current are 223.6 V and 4.47 A, respectively.

If Za = 450 ohms, then the forward power arriving at the antenna is 2778 Watts. The reflected power is 1778 Watts. The total applied voltage and current are 671 V and 1.5 A, respectively.

In this case SOMETHING in the antenna does change, namely the total feedpoint voltage and current.

> >The forward power arriving at the antenna is now 2430 watts
> >not 944 watts. The forward voltage arriving at the antenna has a
magnitude
> >of 349 V. There is also a reflected voltage at the antenna with a
> >magnitude of 285 V. The total voltage (magnitude) applied to the antenna
> >can be as high as 634 V or as low 64 Volts. The current will be
> >correspondingly lower or higher. It is because of these changes in
voltage
> >and current that manufacturers of antennas and electronic devices specify
> >power ratings under a "matched" condition.
>
> Nonsense.
>
> The reason manufacturers specify power ratings at a matched condition
> is because the power rating of an antenna can vary with frequency, so
> they want power to be determined at the design frequency. It has
> absolutely NOTHING to do with standing waves on the feeder.
>

Why does the power rating of an antenna vary with frequency?

One of the reasons that the power rating of an antenna varies with frequency is that the antenna SWR varies with frequency. If you deliver the same power to the antenna at different SWR levels, the voltages and currents in the antenna will change. SWR does affect the power handling capability of RF devices. The power rating of most, if not all, RF devices is de-rated for increasing system SWR.

Another reason the power rating of an antenna varies with frequency is that the power handing capabilities of the materials used to construct the antenna vary as a function of frequency.

> The only effect of standing waves on the feeder is IN the feeder, or
> the source feeding the line.
>
> 73 Tom

1442. Re: Best coax for VHF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 16:53:41 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <yVzkOip4YsT+zwP0C60dvADTiL++@4ax.com>
Source record: 165491

"Todd Hargis" <hargis@mail.org> wrote:

>The length will be about 80 feet.

The arrl antenna book says, "Lines of 1/2-inch diameter (RG-8 or RG-11) are
acceptable for 144-MHz runs of 50 feet or less. These lines are somewhat better
if they employ foam instead of ordinary PE dielectric material." (page 18-2)

So... you can extrapolate whatever you want from that...

Bob
k5qwg

>
>n9xrg
>
>"VHFRadioBuff" <vhfradiobuff@aol.comspamsux> wrote in message
>news:20010423082822.19713.00000790@ng-de1.aol.com...
>> >I am, to be honest, confused about all the information as to which
>> >coax is best for 2 meter operation. I am getting ready to set up my
>> >station and I was thinking about using LMR-400. Any advice would be
>> >appreciated.
>>
>> The length of the coax run is important. How far is your antenna from your
>> radio?
>> =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
>> 73! de KC2SSB (ex: KF4KHC/HL9HCT)
>> http://vhfradiobuff.tripod.com
>> http://egroups.com/group/2mallmode
>> http://egroups.com/group/6mallmode
>

1443. Re: Beverage did not work, why??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 16:57:03 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae45a53.671671773@news.accessunited.com>
Source record: 165492

On Mon, 23 Apr 2001 15:28:17 GMT, "M. van Wijk" <pa5mw@home.nl> wrote:

>We're summing up all the experiences from our februari PACC contest
>experiences before starting new experiments upon from this summer. One of
>the main problems we encountered is that our first ever build beverage did
>not deliver what we expected on 80 mtrs. In fact it was always 10dB down in
>signal compared to our full size vertical, and (more important here) did
>never deliver any better S/N ratio on whatever signal.
>Some build facts on the beverage:

A Beverage ALWAYS has more loss than a reasonably efficient vertical.
You are fortunate if it was within 10 dB of the vertical (or
unfortunate if the small difference was do to loss in the vertical).

>Length: +/- 175 mtrs, then we ran out of wire.
>Wire: 0.25mm diameter enamelled copper
>Placed on top of 2.4mtr bamboo sticks every 15 mtrs.
>The bamboo sticks were mounted to low fence poles (0.7mtrs high). The fence
>consists of some 300mtrs typical single fence wire.

Three problems:

1.) The fence becomes a major part of the antenna! 300 meters is MUCH
too long for 80 meters, and the fence will interact in unpredictable
ways.

2.) Even 175 meters might be a bit too long for 80 meters. The
pattern of a Beverage is about as good as it ever gets when it is
between 1 and 2 wavelengths long. Longer is NOT better for many
reasons.

On 80 meters, my 140 meter long Beverages are noticably better than my
260 meter long antennas.

3.) If you didn't terminate the antenna, S/N will be worse because
you will have noise from the rear direction. The decrease in S/N can
be anything up to the F/B ratio of a terminated system, if noise
primarily comes from the null direction.

>Direction was ESE, and the end was deliberately left open so we received in
>two directions.

There goes at least 2 dB of S/N ratio, and maybe more!

>One side was connected to a 1:9 transformer on a amidon core (this was
>tested on a antenna analyzer for correct 50 to 450 transforming) with a
>connection to ground (1.5mtr copper waterpipe into wet soil). The connected
>coax was some 50mtrs RG213 alike.

>The seperation between the beverage and our main vertical was more than
>100mtrs, the local soil (farm grass land) was very wet.

Aggrivating the fence wire below the antenna, it sounds like you have
good soil. That can make a Beverage worse, not better.

I'd move the Beverage away from the fence, and terminate it. If you
have to use a two wire Beverage, I'd do that.

I'd make the matching transfomer an isolation type, and NOT ground the
feedline shield to the same ground rod as the Beverage uses.

I'd also make the Beverage shorter if it was for 80 meters. About
1-1/2 wl long works well.

73 Tom

1444. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 16:59:12 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <AbZE6.32073$RF1.2740586@bgtnsc06-news.ops.worldnet.att.net>
Source record: 165493

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ae456a8.670733078@news.accessunited.com...
> On Mon, 23 Apr 2001 14:28:17 GMT, "VE9SRB" <srbest@att.net> wrote:
> >
> >Your statement about current and conductor loss is correct but you need
to
> >provide more information as to SWR, forward power, reflected power and
> >delivered power so that everyone understands what really happens. Be
> >specific with some numbers. This is as ambiguous as your statement that
> >when you deliver 100 watts of power to a matched load and 100 watts of
power
> >to a mismatched load, you are delivering the same power to both.
> >
> >Steve VE9SRB
>
> I don't have time to write a book, and most likely the fellow asking
> the question doesn't want to read a book anyway.
>
> He probably wants the most simple answer that is correct and gives him
> a feel for what is happening.
>
> 73 Tom

I agree.

73, Steve

1445. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 17:28:13 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3AE4662D.5DEAEDAF@haertig.com>
Source record: 165494

Nawww, Wes,

If it were the fifties they'd be giving away 50 feet of 300 ohm
twin-lead and Cecil would be a happy camper. (c:

Gray

Wes Stewart wrote:
>
If fact, if we could
> revert to part of the fifties, the gas station would probably be giving away 50'
> of RG-8 with each fill-up.
>
> Wes Stewart, N7WS
> >
> >
> >-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> >http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> >-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

--
Telecommunications Engineering
Gray Frierson Haertig & Assoc.
820 North River Street, Suite 100
Portland, Oregon 97227
503-282-2989
503-282-3181 FAX
gfh@haertig.com

1446. Re: Cushcraft R-7000 Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 17:29:08 UTC
From: dcollin@connix.com
Message-ID: <3ae465d3.15528068@news.mybizz.net>
Source record: 165495

On Mon, 23 Apr 2001 06:36:56 -0700, AC6V <ac6v@ix.netcom.com> wrote:

>My trusty R-7000, after 2 years of troublefree operation, now has
>terrible VSWR from 17 meters through 40 meters. Suspect I blew a trap,
>but which one?? The 15M thru 10M operation is fine. I suspect the 20M
>trap. Anyone have this problem???
>
>--
>73 From Rod AC6V In San Diego
>700 Ham Topics & 6,000 Links
>http://ac6v.com/
>I Doubt, Therefore I Might Be!!!

You don't say how much power you were running ... it's unlikely to blow a trap at lower power levels. These antennas are especially susceptible to mechanical problems and corrosion, which interrupt continuity. Completely disassemble the antenna, clean up all joints, use an antioxidants, stainless hardware, and lockwashers while reassembling. All connections of the conductors at the traps should by disconnected, cleaned and reassembled in the same manner.

It sounds as though you might have a problem somewhere between the output of the 10/12 meter trap (CT1) and the output of the 17 meter trap (CT2).

See the review on eham.net, as I believe there are some useful pieces of info there. Don't be too discouraged by the r7000 bashing, everyone's had problems with 'em.

If you need, the manual is available on line from www.cushcraft.com

73 de Dennis

1447. Re: Thanx Cecil,Dan,Ralph,Reg & Roy

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 18:53:53 UTC
From: Scott McClements <yetbbwa@grove.iup.edu>
Message-ID: <3AE47A41.432082E@grove.iup.edu>
Source record: 165496

I am curious why you need to determine the velocity factor of RG-8X?

Scott.

Mad Dog wrote:

> For the helpful information y'all supplied. This RG8/X has a
> foamed/polyethylene insulator
> that is solid white, i guess it's back to the drawing board to determine the
> V/F.
> Or i could switch to a different brand that has a low loss,high shielding
> and consistent V/F
> such as Times LMR400. The system i am building is for 11meter use but i am
> engineering
> the rig piece by piece for minimal loss and stray RF.
> Thanx again Gentleman.....
> --
> 714 Sandpile,
> The Mad Dog wavin' good bye

1448. Re: Beverage did not work, why??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 19:40:47 UTC
From: "M. van Wijk" <pa5mw@home.nl>
Message-ID: <3z%E6.62378$D9.386306@dbsch1.home.nl>
Source record: 165497

To: "Tom W8JI" <2w8ji@akorn.net>
Sent: Monday, April 23, 2001 9:40 PM
Subject: Re: Beverage did not work, why??

> > Three problems:
> >
> > 1.) The fence becomes a major part of the antenna! 300 meters is MUCH
> > too long for 80 meters, and the fence will interact in unpredictable
> > ways.
>
OK, have thought about that too, but since the fence is of the worst
thinkable junk wire with a high impedance at HF and has many
interconnections.....but point taken.
>
> > 2.) Even 175 meters might be a bit too long for 80 meters. The
> > pattern of a Beverage is about as good as it ever gets when it is
> > between 1 and 2 wavelengths long. Longer is NOT better for many
> > reasons.
>
I know; we got the 175 mtr fom ON4UN which claims this is an optimum
lenght
(cone of silence story).
>
>
> > 3.) If you didn't terminate the antenna, S/N will be worse because
> > you will have noise from the rear direction. The decrease in S/N can
> > be anything up to the F/B ratio of a terminated system, if noise
> > primarily comes from the null direction.
> >
> >
> > >Direction was ESE, and the end was deliberately left open so we
received
> in
> > > >two directions.
> >
> > There goes at least 2 dB of S/N ratio, and maybe more!
>
True! But as said, there is no possibility in W or NW direction, only E.
That would take another 200mtrs of coax to feed the beverage at the right
side.
>
>
> > Aggrivating the fence wire below the antenna, it sounds like you have
> > good soil. That can make a Beverage worse, not better.

> >
>
Indeed! Stupid me, I should have figured that one out myself.
>
>
> > I'd move the Beverage away from the fence, and terminate it. If you
> > have to use a two wire Beverage, I'd do that.
>
>
> > I'd make the matching transfomer an isolation type, and NOT ground the
> > feedline shield to the same ground rod as the Beverage uses.
> >
> > I'd also make the Beverage shorter if it was for 80 meters. About
> > 1-1/2 wl long works well.
> >
> > 73 Tom

OK, many thanks Tom. You've brought up some good points here.
'73 Mark, PA5MW

1449. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 19:54:54 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9c215t$7fi$1@plutonium.btinternet.com>
Source record: 165498

Peter, believe me, I do understand you are are trying to be
helpful.

But it is a mathematical, academic, theoreical, undeniable fact,
that the antenna plus feedline is resonant and will register
minimum SWR versus frequency, whatever the minimum SWR may be, when
the antenna plus feedline is resonant, ie., the feedpoint
resistance is a pure resistance.

--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

Peter O. Brackett <ab4bc@ix.netcom.com> wrote in message
news:9besr7jit1@slb0.atl.mindspring.net...
> Reg:
>
> The frequency of the minimum value of VWSR is a good indicator of
resonance,
> however it is a more complicated process for the meter to come up
with the
> VSWR reading... just in case something is wrong with the meter...
>
> Wouldn't a "safer" indication of resonance, less subject to
errors and fauty
> meter operation, be that the antenna plus feedline is resonant
when the
> measured reactance equals zero. Xs = 0. Of course the
resistance will be
> whatever it will be at resonance, but the reactance has to be
zero.
>
> Just trying to be helpful.
>
> -Peter K1PO
>
>
> "Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
> news:9bep3u$9h4$1@plutonium.btinternet.com...
> > The antenna *PLUS* feedline is resonant when the SWR is at its
> > minimum value whatever the actual value of the SWR might be.

> > ---
> > **********
> > Regards, Reg, G4FGQ
> > Free radio design & modelling software
> > http://www.btinternet.com/~g4fgq.regp
> >
> > **********
> >
> >
> >
>
>

1450. Re: A3WS high SWR?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 19:58:16 UTC
From: kenneth m cubilo <kce@freeway.net>
Message-ID: <3ae4898b$0$88185$2c3e98f8@news.voyager.net>
Source record: 165499

hi jim have had mine up for a few months, rain, snow or shine vswr stays the same just about flat on both bands. had a problem like yours on a 15 meter monobander once traced it to a poor barrel connector and water getting into the coaxial jacket
73 ken w8ob

Jim Martin wrote:
>
> Has anyone else had high SWR problems with the A3WS during wet
> weather? In my case, when the sun comes out it goes back to normal.
> Which means I have had no luck finding the cause.
>
> Jim W8AC

1451. Re: Cushcraft R-7000 Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 20:00:52 UTC
From: kenneth m cubilo <kce@freeway.net>
Message-ID: <3ae48a26$0$88185$2c3e98f8@news.voyager.net>
Source record: 165500

before changing out traps do the modification to them if you have not done so already that is remove the sheet metal screws at the top and bottom sand up both the alum wire and the trap surface. apply a coat of no-allox compound to both reinstall the sheet metal screw with a star washer. this will clear up 99 percent of this type of problem. i used to have this problem but 3 years ago did the mod and worked great since.
73 ken w8ob

AC6V wrote:
>
> My trusty R-7000, after 2 years of troublefree operation, now has
> terrible VSWR from 17 meters through 40 meters. Suspect I blew a trap,
> but which one?? The 15M thru 10M operation is fine. I suspect the 20M
> trap. Anyone have this problem???
>
> --
> 73 From Rod AC6V In San Diego
> 700 Ham Topics & 6,000 Links
> http://ac6v.com/
> I Doubt, Therefore I Might Be!!!

1452. Re: Beverage did not work, why??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 20:16:18 UTC
From: richardharrison@webtv.net
Message-ID: <10440-3AE48D92-51@storefull-113.iap.bryant.webtv.net>
Source record: 165501

Mark, PA5MW / P14SHB wrote:
"Please supply any relevant info which perhaps might serve our described situation and pratical possibilities.

175 meters for an 80 meter Beverage is about optimum length. 2 to 3 metes is about optimum height. 0.25 mm diameter is equivalent to AWG 30 which would have about 597 ohms loss resistance in 175 meters of length, and that is not optimum.

Location over a grounded fence wire and wet farmland would rob you of needed tilt for vertical polarization response to a ground wave or vertical response from any source except as a short grounded vertical antenna from displacement-current response. The height of this antenna is 2 to 3 meters. It is non-directional and fed through about 600 ohms.

It should surprise no one that it would not compare favorably with a full-size vertical or have the directional characteristics of a real Beverage antenna.

Best regards, Richard Harrison, KB5WZI

1453. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 20:51:20 UTC
From: kb7qhc@home.com
Message-ID: <3ae48fc3.2396134379@news.seanet.com>
Source record: 165502

On Sun, 22 Apr 2001 07:01:00 GMT, Perseus@hol.gr (I-Oannes Karahalus Filos]+[EE 10 Konx Om Panx) wrote:

>Paul ,there is not at all belief. Its prooven from the results of the
>experiments and it works.
>I suggest you spend some time and read the links, and trust me,
>you will like it because after all its highly related to amateur radio
>and especially with antennas.
>
>On Sat, 21 Apr 2001 20:41:00 -0500, 'Doc <w5lz@oio.net> wrote:
>
>>"Duke",
>> The title really doesn't affect me at all, and
>>had nothing to do with my comment. I was speaking
>>about the subject of your post, and your belief(?)
>>in it...
>> 'Doc
>
>I am a child of Earth and of Starry Heaven;
> But my race is of Heaven(Orphics)
> E 10 E
> Duke of Mystra

Hi OM,

Sorry to rain on your parade, but the links point to work that has been done before and even have existing patents. If anyone seeks to close these links down, it will be the owner of the technology (who is already easily sought with a good Patent search engine). If you can't figure a way out to keep this information from being removed from the net, then obviously you are not very interested in keeping it available (which is extremely simple) and you must be part of the conspiracy to subvert their dissemination (note that you haven't bothered to repeat these links - must not be that important). So much for the "X-Files" attitude that this "technology" is presented to us with.

I have researched a good dozen of these patents for a superconductor outfit to check the feasibility of acquiring rights and license - all had every appearance of being wholly off the wall. This work you link to is no different.

I've even seen this pendulum trick too (by the inventor) - not very convincing (pathetic in fact). The details (sic) at your links are just as flabby; they are relying on hope and charity to make up for the lack of science.

One of the obvious red flags is the breadth of claims (and breathlessly profound theory) and shallowness of data, but this group is already used to that and this largely accounts for the "ho-hum" response. You are going to have to dress it up with fractals or a CFA to get our attention (so that we can become fully engaged in mocking this work).

73's
Richard Clark, KB7QHC

1454. antenna plans needed

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 21:04:24 UTC
From: stormspotter <scissorcut@bigfoot.com>
Message-ID: <te96agjprmpuf6@corp.supernews.com>
Source record: 165503

Hi,
I'm looking for plans to build a colinear 2 meter antenna out of 300 ohm tv cable.
Thanks,
Tony
KD5AFE

1455. Re: Cushcraft R-7000 Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 21:39:18 UTC
From: David Molvin <wa3nko@ix.netcom.com>
Message-ID: <9c275ofkv1@slb3.atl.mindspring.net>
Source record: 165504

I agree with this...I had this problem with one of my traps (don't remember which one) right out of the box. The screw at the bottom of the trap was simply crossthreaded and making no contact. Cleaned up the connection and all was fine.

David
"kenneth m cubilo" <kce@freeway.net> wrote in message news:3ae48a26$0$88185$2c3e98f8@news.voyager.net...
> before changing out traps do the modification to them if you have not
> done so already that is remove the sheet metal screws at the top and
> bottom sand up both the alum wire and the trap surface. apply a coat of
> no-allox compound to both reinstall the sheet metal screw with a star
> washer. this will clear up 99 percent of this type of problem. i used to
> have this problem but 3 years ago did the mod and worked great since.
> 73 ken w8ob
>
> AC6V wrote:
> >
> > My trusty R-7000, after 2 years of troublefree operation, now has
> > terrible VSWR from 17 meters through 40 meters. Suspect I blew a trap,
> > but which one?? The 15M thru 10M operation is fine. I suspect the 20M
> > trap. Anyone have this problem???
> >
> > --
> > 73 From Rod AC6V In San Diego
> > 700 Ham Topics & 6,000 Links
> > http://ac6v.com/
> > I Doubt, Therefore I Might Be!!!

1456. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 21:52:31 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3AE4A41F.19628D04@berkshire.net>
Source record: 165508

incorrect... there is a group that has managed to create such a strong magnetic field that they could suspend almost anything in it without it being 'full of iron'. unfortunately the effective area is only a couple inches in diameter and maybe a foot long... and it takes enough power to light a small town. its no mystery of anti gravity, just an application of standard physics.

with the apparatus i saw in other links to this effect there are too many chances for stray electric and magnetic fields to cause a false result. in one link there were warnings to make sure there are no stray air currents in the room and not to breath on it. if their device caused any kind of effect i would expect a large tv transmitter to put itself in orbit and meet up with the destroyer from the philadelphia experiment. they would probably claim that wires jumping up when they get hit by lightning was anti-gravity also.

"I-Oannes Karahalus Filos]+[EE 10 Konx Om Panx" wrote:
>
> Yes, you are right. But in this experiment they had made the body
> of the frog full of iron and the surce of simpe magnetism was out of the body.
> In the experiment of Stavros we have loss of weight with simple RF.
> Not from out side source but from within the body.
> That works when the body (antenna) is L/4 of the wave length.
> And thats antigravity. Electromagnetism who affects gravity.
> Ofcourse this is the first step. The complete undarstanding of this <law>
> and the development will bring us and the wanted hovering.
>
> On Sun, 22 Apr 2001 20:16:15 -0400, "N3VST" <not@chance.com> wrote:
>
> >I thought a group of scientist were able to make a small frog defy gravity
> >in a lab using extremely power magnetic energy. That is no secret and there
> >is nothing to cover up...
> >"Peter J. Bertini" <commquart@home.com> wrote in message
> >news:8RFE6.15679$Ce4.1489063@news1.rdc1.ct.home.com...
> >> Doc!!
> >>
> >> This may mean the end of the need for rotors! Think of the possibilities!
> >>
> >> Pete ;)\
> >>
> >>
> >> "'Doc" <w5lz@oio.net> wrote in message news:3AE30BC1.2AA6C659@oio.net...
> >> >
> >> >
> >> > Went back and re-visited the links. Nothing in the
> >> > experiment relates to antigravity anymore than an
> >> > "Ottis" elevator does. Bit of a 'reach' to call it

> >> > 'anti-gravity'...
> >> > 'Doc
> >>
> >>
> >
> >
> >
>
> I am a child of Earth and of Starry Heaven;
> But my race is of Heaven(Orphics)
> E 10 E
> Duke of Mystra

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

1457. Re: Beverage did not work, why??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 22:01:49 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3AE4A64D.40794FC1@berkshire.net>
Source record: 165511

check the low band dxing book for the 2 wire system that provides two directions at the same time. it takes 2 torroidal transformers but no relays. i use those here because i can only run west from the shack and they work very nicely. they also have the added advantage that both directions are available at the same time, so with 3 of them here i get 6 directions that can be used by my 40m, 80m, and 160m stations independently. there was also an improvement discussed recently i think on the low band reflector for a transformer termination that improves the backwards direction.

"M. van Wijk" wrote:
> > > >Direction was ESE, and the end was deliberately left open so we
> received
> > in
> > > > >two directions.
> > >
> > > There goes at least 2 dB of S/N ratio, and maybe more!
> >
> True! But as said, there is no possibility in W or NW direction, only E.
> That would take another 200mtrs of coax to feed the beverage at the right
> side.

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

1458. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 22:21:07 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE4AAD3.3B50@wt.net>
Source record: 165506

Tom W8JI wrote:

>
> The typical 5/8 wl antenna does NOT exibit the same pattern as a
> vertical dipole (which ou example uses) because it is NOT center fed.
> It is end-fed, and that causes the second current maxima that starts
> to appear to be out-of-phase with the main current maxima. What
> actually happens in the real world of antennas, if you replace a 1/4
> wl groundplane with a 5/8th wave antenna, is the useful gain along
> the horizon at best remains about the same. At worse the gain
> decreases at useful wave angles.

Dunno, I think I cured that problem by using dual 5/8 elements. I'm kind of mixed on this subject. On 2m, I've found everything you said to be true, but the 5/8 gp I tried there only had 1/4 wl radials. But on 10m, in testing all three types, the 5/8 GP won here. But I was using appx 3/4 wl radials instead of the normal 1/4 wl. One reason being it doubled on 30m as a 1/4 wl GP. But here on 10m, using a 30 mile ground wave path, the 5/8 gp won by a measurable amount over both the 1/4 wl gp and an end fed half wave with and without decoupling. All were at the same height, and same feedline." 36 ft at the base of each antenna." With my new version of "dual" 5/8 gp that I cooked up with modeling, I think most of these problems are cured, and the gain over a 1/4 gp is quite noticeable at low angles. I still haven't gotten around to trying a real one yet though. I don't get on 10m too much lately for one thing. I still have the web pages with the modeling info I did on this. According to modeling, it should do well, but I need to test in the real world. I oughta make one for 2m as a test. If it beats a good 1/4 wl GP on 2m , I'll know it really works. On my last test quite a few years ago on 2m, the 1/4 GP beat a 5/8 GP with 1/4 wl radials by a large amount. Being 2m is so critical as far as the wave angle along the horizon, if it works on 2m, it should work on HF. Thats also why I used far off ground wave signals to test on 10m. I thought those angles would be the most critical as far as low angle performance. Also steady signals and easy to compare. The "skip" reports matched the ground wave usually. IE: what was best ground wave, was best for sky wave at low angles.

http://web.wt.net/~nm5k/acompari.htm

You've probably seen this already, but this explains my thoughts on how to improve the 5/8 GP to do what it should do. In effect, for an optimum version, I'd make a dual 5/8 collinear with steeply sloped lower 5/8 wl radials as the lower 5/8 element. MK

--
http://web.wt.net/~nm5k

1459. Re: Best coax for VHF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 22:31:28 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE4AD40.BB093D0@IEEE.org>
Source record: 165505

Todd Hargis wrote:
> The length will be about 80 feet.

LM400 should work pretty well at that length on 2m.
--
http://www.mindspring.com/~w6rca

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1460. Re: antenna plans needed

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 22:32:05 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE4AD65.4B7B@wt.net>
Source record: 165507

stormspotter wrote:
>
> Hi,
> I'm looking for plans to build a colinear 2 meter antenna out of 300 ohm tv
> cable.
> Thanks,
> Tony
> KD5AFE
I've heard of J-poles made that way, but haven't seen too many
collinears. You may want omnidirectional gain, but if you can swing a
rotor, a small 3 el yagi will eat most any vertical for lunch on 2m. Of
course, it's unidirectional though. But in the directions you are
pointing, you'll hear and work stuff that won't exist on the vertical.
No matter what kind it is. The advantage of a collinear over a well
decoupled 1/4 GP is small on 2m. The angles needed are very low and
critical, and a 1/4 GP just happens to be about right. 2-3 degrees off
the horizon if high in terms of wavelength. I once compared a 1/4 gp
with 8 radials against a ringo ranger 2. "dual 5/8 with a decoupling
section". The difference was very small compared to what a 3 el yagi
would do. MK
--
http://web.wt.net/~nm5k

1461. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 22:54:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE4B28F.E8C16A0E@IEEE.org>
Source record: 165509

VE9SRB wrote:
> You are making this too simple a matter. You simply assume that the same
> total power is delivered to the antenna in each case without considering
> what has to change in the system to make this happen. For some reason, you
> do not want to state or recognize that to deliver the same power to the
> antenna in each case, the total applied voltage and current at the antenna
> feedpoint change.

Tom is assuming a Z0-match when he says all the generated power minus the feedline losses reach the antenna no matter what the SWR. You seem to be assuming a Z0-mismatch when you say that's not true. You two are not talking about the same antenna system. Why not discuss both cases separately?

--
http://www.mindspring.com/~w6rca

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1462. Looking for Antenna Web Site

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 22:59:50 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <emc9et0d6bckvmmfi73rotgspls8kp5chf@4ax.com>
Source record: 165510

I am looking for a needle in a haystack. I received a schematic of a 2-meter antenna back in 1998 that came from a web site with the address http://pw2.netcom.com/~kimeyer/p2.html . That address is no longer valid. The antenna consisted of a 60-inch wire at the top and a 17 inch wire at the bottom (vertically) connected together with a 75-300 ohm transformer. It was meant to be hung from a tree, etc. for portable operation. Anyone know where it is now, or anything else about it? Thanks.

73, Dick - W6CCD

1463. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 23:06:53 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c2chsbbd1@nntp9.atl.mindspring.net>
Source record: 165512

Steve:

I don't get it, 100 watts deliverd to a matched load is exactly the same as 100 watts delivered to a mis-matched load.

Of course everyone understands that the voltage level (Of the Thevin generator, if a voltage source.) or the current level (Of the Norton generator, if a current source.) must be different to supply 100 watts to two different values of load, but that is obvious...

If one wants to put 100 watts into a load, no matter what its' value, one simply adjusts the level of voltage or current to that required to deliver the 100 watts. What?

If the load is 50 Ohms you need to put V = sqrt(P*R) = sqrt(100 * 50) = 70.707 volts across the 50 Ohms to deliver 100 W.

If the load is 100 Ohms you need to put V = sqrt(100 * 100) = 100.000 volts across the 100 Ohms to deliver 100 W.

100 watts is 100 watts delivered to the load, no matter what the load value. Simple stuff indeed.

What's your point?

Why do we have to have all those "messy" and complicated "forward", "reflected", and "delivered" complications?

How many "powers" can there be? 100 watts delivered is 100 watts delivered! That one "delivered" power is good enough for anyone. If the source is a perfect voltage generator with no internal resistance or impedance, who cares...? And...

If the source is not a perfect voltage generator but has a finite non-zero internal impedance then, if one was curious about the insides of the generator, one might wonder what is the "internal" voltage applied to the series connection of the internal generator impedance and the external load.

But as long as the generator works and delivers the voltage needed across the load to deliver the power required, who cares?

Why do we need all this incident, forward, reflected, delivered, transmitted, mumbo jumbo to explain something so simple?

What?

-Peter K1PO

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ae456a8.670733078@news.accessunited.com...
> On Mon, 23 Apr 2001 14:28:17 GMT, "VE9SRB" <srbest@att.net> wrote:
> >
> >Your statement about current and conductor loss is correct but you need
to
> >provide more information as to SWR, forward power, reflected power and
> >delivered power so that everyone understands what really happens. Be
> >specific with some numbers. This is as ambiguous as your statement that
> >when you deliver 100 watts of power to a matched load and 100 watts of
power
> >to a mismatched load, you are delivering the same power to both.
> >
> >Steve VE9SRB
>
> I don't have time to write a book, and most likely the fellow asking
> the question doesn't want to read a book anyway.
>
> He probably wants the most simple answer that is correct and gives him
> a feel for what is happening.
>
> 73 Tom

1464. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 23:08:40 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE4B5F8.5F768B82@IEEE.org>
Source record: 165513

VE9SRB wrote:
> Reflected power is not an imaginary or "made up" concept.

Nope it's not, Steve. However, all it takes to keep reflected power from reaching the transmitter is a Z0-match in the antenna system often provided by an antenna tuner. If reflected power is not allowed to reach the transmitter, it "has no choice" but to join the generated power at the Z0-match and contribute to the forward power. In an antenna system with a Z0-match, forward power is indeed equal to generated power plus reflected power. You seem to have been talking about antenna systems with Z0-mismatches where some of the reflected power is lost in the generator. The entire discussion would be immediately resolved if everyone would preface their statements with either: "In a Z0-matched antenna system, ..." or "In a Z0-mismatched antenna system, ..."
--
http://www.mindspring.com/~w6rca

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1465. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 23:14:17 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <dH2F6.33149$IJ1.2831152@bgtnsc05-news.ops.worldnet.att.net>
Source record: 165514

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE4B28F.E8C16A0E@IEEE.org...
> VE9SRB wrote:
> > You are making this too simple a matter. You simply assume that the
same
> > total power is delivered to the antenna in each case without considering
> > what has to change in the system to make this happen. For some reason,
you
> > do not want to state or recognize that to deliver the same power to the
> > antenna in each case, the total applied voltage and current at the
antenna
> > feedpoint change.
>
> Tom is assuming a Z0-match when he says all the generated power minus the
> feedline losses reach the antenna no matter what the SWR. You seem to be
> assuming a Z0-mismatch when you say that's not true. You two are not
talking
> about the same antenna system. Why not discuss both cases separately?
>

Without going into anymore details, you're first sentence was my point - you
need to do one of two things to have the same delivered power in each case,
either create a Zo match with a tuner, or increase the forward power in the
system. You have to compensate for the fact that reflections are created
with the higher SWR.

Steve

1466. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 23:19:14 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE4B872.933BAE08@bwcc.com>
Source record: 165515

"Peter O. Brackett" wrote:
> 100 watts is 100 watts delivered to the load, no matter what the load value.
> Simple stuff indeed.
If you send a message and it bounces, how many messages were delivered?

I missed the clue in your message that you were only kidding.

1467. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 23:23:14 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c2dgrsur1@slb4.atl.mindspring.net>
Source record: 165516

Steve:

I don't think "the thread" understands all of this stuff deeply enough yet. Here's a simple problem to get "the thread" thinking...

Let's set up two 50 Ohm transmitters on one single 50 Ohm transmission line, let "the thread" choose the length of line by voting for their favorite length!

One transmitter on each end. Facing each other... Heh, heh... that should get "the thread" talking!

Place a directional coupler in the center of the line. VSWR meter, power meter, whatever you want to call it. Any device of "the thread's" choosing, that can "measure" forward and reflected "waves". Let's use a Bird Model 43 perhaps.

Adjust the transmitter on the left end to send 100 watts towards the right end.

Adjust the transmitter on the right end to send 50 watts toward the left end.

Now what are the forward and reflected readings on that directional coupler?

Next change the left hand transmitter from a 50 Ohm to 100 Ohm transmitter, (Use an ideal transformer if you can't buy a 100 Ohm transmitter.) and set its' power output to the same level as before, i.e. left hand transmitter delivers 100 watts to the right end as before.

Now what are the two reading on the directional coupler?

Thoughts, comments, thread?

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message
news:%uWE6.31953$RF1.2727141@bgtnsc06-news.ops.worldnet.att.net...
>
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> news:9bvf78ag1@slb2.atl.mindspring.net...
> > Steve:
> >
> > There is a very deep symantic problem here associated with the words
> > "travel" and "travelling". This is a great source of confusion for
> > beginners and it comes from trying to reconcile two visualizations, the
> > travelling wave visualization, or transient case where energy is the
more

> > appropriate metric as compared to power, and the steady state case where
> > power is the more appropriate metric. Sort of like the Fourier
Transform,
> > LaPlace Transform dichotomy, both views are useful and represent "the
> truth"
> > but one is more appropriate and easy to use for transient analysis,
while
> > the other is more appropriate and easier to use for the steady state.
> >
> > For how do beginners visualize power but as energy expended per unit
time,
> a
> > continuous flow, not a passing phenomena....
> >
> > How can a power travel? An quantum of energy can travel, but power????
> >
> > Voltages and currents can travel as "waves", but power per se does not
> > travel How can one visualize volts times amps as traveling?
> >
> > How can a power... say Forward Power lose some of itself along the way
and
> > then be called the same thing?
> >
> > How can a power... say Reflected Power lose some of itself along the way
> and
> > still be called the same thing?
> >
> > Power is a quantity that can be calculated at a point where one can
> measure
> > an I and a V and perform the calculation P = V*I*cos(theta), but does
that
> > formulae travel?
> >
>
> We define forward and rearward traveling voltage and current in a
> transmission line. Associated with these are the derived quantities of
> forward and rearward traveling power. It's no more complicated than that.
>
>
> > And... if you move up or down a distance from the first point you will
> > measure a different I and V and theta and calcualate a different set of
> > powers.
> >
>
> Only if the transmission line has loss.
>
> Additionally, for the forward and rearward traveling waves, theta never
> changes, even if the line has loss. You may be confusing "total" or
> "delivered" power with forward and reflected power.
>

> > At each point along a transmission line, one may measure an I and a V
and
> > use a reference impedance R to calculate forward and reflected voltages
> and
> > currents and from those to calculate the Power being transmitted at that
> > point, Pt and from that one can pose a ficticious incident power Pi,
> > appropriate to that point, and calculate a reflected power Pr for that
> > point.
> >
> > For Pt = V*I*cos(theta) can be calculated at a point from the V and I
> > "waves" at that point...
> >
> > and then....
> >
> > Pr = Pi - Pt
> >
> > In any practical case, a little further on you will get slightly
different
> > values for Pt, Pi, Pr, etc...
> >
>
>
> In any transmission line, the forward traveling voltage and current are
> related as follows: Vfwd/Ifwd = Zo. The rearward (reflected) traveling
> voltage and current are related as follows: Vref/Iref = Zo.
>
> Forward Power = Pfwd = |Vfwd| |Ifwd| Cos(theta), where theta is the phase
> angle of Zo.
>
> Rearward Power = Pref = |Vref| |Iref| Cos (theta), where theta is the
phase
> angle of Zo.
>
> The total voltage at any point on the line is Vtot = Vfwd + Vref. The
total
> current at any point on the line is Itot = Ifwd - Iref (my math
preference
> for those who use Itot = Ifwd + Iref). The line impedance at any point on
> the line is Z = Vtot/Itot.
>
> The total or delivered power at any point on the line is Ptot = Pdel =
> |Vtot| |Itot| Cos (theta), where theta is the phase angle of Z. Note also
> that Pdel = Pfwd - Pref.
>
> If the transmission line has zero loss, forward V and I change over the
line
> length, but forward power does not. Rearward V and I change over the
length
> of the line but rearward power does not.
>

> If the line has loss, then the forward power will diminish as a function
of
> the distance the forward power travels away from the transmitter. At the
> same time, the reflected or rearward traveling power will diminish as a
> function of the distance it travels away from the antenna.
>
>
> > They are not "travelling" and "losing" stuff as they travel, that
> > visualization is a symantic nightmare in the steady state, in the steady
> > state, they exist at each and every point on the line, and one measures
> and
> > calculates different values along the way.
> >
>
> If the line has loss, then forward and rearward power diminish as they
> travel away from theie respective reference point of origin.
>
> > Your visualization is perhaps appropriate to a line excited by an
impulse
> or
> > a step voltage or current excitation, and the calculation of energy
> > contained in a travelling wave... e.g. a soliton like phenomena, but for
> the
> > steady state it merely serves to confuse.
> >
>
> The "visualizations" that I discuss are very valid for steady state
> conditions. The total steady state voltage and current at any point on a
> transmission line are the vector sum of the forward and rearward traveling
> waves.
>
>
> > IMHO...
> >
> > -Peter K1PO
> >
> >
>
> Steve. VE9SRB
>
>
>

1468. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 23:30:41 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae4bac5.20365236@news.aepnet.org>
Source record: 165517

On Mon, 23 Apr 2001 10:28:13 -0700, Gray Frierson Haertig
<gfh@haertig.com> wrote:

>
>Nawww, Wes,
>
>If it were the fifties they'd be giving away 50 feet of 300 ohm
>twin-lead and Cecil would be a happy camper. (c:

Touche. But I said "part of the fifties", and I meant to say RG-6.

Wes

>
>Gray
>
>
>Wes Stewart wrote:
>>
>If fact, if we could
>> revert to part of the fifties, the gas station would probably be giving away 50'
>> of RG-8 with each fill-up.
>>
>> Wes Stewart, N7WS
>> >
>> >
>> >-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
>> >http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
>> >-----== Over 80,000 Newsgroups - 16 Different Servers! =-----
>
>--
>Telecommunications Engineering
>Gray Frierson Haertig & Assoc.
>820 North River Street, Suite 100
>Portland, Oregon 97227
>503-282-2989
>503-282-3181 FAX
>gfh@haertig.com

1469. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 23:37:41 UTC
From: kb7qhc@home.com
Message-ID: <3ae5bbdc.2407423592@news.seanet.com>
Source record: 165518

On Mon, 23 Apr 2001 19:23:14 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>Thoughts, comments, thread?
>
>-Peter K1PO

Hi Peter,

You have nothing to say about the phase of the two sources?

S'pose it matters?

Might do to talk about frequency too, but the conundrum is as
confounding either way.

73's
Richard Clark, KB7QHC

1470. Re: Question-My First Antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 23:46:00 UTC
From: w1rfi@aol.com
Message-ID: <20010423194600.04347.00000116@ng-cs1.aol.com>
Source record: 165419

>From: Mary Anne Olsen wolsen@erols.com

>What if the maximum antenna supports are only say 40 feet and the lot
>size is 50 by 75 feet. What antenna would you recommend? Bill N3TVU

Many hams make a version of the dipole antenna as their first HF antenna. Here are some good downloadable articles on the dipole, plus some good linkage:

http://www.arrl.org/tis/info/dipole-h.html

73,
Ed Hare, W1RFI

1471. Re: Velocity Factory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 23:48:28 UTC
From: w1rfi@aol.com
Message-ID: <20010423194828.04347.00000119@ng-cs1.aol.com>
Source record: 165420

>Cecil.A.Moore@IEEE.org

>RG-8X has a "foam polyethylene dielectric", according to The Wireman.

A good way to tell is to look closely at the insulation between the center conductor and the shield. If it is whitish and translucent, it is solid. If it is white and not at all translucent, it is foam.

73,
Ed Hare, W1RFI

1472. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-23 23:51:36 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c2f61dfq1@slb4.atl.mindspring.net>
Source record: 165421

Steve:

I said...

[snip]
> >
> > Pr = Pi - Pt
> >
> > It's really simple. Reflected power Pr is just the result of subracting
a
> > real power Pt from another ficticious quantity the incident power Pi.
> >
> > It's imaginary because it is a "made up" value.
[snip]

You said...

[snip]
>
> Reflected power is not made up, imaginary or fictitious. It is very very
> real. The delivered power is the result of subtracting reflected power
from
> forward power, not the other way around.
>
[snip]

Take my equation Pr = Pi - Pt...

Add Pt to both sides, Pr + Pt = Pi

Subtract Pr from both sides, Pt = Pi - Pr

That's what you said, that's what I said... we both said the same thing!

We are not arguing over "facts" or "equations" we are arguing over the
"sequence" and "viewpoint" of the multitude of powers that have been defined
here.

Either Reflected Power Pr is derived from Pi and Pt as Pr = Pi - Pt, by
subtracting the "actual" delivered power from the incident power...

or...

The Delivered Power Pt is derived from Pi and Pr as Pt = Pi - Pr.

Where are the independent variables and where are the dependent variables
here?

I maintain that the "only" real power that you can measure, by delivering it into a suitable load and measuring the temperature rise of that load is the "Delivered Power" Pt.

The incident power Pi is a "ficticious" power which is assumed with the exception of one "real" case. Pi is the power that would be delivered to a perfectly (conjugate) matched load. Pi may exist, or not, in any measurement set up depending only on the condition of the existence of a perfect (cojugate) match.

If a perfect (conjugate) match does not exist, then Pi certainly does not exist in that setup and so is indeed "ficticious". And the mismatched case, where Pi is non-existent, is the only case that matters to your argument, since that is the only case where Pr is non-zero!

You argue against yourself here.

And so it is indeed simple... unless a perfect (conjugate) match exists, the only "real" power available to be measured is Pt the delivered or transmitted power!

In this case, the incident or forward power Pi is ficticious, since it is not present and cannot be measured directly. Pi is the power that would be delivered to a perfectly matched load.

The other power, the reflected power Pr, since it is directly related to the other two by an equation which you yourself have espoused, and you agree with this relationship:

Pr = Pi -Pt

And so in the mis-matched case, you will agree that Pi is ficticious and cannot be measured, Pr cannot be measured, where would you place the load to absorb it and to measure the temperature rise, and only Pt can be measured.

Thus in the mismatched case, only Pt is real and available for measurement, Pi is ficticious, and Pr is only available through mathematical calculation, performed off line or on line by an analog or digital computer, it matters not which.

My point is that the "real" power must lie on the left hand side of the equation. You measure reality first and then derive everything else from it.

That calculation to find that "derived" quantity Pr from the "only real power, Pt" is simply:

Pr = Pi - Pt.

The only case for "reality" that your argument has at all... is in the case of perfect (conjugate) matching... when the reflected power is zero (Pr = 0) anyway and Pt = Pi. A trivial case!

And so... it goes... all we really need is the delivered power...

as Einstein once said, "don't make things any more complicated then they need to be!"

-Peter K1PO

1473. looking for info on the sgc smart tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 00:04:06 UTC
From: DM <dmalarajr@wi.rr.com>
Message-ID: <Wp3F6.165$q7.7323@typhoon.mw.mediaone.net>
Source record: 165422

I am thinking abt buying a scg 237 tuner for mobile and base use .has anyone used one? please let me know what you think of them, Dave

1474. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 00:12:25 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c2gct$m0n$1@slb5.atl.mindspring.net>
Source record: 165423

John:

[snip]
>
> It occurs to me that if you send a narrow pulse down a long enough
transmission
> line, shorted at the end, that you will clearly see a reflected pulse at
the
> entry end at some delay time later. It can be viewed on an oscilloscope,
which
> is just a fancy voltmeter, and so is as real as what is measured by any
> voltmeter or ammeter.
>
> john
>
[snip]

Agreed!

That is the transient case.

But in that case where is the power?

An energy quanta moves down the line and back, it does not deliver power...

Power is energy delivered per unit time. Joules is energy. Watts is Joules
per second.

In the "steady state" case the reflected power equals the incident power
minus the transmitted or delivered power.

Pr = Pi - Pt. This equation is valid at all times t. Since all of the P's
are indeed continuous functions of time.

In the transient case there is no power, there is only energy...

Let's call these energies... Er, Ei and Et. These energies are not
functions of time but are simply quanta. (OK the energy might be calculated
by integrating over some short time period during which the energy
persists.)

And so the equation:

Er = Ei - Et is not valid at all times t as is the equation Pr = Pi - Pt.

(Sorry about using t for two purposes here.)

In fact a Bird Wattmeter would not be able to provide a confirmation of this
equation for the meter needle would make but two separate and barely

observable blips.

One could make the argument, and also try to test it by increasingly difficult measurements, that the steady state is in fact the superposition of an infinity of infinitesimal transient events, but... that is so unsatisfying... why bother... it makes things more complicated than necessary. Why make models of reality more complicated than necessary?

It's sort of like the "difference" between differential equations and difference equations. They can both be models of reality, but models they are, and... those who adhere vehemently to the belief that one or the other "is" reality are often surprised when the model reaches it's limits and does not match reality.

One encounters this in electromagnetic analysis programs, for instance those like EZENEC which use the NEC "method of moments" which is essentially a model of reality based upon "difference" equations. Often if care is not taken in setting up the parameters of that model of reality one gets useless results that don't match reality.

The same is true when trying to reconcile transient and steady state transmission line wave mechanics, one should not become enamored with one view over the other... simplicity is best.

-Peter K1PO

1475. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 01:19:42 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae4d2c8.702513288@news.accessunited.com>
Source record: 165424

On Mon, 23 Apr 2001 16:45:21 GMT, "VE9SRB" <srbest@att.net> wrote:
Hi Steve,

>Why does the power rating of an antenna vary with frequency?

1.) Because voltage across components in the antenna can change.

2.) Because current can change.

3.) Because the ratings of components yused in the antenna can change
with frequency, although this is usually not a noticable problem.

4.) Anything that changes the electrical characteristics of the
antenna itself might change power ratings.

Power ratings normally vary with frequency.

>One of the reasons that the power rating of an antenna varies with frequency
>is that the antenna SWR varies with frequency. If you deliver the same
>power to the antenna at different SWR levels, the voltages and currents in
>the antenna will change.

That is not true. Power ratings might vary with length of the antenna
or the resonant frequency the antenna is adjusted to, but it really
doesn't matter what the feedline SWR is.

I can make the feedline SWR anything I like, and as long as I don't
change anything in the antenna the power rating of the antenna will
remain the same.

73 Tom

1476. Re: antenna plans needed

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 01:23:59 UTC
From: stormspotter <scissorcut@bigfoot.com>
Message-ID: <te9liibipbvk80@corp.supernews.com>
Source record: 165425

basically what I'm needing is something I can throw in a tree when working club events. We work traffic control/communications for the local chamber of commerce's fun fest & bicycle race. Thanks for any help you can give.
Tony

"Mark Keith" <nm5k@wt.net> wrote in message news:3AE4AD65.4B7B@wt.net...
> stormspotter wrote:
> >
> > Hi,
> > I'm looking for plans to build a colinear 2 meter antenna out of 300 ohm tv
> > cable.
> > Thanks,
> > Tony
> > KD5AFE
> I've heard of J-poles made that way, but haven't seen too many
> collinears. You may want omnidirectional gain, but if you can swing a
> rotor, a small 3 el yagi will eat most any vertical for lunch on 2m. Of
> course, it's unidirectional though. But in the directions you are
> pointing, you'll hear and work stuff that won't exist on the vertical.
> No matter what kind it is. The advantage of a collinear over a well
> decoupled 1/4 GP is small on 2m. The angles needed are very low and
> critical, and a 1/4 GP just happens to be about right. 2-3 degrees off
> the horizon if high in terms of wavelength. I once compared a 1/4 gp
> with 8 radials against a ringo ranger 2. "dual 5/8 with a decoupling
> section". The difference was very small compared to what a 3 el yagi
> would do. MK
> --
> http://web.wt.net/~nm5k

1477. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 01:26:24 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae4d539.703138438@news.accessunited.com>
Source record: 165426

On Mon, 23 Apr 2001 17:21:07 -0500, Mark Keith <nm5k@wt.net> wrote:

>Dunno, I think I cured that problem by using dual 5/8 elements. I'm kind
>of mixed on this subject. On 2m, I've found everything you said to be
>true, but the 5/8 gp I tried there only had 1/4 wl radials. But on 10m,
>in testing all three types, the 5/8 GP won here. But I was using appx
>3/4 wl radials instead of the normal 1/4 wl. One reason being it doubled
>on 30m as a 1/4 wl GP. But here on 10m, using a 30 mile ground wave
>path, the 5/8 gp won by a measurable amount over both the 1/4 wl gp and
>an end fed half wave with and without decoupling.

Well, there is an advantage to a taller antenna. It can get you above
clutter. But most likely if you saw a difference between a 1/2 wl and
a 5/8th wl in favor of the 5/8th wave something else was going on.

That isn't the same as the antenna having more gain.

Stacked 5/8th wl antennas butted end-to-end move the current maxima's
apart, and that increases collinear gain. But two half wave antennas
stacked with the same physical seperation of the current maxima's have
more gain.

73 Tom

1478. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 01:32:36 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c2l32vr1@slb0.atl.mindspring.net>
Source record: 165427

Richard:

Welcome. Heh, heh...

You ask additional interesting questions, leading perhaps to "complications".

Conundrum indeed.

Let's make it simple... the answer is the same anyway... if it helps, start both transmitters off at the same phase angle and let the frequency approach zero as closely as you wish...

Ohhh say... 0.00001 Hz or so... ! If that's not low enough just go down another few decades in frequency I don't really care. The answer is independent of frequency and wavelength. Why?

That should get "the thread" talking.

Two transmitters facing off on a common transmission line. Operating in the 3 * 10 E +13 meter band.

But the poor Bird Model 43 wattmeter won't work at that frequency! I do happen to have one (A reflected power meter that actually works at 0.00001Hz, the construction of this device is fairly simple.) should anyone wish to set up the experiment.

I am still interested to know the answers to my earlier questions. Two transmitters facing off on a common transmission line! I love it. What then is the forward and what is the reflected power?

They are valid questions, and they have "real" answers that hold at all frequencies, even DC...

The questions will certainly "test" "the threads" ability to "explain" using complicated travelling wave theories.

The answers will illuminate!

Heh, heh... what is the "reflected" power when the frequency is zero?

Where are the "waves" at that august frequency? Does the analysis using Pi, Pr, and Pt still hold for DC?

If not, why not?

What?

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3ae5bbdc.2407423592@news.seanet.com...
> On Mon, 23 Apr 2001 19:23:14 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> >Thoughts, comments, thread?
> >
> >-Peter K1PO
>
> Hi Peter,
>
> You have nothing to say about the phase of the two sources?
>
> S'pose it matters?
>
> Might do to talk about frequency too, but the conundrum is as
> confounding either way.
>
> 73's
> Richard Clark, KB7QHC

1479. Re: looking for info on the sgc smart tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 01:35:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE4D854.5FDD590B@IEEE.org>
Source record: 165428

DM wrote:
> I am thinking abt buying a scg 237 tuner for mobile and base use .has
> anyone used one? please let me know what you think of them, Dave

I used an SGC-230 for years and it worked great.
--
http://www.mindspring.com/~w6rca

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1480. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 01:43:59 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE4DA5F.7A951A82@IEEE.org>
Source record: 165429

"Peter O. Brackett" wrote:
> as Einstein once said, "don't make things any more complicated than they
> need to be!"

He also said: God doesn't roll dice. To which another physicist replied:
Not only does God roll dice, but he rolls them in the dark.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1481. Re: Beverage did not work, why??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 01:51:51 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae4d6b5.703519023@news.accessunited.com>
Source record: 165430

On Mon, 23 Apr 2001 19:40:47 GMT, "M. van Wijk" <pa5mw@home.nl> wrote:

>> > 2.) Even 175 meters might be a bit too long for 80 meters. The
>> > pattern of a Beverage is about as good as it ever gets when it is
>> > between 1 and 2 wavelengths long. Longer is NOT better for many
>> > reasons.
>>
> I know; we got the 175 mtr fom ON4UN which claims this is an optimum
>lenght
>(cone of silence story).

I'm fortunate to have the room to have multiple Beverages, and I have used them since the 70's at several very different locations. I currently have seven 580 foot long Beverages, as well as arrays of 880 foot long Beverages. I have something like 23 or 25 Beverages up now, and 16 verticals that I can phase.

I can phase any combination of antennas together to make a "big antenna" out of smaller antennas.

I can't swear about 80 meters, but what happens on 160 is at distances more than about 1000-1500 feet the phase and level is so rapidly changing that it become impossible to combine two antennas for more than a few seconds. The exception is when the ionosphere is very stable, and d fading is very slow and shallow.

I can watch the amplitude and phase changing rapidly, and phase rotates all through 360 degrees in short periods of time most nights at distances more than three wavelengths. I can't imagine how a wire with no phase adjustment could make use of such length reliably, and as a matter of course I have removed all my 1500 foot Beverages from service over two years ago....after poor results on 160.

So while a physically large antenna "looks pretty" on a model that shows antenna pattern, at some point the length becomes a disadvantage. All of the antenna contributes to random noise, yet the desired signal is never the proper phase long enough to add better than the noise if the antenna is too long.

As a matter of fact, fading can actually get much worse with a physically large array. That's why I limit the size of single arrays to an area no larger than two wavelengths, and can reduce the effective size by dropping elements if necessary.

I suspect 80 meters is at least a bit like 160, but I am not sure. I do know the large 160 antennas, like the 880 foot Beverages, are not as good as shorter Beverages on 80 and especially 40 meters.

Some people report the same effect, some people disagree. But most of the people I know with systems that let them A-B test antennas over a period of time have observations that agree with mine.

I'd get the antenna away from the fence, and make it out of two wire line so you can reverse it. You can use TV Twinlead, I used 300 ohm twinlead in some of my old two wire reversable antennas. 500 feet of twinlead would make a good 160/80 meter antenna, and it would even be usable on 40 in some cases.

You just have to design the transformers correctly.

73 Tom

1482. Visit today at - www.ab7sl.com -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 01:52:15 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <j%4F6.4096$5t3.320229@newsread1.prod.itd.earthlink.net>
Source record: 165431
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

Lots of STUFF to do at www.ab7sl.com such as...

All - NEW - W9INN antenna page!!

1. Ham Radio Links (some unusual)
2. Several Ham Radio Web Rings !
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5.Station Description
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8.Downloadable IOTA List
9.W7NH - Elmer Tribute
8.Prescott Arizona Page
9.Online DX Logbook
10.3D Art Gallery (downloads)
11.Music Page (downloads)
12.Frequently Asked Questions
13.Free-For-All Links Page
14.Guestbook
15.Equipment Photos
16.Downloadable DXCC Countries List
17.Downloadable ITU Prefixes List
18.W9INN Antennas Page
--

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

1483. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 03:26:29 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9c2rp5fau0@208.206.142.95>
Source record: 165432

W6RCecilA wrote:
>
> VE9SRB wrote:
> > Reflected power is not an imaginary or "made up" concept.
>
> Nope it's not, Steve. However, all it takes to keep reflected
> power from reaching the transmitter is a Z0-match in the antenna
> system often provided by an antenna tuner. If reflected power is
> not allowed to reach the transmitter, it "has no choice" but to
> join the generated power at the Z0-match and contribute to the
> forward power. In an antenna system with a Z0-match, forward
> power is indeed equal to generated power plus reflected power.
> You seem to have been talking about antenna systems with Z0-
> mismatches where some of the reflected power is lost in the
> generator. The entire discussion would be immediately resolved
> if everyone would preface their statements with either: "In a
> Z0-matched antenna system, ..." or "In a Z0-mismatched antenna
> system, ..."

I believe I have unintentionally misled the thread here. The article's
author did indeed use a antenna matching network and adjust the
transmitter to the same output power both before and after introducing
the mismatch at the antenna. I left the details out for brevity. His
point was not new- If you use an antenna tuner you don't need to be
concerned about SWR if your coax feedline doesn't have excessive losses.

Dick

> --
> http://www.mindspring.com/~w6rca
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1484. Re: Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 03:36:53 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9c2sclgul0@208.206.142.95>
Source record: 165433

Tom W8JI wrote:
>
> Since most lightning takes the form of common-mode currents on the
> outside of the shield, directly burying the coax or enclosing it in
> metallic pipe that is directly buried would help dissipate some energy
> by providing an alternate path to earth. It doesn't matter what
> material the conduit is, as long as it is conductive, or even if it is
> there. As a matter of fact, it is better to not have it there, and
> have the coax directly buried.

Why does the NEC prohibit running a ground wire inside a conduit? Does
it act as a waveguide beyond cutoff?

Dick

1485. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 03:43:04 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE4F648.1D6850D0@toast.net>
Source record: 165434

"Peter O. Brackett" wrote:

> John:
>
> [snip]
> >
> > It occurs to me that if you send a narrow pulse down a long enough
> transmission
> > line, shorted at the end, that you will clearly see a reflected pulse at
> the
> > entry end at some delay time later. It can be viewed on an oscilloscope,
> which
> > is just a fancy voltmeter, and so is as real as what is measured by any
> > voltmeter or ammeter.
> >
> > john
> >
> [snip]
>
> Agreed!
>
> That is the transient case.
>
> But in that case where is the power?

Power is transfer of energy per unit time. So there is instantaneous power
wherever there is energy in motion at that moment.

>
> An energy quanta moves down the line and back, it does not deliver power...
>
> Power is energy delivered per unit time. Joules is energy. Watts is Joules
> per second.

True, except the delivery can be from point A to point A plus one inch, it
doesn't have to be to a load.
And so we have (or had, for short moments) forward power (rate of transfer of
energy in direction 1) and a little later, reverse power (rate of transfer of
energy in direction 2). Now we just crank up the pulse repetition rate until all
the pulses get really confused, but we still have forward and reverse power.
Then if we terminate the line in its characteristic impedance, suddenly we have
no reflections, just forward power. Then we fuss with the termination, and we
start having reverse power again.

>
> In the "steady state" case the reflected power equals the incident power

> minus the transmitted or delivered power.
>
> Pr = Pi - Pt. This equation is valid at all times t. Since all of the P's
> are indeed continuous functions of time.
>
> In the transient case there is no power, there is only energy...
>
> Let's call these energies... Er, Ei and Et. These energies are not
> functions of time but are simply quanta. (OK the energy might be calculated
> by integrating over some short time period during which the energy
> persists.)
>
> And so the equation:
>
> Er = Ei - Et is not valid at all times t as is the equation Pr = Pi - Pt.
>
> (Sorry about using t for two purposes here.)
>
> In fact a Bird Wattmeter would not be able to provide a confirmation of this
> equation for the meter needle would make but two separate and barely
> observable blips.
>
> One could make the argument, and also try to test it by increasingly
> difficult measurements, that the steady state is in fact the superposition
> of an infinity of infinitesimal transient events, but... that is so
> unsatisfying... why bother... it makes things more complicated than
> necessary. Why make models of reality more complicated than necessary?

Especially when you have to go back to the big bang to start set those wave
trains in motion. And aim them just right.

>
> It's sort of like the "difference" between differential equations and
> difference equations. They can both be models of reality, but models they
> are, and... those who adhere vehemently to the belief that one or the other
> "is" reality are often surprised when the model reaches it's limits and does
> not match reality.
>
> One encounters this in electromagnetic analysis programs, for instance those
> like EZENEC which use the NEC "method of moments" which is essentially a
> model of reality based upon "difference" equations. Often if care is not
> taken in setting up the parameters of that model of reality one gets useless
> results that don't match reality.
>
> The same is true when trying to reconcile transient and steady state
> transmission line wave mechanics, one should not become enamored with one
> view over the other... simplicity is best.

Then reflected power isn't entirely a fiction, it's just not the only way to
look a things? :-)

john

1486. Re: grounding wire in conduit

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 03:54:50 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE4F90A.DABB76FD@bwcc.com>
Source record: 165435

Dick Carroll wrote:
> Why does the NEC prohibit running a ground wire inside a conduit?
Please take care in this regard.
What section are you citing?

I'll cite a section that requires the conduit over the grounding wire for its own protection from physical damage.

Then I can say that the NEC requires a grounding wire to be in conduit.

But you have to know the circumstances.
And there are far more circumstances where the grounding wire must be in a conduit or is merely permitted to be outside the conduit than where it prohibited from being inside a conduit.

1487. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 03:55:47 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9c2tg3$k5g$0@208.206.142.95>
Source record: 165436

Wes Stewart wrote:
>
> On 21 Apr 2001 06:45:31 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>
> [snip]
> >
> >
> > Read an interesting SWR article yesterday by Carl Drumeller, W5JJ, in a
> >28 year old issue of 73 magazine. He went about proving that there is no
> >such thing as reflected power. Reflected voltage and current are 90ï¿½ out
> >of phase. Power = volts x amps x the cosine of the phase angle.
> >The cosine of 90 is zero, so (X watts) x (zero) = zero. Therefore no
> >reflected power exists. Ever. (presumably so long as that 90ï¿½ phase
> >relationship exists.)
>
> I can (and have thousands of times) use(d) a directional coupler and a
> thermocouple or thermistor power sensor to measure reflected power. Either of
> these two sensors responds only to temperature rise, they don't know a volt from
> an amp. If this power is fictitious, why does the termination in the sensor
> heat up????
>
> >
> > He also mentioned something that should be obvious - the reason why
> >coax losses are higher with higher SWR. With an SWR of 2:1 the voltage
> >and current on the coax is twice as great as with 1:1 SWR, so that
> >doubles dielectric loss from the doubled voltage and the 1^2 x R losses
> >are doubled because of the doubled current flowing.
> >(With every increase in SWR the losses go up in direct multiples, IE
> >with SWR of 4:1, losses are four times those with a 1:1 match.)
>
> Baffle gab. These reflected volts and amps are supposed to be 90 degrees out
> of phase with respect to each other, right? I think you would have to agree
> that the forward volts and amps are in phase with each other, so what is this
> special relationship that allows the total voltage and the total current to add
> in phase, while at the same time the reflected components have their 90 degree
> relationship. This is truly magical.
>
> Furthermore, since the VSWR (ratio between the minimum and maximum voltages) is
> 2:1, the magnitude of the reflected voltage (rho) must be 0.3333.
>
> 1 + .3333
> VSWR = ----------------- = 2.0
> 1 - .3333
>

> How can the author say the voltage is doubled? According to him, 1 plus 0.3333
> equals two. Must be that special 90 degree relationship at work. <g>
>
> >
> > For some reason these facts are almost never stated so clearly.
>
> These facts are not stated clearly, because they are not facts.
>

Whoops! I can see that I should have said that in the article all this occurs *after* the transmitter is matched to the line with a tuner. He set up a 100 watt transmitter through a tuner matched to a 50 ohm line and a 50 ohm dummy load for a SWR of 1 to 1. Then he changed the load to 12.5 ohms ,retuned the tuner for a transmitter output of 100 watts and an SWR of 4:1 and an indicated forward power of 120 watts and an indicated reflected power of 20 watts. Then he found the voltage and current minimums,which he said were 90ï¿½ apart and easier to find than the maximums, and applied the cosine rule....

Dick

1488. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 04:07:12 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c2u4tpaa1@slb6.atl.mindspring.net>
Source record: 165437

Cecil:

In Vegas they don't let you roll dice in the dark. Heh, heh.

I suppose in heaven God can do what he wants... but... I would have assumed that God would be more friendly with his "customers" and it would only be in Lucifer's paradise that they would tolerate rolling dice in the dark!

In heaven (The big ham shack in the sky!) VSWR I'm told, doesn't matter, you will be able to work "The Universe" with a microwat, feeding a one inch antenna...

On the other hand, in Hell, well... you will need to understand incident and reflected power and VSWR and backward and forward waves and all that other "hellish" stuff. And the QRM and QRN will be murder.... no one will QSL and all signals are CW at 45 wpm!

Be good hams and you will go to heaven, where there is never any refelected power, but...be bad hams and you will suffer the vagaries of mismatches and travelling wave analysts.

Bless you Cecil, you are a gem!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE4DA5F.7A951A82@IEEE.org...
> "Peter O. Brackett" wrote:
> > as Einstein once said, "don't make things any more complicated than
they
> > need to be!"
>
> He also said: God doesn't roll dice. To which another physicist replied:
> Not only does God roll dice, but he rolls them in the dark.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1489. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 04:10:41 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9c2uc1$90p$1@bashir.peak.org>
Source record: 165439

Tom W8JI <2w8ji@akorn.net> wrote:
:>
:>It partly depends on where you are making the SWR measurement. If it is before
:>the tuner, then it simply means that your tuner is providing a 50 ohm load to
:>the transmitter. It says nothing about out efficient a radiator you have on
:>the other side of the tuner. For example, you could remove the tuner and
:>antenna and replace them with a 50 ohm dummy load. You would get a 1:1 SWR
:>indication, but the signal transmitted would be minute.

: SWR does not indicate system efficiency.

Which is what I stated above.

:>It is possible that the tuner is absorbing most of your power and radiating it
:>as heat.

: But unlikely. In most cases the tuner would fail if power were being
: "ate up" in the tuner. Unless you run very low power or have a very
: big tuner.

Most marine radios are low power - usually 25 watts or less.

:>: It's difficult for me to believe that a grounded wire parallel to and within a
:>: few feet of the antenna won't be absorbing some portion of the signal.
:>
:>Sure, it will absorb a small amount of the signal. But not anywhere near the
:>amount needed to produce the poor transmission/reception that you report.

: It certainly can be causing big problems. It greatly affects the
: pattern of the antenna, and can make the radiation resistance very
: low....leaving him with mainly loss-related resistances to load into.

It can affect the radiation pattern, but not much. Remember that the
antenna is almost vertical - so is the other backstay. It is basically
a base loaded Marconi, and probably with a rather imperfect ground.

The radiation resistance will be lowered, which reduces efficiency, but
remember that this is a separate non-connected wire. It would act like
a parasitic element that is too close to the radiating element.

One thing that does need to be checked is that unused backstay is not
a resonant length at the operating frequencies - In this case, the
combination of stay and mast need to be checked. If the rig performs
poorly over all the marine frequencies, then this is unlikely to be
the problem.

This type of antenna has been used for many years, with decent results.
So something has to be wrong with the installation itself. Aside from

potential antenna problems, it could be a defective marine radio, or a defective tuner. There is a small chance that it could be defective coax - although that might be obvious. It could be a combination of all of these.

I am still waiting to hear where the SWR was checked. I would also like to know if the output power has been checked.

--
Bill Nelson (billn@peak.org)

1490. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 04:17:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c2up2pjn1@nntp9.atl.mindspring.net>
Source record: 165438

John:

Thanks for contributing your thoughts to the thread. All that high
frequency RF and HF stuff is fine business, but...

Consider the case of DC... or if you don't like that, consider the case
where the frequency is 0.00000000000000000001 Hz.

We connect a 50 Ohm DC transmitter (or extremely low frequency as above)
transmitter to a 100 foot transmission line with 50 Ohm surge resistance,
which is connected in turn to a 100 Ohm load.

We wait for a week till things settle down, if they don't "settle down" then
we wait for a year... whatever, you know where I'm going.

Then... we make some measurements.

Will we find travelling waves?

Will there be reflected power?

Will there be forward or incident power?

Will there be transmitted power?

Will the reflected wave be "b = V - IR"?

Will the incident wave be "a = V + IR"?

Will the reflected power Pr be equal to:

Pr = Pi - Pt (Where Pt is the [DC] power absorbed by the load resistance?)

Will a Bird Model 43 wattmeter be able to "resolve" the [DC] forward and
reflected voltages?

Can you think of an instrument that would resolve them?

What?

Is the refelected power travelling back down the wires while the forward
power is travelling outward?

What?

Thoughts, comments?

-Peter K1PO

We wait for
"John O'Flaherty" <oflahert@toast.net> wrote in message

news:3AE4F648.1D6850D0@toast.net...
> "Peter O. Brackett" wrote:
>
> > John:
> >
> > [snip]
> > >
> > > It occurs to me that if you send a narrow pulse down a long enough
> > transmission
> > > line, shorted at the end, that you will clearly see a reflected pulse
at
> > the
> > > entry end at some delay time later. It can be viewed on an
oscilloscope,
> > which
> > > is just a fancy voltmeter, and so is as real as what is measured by
any
> > > voltmeter or ammeter.
> > >
> > > john
> > >
> > [snip]
> >
> > Agreed!
> >
> > That is the transient case.
> >
> > But in that case where is the power?
>
> Power is transfer of energy per unit time. So there is instantaneous power
> wherever there is energy in motion at that moment.
>
> >
> > An energy quanta moves down the line and back, it does not deliver
power...
> >
> > Power is energy delivered per unit time. Joules is energy. Watts is
Joules
> > per second.
>
> True, except the delivery can be from point A to point A plus one inch, it
> doesn't have to be to a load.
> And so we have (or had, for short moments) forward power (rate of transfer
of
> energy in direction 1) and a little later, reverse power (rate of transfer
of
> energy in direction 2). Now we just crank up the pulse repetition rate
until all
> the pulses get really confused, but we still have forward and reverse
power.

> Then if we terminate the line in its characteristic impedance, suddenly we
have
> no reflections, just forward power. Then we fuss with the termination, and
we
> start having reverse power again.
>
> >
> > In the "steady state" case the reflected power equals the incident power
> > minus the transmitted or delivered power.
> >
> > Pr = Pi - Pt. This equation is valid at all times t. Since all of the
P's
> > are indeed continuous functions of time.
> >
> > In the transient case there is no power, there is only energy...
> >
> > Let's call these energies... Er, Ei and Et. These energies are not
> > functions of time but are simply quanta. (OK the energy might be
calculated
> > by integrating over some short time period during which the energy
> > persists.)
> >
> > And so the equation:
> >
> > Er = Ei - Et is not valid at all times t as is the equation Pr = Pi -
Pt.
> >
> > (Sorry about using t for two purposes here.)
> >
> > In fact a Bird Wattmeter would not be able to provide a confirmation of
this
> > equation for the meter needle would make but two separate and barely
> > observable blips.
> >
> > One could make the argument, and also try to test it by increasingly
> > difficult measurements, that the steady state is in fact the
superposition
> > of an infinity of infinitesimal transient events, but... that is so
> > unsatisfying... why bother... it makes things more complicated than
> > necessary. Why make models of reality more complicated than necessary?
>
> Especially when you have to go back to the big bang to start set those
wave
> trains in motion. And aim them just right.
>
> >
> > It's sort of like the "difference" between differential equations and
> > difference equations. They can both be models of reality, but models
they
> > are, and... those who adhere vehemently to the belief that one or the

other
> > "is" reality are often surprised when the model reaches it's limits and
does
> > not match reality.
> >
> > One encounters this in electromagnetic analysis programs, for instance
those
> > like EZENEC which use the NEC "method of moments" which is essentially a
> > model of reality based upon "difference" equations. Often if care is
not
> > taken in setting up the parameters of that model of reality one gets
useless
> > results that don't match reality.
> >
> > The same is true when trying to reconcile transient and steady state
> > transmission line wave mechanics, one should not become enamored with
one
> > view over the other... simplicity is best.
>
> Then reflected power isn't entirely a fiction, it's just not the only way
to
> look a things? :-)
>
> john
>
>
>
>

1491. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 04:47:54 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE5057A.26A52DB6@bwcc.com>
Source record: 165440

"Peter O. Brackett" wrote:
> Thanks for contributing your thoughts to the thread. All that high
> frequency RF and HF stuff is fine business, but...
>
> Consider the case of DC... or if you don't like that, consider the case
> where the frequency is 0.00000000000000000001 Hz.
I think you have a case where there cannot be a standing wave because your conductor is too short.
Now if your conductor were 19 septillion miles long....

1492. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 04:58:22 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE507EE.A780D642@toast.net>
Source record: 165441

"Peter O. Brackett" wrote:

> John:
>
> Thanks for contributing your thoughts to the thread. All that high
> frequency RF and HF stuff is fine business, but...
>
> Consider the case of DC... or if you don't like that, consider the case
> where the frequency is 0.00000000000000000001 Hz.
>
> We connect a 50 Ohm DC transmitter (or extremely low frequency as above)
> transmitter to a 100 foot transmission line with 50 Ohm surge resistance,
> which is connected in turn to a 100 Ohm load.
>
> We wait for a week till things settle down, if they don't "settle down" then
> we wait for a year... whatever, you know where I'm going.
>
> Then... we make some measurements.
>
> Will we find travelling waves?
>
> Will there be reflected power?
>
> Will there be forward or incident power?
>
> Will there be transmitted power?
>
> Will the reflected wave be "b = V - IR"?
>
> Will the incident wave be "a = V + IR"?
>
> Will the reflected power Pr be equal to:
>
> Pr = Pi - Pt (Where Pt is the [DC] power absorbed by the load resistance?)
>
> Will a Bird Model 43 wattmeter be able to "resolve" the [DC] forward and
> reflected voltages?
>
> Can you think of an instrument that would resolve them?
>
> What?
>
> Is the refelected power travelling back down the wires while the forward
> power is travelling outward?

>
> What?

If you are talking about a very low frequency, say 1*10^-20 Hz, then it's the same as at any other frequency, just slower.
If you are talking about dc, then the dc had to start sometime, and there was a transient then. That transient would have excited a reflection if there were a mismatch.
If you are talking about a pulse, well if the transmission line is shorted at the end, and correctly matched at the beginning, then there is just that one reflection, and silence returns.
Similarly with the transient that establishes the dc current. After some time you can consider it to be in a steady state. In that steady state, there would be no reflected power. Since there would be no reflected power, it would be vain to speak of forward power... there would be the power dissipated, and no reflected power to distinguish it from. So reflected power doesn't exist at dc, and would become very difficult and time consuming to measure at very low frequencies. But I think it's still as real as any of the other abstractions use to analyze electricity.

Do you think the term 'reflected power' has its place in analyzing transmission lines excited with rf at ordinary frequencies?

john

1493. Re: END FED ANT QUESTION

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 05:17:58 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9c32a6$l2t$1@bashir.peak.org>
Source record: 165444

marvin rosen <n3bqa@starpower.net> wrote:
: maybe i should reexamine my question! is there such a thing as an end fed
: 80-10 mtr ant using coax as the feed line?

Certainly. But you would want the tuner at the antenna, not in the shack,
unless the coax run was very short.

--
Bill Nelson (billn@peak.org)

1494. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 05:26:57 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c32qfakm1@slb7.atl.mindspring.net>
Source record: 165442

Denver:

If the travelling wave analysis is valid for a long conductor, then why is it not valid for a short conductor?

Where 's the magic in the length?

If they are valid, then all of the travelling wave equations and analysis must also be valid for DC as well as for RF, no?

Well they are! And so, in the case of DC, the "reflected voltage wave" is still:

b = V - IR

but... there are no "waves" to be seen, on the line... heh, heh.

So where does the reflected power go when the line is excited by a DC source??

What?

Where are all of those travelling wave analysts when you need them? Heh, heh...

As Einstein said, Keep It Simple Stupid - - KISS.

We don't need to maintain a complicated and arduous "fiction" which "visualizes" that "waves of power" are bouncing up and down a transmission line in order to understand what is happening on a transmission line.

All we really need to know is the voltage V and current I on the line at some point, the surge impedance of the line, and the load impedance of the load connected to the line, and from those "simple to measure" quantites we can deduce, calculate, design, and analyze any and all things of interest.

Discussing such arcane matters as forward and reflected power, may make us seem sophisticated, and knowledgeable, etc... but....

There is simply no need to introduce the "fiction" of reflected power, and forward power, etc... in order to accurately engineer and operate radio systems efficiently.

Those analyses are mere exercises in mathematical aesthesitics, and prove nothing but one's prowress at algebraic manipulation, completely unecessary for the working engineer.

Sort of like using calculus to find the area of a circle, when the formula for that particular conic sections is readily available. You don't have to

"prove" it every time you use it. Do we have to understand the whole operation of the digestive system in order to eat our dinner?

Thoughts, comments?

-Peter K1PO

"Denver Braughler" <Braughler@bwcc.com> wrote in message news:3AE5057A.26A52DB6@bwcc.com...
> "Peter O. Brackett" wrote:
> > Thanks for contributing your thoughts to the thread. All that high
> > frequency RF and HF stuff is fine business, but...
> >
> > Consider the case of DC... or if you don't like that, consider the case
> > where the frequency is 0.00000000000000000001 Hz.
> I think you have a case where there cannot be a standing wave because your conductor is too short.
> Now if your conductor were 19 septillion miles long....

1495. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 05:33:14 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c3369$956$1@slb7.atl.mindspring.net>
Source record: 165443

Reg:

Agreed!

But... only if the "reference impedance" in one's "reflected voltage meter"
is also a resistance! [Usually the case.]

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9c215t$7fi$1@plutonium.btinternet.com...
> Peter, believe me, I do understand you are are trying to be
> helpful.
>
> But it is a mathematical, academic, theoreical, undeniable fact,
> that the antenna plus feedline is resonant and will register
> minimum SWR versus frequency, whatever the minimum SWR may be, when
> the antenna plus feedline is resonant, ie., the feedpoint
> resistance is a pure resistance.
>
> --
> **********
> Regards, Reg, G4FGQ
> Free radio design & modelling software
> http://www.btinternet.com/~g4fgq.regp
>
> **********
>
> Peter O. Brackett <ab4bc@ix.netcom.com> wrote in message
> news:9besr7jit1@slb0.atl.mindspring.net...
> > Reg:
> >
> > The frequency of the minimum value of VWSR is a good indicator of
> resonance,
> > however it is a more complicated process for the meter to come up
> with the
> > VSWR reading... just in case something is wrong with the meter...
> >
> > Wouldn't a "safer" indication of resonance, less subject to
> errors and fauty
> > meter operation, be that the antenna plus feedline is resonant
> when the
> > measured reactance equals zero. Xs = 0. Of course the
> resistance will be
> > whatever it will be at resonance, but the reactance has to be

> zero.
> >
> > Just trying to be helpful.
> >
> > -Peter K1PO
> >
> >
> > "Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
> > news:9bep3u$9h4$1@plutonium.btinternet.com...
> > > The antenna *PLUS* feedline is resonant when the SWR is at its
> > > minimum value whatever the actual value of the SWR might be.
> > > ---
> > > **********
> > > Regards, Reg, G4FGQ
> > > Free radio design & modelling software
> > > http://www.btinternet.com/~g4fgq.regp
> > >
> > > **********
> > >
> > >
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>

1496. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 05:41:22 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE51202.359912E1@bwcc.com>
Source record: 165445

"Peter O. Brackett" wrote:
> If the travelling wave analysis is valid for a long conductor, then why is
> it not valid for a short conductor?
>
> Where's the magic in the length?
If the conductor is too short, the reflection will be nearly simultaneous with the original wave.
I didn't mean that it's not valid.
It's just not measurable.

> If they are valid, then all of the travelling wave equations and analysis
> must also be valid for DC as well as for RF, no?
I have no problem with that.

> So where does the reflected power go when the line is excited by a DC
> source??
Please explain.
I don't believe that I expect a reflection in a line carrying time-invariant DC.

1497. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 05:54:00 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c34d6fnt1@slb0.atl.mindspring.net>
Source record: 165446

Denver:

[snip]
> > So where does the reflected power go when the line is excited by a DC
> > source??
> Please explain.
> I don't believe that I expect a reflection in a line carrying
time-invariant DC
[snip]

At what particular frequency did you think the reflections would stop? Say
at f = 0 + df? Where df is the infinitesimal of calculus, or...

What?

Do you mean that as we approach lower and lower frequencies the reflected
power goes away somehow?

By what law or formula does reflected power fall off with frequency?

Do you mean to say that the reflected power Pr is a function of frequency
say Pr(f) = ??? What is that function?

Come on now, you have to be consistent... either there is reflected power or
there is not!

Don't waffle here, we are about to get to the bottom of this "fiction"...
tell me... there is no reflected power at frequencies below say f = 0.001 Hz
and there is reflected power above that frequency, or ....

What???

-Peter K1PO

1498. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 06:10:00 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c35b6utj1@slb0.atl.mindspring.net>
Source record: 165447

John:

[snip]
>After some time
> you can consider it to be in a steady state. In that steady state, there would
> be no reflected power. Since there would be no reflected power, it would be vain
> to speak of forward power... there would be the power dissipated, and no
> reflected power to distinguish it from. So reflected power doesn't exist at dc,
> and would become very difficult and time consuming to measure at very low
> frequencies. But I think it's still as real as any of the other abstractions use
> to analyze electricity.
[snip]

At what particular frequency did you think the reflections would stop?

Say at f = 0 + df? Where df is the infinitesimal of calculus, or...

What?

Do you mean that as we approach lower and lower frequencies the reflected power goes away somehow?

By what law or formula does reflected power fall off with frequency?

Do you mean to say that the reflected power Pr is a function of frequency say Pr(f) = ??? whatever... that gradually reduces to zero as we approach DC?
Or does the reflected power magically dissappear below some frequency that is "low enough".

What then is the form of that function?

Come on now, you have to be consistent... either there is reflected power or there is not!

Don't waffle here, we are about to get to the bottom of this reflected power "fiction"...

It won't really hurt... admit it...

Tell me... there is no reflected power at frequencies below say f = 0.001 Hz and there is reflected power above that frequency, or .... whatever you wish,
and then provide supporting evidence.

Otherwise... get with it... that so called reflected power is nothing more nor less than a mathematical artifice to help some "needy" folks to "visualize" the operation of a transmission line. It is not mathematically wrong, just superflous, like the human appendix. Throw it out and no one will miss it!

I maintain that if you claim that there is no reflected power at DC then there is no reflected power at any frequency. Since zero is just as valid a frequency as any other.

Personally I assert that there is reflected power at DC (zero frequency) and it is the same ficticious reflected power that you will find at any frequency.

Just that and nothing more, a fiction created by mathematical manipulation, the reflected power Pr is a mathematical "fiction" calculated by subtracting the actual real power transmitted or delivered to the load Pt from the ficticious incident power Pi which would be supplied to an actual matched load if it were present.

The calculation is done by simple arithmetic symbolized by the formula below:

Pr = Pi - Pt

The only "real" power is Pt, all the rest is "visualization" and mathematical aesthetics.

What???

-Peter K1PO

1499. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 06:10:30 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE518D6.1C653F3C@toast.net>
Source record: 165448

"Peter O. Brackett" wrote:

> Denver:
>
> [snip]
> > > So where does the reflected power go when the line is excited by a DC
> > > source??
> > Please explain.
> > I don't believe that I expect a reflection in a line carrying
> time-invariant DC
> [snip]
>
> At what particular frequency did you think the reflections would stop? Say
> at f = 0 + df? Where df is the infinitesimal of calculus, or...
>
> What?
>
> Do you mean that as we approach lower and lower frequencies the reflected
> power goes away somehow?
>
> By what law or formula does reflected power fall off with frequency?
>
> Do you mean to say that the reflected power Pr is a function of frequency
> say Pr(f) = ??? What is that function?
>
> Come on now, you have to be consistent... either there is reflected power or
> there is not!
>
> Don't waffle here, we are about to get to the bottom of this "fiction"...
> tell me... there is no reflected power at frequencies below say f = 0.001 Hz
> and there is reflected power above that frequency, or ....
>
> What???

It seems to me that frequency, logically at least, reaches to 1/infinity, that is, there is no frequency that you can claim is the lowest possible frequency. Thus it wouldn't be appropriate to say that reflected power ceases to exist at any frequency that is a frequency. DC, sometimes called zero frequency, is actually another thing, with it's own simpler analyses. At what frequency does the fiction of reactance drop out of existence?

john

1500. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 06:22:44 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE51BB4.650BA99E@bwcc.com>
Source record: 165449

"Peter O. Brackett" wrote:
> At what particular frequency did you think the reflections would stop?
Perhaps I don't.

> By what law or formula does reflected power fall off with frequency?
We could ask at what frequency of sound is there no echo.

> Do you mean to say that the reflected power Pr is a function of frequency
> say Pr(f) = ???
Actually the reflectivity potential may be dependent upon frequency.

> What is that function?
I don't know.

> Come on now, you have to be consistent... either there is reflected power or
> there is not!
Or it is a trick question.

I think there is a relationship between the length of the conductor and the frequency.
A conductor that is only 1 trillionth of a wavelength long can't experience a measurable reflection.
But I'm guessing at the moment.
The explanation may be that in a short conductor the voltage difference is nearly zero measured along the conductor.

1501. Re: antenna plans needed

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 06:27:33 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE51CD5.74E3@wt.net>
Source record: 165451

stormspotter wrote:
>
> basically what I'm needing is something I can throw in a tree when working
> club events. We work traffic control/communications for the local chamber of
> commerce's fun fest & bicycle race. Thanks for any help you can give.
> Tony

You can make s j-pole that could work in this manner. Myself, I'd probably just take along a couple of fence rails and make a mast to mount a 1/4 wl GP on. I have a drive on ramp that will self support the mast. The fence rails are 10 ft a piece and fit together. They are cheap at home depot. My drive on madt holder is homebrew, but I've seen them in QST etc. This might be more than you want to do, but the advantage is you don't need any trees, and you can mount either a vertical or a small beam. Also HF dipoles if so inclined. If you want to try the twin lead j-pole, I think there may be plans on the net for it. MK

--
http://web.wt.net/~nm5k

1502. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 06:30:28 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE51D84.E0692266@toast.net>
Source record: 165450

"Peter O. Brackett" wrote:

> John:
>
> [snip]
> >After some time
> > you can consider it to be in a steady state. In that steady state, there
> would
> > be no reflected power. Since there would be no reflected power, it would
> be vain
> > to speak of forward power... there would be the power dissipated, and no
> > reflected power to distinguish it from. So reflected power doesn't exist
> at dc,
> > and would become very difficult and time consuming to measure at very low
> > frequencies. But I think it's still as real as any of the other
> abstractions use
> > to analyze electricity.
> [snip]
>
> At what particular frequency did you think the reflections would stop?
>
> Say at f = 0 + df? Where df is the infinitesimal of calculus, or...
>
> What?
>
> Do you mean that as we approach lower and lower frequencies the reflected
> power goes away somehow?
>
> By what law or formula does reflected power fall off with frequency?

Who says it does?

> Do you mean to say that the reflected power Pr is a function of frequency
> say Pr(f) = ??? whatever... that gradually reduces to zero as we approach
> DC?
> Or does the reflected power magically dissappear below some frequency that
> is "low enough".
>
> What then is the form of that function?
>
> Come on now, you have to be consistent... either there is reflected power or
> there is not!
>
> Don't waffle here, we are about to get to the bottom of this reflected power
> "fiction"...

>
> It won't really hurt... admit it...
>
> Tell me... there is no reflected power at frequencies below say f = 0.001 Hz
> and there is reflected power above that frequency, or .... whatever you
> wish,
> and then provide supporting evidence.
>
> Otherwise... get with it... that so called reflected power is nothing more
> nor less than a mathematical artifice to help some "needy" folks to
> "visualize" the operation of a transmission line. It is not mathematically
> wrong, just superflous, like the human appendix. Throw it out and no one
> will miss it!
>
> I maintain that if you claim that there is no reflected power at DC then
> there is no reflected power at any frequency. Since zero is just as valid a
> frequency as any other.

Sorry, it's another thing entirely. It is _no_ frequency. As I pointed out in another reply, the frequency scale goes to 1/infinity. It never reaches zero. And if reflected power is a fiction because it doesn't apply at zero frequency, then so is reactance.

>
> Personally I assert that there is reflected power at DC (zero frequency) and
> it is the same ficticious reflected power that you will find at any
> frequency.
>
> Just that and nothing more, a fiction created by mathematical manipulation,
> the reflected power Pr is a mathematical "fiction" calculated by subtracting
> the actual real power transmitted or delivered to the load Pt from the
> ficticious incident power Pi which would be supplied to an actual matched
> load if it were present.
>
> The calculation is done by simple arithmetic symbolized by the formula
> below:
>
> Pr = Pi - Pt
>
> The only "real" power is Pt, all the rest is "visualization" and
> mathematical aesthetics.

It would make as much sense to say that resistance is a convenient visualization for the proportionality between voltage and current, and has no real existence. If you prefer to do without some particular abstraction, that's your privilege.

john

1503. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 07:06:34 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae50ba0.41067669@news.aepnet.org>
Source record: 165452

On Mon, 23 Apr 2001 01:22:55 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Wes:
>
>Have fun at dinner...

It was delicious.
>
>You are correct.
>
>It can be proved (theoretically) that a lossless directional coupler cannot
>be implemented in practice. The development of that proof will teach one a
>lot about travelling waves and their measurements. There will always be at
>least the 3dB losses that you allude to and likely even more.

Not so. If I configure a directional coupler so that it responds only
to the reverse direction, almost all of the input power gets to the
output port. Any device will have some loss, and coupler directivity
is never infinite, so there will be a bit of loss in the forward
direction too.

"Directivity" in this sense is the "goodness" of the coupler. In the
ideal, power (and I do mean power) appears at the coupled port from
only one direction. If the coupler is supposed to be sampling
reflected power, it should not respond to the incident, or forward
power. Because no coupler is ideal there will be some forward power
appearing at the coupled port.

If the coupling ratio is for example, 20 dB then power reflected from
the load appears at the coupled port at a level 20 dB below the total.
If I apply 10 W to the input port from a well-matched source and short
the output port of the coupler, 100 mW is available at the coupled
port. If the load on the coupled port is also well-matched then the
100 mW is dissipated in that load and 9.9 W are delivered back to the
source where they are also dissipated. (BTW, a short circuit is one
of the "standard" loads used in network analysis to calibrate the
instrument.)

If this coupler has a directivity of 20 dB, then there will also be
power appearing at the coupled port resulting from the incident 10 W.
Since the coupling ratio is 20 dB and the directivity is 20 dB, this
level will be 40 dB lower than the incident power. Forty dB down from
10 W is 1.0 mW. Therefore, with no other loss, the power available at
the output port isn't the full 10 W but instead 9.999 W.

Now here is where things can get interesting (topic drifting back to SWR)...

Using the same coupler, let's see what happens when instead of the short circuit on the output, I install a perfect load. Now there is by definition, no reflected power. My source is still delivering the full 10 W, but because of finite directivity, there is still 1.0 mW appearing at the coupled port. I "calibrated" the forward power by using a short circuit on the ouput and getting a reference power. You should recall this was 100 mW.

My indicated return loss (the ratio of reflected to forward power expressed in dB) is the ratio of 1 mW / 100 mW or, no surprise, 20 dB. (Purists will note that this isn't exact because I neglected phase for the time being) Now 20 dB return loss equates to an SWR of 1.22:1 so this perfect load looks like a mismatch because of test equipment error.

Suppose for a moment that we now connect this "scalar network analyzer" (that's what it's called in industry) to a load that actually is 1.22:1. We already know that this is a return loss of 20 dB, so with our 10 W incident signal, we have a reflected signal level of 100 mW. This reflected signal suffers the 20 dB coupling loss and appears at the coupled (test) port as 1 mW.

Now we have two signals at the test port; the 1 mW reflected and the 1 mW resulting from the non-ideal directivity. If these two signals are in phase, they sum to 2 mW, or 3 dB more than expected. The indicated return loss is now 17 dB, not 20 dB. This is equivalent to 1.33:1 SWR. Our real 1.22:1 SWR measures 1.33:1. At this point you say, "So what?"

Bear with me just a minute longer. If the two signals at the test port happen to be exactly 180 degrees out of phase, they cancel completely. The reflected power measures zero, so the indicated return loss infinite, or an SWR of 1.0:1. The error in measuring return loss is +3 dB / - infinity dB. That's a lot of error.

If you are still with me you are probably thinking, "Stewart, who gives a rat's behind about this. This is ham radio for goodness sake."

To which I reply, "It does make a difference when you are using your 'trusty' brand xyz handheld analyzer to make what you believe to be a semi-precision measurement and you don't have a clue about what the directivity of the internal coupler is or even what the return loss of the crappy SO-239 connector is."

>
>As to the "reflected power" burning out the aircraft radar, are you
>referring to the "mismatch" presented to the transmitter screwing up the
>power amplifier or the strong local echo burning out the radar receiver
>front end?

I'm taking about burning out the receiver with the "fictitious"
reflected power. This is the same kind of "fictitious" power that
reflects from every other discontinuity in a transmission system.

[I have to snip something, as Tom says elsewhere, I don't have time to
write a book]

>This does not mean that reflections and reflected waves have no existence,
>they most certainly do...
>
>It is just that in an actual mismatched measurement set up, the so called
>"reflected power" is not an actual power per se... rather it is an useful
>artifice to help us to make other calculations. One cannot measure Pr
>directly in a mismatched measurement set up... because it doesn't exist.
>Similarily one cannot measure Pi directly in a mismatched measurement set up
>because it doesn't exist. The only time that Pi exists is when the load and
>generator have impedances which are perfect complex conjugates. In that
>case and that case only Pi is the power that is poured into the sum of the
>real parts of the load and generator impedances.
>
>How can you measure this incident power with a thermistor? The thermistor
>would have to be both the internal resistance of the generator as well as
>the load resistance and so I maintain that you can never measure Pi
>directly, only indirectly. Similarily for Pr. The only one of these three
>powers that can be measure direcly would be Pt the transmitted power, and
>you would do that by placing your thermistor/sensor in the circuit as the
>real part of the load impedance.

I must confess that I don;t have a clue as to what a "mismatched
measurement set up" is. But I do know what a laboratory (i.e.
believable) set up is.

Picture this. I have an x-band source that uses a high quality
isolator (terminated circulator) on its output. Any power returned to
this source is dissipated in the isolator. In addition, there is a
sampling loop that measures ouput level and via feedback stabilizes
the output power (ALC, if you will) This loop has the effect of
further improving the source match.

I connect this generator to a waveguide high-directivity dual
directional coupler. We will use waveguide so you can throw away your
volt and ammeters.

I place two waveguide thermistor power sensors to the two coupled
ports on the directional coupler. I place a shorting plate on the
output of the coupler. If the coupler is a good one, I will measure
the same power on each of the sensors.

The forward power (your Pi) is sampled by the forward-reading coupler
at a level equal to the coupling factor, e.g. -30 dB. The output
short circuit totally reflects the incident power and returns it to
the source. The reverse-reading sensor samples this, also at -30 dB
and displays the same value as the forward sensor. Any differences

between the two can be normalized out.

Because of the 'perfect' source match, there is no re-reflection of the reflected power, it is totally dissipated by the generator. This system will now reliably measure the return loss (within the directivity uncertainty limits discussed earlier) of a load placed on the output. For most purposes, we can ignore the forward sensor reading because it remains constant regardless of load impedance.

A few words about the power sensors. Contrary to what you claim above, the resistance of the thermistors doesn't have to be anywhere near the system impedance. The thermistors (today thermocouples are also used) simply measures temperature rise in a termination. The thermistor is not necessarily the termination. It is usual to have matched thermistors in a self-nulling bridge circuit. The second thermistor is heated by applying an easily-measured DC or low frequency AC signal to it. This applied signal power is adjusted to null the bridge at which time the applied power equals the r-f power. This is a substitution method where a difficult to measure quanity (microwave power) is determined by measuring the low frequency or DC power.

>
>The only "reality" in a circuit is the actual voltage V and current I as
>measured by voltmeters and ammeters, everything else is an "artifice"
>constructed to help us visualize what is happening. The electrons in a
>transmission line at the point where you measure V carry so many joules of
>energy per couloumb and they do not know what is at the end of the
>transmission line until they get there...

Nope. Don't need voltmeters and ammeters. In theory (Richard, I'm sure can elaborate on this) I can use a termination in a bucket of water and a mercury thermometer to measure r-f power.

>
>Use a soldering iron to attach the voltmeter across the conductors where V
>exists, and use the pliers and a soldering iron to cut open the conductor
>and attach the ammeter to read the I that exists... real stuff. Voltage and
>Current at a point on the line are real. The real power Pt delivered to the
>real part of the load impedance is real.

Without heating up the soldering iron I can guarantee the reflected power is real too.
>
>Reflected stuff well... I'm not so sure that it is real. Can't see it on
>an oscilloscope, all I can see on a scope is a voltage across the line. I
>don't see waves? Reflected stuff... It is useful, and under some
>circumstance it might correspond to something real, but it doesn't have to
>be real to be useful.

Take the waveguide reflectometer described above. Leave the output port open. Because this is waveguide, it behaves as a (poor) antenna.

Because the guide impedance doesn't match the impedance of free space
there is a mismatch and power is reflected from the junction
(waveguide/air).

Even you must agree that some of the available power is radiated and
it is real honest-to-goodness power that will heat up a resistor. Now
take a metal plate and hold it near and normal to the "antenna." You
will see the reflected power reading change. Move the plate a bit
closer to or further from the waveguide and you can see that the
reading will change as the phase and amplitute of the now two
reflections change with respect to each other.

There is absolutely no difference between the power reflected from the
junction and the power reflected from the metal plate. They are both
real.

(Homework assignment: Using the setup above and a waveguide sliding
short, determine the directivity of the coupler.)

I can't believe it's midnight and I still doing this.

SK de N7WS
>
>-Peter K1PO
>
>
>
>
>
>
>
>
>
>
>
>
>-Peter K1PO
>
>
>
>
>"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
>news:3ae36629.352375699@news.aepnet.com...
>> On Sun, 22 Apr 2001 16:52:45 -0400, "Peter O. Brackett"
><ab4bc@ix.netcom.com>
>> wrote:
>>
>> >Wes:
>> >
>> >[snip]
>> >"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
>> >news:3ae1988d.235428827@news.aepnet.com...

>> >> On 21 Apr 2001 06:45:31 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>> >>
>> >> [snip]
>> >>
>> >> I can (and have thousands of times) use(d) a directional coupler and
>a
>> >> thermocouple or thermistor power sensor to measure reflected power.
>> >Either of
>> >> these two sensors responds only to temperature rise, they don't know a
>> >volt from
>> >> an amp. If this power is fictitious, why does the termination in the
>> >sensor
>> >> heat up????
>> >>
>> >[snip]
>> >
>> >A sampling directional coupler for amateur use is an analog computer
>which
>> >computes and delivers values for reflected and incident voltages at a
>point
>> >on a line it does not actually separate and deliver large quantities of
>> >power through its' ports. A thermistor coupled to such indicated
>voltages
>> >and/or currents will certainly respond.
>>
>> No, a directional coupler is *not* an analog computer. There are
>available 3 dB
>> directional couplers that split the power and deliver it to two ports. A
>3 dB
>> hybrid for instance is *directional*. Thermistors respond to temperature.
>The
>> power sensor has in it a termination that gets warm when power is applied.
>It
>> is not "computing" anything, it is measuring temperature, and its time
>constant
>> is many orders of magnitude greater than the applied frequency.
>> >
>> >A full power, lossless, directional coupler, rather than a simple
>sampling
>> >directional coupler, is an extremely difficult and expensive thing to
>> >construct. Not many are available to the amateur. It is extremely
>> >difficult to resolve wave directions without invoking losses and very
>> >expensive apparatus.
>>
>> There is no such thing as a "lossless" directional coupler. Some of the
>> avaliable power is coupled to the coupled port and is "lost" to the
>through
>> port.
>> >
>> >Such a device would have four ports on it, two for the "straight through"

>> >path and two directional ports to pull off the "travelling" waves. It
>would
>> >allow one to connect it to two 100 Ohm dummy loads, one to each of the
>> >"directional ports", and connect the "through ports" into the center of
>50
>> >feet of transmission line and then place a 100 watt transmitter at each
>end
>> >of the 50 feet of line and then it would separate out the two into their
>> >respective dummy loads.
>> >
>> >Then the power going from left to right would be traveling in the left
>to
>> >right direction, and the power going from right to left would be going in
>> >the right to left direction, and the directional coupler would resolve
>them,
>> >but where would the "reflected" power be??? It would be nowhere since it
>is
>> >still a fiction!
>>
>> I'm late getting ready to meet friends for dinner, so I don't have time to
>wade
>> through that.
>>
>> >
>> >Where do you buy those directional couplers? The ones that can separate
>> >large amounts of power flowing in two directions? Iv'e never seen one,
>and
>> >I can only imagine how hard it would be to design and build.
>>
>> H-P, now Agilent makes them. I'm retired now and haven't kept up with the
>> industry and the way companies buy and sell each other, at the moment I
>can't
>> give you other names, but they are many.
>> >
>> >Please tell us what was the make and model of the directional couplers
>for
>> >"re-routing" rather than "sampling" directional power to which you
>refer.
>>
>> H-P
>> >
>> >And what were their losses, etc...
>> >
>> >Otherwise your thermistor sensors were no more than simply indicating the
>> >results of a sampled and calculated voltage or current, they were not
>> >actually terminating an "imaginary" reflected power!
>>
>> As I said, I'm short on time, so for now, I'll just say, baffle stuff.
>>
>>

>> N7WS
>>
>> ps. When an F-14 pilot accidently turns on his AWG-9 radar inside the
>metal
>> hanger and the reflected power burns out the receiver front end, is the
>power
>> "imaginary?"
>>
>> >
>> >
>> >
>> >-Peter K1PO
>> >
>> >
>> >
>> >
>>
>>
>
>

1504. Using a dip meter on a cubical quad

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 07:22:21 UTC
From: N3WWN <ralloway@futuretek.cx>
Message-ID: <en54c9.b6h.ln@ns2.ecommanagement.com>
Source record: 165393

Greetings!

This is my first post to this newsgroup, but I've been reading for quite a while.

My question is, how can I use a dip meter to determine the resonant frequency of a 6m cubical quad driven element centered at 52MHz?

I have a Heathkit HD-1250 solid state dip meter. The dip meter is is good working order since I can determine an unknown capacitance and also determine the resonant frequency of a coaxial line shorted at both ends.

The problem I am having is that I cannot find a dip anywhere in the approximate frequency range. I have searched full scale on the 25-51MHz and 48-100MHz coils.

I seem to have once found a small dip around 150MHz (3rd harmonic?) and quite a larger one around 33MHz (1/2 harmonic?), but I'm having trouble repeating these dips.

After talking to a fellow ham who has much more experience than I do, he said that the relationship between the harmonics is not linear, which is why I saw a dip at 33/150MHz instead of 25/150MHz or 33/198MHz, etc.

The element has it's feedpoint between the spacers, not at the spacers. I have disconnected the feedline as well.

I have also read the dip meter manual and ARRL handbooks (1955, and 1973, 1988 if I recall correctly), but the best I could come up with was how to check 1/2 wave and 1/4 wave antennas, but this doesn't appear to be working.

One more thing, should the coil/meter be perpendicular to the element or parallel to it?

I know that what I"m doing is "horse and buggy" era (to quote a local ham), but I cannot justify purchasing an antenna analyzer, plus, since I have the dip meter, why not use it! hi hi

Thanks for any responses and 73!

-Rich
N3WWN

1505. Re: Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 07:56:07 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9c3bdtpl1@neptunium.btinternet.com>
Source record: 165453

A wire inside a steel (magnetic) conduit has a much higher inductive reactance than when not in the conduit. It is a form of linear loading like threading the wire through a lot of ferrite slugs.

Impedance of the connection between equipment and the ground electrode must be as low as possible. It would be much better to use the conduit itself as the ground connection.

1506. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 08:37:10 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9c3dqr$2vs$1@neptunium.btinternet.com>
Source record: 165454

Peter, here's another example of the use of real and imaginary quantities -

"On the collection plate there are 5 - 2 coins".

Psuedo academics and mathematicians will argue interminably about the true meaning of that statement. But a 5-year old schoolboy who understands only simple arithmetic will grasp the meaning in an instant.

Keep up the good work. ;o)

Reg.

1507. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 08:52:45 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c3esbsok1@slb1.atl.mindspring.net>
Source record: 165455

Reg:

I suppose the pastor will have to send the 5 and the 2 to Westminister or to Rome where the theocrats can argue about their relevance to the number of angels on the head of a pin, and the pastor will keep the 3 for himself.

:-)

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:9c3dqr$2vs$1@neptunium.btinternet.com...
> Peter, here's another example of the use of real and imaginary
> quantities -
>
> "On the collection plate there are 5 - 2 coins".
>
> Psuedo academics and mathematicians will argue interminably about
> the true meaning of that statement. But a 5-year old schoolboy who
> understands only simple arithmetic will grasp the meaning in an
> instant.
>
> Keep up the good work. ;o)
>
> Reg.
>
>
>

1508. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 08:59:18 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c3f8vbat1@slb4.atl.mindspring.net>
Source record: 165456

John:

Hey, now you are trying to mess with me... reactance is not a fiction. Reactance is very real, er...at least it is the imaginary part of an impedance.

X = (2 * pi * f* L) or X = 1/(2 * pi * f * C) are both functions of frequency, and to the extent that one can deal with division by zero being defined as infinite, both capacitive and inductive reactance are measureable with "ordinary" instruments.

But reflected power Pr is only a mathematical creation, not a reality.

-Peter K1PO

"John O'Flaherty" <oflahert@toast.net> wrote in message news:3AE518D6.1C653F3C@toast.net...
> "Peter O. Brackett" wrote:
>
> > Denver:
> >
> > [snip]
> > > > So where does the reflected power go when the line is excited by a DC
> > > > source??
> > > Please explain.
> > > I don't believe that I expect a reflection in a line carrying
> > time-invariant DC
> > [snip]
> >
> > At what particular frequency did you think the reflections would stop? Say
> > at f = 0 + df? Where df is the infinitesimal of calculus, or...
> >
> > What?
> >
> > Do you mean that as we approach lower and lower frequencies the reflected
> > power goes away somehow?
> >
> > By what law or formula does reflected power fall off with frequency?
> >
> > Do you mean to say that the reflected power Pr is a function of frequency
> > say Pr(f) = ??? What is that function?
> >

> > Come on now, you have to be consistent... either there is reflected
power or
> > there is not!
> >
> > Don't waffle here, we are about to get to the bottom of this
"fiction"...
> > tell me... there is no reflected power at frequencies below say f =
0.001 Hz
> > and there is reflected power above that frequency, or ....
> >
> > What???
>
> It seems to me that frequency, logically at least, reaches to 1/infinity,
that
> is, there is no frequency that you can claim is the lowest possible
frequency.
> Thus it wouldn't be appropriate to say that reflected power ceases to
exist at
> any frequency that is a frequency. DC, sometimes called zero frequency, is
> actually another thing, with it's own simpler analyses. At what frequency
does
> the fiction of reactance drop out of existence?
>
> john
>

1509. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 09:07:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c3fo9$7uc$1@slb1.atl.mindspring.net>
Source record: 165457

Denver:

Nope, the explanation is simple.

Don't believe what the "High Priests" are telling you. It's in their self-interest to keep you "in the dark" and believing.

That so-called reflected power is strictly a mathematical fiction. Useful for certain engineering calculations, and for explaining some kinds of "visualizations" of transmission dynamics, but certainly not necessary, and not directly observable.

To find or measure the reflected power, Pr one has to first construct the artifice called incident power Pi, and then subtract the actual real power delivered to the load Pt from it. This calculation of Pr is done either "off line" by manual or computerized calculation, or "on line" in some "computing instrument" such as a Bird wattmeter, etc...

All of the engineering and design calculations that one needs to analyse and synthesize any kind of practical transmission system can be done without using either the numerical value of or the concept of reflected power! It is merely a convenient artifice, but unecessary.

So don't worry about trying to understand it, it simply doesn't matter. Volts and Amps and real power dissipated in a load is what matters.

-Peter K1PO

"Denver Braughler" <Braughler@bwcc.com> wrote in message news:3AE51BB4.650BA99E@bwcc.com...
> "Peter O. Brackett" wrote:
> > At what particular frequency did you think the reflections would stop?
> Perhaps I don't.
>
> > By what law or formula does reflected power fall off with frequency?
> We could ask at what frequency of sound is there no echo.
>
> > Do you mean to say that the reflected power Pr is a function of frequency
> > say Pr(f) = ???
> Actually the reflectivity potential may be dependent upon frequency.
>
> > What is that function?
> I don't know.
>
> > Come on now, you have to be consistent... either there is reflected power or

> > there is not!
> Or it is a trick question.
>
> I think there is a relationship between the length of the conductor and the frequency.
> A conductor that is only 1 trillionth of a wavelength long can't experience a measurable reflection.
> But I'm guessing at the moment.
> The explanation may be that in a short conductor the voltage difference is nearly zero measured along the conductor.

1510. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 09:43:42 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c3hrs$s2j$1@slb3.atl.mindspring.net>
Source record: 165458

John:

Wow, they've really got you into believing this reflected power stuff haven't they?

Apparently you will persist in a belief in the reality of reflected power no matter what evidence is presented to the contrary.

The "High Priests" of the reflected power religion have convinced you with their mumbo jumbo.

Don't fall for it, be skeptical!

Of course there is reflected power at DC!

When I asked that question up the thread I was merely testing your belief to see how far it could be stretched. And clearly you don't believe in reflected power at DC.

Yet it exists!

The concept of reflected power, and that's all it is, is just as valid at DC as it is at 10 GHz.

For all you have to do is to simply measure I and V through and across the load impedance Z (Note that V = IZ) and calculate the "ficticious" reflected DC voltage "b" in the same way that you would for AC or RF as:

b = V - IR

Use that "calculated" value of reflected voltage, to calculate the reflected DC current, call it Iref for want of a better symbol and so... Iref = b/R.

And then use b and Iref to calculate the reflected DC power Pr, as the product of the ficticious reflected voltage "b" times the ficticious reflected current "Iref"...

Pr = b * Iref = (V - IR) * (V - IR)/R = (V*V -2VIR + I*I*R*R)/R = (V*V/R - 2*I*V + I*I*R)

High school algebra above... heh, heh. Check it out. No calculus, no integrals, no differentials, no high falutin math... Just plain substitutions, multiplication and division.

Pr = (VV/R - 2IV + IIR)

Clearly if the load equals R (a perfect match)... then V = IR and substituting this value of V into Pr yeilds...

Pr = (I*I*R - 2*I*V + I*I*R) = 0 (The reflected power is zero.)

If the load is not equal to R, why then using V = IZ you can calculate Pr as you like...

I just wonder what good it will be to you to know the value of Pr?

Will it help you to find the power delivered to the load? Will it help you to find out where the reflected power is dissipated? What?

I believe I can now rest my case!

Pr may be convenient for some intermediate mathematical uses, but it is not real!

Now "in my humble opinion" the "so called" reflected voltage "b = V - IR" is a more useful derived concept than the derived concept of reflected power, Pr. For if you know or monitor the value of b, why then you can simply adjust your load impedance Z in the circuit so that b equals zero, i.e. "null the reflected voltage" and then "ta da"... V = IR!

Wow there's a nice "ring" to that! Ohm would be proud.

"All you ever need is I and V!" Heh, heh... Could be the name of a song.

-Peter K1PO

"John O'Flaherty" <oflahert@toast.net> wrote in message news:3AE51D84.E0692266@toast.net...
> "Peter O. Brackett" wrote:
>
> > John:
> >
> > [snip]
> > >After some time
> > > you can consider it to be in a steady state. In that steady state, there
> > would
> > > be no reflected power. Since there would be no reflected power, it would
> > be vain
> > > to speak of forward power... there would be the power dissipated, and no
> > > reflected power to distinguish it from. So reflected power doesn't exist
> > at dc,
> > > and would become very difficult and time consuming to measure at very low
> > > frequencies. But I think it's still as real as any of the other
> > abstractions use
> > > to analyze electricity.
> > [snip]
> >
> > At what particular frequency did you think the reflections would stop?

> >
> > Say at f = 0 + df? Where df is the infinitesimal of calculus, or...
> >
> > What?
> >
> > Do you mean that as we approach lower and lower frequencies the
reflected
> > power goes away somehow?
> >
> > By what law or formula does reflected power fall off with frequency?
>
> Who says it does?
>
> > Do you mean to say that the reflected power Pr is a function of
frequency
> > say Pr(f) = ??? whatever... that gradually reduces to zero as we
approach
> > DC?
> > Or does the reflected power magically dissappear below some frequency
that
> > is "low enough".
> >
> > What then is the form of that function?
> >
> > Come on now, you have to be consistent... either there is reflected
power or
> > there is not!
> >
> > Don't waffle here, we are about to get to the bottom of this reflected
power
> > "fiction"...
> >
> > It won't really hurt... admit it...
> >
> > Tell me... there is no reflected power at frequencies below say f =
0.001 Hz
> > and there is reflected power above that frequency, or .... whatever you
> > wish,
> > and then provide supporting evidence.
> >
> > Otherwise... get with it... that so called reflected power is nothing
more
> > nor less than a mathematical artifice to help some "needy" folks to
> > "visualize" the operation of a transmission line. It is not
mathematically
> > wrong, just superflous, like the human appendix. Throw it out and no
one
> > will miss it!
> >
> > I maintain that if you claim that there is no reflected power at DC then

> > there is no reflected power at any frequency. Since zero is just as
valid a
> > frequency as any other.
>
> Sorry, it's another thing entirely. It is _no_ frequency. As I pointed out
in
> another reply, the frequency scale goes to 1/infinity. It never reaches
zero.
> And if reflected power is a fiction because it doesn't apply at zero
frequency,
> then so is reactance.
>
> >
> > Personally I assert that there is reflected power at DC (zero frequency)
and
> > it is the same ficticious reflected power that you will find at any
> > frequency.
> >
> > Just that and nothing more, a fiction created by mathematical
manipulation,
> > the reflected power Pr is a mathematical "fiction" calculated by
subtracting
> > the actual real power transmitted or delivered to the load Pt from the
> > ficticious incident power Pi which would be supplied to an actual
matched
> > load if it were present.
> >
> > The calculation is done by simple arithmetic symbolized by the formula
> > below:
> >
> > Pr = Pi - Pt
> >
> > The only "real" power is Pt, all the rest is "visualization" and
> > mathematical aesthetics.
>
> It would make as much sense to say that resistance is a convenient
visualization
> for the proportionality between voltage and current, and has no real
existence.
> If you prefer to do without some particular abstraction, that's your
privilege.
>
> john
>
>
>
>

1511. Re: Beverage did not work, why??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 11:13:51 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3ae55ff0_1@news.cybertours.com>
Source record: 165459

"M. van Wijk" <pa5mw@home.nl> wrote in message
news:lSXE6.60549$D9.371937@dbsch1.home.nl...
> Hi,
>
> We're summing up all the experiences from our februari PACC contest
> experiences before starting new experiments upon from this summer. One of
> the main problems we encountered is that our first ever build beverage did
> not deliver what we expected on 80 mtrs. In fact it was always 10dB down
in
> signal compared to our full size vertical, and (more important here) did
> never deliver any better S/N ratio on whatever signal.
> Some build facts on the beverage:
>
> Length: +/- 175 mtrs, then we ran out of wire.
> Wire: 0.25mm diameter enamelled copper
> Placed on top of 2.4mtr bamboo sticks every 15 mtrs.
> The bamboo sticks were mounted to low fence poles (0.7mtrs high). The
fence
> consists of some 300mtrs typical single fence wire.
(SNIP)

Here in The fence wire under your antenna lies at least part of the problem.
a beverage in order to get the correct wave tilting only works of rather
poor soil grounding conditions.. The fence wire under your beverage would
actuall detract from the performance of the antenna.

Hope this is of Some Help
73 Dave kc1di
> Thank you in advance!
>
> '73 Mark, PA5MW / PI4SHB
>
>

1512. Re: END FED ANT QUESTION

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 11:21:22 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3ae561b4_1@news.cybertours.com>
Source record: 165460

"Bill Nelson" <billn@spock.peak.org> wrote in message
news:9c32a6$l2t$1@bashir.peak.org...
> marvin rosen <n3bqa@starpower.net> wrote:
> : maybe i should reexamine my question! is there such a thing as an end
fed
> : 80-10 mtr ant using coax as the feed line?
>
> Certainly. But you would want the tuner at the antenna, not in the shack,
> unless the coax run was very short.
>
> --
> Bill Nelson (billn@peak.org)

I concour with Bill,
But you can use a Choke balun with a short run of coax. and it will work ok.
Remember just because you are tuning the antenna with an antenna tuner in
the shack , does not mean that the SWR on the coax is any less. An endfed
wire that approaches half wave long will present impedences in the thousands
of ohms , the Swr is extermly high on the coax . making loss very great..
the exception to this is when a 1/4 or odd multiple is end fed against a
good ground.. IE 1/4 , 3/4 etc. This length would produce a fairly low
impedence and work quite well with coax feed. but then you no longer have a
multiband antenna system with the exception of 40/15 mtrs. a forty meter
1/4wave will also work as a 3/4 on 15Meters.

Good Luck,
73 Dave KC1DI

1513. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 12:19:46 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae56e67.742358275@news.accessunited.com>
Source record: 165461

On 24 Apr 2001 04:10:41 GMT, Bill Nelson <billn@spock.peak.org> wrote:

>It can affect the radiation pattern, but not much. Remember that the
>antenna is almost vertical - so is the other backstay. It is basically
>a base loaded Marconi, and probably with a rather imperfect ground.

The induced current in a close-spaced wire is generally opposite that
in the exciting wire. Connected or not, grounded or not, it can make a
large change in pattern and efficiency.

>One thing that does need to be checked is that unused backstay is not
>a resonant length at the operating frequencies - In this case, the
>combination of stay and mast need to be checked. If the rig performs
>poorly over all the marine frequencies, then this is unlikely to be
>the problem.

It all needs to be looked at. A conductor does not need to be resonant
to have a large effect on the pattern.

>This type of antenna has been used for many years, with decent results.
>So something has to be wrong with the installation itself. Aside from
>potential antenna problems, it could be a defective marine radio, or
>a defective tuner. There is a small chance that it could be defective
>coax - although that might be obvious. It could be a combination of
>all of these.

Could be. The problem could be anything. There simply isn't enough
information. The only thing that we do know is SWR doesn't mean
anything.

73 Tom

1514. Re: Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 12:25:35 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae56f7b.742634649@news.accessunited.com>
Source record: 165462

On 24 Apr 2001 03:36:53 GMT, Dick Carroll <dixie@townsqr.com> wrote:

> Why does the NEC prohibit running a ground wire inside a conduit? Does
>it act as a waveguide beyond cutoff?
>
>Dick

A ground wire is a different case than the actual feedline.

With the feedline, we don't mind diverting energy. With the ground wire, we want to keep it in that wire. As Reg says, better to use the conduit for a ground lead than to put a wire inside it, if the connections are dependable.

73 Tom

1515. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 12:27:20 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9c3rac$f12$1@neptunium.btinternet.com>
Source record: 165463

Peter said -
> But... only if the "reference impedance" in one's "reflected
voltage meter"
> is also a resistance! [Usually the case.]
==========
The poor quality of the usual RC meter is due to the effective
reference impedance being anything BUT purely resistive.

Such wierd territory is entered at your peril. Beware of man-traps
such as reflection coefficients greater than unity and negative
values of SWR.

Reg.

1516. Re: END FED ANT QUESTION

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 12:43:30 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9c3s8n$87i$1@plutonium.btinternet.com>
Source record: 165464

Bill wrote -
> marvin rosen wrote:
> : maybe i should reexamine my question! is there such a thing as an end fed
> : 80-10 mtr ant using coax as the feed line?
>
> Certainly. But you would want the tuner at the antenna, not in the shack,
> unless the coax run was very short.
==========
Bill, very true. Also applies to the 160m band.

I have always been fortunate enough to be able to bring the end of the antenna wire through a window right into the shack. The tuner and transceiver can then be within arm's reach of each other. If the shack is on the ground floor the ground connection can usually be kept short enough to prevent significant RF in the shack at least on the lower HF bands.

Reg

1517. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:04:25 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9c3tft$g3k$1@uranium.btinternet.com>
Source record: 165467

Reflections and echos are ALWAYS a matter of time.

Gentlemen, praps your differences could be reconciled if you
discussed reflections on transmission lines in terms of Time. Ban
the mention of frequency.

Try standing on your heads ;o)

Reg

1518. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:04:57 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE579F9.AFE8D470@IEEE.org>
Source record: 165465

Dick Carroll wrote:
> Then he found the voltage and
> current minimums,which he said were 90ï¿½ apart and easier to find than
> the maximums, and applied the cosine rule....

You mean misapplied the cosine rule. Power is measured at a point.
The current and voltage associated with that power must be measured
at that same point, not one of them a quarter wavelength away. The Z0
of the transmission line keeps the power factor of the forward power
close to unity and does the same thing for reflected power. For
most practical purposes, the phase angle between the forward current
and forward voltage can be considered to be zero. Ditto for the
phase angle between the reflected current and reflected voltage.
Forward power and reflected power are separate entities.

A transmission line is a transformer. Consider the result of multiplying
the voltage on the primary of a transformer by the current out of the
secondary by the cosine of the angle between them. You can easily prove
that "power" is greater than the total power input into the system. Now
if I put that in a ham mag article, would you believe I could get more
power out of a transformer than I put in?
--
http://www.mindspring.com/~w6rca

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1519. Trimming a 2m Hamstick

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:13:26 UTC
From: Eric Ruuska <eruuska@netnitco.net>
Message-ID: <3ae57b88@news.netnitco.net>
Source record: 165466

Hey all,

I just picked up the 2m version of the Hamstick, but unlike other Hamsticks, it didn't come with the handy little chart on how long to trim the whip. Does this mean that it doesn't need trimming? Or was it mistakenly omitted from the package?

I've got it installed with my IC706MkII, and I'm having trouble hitting a repeater less than 4 miles away. I've got the RF power cranked up, my SWR display is looking alright, so what gives?

Thanks a bunch and 73,
Eric Ruuska
KB9ZHN

1520. Re: looking for info on the sgc smart tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:17:51 UTC
From: Greg Blair <gblair@sympatico.ca>
Message-ID: <3AE57CFF.65DF71CD@sympatico.ca>
Source record: 165468

I have used an SGC 230 tuner on a sail boat passage from Toronto to Australia via New York, Panama and the South Pacific. We worked PACTOR email and rag chewed the entire way. We took out reciprocal calls in most of the islands along the way. Kind of fun being on the other end of DX pile up.

Many yachts were similarly equipped. If they had a really good ground , they put out a good, but not great, signal. If they didn't, they had a never ending saga of no contacts, poor signal reports, RFI in all electrical/electronic systems everywhere, basically a non-functioning HF radio system. You would not believe the wonky installations performed by non-ham friends who claimed to understand radio. Car stereos maybe, radio no way. Panama was a case in point. Many boats purchased ICOM rigs + SGC or ICOM tuners at the duty free zone (cheap), clipped them, did not have a ground plate, did not ground the rig or the tuner, and wondered why "Tom's" system worked and theirs did not. ("Tom" had a steel/aluminum boat.)

Also, when you think about it, the turner feeding a random wire is a base loaded antenna with the associated higher losses from the lower radiation resistance, higher currents flowing in the tuner, resulting in poorer radiation characteristics compared to center loaded systems. That is why screwdriver antennas outperform base loaded antennas, such as tuner feed random wires/whips.

If the band is open, a piece of wet spaghetti will work DX half way around the world. This is a function of propagation conditions, not the tuner.

So if you purchase a SGC/ICOM/KENWOOD/LDG automatic tuner, or a manual tuner, it will work if you focus on your ground system!

Cheers, Greg

DM wrote:

> I am thinking abt buying a scg 237 tuner for mobile and base use .has
> anyone used one? please let me know what you think of them, Dave

1521. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:18:21 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE57D1D.3F9F2D@IEEE.org>
Source record: 165369

Dick Carroll wrote:
> I believe I have unintentionally misled the thread here. The article's
> author did indeed use a antenna matching network and adjust the
> transmitter to the same output power both before and after introducing
> the mismatch at the antenna. I left the details out for brevity. His
> point was not new- If you use an antenna tuner you don't need to be
> concerned about SWR if your coax feedline doesn't have excessive losses.

His conclusion may be correct but his proof was flawed. And one must
take SWR into account to ascertain if coax feedline loss is excessive.

For instance, if the SWR=1:1 loss for a 1/2WL run of coax is 3dB,
one might say that loss is acceptable since it is only about 1/2
S-unit. However, if the SWR is 20:1, the total loss in the coax
becomes greater than 9dB, i.e. about 80% of the power is lost in
the coax. That's why coax is a poor choice for a non-resonant
length dipole.

OTOH, at HF, open-wire feeders tolerate a 20:1 SWR with usually
negligible losses. Take a look at the loss charts at the end of
Chapter 16 in one of the older ARRL Handbooks. That chart is in
Chapter 19, Fig. 19.5, in my ARRL Handbook 2000.
--
http://www.mindspring.com/~w6rca

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1522. Re: mount ant on Jeep?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:22:18 UTC
From: n8mli@aol.com
Message-ID: <20010424092218.12907.00000795@ng-cp1.aol.com>
Source record: 165370

I mounted a 5/8 wave right on the hood. Make sure you don't have any RF that might get into the computer,I didnt' any problems. I also made a mount for Hamstick and scanner antennas right off the tire bumper. Make sure you make a good ground connection for these antennas. I got the idea from those Jeep parts catologs.

1523. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:30:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE57FFD.15183AB1@IEEE.org>
Source record: 165371

Reg Edwards wrote:
>
> Peter, here's another example of the use of real and imaginary
> quantities -
>
> "On the collection plate there are 5 - 2 coins".
>
> Psuedo academics and mathematicians will argue interminably about
> the true meaning of that statement. But a 5-year old schoolboy who
> understands only simple arithmetic will grasp the meaning in an
> instant.

The statement is ambiguous unless you define the meaning of the dash.
--
http://www.mindspring.com/~w6rca

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1524. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:36:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5814B.67BCFF0A@IEEE.org>
Source record: 165372

"Peter O. Brackett" wrote:
> Is the refelected power travelling back down the wires while the forward
> power is travelling outward? What? Thoughts, comments?

Make the transmission line one wavelength long and add unique modulation
to each cycle. You will see the forward wave modulation(s) going forward
and the reflected wave modulation(s) going backwards. All this is extremely
easy to see with a few TV receiver experiments. Hang a 75 ohm coax stub
on your TV input terminal and you will certainly see the effect of
reflections in the ghosting on the screen.
--
http://www.mindspring.com/~w6rca

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1525. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:41:47 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5829B.BEB737D8@IEEE.org>
Source record: 165373

"Peter O. Brackett" wrote:
> If the travelling wave analysis is valid for a long conductor, then why is
> it not valid for a short conductor?
>
> Where 's the magic in the length?

There's no "magic" in the length but there is some utility in the length.

Systems where the reflected wave is a different cycle are easier to
measure. When you get a reflection of the same cycle, it is indeed
difficult to figure out what happening. However, modulation can
be used to ascertain what is happening in a system where the cycle
being reflected is not the cycle being generated. Play around with
some thought experiments concerning TV ghosting and then run them.
The reality of the situation will be obvious.
--
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1526. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:44:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE58345.C342B968@IEEE.org>
Source record: 165374

"Peter O. Brackett" wrote:
> Don't waffle here, we are about to get to the bottom of this "fiction"...
> tell me... there is no reflected power at frequencies below say f = 0.001 Hz
> and there is reflected power above that frequency, or ....

Make your transmission line lossless and one wavelength long
and you will get reflections at any frequency.
--
http://www.mindspring.com/~w6rca

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1527. Re: Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:45:50 UTC
From: richardharrison@webtv.net
Message-ID: <17879-3AE5838E-80@storefull-114.iap.bryant.webtv.net>
Source record: 165380

Dick Carroll wrote:
"Why does the NEC prohibit running a ground wire inside a conduit?"

Because the ground wire not enclosed in steel conduit is for surge protection, not electric shock prevention.

A steel conduit due to permeability of the steel greatly increases the self-inductance of the enclosed wire and inhibits surge current. You want to promote surge current in your lightning ground wires. You want to inhibit surge current in your wires to protected equipment. It is a good idea to run wires to protected equipment through separate grounded steel conduits, except for the surge protection grounds which are not run through steel conduit.

Best regards, Richard Harrison, KB5WZI

1528. Re: Trimming a 2m Hamstick

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:47:02 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <R4PlOl+TEQIKqf1YppIEqx2TVAql@4ax.com>
Source record: 165375

"Eric Ruuska" <eruuska@netnitco.net> wrote:

>Hey all,
>
>I just picked up the 2m version of the Hamstick, but unlike other Hamsticks,
>it didn't come with the handy little chart on how long to trim the whip.
>Does this mean that it doesn't need trimming? Or was it mistakenly omitted
>from the package?
>
>I've got it installed with my IC706MkII, and I'm having trouble hitting a
>repeater less than 4 miles away. I've got the RF power cranked up, my SWR
>display is looking alright, so what gives?
>
>Thanks a bunch and 73,
>Eric Ruuska
>KB9ZHN
>

At their web site, http://www.hamstick.com/ I notice they make 4 or 5 different
2m antennas, so it's hard to say. However, there is a feedback address at the
web site where you could email them.

Bob
k5qwg

1529. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:49:57 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE58485.8200FA04@IEEE.org>
Source record: 165376

"Peter O. Brackett" wrote:
> But reflected power Pr is only a mathematical creation, not a reality.

Run a million joules RF for one second into a one second long lossless
unterminated transmission line. During the next second, disconnect the
transmitter and grab the feedline conductors, one in each hand. What
would you expect to happen next? Saying that reflected power is only
a mathematical creation is the same thing as saying that the conservation
of energy principle can be violated. In the above thought experiment,
where did the energy go if not into the reflected waves?
--
http://www.mindspring.com/~w6rca

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1530. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 13:53:08 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE58544.5ED7D227@IEEE.org>
Source record: 165377

"Peter O. Brackett" wrote:
> That so-called reflected power is strictly a mathematical fiction.

Peter, I can design reflections to cause TV ghosting. Are TV ghosts
a mathematical fiction?
--
http://www.mindspring.com/~w6rca

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1531. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 14:00:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE58705.52066216@IEEE.org>
Source record: 165378

"Peter O. Brackett" wrote:
> I maintain that if you claim that there is no reflected power at DC then
> there is no reflected power at any frequency. Since zero is just as valid a
> frequency as any other.

At DC steady-state there is no net moving energy so all the de/dt factors
are zero. However, prior to DC steady-state, during the transcient condition,
there can be forward and reflected energy since the de/dt factors are not
zero.
--
http://www.mindspring.com/~w6rca

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1532. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 14:02:14 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE58766.E5AA6634@IEEE.org>
Source record: 165379

"Peter O. Brackett" wrote:
> Apparently you will persist in a belief in the reality of reflected power no
> matter what evidence is presented to the contrary.

Using TV ghosting, I can prove to you that reflections exist.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1533. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 14:04:33 UTC
From: richardharrison@webtv.net
Message-ID: <17878-3AE587F1-176@storefull-114.iap.bryant.webtv.net>
Source record: 165381

Tom, W8JI wrote:
"But most likely if you saw a difference between 1/2wl and 5/8th wl in favor of the 5/8th wave something else was going on.

That isn`t the same as the antenna having more gain."

A 5/8wl antenna has gain over a 1/2wl antenna.

Best regards, Richard Harrison, KB6WZI

1534. Re: Beverage did not work, why??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 14:26:59 UTC
From: richardharrison@webtv.net
Message-ID: <17880-3AE58D33-32@storefull-114.iap.bryant.webtv.net>
Source record: 165382

Tom, W8JI wrote:
"As a matter of fact, fading can actually get much worse with a
physically large array."

A simple solution is breaking the array into pieces, each connected to
its own receiver, Use a diversity combiner to instantaneously select the
best received signal from a receiver.

Best regards, Richard Harrison, KB5WZI

1535. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 14:56:38 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE59426.CF8FCD18@toast.net>
Source record: 165383

W6RCecilA wrote:

> "Peter O. Brackett" wrote:
> > But reflected power Pr is only a mathematical creation, not a reality.
>
> Run a million joules RF for one second into a one second long lossless
> unterminated transmission line. During the next second, disconnect the
> transmitter and grab the feedline conductors, one in each hand. What
> would you expect to happen next? Saying that reflected power is only
> a mathematical creation is the same thing as saying that the conservation
> of energy principle can be violated. In the above thought experiment,
> where did the energy go if not into the reflected waves?

I believe it will have gone into the enlightenment of the experimenter. :-)

john

1536. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 14:59:09 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE594BD.3BDD4567@toast.net>
Source record: 165384

"Peter O. Brackett" wrote:

>
>
> "All you ever need is I and V!" Heh, heh... Could be the name of a song.
>

So you _do_ think resistance is a fiction. Cool.

john

1537. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 15:02:52 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE5959C.53E06446@toast.net>
Source record: 165385

"Peter O. Brackett" wrote:

> Denver:
>
> Nope, the explanation is simple.
>
> Don't believe what the "High Priests" are telling you. It's in their
> self-interest to keep you "in the dark" and believing.
>
> That so-called reflected power is strictly a mathematical fiction. Useful
> for certain engineering calculations, and for explaining some kinds of
> "visualizations" of transmission dynamics, but certainly not necessary, and
> not directly observable.

Is it by mathematical fiction that time domain reflectometers work?

john

1538. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 15:06:49 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE59689.C747D494@toast.net>
Source record: 165386

"Peter O. Brackett" wrote:

> John:
>
> Hey, now you are trying to mess with me... reactance is not a fiction.
> Reactance is very real, er...at least it is the imaginary part of an
> impedance.
>
> X = (2 * pi * f* L) or X = 1/(2 * pi * f * C) are both functions of
> frequency, and to the extent that one can deal with division by zero being
> defined as infinite, both capacitive and inductive reactance are measureable
> with "ordinary" instruments.
>
> But reflected power Pr is only a mathematical creation, not a reality.

Sorry, Peter, impedance and reactance are convenient mathematical fictions,
entirely derivable from voltage, current and their phases; they have no real
separate exisence.

john

1539. END FEED WITH LADDER LINE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 15:26:49 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9c45vu$1at$1@bob.news.rcn.net>
Source record: 165387

i am able to put up 100 ft of wire in an inverted v configuration & would like to end feed it with 450 ohm ladder line...then i want to connect a current balun to it & run coax thru my window sill......can i use "any" amount of ladder line (example:10, 20 or 30 ft.) or is there a particular minimum length that would be suitable?

1540. BALUNS?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 15:31:22 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9c468e$2aq$1@bob.news.rcn.net>
Source record: 165388

is there any difference between a 4:1 current balun & a 4:1 "remote"
current balun?

1541. Re: END FEED WITH LADDER LINE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 15:32:45 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE59C9D.70A858A9@IEEE.org>
Source record: 165389

marvin rosen wrote:
> i am able to put up 100 ft of wire in an inverted v configuration & would
> like to end feed it with 450 ohm ladder line...

To what are you going to connect the second wire of the ladder-line?
--
http://www.mindspring.com/~w6rca

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1542. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 15:42:33 UTC
From: k3bu@aol.com
Message-ID: <20010424114233.25835.00001359@ng-mq1.aol.com>
Source record: 165390

Perseus@hol.gr wrote:

>A Greek scientist have succeed with his experiments with antigravity.

After looking at experiments, I keep wondering, how does that defy gravity? He has gizmo suspended on the string and makes it move in the horizontal plane. How does that defy gravity?

To me it looks like this "antigravity" experiment is more like using EM fields to react with Earth magnetic field. About the same category as helicopter "defying" gravity.

To me valid proof would be to have something that after activating it would make object (no strings or power attached) float or fly away, not being bound by gravitational forces.

Now I know why my drooping Yagi elements "stood up" when I put power to the antenna :-)

Yuri, K3BU

1543. Re: END FEED WITH LADDER LINE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 15:52:44 UTC
From: "Edward A. Feustel" <efeustel@ists.dartmouth.edu>
Message-ID: <3AE5A14C.461422C0@ists.dartmouth.edu>
Source record: 165391

Sounds like you have an end fed Zepp. A standard antenna well documented
in
the ARRL antenna handbook.

Regards,
Ed, N5EI

marvin rosen wrote:
>
> i am able to put up 100 ft of wire in an inverted v configuration & would
> like to end feed it with 450 ohm ladder line...then i want to connect a
> current balun to it & run coax thru my window sill......can i use "any"
> amount of ladder line (example:10, 20 or 30 ft.) or is there a particular
> minimum length that would be suitable?

--

1544. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 15:56:54 UTC
From: kb7qhc@home.com
Message-ID: <3ae5a157.2466170175@news.seanet.com>
Source record: 165392

On Mon, 23 Apr 2001 21:32:36 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Conundrum indeed.
>
>Let's make it simple... the answer is the same anyway... if it helps, start
>both transmitters off at the same phase angle and let the frequency approach
>zero as closely as you wish...
>
>Ohhh say... 0.00001 Hz or so... ! If that's not low enough just go down
>another few decades in frequency I don't really care. The answer is
>independent of frequency and wavelength. Why?
>

Hi Peter,

If the frequency is arbitrary (except that both sources support it);
why make it an issue at all?

It seems unlikely that any conclusion can come from so many immaterial
conditions.

Why don't you try again, and boil out the rhetorical clutter.

73's
Richard Clark, KB7QHC

1545. Re: Best coax for VHF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 16:03:12 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae5a3bc.499232549@news.aepnet.com>
Source record: 165397

On Mon, 23 Apr 2001 12:05:41 GMT, Todd <n9xrg@hotmail.com> wrote:

>I am, to be honest, confused about all the information as to which
>coax is best for 2 meter operation. I am getting ready to set up my
>station and I was thinking about using LMR-400. Any advice would be
>appreciated.

Depends. As a general rule you want the lowest loss cable that is practical.
This usually rules out 4" Heliax, but a few EMEers actually use it.

LMR-400 is good for general use. Better would be Andrew LDF4-50 (about 1/2 the
loss). This is harder to use and expensive, but is often found surplus at
hamfests. I usually pay about $1.00/ft. Connectors are expensive when new, but
again I've purchased very short cables with connectors on them just to get
recycle the connectors. I even use this on a long run at h-f.

73, Wes N7WS
>
>73,
>
>N9XRG

1546. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 16:04:20 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <8uhF6.33503$RF1.2851638@bgtnsc06-news.ops.worldnet.att.net>
Source record: 165394

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ae4d2c8.702513288@news.accessunited.com...
> On Mon, 23 Apr 2001 16:45:21 GMT, "VE9SRB" <srbest@att.net> wrote:
> Hi Steve,
>
> >Why does the power rating of an antenna vary with frequency?
>
> 1.) Because voltage across components in the antenna can change.
>
> 2.) Because current can change.
>

Correct, now consider what can cause the voltage and current to change:

If the operating frequency changes, what is one of the main electrical characteristics of the antenna that changes? It's feedpoint impedance. As the feedpoint impedance changes with frequency, delivering the same power to the antenna causes the feedpoint voltage and current to change. A change in feedline SWR is an indication of a change in feedpoint impedance. As SWR changes, the power rating of the antenna changes as well.

> 3.) Because the ratings of components yused in the antenna can change
> with frequency, although this is usually not a noticable problem.
>
> 4.) Anything that changes the electrical characteristics of the
> antenna itself might change power ratings.
>

The antenna impedance is an electrical characteristic of the antenna. A change in SWR indicates that there has been a change in impedance. Therefore, a change in SWR might cause a change in the antenna power rating.

> Power ratings normally vary with frequency.
>
> >One of the reasons that the power rating of an antenna varies with
frequency
> >is that the antenna SWR varies with frequency. If you deliver the same
> >power to the antenna at different SWR levels, the voltages and currents
in
> >the antenna will change.
>
> That is not true.

If you deliver the same power to different impedances (different SWRs), the voltage and current in the impedances will be different. If you deliver 100 Watts to a 50 ohm resistor and 100 Watts to a 450 ohm resistor, the voltage

and current will not be the same in both. How can you tell me that this is not true?

>Power ratings might vary with length of the antenna
> or the resonant frequency the antenna is adjusted to, but it really
> doesn't matter what the feedline SWR is.
>

What electrical characteristic of an antenna changes significantly as you change the length of the antenna? Its feedpoint impedance changes. Therefore, as you change the length of an antenna, the SWR on the feedline changes.

> I can make the feedline SWR anything I like, and as long as I don't
> change anything in the antenna the power rating of the antenna will
> remain the same.
>

Don't you recognize the relationship between the antenna's feedpoint impedance and feedline SWR? If the antenna is the only component connected at the end of the transmission line, how can you make the feedline SWR anything you like, without changing anything in the antenna? The feedline SWR is directly related to the antenna feedpoint impedance and the Zo of the feedline. Any change in the antenna that changes the antenna feedpoint impedance, changes the feedline SWR.

If you change something in the antenna: length, proximity to nearby objects, etc, the impedance will change and the SWR will change. To deliver the same power to a different SWR the feedpoint voltage and current will change.

Steve VE9SRB

1547. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 16:10:59 UTC
From: kb7qhc@home.com
Message-ID: <3ae6a2ae.2466513779@news.seanet.com>
Source record: 165395

On 24 Apr 2001 15:42:33 GMT, k3bu@aol.com (Yuri Blanarovich) wrote:

>Perseus@hol.gr wrote:
>
>>A Greek scientist have succeed with his experiments with antigravity.
>
>After looking at experiments, I keep wondering, how does that defy gravity? He
>has gizmo suspended on the string and makes it move in the horizontal plane.
>How does that defy gravity?
>
>To me it looks like this "antigravity" experiment is more like using EM fields
>to react with Earth magnetic field. About the same category as helicopter
>"defying" gravity.
>
>To me valid proof would be to have something that after activating it would
>make object (no strings or power attached) float or fly away, not being bound
>by gravitational forces.
>
>Now I know why my drooping Yagi elements "stood up" when I put power to the
>antenna :-)
>
>Yuri, K3BU

Hi Yuri,

Your questions merely expose the enormous scientific weakness that surrounds these so-called advances in technology.

These pendulum experiments COULD be used as proof of the concepts they so breathlessly announce, but it seems these same scientists are wholly ignorant of both the art of application and tools available to the practical designer. It wouldn't surprise me if they stumbled out of their ivory tower to proclaim the world was round! (And then would proceed to prove it within 10%) The technique of the pendulum easily succumbs to the measure of Gravity to many, many places; and yet these scientists have difficulty approaching even a qualitative answer.

This brings to mind Kurt Vonnegut's mythical hero/mayor of New York who could measure the state of Gravity in the morning by the angle of his erection. I sometimes wonder if these experts could find their own tools with both hands.

73's
Richard Clark, KB7QHC

1548. Re: END FEED WITH LADDER LINE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 16:19:16 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9c4929cgi1@bob.news.rcn.net>
Source record: 165396

the lower portion of the ladder line will be connectd to the balun
"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE59C9D.70A858A9@IEEE.org...
> marvin rosen wrote:
> > i am able to put up 100 ft of wire in an inverted v configuration &
would
> > like to end feed it with 450 ohm ladder line...
>
> To what are you going to connect the second wire of the ladder-line?
> --
> http://www.mindspring.com/~w6rca
>
>
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1549. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 16:29:07 UTC
From: kb7qhc@home.com
Message-ID: <3ae7a7ce.2467825545@news.seanet.com>
Source record: 165398

On Tue, 24 Apr 2001 07:06:34 GMT, nospam_n7ws@arrl.net (Wes Stewart)
wrote:

>>
>>The only "reality" in a circuit is the actual voltage V and current I as
>>measured by voltmeters and ammeters, everything else is an "artifice"
>>constructed to help us visualize what is happening. The electrons in a
>>transmission line at the point where you measure V carry so many joules of
>>energy per couloumb and they do not know what is at the end of the
>>transmission line until they get there...
>
>Nope. Don't need voltmeters and ammeters. In theory (Richard, I'm
>sure can elaborate on this) I can use a termination in a bucket of
>water and a mercury thermometer to measure r-f power.
>

Hi Wes,

I presume I am the Richard you speak of. To respond thusly: yes, you
are right, but elaboration is unnecessary to your treatment here.

You have presented a very thorough description of the process at the
bench (and managed to write a book anyway ;-)

The most meaningful entry was:
>This is a substitution method where a difficult to measure quanity
>(microwave power) is determined by measuring the low frequency or DC
>power.

Few amateurs realize that through technique, not money thrown at
wonderful tools, they can achieve measures of high accuracy
(frequently far in excess of those costly handheld devices).

73's
Richard Clark, KB7QHC

1550. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 16:37:40 UTC
From: kb7qhc@home.com
Message-ID: <3ae8aa5f.2468482630@news.seanet.com>
Source record: 165399

On Tue, 24 Apr 2001 09:37:10 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Peter, here's another example of the use of real and imaginary
>quantities -
>
>"On the collection plate there are 5 - 2 coins".
>
>Psuedo academics and mathematicians will argue interminably about
>the true meaning of that statement. But a 5-year old schoolboy who
>understands only simple arithmetic will grasp the meaning in an
>instant.
>
>Keep up the good work. ;o)
>
>Reg.
>
>

Ah Punchinello,

Propagation of more Old Wive's tales I see.

60 or more years ago, Piaget studied children's capacity to determine
this problem you speak of (the constancy of number) and found that NO,
children don't always exhibit this without progressing through
previous states of understanding. These are common topics of
Developmental Psychology.

What you speak of is the grasp a pensioner has with this problem, not
a child. ;-)

73's
Richard Clark, KB7QHC

1551. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 16:47:21 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae5aceb.501583970@news.aepnet.com>
Source record: 165400

On Mon, 23 Apr 2001 20:54:54 +0100, "Reg Edwards" <g4fgq.regp@btinternet.com>
wrote:

[snip]
>
>But it is a mathematical, academic, theoreical, undeniable fact,
>that the antenna plus feedline is resonant and will register
>minimum SWR versus frequency, whatever the minimum SWR may be, when
>the antenna plus feedline is resonant, ie., the feedpoint
>resistance is a pure resistance.

Gad Reg. The Queen's English is more twisted than George Bush's.

"The antenna plus feedline is resonant when the antenna plus feedline is
resonant and the feedpoint resistance is a resistance?"

Are you absolutely sure? <g>

Wes

>

1552. Re: END FEED WITH LADDER LINE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 17:19:27 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae5b59b.503808067@news.aepnet.com>
Source record: 165402

On Tue, 24 Apr 2001 12:19:16 -0400, "marvin rosen" <n3bqa@starpower.net> wrote:

Clearly, Marvin, you misunderstand Cecil's Texas humor. The second wire he refers to is the one at the antenna end that is not connected to the antenna.

The antenna you propose is commonly called an "End-fed Zepp." You can do a literature or web search on this term and find more info. Unfortunately, you will get a lot of misinformation.

The problems with this antenna are:

1. The end feed causes a severely unbalanced situation in the ladder line. Ideally, the currents in the two wires are equal and opposite so that there is no radiation from the feed line; it just transports energy from the transmitter to the antenna. When the antenna connects to only one of the feedline conductors, it upsets this relationship and the feedline now wants to radiate, i.e., it becomes part of the antenna.

2. You don't specify what band(s) that you intend to use this on but I assume that you intend to use it on multiple bands. The feedpoint impedance of the transmission line will vary wildly with changes in transmission line length and frequency. This can create intractable situations that a practical antenna tuner (you do plan to use a tuner I hope) cannot cope with.

3. It is almost impossible to build/buy a balun that can cope with the problems stated in 1 and 2.

If you can state more exactly what your requirements are, many on the group could offer possible alternatives to your plan.

73,

Wes Stewart N7WS

>the lower portion of the ladder line will be connectd to the balun
>"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
>news:3AE59C9D.70A858A9@IEEE.org...
>> marvin rosen wrote:
>> > i am able to put up 100 ft of wire in an inverted v configuration &
>would
>> > like to end feed it with 450 ohm ladder line...
>>
>> To what are you going to connect the second wire of the ladder-line?
>> --
>> http://www.mindspring.com/~w6rca
>>
>>

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>

1553. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 17:37:14 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <eRiF6.2025$AU4.167250@bgtnsc04-news.ops.worldnet.att.net>
Source record: 165401

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9c215t$7fi$1@plutonium.btinternet.com...
> Peter, believe me, I do understand you are are trying to be
> helpful.
>
> But it is a mathematical, academic, theoreical, undeniable fact I
> that the antenna plus feedline is resonant and will register
> minimum SWR versus frequency, whatever the minimum SWR may be, when
> the antenna plus feedline is resonant, ie., the feedpoint
> resistance is a pure resistance.
>

If you are trying to imply that all antenna's exhibit minimum SWR when they are resonant, this is not correct. The feedpoint impedance being purely resistive does not guarantee that it also has minimum SWR. Its a function of Zo and the antenna R at resonance. I can send measured or computed data on several antennas proving this. I would really like to know who comes up with all this stuff.

Steve VE9SRB

1554. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 17:44:07 UTC
From: kb7qhc@home.com
Message-ID: <3ae5baf6.2472729877@news.seanet.com>
Source record: 165403

On Tue, 24 Apr 2001 01:26:57 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>Where 's the magic in the length?
>

Hi Peter,

This is obviously a problem of the line being able to exhibit the
distributed parts that make transmission line theory practicable.

When your line can satisfy those constraints, your "magic" is found.

73's
Richard Clark, KB7QHC

1555. Re: Using a dip meter on a cubical quad

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 18:06:23 UTC
From: kb7qhc@home.com
Message-ID: <3ae6bd92.2473397777@news.seanet.com>
Source record: 165404

On Tue, 24 Apr 2001 11:22:21 +0400, "N3WWN" <ralloway@futuretek.cx>
wrote:

>Greetings!
>
>This is my first post to this newsgroup, but I've been reading for quite
>a while.
>
>My question is, how can I use a dip meter to determine the resonant
>frequency of a 6m cubical quad driven element centered at 52MHz?
>
>I have a Heathkit HD-1250 solid state dip meter. The dip meter is is
>good working order since I can determine an unknown capacitance and also
>determine the resonant frequency of a coaxial line shorted at both ends.
>
>The problem I am having is that I cannot find a dip anywhere in the approximate
>frequency range. I have searched full scale on the 25-51MHz and
>48-100MHz coils.
>
>I seem to have once found a small dip around 150MHz (3rd harmonic?) and
>quite a larger one around 33MHz (1/2 harmonic?), but I'm having trouble
>repeating these dips.
>
>After talking to a fellow ham who has much more experience than I do, he
>said that the relationship between the harmonics is not linear, which is
>why I saw a dip at 33/150MHz instead of 25/150MHz or 33/198MHz, etc.
>
>The element has it's feedpoint between the spacers, not at the spacers. I
>have disconnected the feedline as well.
>
>I have also read the dip meter manual and ARRL handbooks (1955, and
>1973, 1988 if I recall correctly), but the best I could come up with
>was how to check 1/2 wave and 1/4 wave antennas, but this doesn't appear
>to be working.
>
>One more thing, should the coil/meter be perpendicular to the element or
>parallel to it?
>
>I know that what I"m doing is "horse and buggy" era (to quote a local
>ham), but I cannot justify purchasing an antenna analyzer, plus, since I
>have the dip meter, why not use it! hi hi
>
>Thanks for any responses and 73!
>

>-Rich
> N3WWN

Welcome Rich,

Horse and buggy could easily get you further down the road than the modern go carts offered for the same problem.

One issue to be concerned with is scale. That is, the scale of your application of the Dipper. You could build a coupling loop at the feed point of your co-ax to the antenna, but you have to be mindful that at the frequency you are working at, this could easily disturb the design (which is the long way of saying be prepared for some error in the results).

It looks like your antenna is resonant at 33 MHz. You could have the wrong geometry or dimension (unlikely) or you may have omitted decoupling at the antenna feed point (more likely) such that your co-ax now increases the dimension (doesn't really matter how or how much). I will trust that you are competent in the Dipper's usage (sounds like it from your initial comments). The issue of coil placement would be far subtler than the problem you approach us with.

73's
Richard Clark, KB7QHC

1556. Re: Using a dip meter on a cubical quad

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 18:25:35 UTC
From: David Pearce <david.e.pearce@lmco.com>
Message-ID: <3AE5C51F.B89B3204@lmco.com>
Source record: 165282

What comes to mind is how much your body and the vicinity of the ground
affects the resonance.

N3WWN wrote:
>
> Greetings!
>
> This is my first post to this newsgroup, but I've been reading for quite
> a while.
>
> My question is, how can I use a dip meter to determine the resonant
> frequency of a 6m cubical quad driven element centered at 52MHz?
>
> I have a Heathkit HD-1250 solid state dip meter. The dip meter is is
> good working order since I can determine an unknown capacitance and also
> determine the resonant frequency of a coaxial line shorted at both ends.
>
> The problem I am having is that I cannot find a dip anywhere in the approximate
> frequency range. I have searched full scale on the 25-51MHz and
> 48-100MHz coils.
>
> I seem to have once found a small dip around 150MHz (3rd harmonic?) and
> quite a larger one around 33MHz (1/2 harmonic?), but I'm having trouble
> repeating these dips.
>
> After talking to a fellow ham who has much more experience than I do, he
> said that the relationship between the harmonics is not linear, which is
> why I saw a dip at 33/150MHz instead of 25/150MHz or 33/198MHz, etc.
>
> The element has it's feedpoint between the spacers, not at the spacers. I
> have disconnected the feedline as well.
>
> I have also read the dip meter manual and ARRL handbooks (1955, and
> 1973, 1988 if I recall correctly), but the best I could come up with
> was how to check 1/2 wave and 1/4 wave antennas, but this doesn't appear
> to be working.
>
> One more thing, should the coil/meter be perpendicular to the element or
> parallel to it?
>
> I know that what I"m doing is "horse and buggy" era (to quote a local
> ham), but I cannot justify purchasing an antenna analyzer, plus, since I
> have the dip meter, why not use it! hi hi
>

> Thanks for any responses and 73!
>
> -Rich
> N3WWN

1557. Re: Random Longwire Question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 18:41:16 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AE5C8CC.2781E494@rupert.tds-az.lmco.com>
Source record: 165285

ClassicAudioVisual wrote:
>
> Hello,
>
> I'm thinking of extending my existing longwire, currently it runs from the corner of my
> house to a pole situated at the end of my garden. The wire is approximately 25' long.
>
> What if I extended the wire from the pole to the other end of the house creating a
> inverted V shape thus extending the wire to 50' in length.
>
> Would this work?
>
> Kind regards,
>
> Cav.

If your aim is to get better reception, extending the length of your
antenna
should help. Just try to make sure that the included angle stays greater
than
90 degrees. Less than 90 degrees and you might get some signal
cancellation
or simply no increase in reception capabilities. You didn't say how high
the
pole is, but, if you could get that end higher in the air, it should
also help.

But just FYI, a "Longwire" usually refers to an antenna that is multiple
wavelengths at the frequency of operation. For example, a 1 wavelength
longwire
antenna for 7 MHz would be around 142 feet. As you add wavelengths of
antenna
your radiation pattern changes giving you a endfire effect. An aribtrary
length antenna is simply refered to as a "Random Wire". Few people have
the
space necessary for a true "Longwire". I know I don't.

Martin, K7MEM

--
Martin E. Meserve K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore
my responses may not be as timely as you, or I, would like them to
be. If I seem to be ignoring you, send me another E-Mail to jog my

memory. Opinions are my own and do not reflect the opinions of my
employer.

1558. Re: Question-My First Antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 19:18:01 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AE5D169.794BDF32@rupert.tds-az.lmco.com>
Source record: 165293

Mary Anne Olsen wrote:
>
> What if the maximum antenna supports are only say 40 feet and the lot
> size is 50 by 75 feet. What antenna would you recommend? Bill N3TVU

I'm with Reg on this one. I think your best bet is to start with
a Inverted-L. I had one up at one time and it worked great. Reg's
suggestion, which included a tuner, is great for all bands. If
you don't want to use a tuner you can still use an Inverted-L
for several related bands.

In the 1999 ARRL Handbook there is an article on an Inverted-L
antenna. I don't have the book with me, so I can't credit the
author. It is fed from the ground with coax.

The author chose a 3/4 wavelength radiator for 40 Meters
(96 feet). The idea being that the feed impedance drops when
using an odd 1/4 wavelength, to about 200 ohms. I erected one,
based on this, but couldn't get the feed impedance down until
I laid a few ground radials. The feed impedance came right down
and stabilized, as predicted. My radials were just random lengths
of wire buried about 3 inches down.

I then wound a matching transformer, a un-un, so that I could
feed it from the base with 50 ohm coax. After a little bit
of radiator pruning and transformer adjustment, the SWR was under
1.5:1 across the whole 40 Meter band.

It appeared to also work well on 15 Meters, as a 2 1/4 wavelength
radiator, with a SWR under 2:1 across the band. I took some
readings and made some harts, but I don't have those with me
either.

I then added a series capacitor, at the base, and was able to tune
the radiator on 80 Meters. With a variable capacitor, about 150
pF, I was able to get an SWR of 1.1:1 anywhere in the 80 Meter
band, but the bandwidth was not very wide. The radiator then acts
as a 3/8 wavelength radiator.

I didn't try it on any of the other bands and I can make no
statments about it's efficiency, even on the bands I did test it
on, but it does work. If you double the wire length I think you
can make this work on 160/80 Meters.

Martin

--
Martin E. Meserve K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore my responses may not be as timely as you, or I, would like them to be. If I seem to be ignoring you, send me another E-Mail to jog my memory. Opinions are my own and do not reflect the opinions of my employer.

1559. Re: BALUNS?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 19:58:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE5DAF8.C93786A1@eznec.com>
Source record: 165405

What's a "remote" current balun?

Roy Lewallen, W7EL

marvin rosen wrote:
>
> is there any difference between a 4:1 current balun & a 4:1 "remote"
> current balun?

1560. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 20:13:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5DE5C.E0C9183@IEEE.org>
Source record: 165406

Richard Clark wrote:
> Your questions merely expose the enormous scientific weakness that
> surrounds these so-called advances in technology.

There you go again, Richard, poo-pooing the advancements in technology
when all one needs is a sky hook with a long cable.

Did you know they eat poo-poo's in Hawaii? My three year old grandson
thinks that is hilarious (after his mother taught him not to poo-poo
in his underwear).
--
http://www.mindspring.com/~w6rca

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1561. Re: END FEED WITH LADDER LINE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 20:14:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5DEB6.F09C193@IEEE.org>
Source record: 165407

marvin rosen wrote:
> the lower portion of the ladder line will be connectd to the balun

I'm not talking about the lower portion - I'm talking about the upper
portion. Where is the current in that wire going to go?
--
http://www.mindspring.com/~w6rca

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1562. Re: END FEED WITH LADDER LINE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 20:16:47 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5DF2F.B392FFB1@IEEE.org>
Source record: 165408

Wes Stewart wrote:
> Clearly, Marvin, you misunderstand Cecil's Texas humor.

Dang Wes, you spoil everything. :-)
--
http://www.mindspring.com/~w6rca

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1563. Re: BALUNS?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 20:18:04 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5DF7C.42B302EC@IEEE.org>
Source record: 165409

Roy Lewallen wrote:
> What's a "remote" current balun?

I was tempted to ask the same question, Roy, but then I gathered that
was his question.
--
http://www.mindspring.com/~w6rca

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1564. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 20:21:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5E051.EE59EABA@IEEE.org>
Source record: 165410

VE9SRB wrote:
> I would really like to know who comes up with all this stuff.

People who assume conclusions about subsets also apply to supersets.
--
http://www.mindspring.com/~w6rca

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1565. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 20:28:50 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5E202.A8DB6C0A@IEEE.org>
Source record: 165411

Richard Clark wrote:
> Few amateurs realize that through technique, not money thrown at
> wonderful tools, they can achieve measures of high accuracy
> (frequently far in excess of those costly handheld devices).

One wonders how Maxwell did his thing without electronics.
--
http://www.mindspring.com/~w6rca

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1566. Re: etymology

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 20:31:38 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE5E2AA.C8A32787@bwcc.com>
Source record: 165412

W6RCecilA wrote:
> Are TV ghosts a mathematical fiction?
Oh, so that's why they are called ghosts!

1567. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 20:44:18 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c4oii$1ob$1@slb7.atl.mindspring.net>
Source record: 165413

Richard:

Just assume that both transmitters are transmitting DC... that works!

Now answer the questions.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3ae5a157.2466170175@news.seanet.com...
> On Mon, 23 Apr 2001 21:32:36 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Conundrum indeed.
> >
> >Let's make it simple... the answer is the same anyway... if it helps,
start
> >both transmitters off at the same phase angle and let the frequency
approach
> >zero as closely as you wish...
> >
> >Ohhh say... 0.00001 Hz or so... ! If that's not low enough just go down
> >another few decades in frequency I don't really care. The answer is
> >independent of frequency and wavelength. Why?
> >
>
> Hi Peter,
>
> If the frequency is arbitrary (except that both sources support it);
> why make it an issue at all?
>
> It seems unlikely that any conclusion can come from so many immaterial
> conditions.
>
> Why don't you try again, and boil out the rhetorical clutter.
>
> 73's
> Richard Clark, KB7QHC

1568. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 20:48:14 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c4optkd1@slb7.atl.mindspring.net>
Source record: 165414

Cecil:

That's "energy" not "power".

This difference is more than sematic... it is subtle but simple when you
"get it".

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE58485.8200FA04@IEEE.org...
> "Peter O. Brackett" wrote:
> > But reflected power Pr is only a mathematical creation, not a reality.
>
> Run a million joules RF for one second into a one second long lossless
> unterminated transmission line. During the next second, disconnect the
> transmitter and grab the feedline conductors, one in each hand. What
> would you expect to happen next? Saying that reflected power is only
> a mathematical creation is the same thing as saying that the conservation
> of energy principle can be violated. In the above thought experiment,
> where did the energy go if not into the reflected waves?
> --
> http://www.mindspring.com/~w6rca
>
>
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1569. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 20:53:12 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c4p37bfm1@nntp9.atl.mindspring.net>
Source record: 165415

John:

Sorry old man, you are missing a very important point.

We know where and how to connect the voltmeter and ammeter to measure an impedance or reactance, put the voltmeter leads across the impedance and place the ammeter in series with the impedance, there is no "fiction" therein, I can readily label the connections points on a schematic and draw a schematic for the connections, but....

Where, pray tell, do you intend to place the voltmeter and ammeter leads to measure that ephemeral thing called "reflected power".

-Peter K1PO

"John O'Flaherty" <oflahert@toast.net> wrote in message news:3AE59689.C747D494@toast.net...
> "Peter O. Brackett" wrote:
>
> > John:
> >
> > Hey, now you are trying to mess with me... reactance is not a fiction.
> > Reactance is very real, er...at least it is the imaginary part of an
> > impedance.
> >
> > X = (2 * pi * f* L) or X = 1/(2 * pi * f * C) are both functions of
> > frequency, and to the extent that one can deal with division by zero being
> > defined as infinite, both capacitive and inductive reactance are measureable
> > with "ordinary" instruments.
> >
> > But reflected power Pr is only a mathematical creation, not a reality.
>
> Sorry, Peter, impedance and reactance are convenient mathematical fictions,
> entirely derivable from voltage, current and their phases; they have no real
> separate exisence.
>
> john
>

1570. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 20:58:51 UTC
From: kb7qhc@home.com
Message-ID: <3ae6e8cb.2484462297@news.seanet.com>
Source record: 165416

On Tue, 24 Apr 2001 15:28:50 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> Few amateurs realize that through technique, not money thrown at
>> wonderful tools, they can achieve measures of high accuracy
>> (frequently far in excess of those costly handheld devices).
>
>One wonders how Maxwell did his thing without electronics.

Hi Cecil,

The old fashioned way, he had to think (another one of those
techniques people try to replace by purchase).

73's
Richard Clark, KB7QHC

1571. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 20:59:12 UTC
From: kb7qhc@home.com
Message-ID: <3ae5e69f.2483906869@news.seanet.com>
Source record: 165417

On Tue, 24 Apr 2001 16:44:18 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>Just assume that both transmitters are transmitting DC... that works!
>
>Now answer the questions.
>

Hi Peter,

OK, both being in phase would suggest there is nothing to worry about.

This thread is closed. ;-)

73's
Richard Clark, KB7QHC

1572. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:02:06 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c4pjr$3m5$1@slb7.atl.mindspring.net>
Source record: 165418

Cecil:

Nope, TV ghosts are not mathematical fictions, nor are most other kinds of "echos".

What is a "fiction" is the particular and specific way in which the "proponents" of "reflected power" Pr and define it...

Look closely at their formula for Pr and ask yourself, what are those components that define the reflected power?

Pi is the power that "would be" delivered to a perfectly (conjugately) matched load. But in the mismatched case Pi not only is not "would be" it simply "isn't"!

Pr = Pi - Pt.

Clearly if you really understand what this definition means, and what Pi is, itself a fiction, then you have no alternative than to accept that Pr, as defined by this equation is pure fiction. Except of course for the perfectly conjugately matched case in which Pr = 0 and Pt = Pi anyway!

I'm not saying that this defiinition of Pr is not useful, it might indeed be useful to some, but it is a pure fiction and is completely unecessary.

Think about it...

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AE58544.5ED7D227@IEEE.org...
> "Peter O. Brackett" wrote:
> > That so-called reflected power is strictly a mathematical fiction.
>
> Peter, I can design reflections to cause TV ghosting. Are TV ghosts
> a mathematical fiction?
> --
> http://www.mindspring.com/~w6rca
>
>
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1573. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:05:27 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c4pq5uhp1@slb7.atl.mindspring.net>
Source record: 165319

John:

Nope, time domain reflectometry is not fiction.

But then it does not deal with power, but with transients.

And no one in the TDR field ever tries to write down an equation that states
that you can determine a reflected pulse by subtracting the transmitted
pulse from the incident pulse.

Fuzzy thinking...

-Peter K1PO

"John O'Flaherty" <oflahert@toast.net> wrote in message
news:3AE5959C.53E06446@toast.net...
> "Peter O. Brackett" wrote:
>
> > Denver:
> >
> > Nope, the explanation is simple.
> >
> > Don't believe what the "High Priests" are telling you. It's in their
> > self-interest to keep you "in the dark" and believing.
> >
> > That so-called reflected power is strictly a mathematical fiction.
Useful
> > for certain engineering calculations, and for explaining some kinds of
> > "visualizations" of transmission dynamics, but certainly not necessary,
and
> > not directly observable.
>
> Is it by mathematical fiction that time domain reflectometers work?
>
> john
>
>
>

1574. Re: END FEED WITH LADDER LINE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:06:42 UTC
From: richardharrison@webtv.net
Message-ID: <15068-3AE5EAE2-305@storefull-112.iap.bryant.webtv.net>
Source record: 165323

Marvin Rosen wrote:
I am able to put up 100 ft of wire in an inverted V configuration &
would like to end feed it with 450 ladder-line."

Better to center-feed the wire.

Collins Radio recommended in "Amateur Single Sideband" that amateurs with limited resources use a tri-band beam for 10, 15, and 20 meters, and use a trap dipole for 80 and 40 meters.

The trap dipole Collins recommends is an "inverted-vee". A single support pole 30 to 50 feet high is needed for the center drivepoint. The ends are supported by poles at least 10 feet high.

The overall length for 80-meters is cut-and-try because of the traps but is usually 100 to 110 feet in the phone-band. Traps make the 40-meter dipole 64.5 feet long. 50-ohm coax feeds the drivepoint and has an SWR of less than 1.5:1.

Best regards, Richard Harrison, KB5WZI

1575. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:06:59 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c4pt1llg1@slb2.atl.mindspring.net>
Source record: 165320

Reg:

I believe that those who subscribe to the "reflected power" religion are
already standing on their heads.

Heh, heh...

They seem to be having problems with DC reflected power... I wonder why?

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9c3tft$g3k$1@uranium.btinternet.com...
> Reflections and echos are ALWAYS a matter of time.
>
> Gentlemen, praps your differences could be reconciled if you
> discussed reflections on transmission lines in terms of Time. Ban
> the mention of frequency.
>
> Try standing on your heads ;o)
> ----
> Reg
>
>
>

1576. Re: BALUNS?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:07:04 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3ae5eb8a$0$88180$bbae4d71@news.net-link.net>
Source record: 165322

Likely something that "remotely" resembles a current balun? A 4:1 current balun that is built into a tuner could be considered "local" and the one you hook coax to outdoors that is tied directly into the antenna could be considered "remote". If the balun is made in a small PVC tube, it is a City balun for low power on a small lot. If it made in a larger container, such as a 3 LB coffee can, it is a "country" balun for legal limit. If it is made in a 50 gallon steel drum, it is a Texas balun for floor model Henry.
Roy Lewallen wrote in message <3AE5DAF8.C93786A1@eznec.com>...
>What's a "remote" current balun?
>
>Roy Lewallen, W7EL
>
>marvin rosen wrote:
>>
>> is there any difference between a 4:1 current balun & a 4:1 "remote"
>> current balun?

1577. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:07:26 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c4ptseio1@nntp9.atl.mindspring.net>
Source record: 165321

For how long?

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE58345.C342B968@IEEE.org...
> "Peter O. Brackett" wrote:
> > Don't waffle here, we are about to get to the bottom of this
"fiction"...
> > tell me... there is no reflected power at frequencies below say f =
0.001 Hz
> > and there is reflected power above that frequency, or ....
>
> Make your transmission line lossless and one wavelength long
> and you will get reflections at any frequency.
> --
> http://www.mindspring.com/~w6rca
>
>
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1578. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:15:08 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE5ECDC.2F0DFF1A@toast.net>
Source record: 165324

"Peter O. Brackett" wrote:

> John:
>
> Sorry old man, you are missing a very important point.
>
> We know where and how to connect the voltmeter and ammeter to measure an
> impedance or reactance, put the voltmeter leads across the impedance and
> place the ammeter in series with the impedance, there is no "fiction"
> therein, I can readily label the connections points on a schematic and draw
> a schematic for the connections, but....
>
> Where, pray tell, do you intend to place the voltmeter and ammeter leads to
> measure that ephemeral thing called "reflected power".

You can't measure impedance or reactance with a voltmeter or ammeter. You can only measure voltage or current, and posit an imaginary property from a mathematical formula, to relate the two.

john

1579. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:17:05 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE5ED51.6D03FE3F@toast.net>
Source record: 165326

"Peter O. Brackett" wrote:

> John:
>
> Nope, time domain reflectometry is not fiction.
>
> But then it does not deal with power, but with transients.
>
> And no one in the TDR field ever tries to write down an equation that states
> that you can determine a reflected pulse by subtracting the transmitted
> pulse from the incident pulse.
>
> Fuzzy thinking...

What thinking was fuzzy, please?

john

1580. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:20:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5EE07.5ADF074F@IEEE.org>
Source record: 165327

"Peter O. Brackett" wrote:
> That's "energy" not "power".
> This difference is more than sematic... it is subtle but simple when you
> "get it".

Don't tell us that you are basing your entire argument on the definition of power. You're gonna lose if you accept the IEEE definition of power, i.e. joules/second passing a point (no work required). Do you also claim that commercial power generation plants don't exist? :-)

So please answer this question: Does reflected energy exist? If the answer is yes, then reflected power exists according to the IEEE definition of power.
--
http://www.mindspring.com/~w6rca

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1581. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:20:48 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c4qmvqjp1@slb6.atl.mindspring.net>
Source record: 165325

Cecil:

I did not say that reflections do not exist!

Repeat, repeat, repeat...

I did not say that reflections do not exist!

I did not say that reflections do not exist!

What is there QRM on this frequency. Of course reflections exist!

What I did say was that the specific quantity Pr, called the "reflected power" by many, and defined by the equation Pr = Pi - Pt, is a fiction.

I did not say reflection do not exist.

I did say that "reflected power" Pr, as commonly defined in the industry, is a pure mathematical fiction.

Where the "heck" does it go? Who or what dissipates it? Where is it's "source", where is it's sink? Would you pay for it by the kWHour? What???

And I believe that I have proved that quantity to be a fiction beyond any reasonable doubt using elementary high school algebra.

Let's stick with reflected voltages and reflected currents, I can deal with those sums and differences, but please, please, please don't mess with that "fiction" called reflected power it leads to all kinds of serious misunderstandings. Why Oh Why did VSWR meter manufacturers (reflected voltage meter manufacturers) start labeling their meter faces with "power"... When its' not... that little misapplication of terminology has sent many a prospective good engineer into "reflected power" oblivion.

-Peter K1PO [The guy who believes in reflections, but foreswears that common "ficticious" definition of reflected power.]

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AE58766.E5AA6634@IEEE.org...
> "Peter O. Brackett" wrote:
> > Apparently you will persist in a belief in the reality of reflected power no
> > matter what evidence is presented to the contrary.
>
> Using TV ghosting, I can prove to you that reflections exist.
> --
> http://www.mindspring.com/~w6rca

>
>
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1582. Re: END FEED WITH LADDER LINE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:26:03 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae5ef5d.10195470@news.aepnet.org>
Source record: 165328

On Tue, 24 Apr 2001 15:16:47 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Wes Stewart wrote:
>> Clearly, Marvin, you misunderstand Cecil's Texas humor.
>
>Dang Wes, you spoil everything. :-)

Sorry.
>--
>http://www.mindspring.com/~w6rca
>
>
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>http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1583. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:27:34 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c4r3j$9dd$1@slb3.atl.mindspring.net>
Source record: 165329

Cecil:

What!

You have it all wrong here...

Here you claim to be a reflected power believer and at the first opportunity (DC) you deny your saviour.

Read my lips...

The concept of reflected power, and all of the equations and mathematics for calculating it, are just as valid for DC as for AC.

Surprised?

You shouldn't be... just try some calculations... use batteries with 50 Ohm internal resistance for "transmitters", and use dummy loads or "made up" impedances for antennas, or whatever...

You will see that all of the "reflected power" mathematical apparatus still works for DC as it did for AC.

What? It doesn't fit with your "visualizations"? Heh, heh...

I just wonder what use can be made of it!

-Peter K1PO [I'm OK with reflected power, just don't say it's not ficticious!]

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AE58705.52066216@IEEE.org...
> "Peter O. Brackett" wrote:
> > I maintain that if you claim that there is no reflected power at DC then
> > there is no reflected power at any frequency. Since zero is just as valid a
> > frequency as any other.
>
> At DC steady-state there is no net moving energy so all the de/dt factors
> are zero. However, prior to DC steady-state, during the transcient condition,
> there can be forward and reflected energy since the de/dt factors are not
> zero.
> --
> http://www.mindspring.com/~w6rca
>
>
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1584. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:27:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5EFD9.1FF3CBDC@IEEE.org>
Source record: 165330

"Peter O. Brackett" wrote:
> Where, pray tell, do you intend to place the voltmeter and ammeter leads to
> measure that ephemeral thing called "reflected power".

Well, the voltmeter and ammeter need a little help from the characteristic impedance of the transmission line. The ratio of voltage/current for the forward waves equals Z0. The ratio of the voltage/current for the reflected waves equals Z0. Given those assumptions, it is duck soup to separate the forward power from the reflected power by adding and subtracting phasers which are not Star Trek weapons but are quasi-vectors related by either zero or 180 degrees - or are they pseudo-vectors? - I forget.
--
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1585. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:37:32 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae5ef8f.10245069@news.aepnet.org>
Source record: 165331

On Tue, 24 Apr 2001 16:53:12 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>John:
>
>Sorry old man, you are missing a very important point.
>
>We know where and how to connect the voltmeter and ammeter to measure an
>impedance or reactance, put the voltmeter leads across the impedance and
>place the ammeter in series with the impedance, there is no "fiction"
>therein, I can readily label the connections points on a schematic and draw
>a schematic for the connections, but....
>
>Where, pray tell, do you intend to place the voltmeter and ammeter leads to
>measure that ephemeral thing called "reflected power".

Where are you going to attach your voltmeter and ammeter leads to my
waveguide and tell me what the guide impedance is?

And since when do voltmeters and ammeters measure impedance? I
thought they measured volts and amps, but what do I know, I still
think reflected power is real.

Wes Stewart, N7WS

1586. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:45:00 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5F3DC.A2E17811@IEEE.org>
Source record: 165332

"Peter O. Brackett" wrote:
> Think about it...

I have thought about it a lot, Peter. It doesn't matter if the generator is matched or not. Power delivered to the load equals forward power minus reflected power assuming, of course, that you accept the definition of power in the IEEE Dictionary. (If you don't, simply convert watts to joules/second passing a measurement point).

Consider the following thought experiment: You are in a room with a transmission line entering the room and exiting the room. You have no knowledge of the generator or the load. You can make any ***PASSIVE*** measurement you choose, i.e. voltage, current, and phase. Can you tell if a conjugate match exists or not? I submit that you cannot tell and that it doesn't matter anyway (except for the efficiency of the generator).
--
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1587. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:48:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5F4BE.D37D1978@IEEE.org>
Source record: 165333

"Peter O. Brackett" wrote:

> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote:
> > Make your transmission line lossless and one wavelength long
> > and you will get reflections at any frequency.

> For how long?

For as long as power is applied after steady-state has been reached.
This is easily proven by observing ghosts on a TV.
--
http://www.mindspring.com/~w6rca

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1588. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 21:56:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5F6A5.A8FD06CA@IEEE.org>
Source record: 165334

"Peter O. Brackett" wrote:
> I did not say that reflections do not exist!
> Repeat, repeat, repeat...
> I did not say that reflections do not exist!
> I did not say that reflections do not exist!
> What is there QRM on this frequency. Of course reflections exist!

If reflected energy exists, given the definition of power in the IEEE
Dictionary, then reflected power exists. There is no getting around it.
If we don't share a common dictionary for a common language, communication
is impossible.

> And I believe that I have proved that quantity to be a fiction beyond any
> reasonable doubt using elementary high school algebra.

Unfortunately, you have violated standard definitions in the process.
Instead of using reflected "power", why not use reflected "gobbleygook",
which is not defined in the IEEE Dictionary so you are free to define
it yourself.
--
http://www.mindspring.com/~w6rca

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1589. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 22:00:04 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE5F764.ABE0F3F@IEEE.org>
Source record: 165335

"Peter O. Brackett" wrote:
> You will see that all of the "reflected power" mathematical apparatus still
> works for DC as it did for AC.

Of course the reflection model works, else it wouldn't be as useful.
I don't know for sure, but a quantum physics model might work just
as well or better. Why don't you calculate everything at the quantum
level and get back to us? :-)
--
http://www.mindspring.com/~w6rca

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1590. Re: BALUNS?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 22:16:07 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE5FB27.20E9@wt.net>
Source record: 165337

Rudy Marcelletti wrote:

> If it is made in a 50 gallon steel drum, it is a Texas balun for floor model Henry.

We make em Texas tough..:} And I really do run a floor model henry..:)
But these days a floor model henry is fairly wimpy compared to what they
sell now. IE: an 8877 amp etc.. Of course henry makes one of those too
though. Mine's only a dual 3-500z model. Just a peanut whistle these
days. It's lucky to do 1400w with 100w drive. A good 8877 amp will crank
2500w all day long usually. I guess you'll need the 55 gallon drum with
teflon wrapping for those. :/ MK

--
http://web.wt.net/~nm5k

1591. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 22:23:16 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae5f3e9.11359009@news.aepnet.org>
Source record: 165336

On Tue, 24 Apr 2001 17:05:27 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>John:
>
>Nope, time domain reflectometry is not fiction.
>
>But then it does not deal with power, but with transients.
>
>And no one in the TDR field ever tries to write down an equation that states
>that you can determine a reflected pulse by subtracting the transmitted
>pulse from the incident pulse.
>
>Fuzzy thinking...

There may be fuzzy thinking here but.....

In most TDRs, it is not a pulse that is transmitted, but a very fast
risetime impulse. The reflections do in fact combine with the impulse
and sum algebraically. I guess if you want to change the sign of one
of these, you can call it subtraction.

Steve Adam in chapter 6.2 of his book, "Microwave Theory and
Applications", Prentice-Hall, 1969, gives equations for determining
the characteristics of complex discontinuities using a TDR and
examining the sum of the impulse and the reflection(s).

Since the impulse generator is purposely a well-match source (to
prevent re-reflections) there is a resistive (Zo) load in the system.
Last I recall, volts across a resistance constitutes "power", so I
must conclude that there is power in the reflections. They are after
all, measured by sampling the voltage at the output of the impulse
generator.

Wes Stewart, N7WS

1592. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 23:21:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE60A86.ADA380E5@eznec.com>
Source record: 165338

In circuits texts, "impulse" is used to mean an infinitely narrow, often infinitely high pulse (usually with finite area). In TDR work, the term is often used to mean an approximation to an impulse, i.e., a very narrow pulse. Impulses are often used for long-line TDRs, like the ones used for troubleshooting long communications cables. High speed TDRs used for evaluating connectors, connections, interfaces, PC board runs, and the like generate a step (the integral of an impulse) with very fast risetime (some in the neighborhood of 10 ps), the fast risetime being necessary for good spatial resolution. I'm pretty sure that's what Wes means. And, yep, everything does sum nicely. I've been away from it for a while now, but did spend several years designing high-speed TDR equipment. In the course of doing that I did quite a bit of customer support, worked with the applications engineers, and taught a few classes. So I can probably answer most general questions about TDR, at least about the high speed variety.

Roy Lewallen, W7EL

Wes Stewart wrote:
>
> On Tue, 24 Apr 2001 17:05:27 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >John:
> >
> >Nope, time domain reflectometry is not fiction.
> >
> >But then it does not deal with power, but with transients.
> >
> >And no one in the TDR field ever tries to write down an equation that states
> >that you can determine a reflected pulse by subtracting the transmitted
> >pulse from the incident pulse.
> >
> >Fuzzy thinking...
>
> There may be fuzzy thinking here but.....
>
> In most TDRs, it is not a pulse that is transmitted, but a very fast
> risetime impulse. The reflections do in fact combine with the impulse
> and sum algebraically. I guess if you want to change the sign of one
> of these, you can call it subtraction.
>
> Steve Adam in chapter 6.2 of his book, "Microwave Theory and
> Applications", Prentice-Hall, 1969, gives equations for determining
> the characteristics of complex discontinuities using a TDR and

> examining the sum of the impulse and the reflection(s).
>
> Since the impulse generator is purposely a well-match source (to
> prevent re-reflections) there is a resistive (Zo) load in the system.
> Last I recall, volts across a resistance constitutes "power", so I
> must conclude that there is power in the reflections. They are after
> all, measured by sampling the voltage at the output of the impulse
> generator.
>
> Wes Stewart, N7WS

1593. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 23:35:29 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c52jkfps1@slb5.atl.mindspring.net>
Source record: 165339

Richard:

Heh, heh...

Yes I believe that you are "in tune" with those DC transmitters. It's not hard to get those DC transmitters in phase with each other, their phase changes so slowly.

Really though, I am serious, all of the same formulae and concepts used for wave mechanics work equally as well at DC as at RF. They must of course, otherwise they would not be "valid". It's just that the "thought" of reflected power at DC really "challenges" the visualizations that some folks carry around in their heads.

Sometimes, like in flying an airplane by instruments, it's best not to visualize, instead allow oneself to be guided by the immutable laws. That's why I prefer I and V and ammeters and voltmeters to those "ficticious" power meters.

But since you raise the question of phase at DC...I wonder, what does it mean to be 90 degrees out of phase with DC?

180 degrees, I get... if one is 50 volts DC the other is -50 volts DC that's clearly 180, but 90 degrees, now there's a challenge.

Is it possible?

One can certainly simulate 90 degree phase shift at DC, and one can handle it mathematically except for one singularity, reabut... can it be emulated, can it be real?

Thanks for the inputs and thoughts...

I think I'm going to start another thread up the NG called say...
"Reflections at DC?"

Should be a "fun" thread don't you think?

Regards,

-Peter K1PO [I believe in reflections but not "reflected power"]

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3ae5e69f.2483906869@news.seanet.com...
> On Tue, 24 Apr 2001 16:44:18 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >

> >Just assume that both transmitters are transmitting DC... that works!
> >
> >Now answer the questions.
> >
>
> Hi Peter,
>
> OK, both being in phase would suggest there is nothing to worry about.
>
> This thread is closed. ;-)
>
> 73's
> Richard Clark, KB7QHC

1594. Re: BALUNS?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-24 23:52:54 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3AE613BF.9090503@aol.com>
Source record: 165342

A marketing term. I can't remember who, but someone is marketing a balun designed to be mounted outside the shack under the eaves. If you find it easier to poke holes for coax, you can run a short length coax to the "remote" balun, then run the twinlead from the "remote" to the antenna(presumably some much longer run)

Good for a stealth antenna mounted in someone elses yard, or for folks out on the prairie where trees are scarce.

1595. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:02:00 UTC
From: k1bqt@aol.com
Message-ID: <20010424200200.12882.00000873@ng-cs1.aol.com>
Source record: 165340

Hi Peter--

>180 degrees, I get... if one is 50 volts DC the other is -50 volts DC that's clearly 180, but 90 degrees, now there's a challenge.<

No challenge at all. Like your argument, it's a big fat zero! Geezuz, are you taking ugly pills, or what???

Rick K1BQT

1596. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:03:30 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE61452.732074EF@bwcc.com>
Source record: 165341

"Peter O. Brackett" wrote:
> 180 degrees, I get... if one is 50 volts DC the other is -50 volts DC that's
> clearly 180,
Wrong.

> but 90 degrees, now there's a challenge.
Obviously you are confused about what phase entails.
In order to have phase, there must be a regular waveform.
It could be completely positive or negative with respect to earth.
What matters is the voltage difference between two points on the wave.

1597. Re: T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:09:54 UTC
From: Al <ke4nu@hotmail.com>
Message-ID: <izoF6.596$rk6.4528@newsfeed.slurp.net>
Source record: 165343

I really like mine, does a fine job, I found one thing I didn't care for:
when it rains the resonance changes...73..Alan
Timothy J. Fiebig <timothy.j.fiebig@exxonmobil.com> wrote in message
news:3AE41700.C61B8BB6@exxonmobil.com...
> Looking for comments on the performance of the T.G.M Mini Quad antenna
> MQ-1. Does anyone own one or has owned one. Also would like to hear
> about the Curshcraft mini beam.
>
> Thanks,
>
> tjf
>

1598. Re: T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:09:54 UTC
From: Al <ke4nu@hotmail.com>
Message-ID: <xJoF6.605$rk6.4799@newsfeed.slurp.net>
Source record: 165344

I really like mine, does a fine job, I found one thing I didn't care for:
when it rains the resonance changes...73..Alan
Timothy J. Fiebig <timothy.j.fiebig@exxonmobil.com> wrote in message
news:3AE41700.C61B8BB6@exxonmobil.com...
> Looking for comments on the performance of the T.G.M Mini Quad antenna
> MQ-1. Does anyone own one or has owned one. Also would like to hear
> about the Curshcraft mini beam.
>
> Thanks,
>
> tjf
>

1599. Re: T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:09:54 UTC
From: Al <ke4nu@hotmail.com>
Message-ID: <5QoF6.618$rk6.5541@newsfeed.slurp.net>
Source record: 165346

I really like mine, does a fine job, I found one thing I didn't care for:
when it rains the resonance changes...73..Alan
Timothy J. Fiebig <timothy.j.fiebig@exxonmobil.com> wrote in message
news:3AE41700.C61B8BB6@exxonmobil.com...
> Looking for comments on the performance of the T.G.M Mini Quad antenna
> MQ-1. Does anyone own one or has owned one. Also would like to hear
> about the Curshcraft mini beam.
>
> Thanks,
>
> tjf
>

1600. Re: T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:09:54 UTC
From: Al <ke4nu@hotmail.com>
Message-ID: <ErpF6.687$rk6.6065@newsfeed.slurp.net>
Source record: 165355

I really like mine, does a fine job, I found one thing I didn't care for:
when it rains the resonance changes...73..Alan
Timothy J. Fiebig <timothy.j.fiebig@exxonmobil.com> wrote in message
news:3AE41700.C61B8BB6@exxonmobil.com...
> Looking for comments on the performance of the T.G.M Mini Quad antenna
> MQ-1. Does anyone own one or has owned one. Also would like to hear
> about the Curshcraft mini beam.
>
> Thanks,
>
> tjf
>

1601. Re: T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:09:54 UTC
From: Al <ke4nu@hotmail.com>
Message-ID: <1LpF6.706$rk6.6170@newsfeed.slurp.net>
Source record: 165359

I really like mine, does a fine job, I found one thing I didn't care for:
when it rains the resonance changes...73..Alan
Timothy J. Fiebig <timothy.j.fiebig@exxonmobil.com> wrote in message
news:3AE41700.C61B8BB6@exxonmobil.com...
> Looking for comments on the performance of the T.G.M Mini Quad antenna
> MQ-1. Does anyone own one or has owned one. Also would like to hear
> about the Curshcraft mini beam.
>
> Thanks,
>
> tjf
>

1602. Re: T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:09:54 UTC
From: Al <ke4nu@hotmail.com>
Message-ID: <bOpF6.708$rk6.6384@newsfeed.slurp.net>
Source record: 165361

I really like mine, does a fine job, I found one thing I didn't care for:
when it rains the resonance changes...73..Alan
Timothy J. Fiebig <timothy.j.fiebig@exxonmobil.com> wrote in message
news:3AE41700.C61B8BB6@exxonmobil.com...
> Looking for comments on the performance of the T.G.M Mini Quad antenna
> MQ-1. Does anyone own one or has owned one. Also would like to hear
> about the Curshcraft mini beam.
>
> Thanks,
>
> tjf
>

1603. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:28:46 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae61a06.786300096@news.accessunited.com>
Source record: 165345

On Tue, 24 Apr 2001 09:04:33 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Tom, W8JI wrote:
>"But most likely if you saw a difference between 1/2wl and 5/8th wl in
>favor of the 5/8th wave something else was going on.
>
>That isn`t the same as the antenna having more gain."
>
>A 5/8wl antenna has gain over a 1/2wl antenna.
>
>Best regards, Richard Harrison, KB6WZI

So you say, but not at low angles over a small ground system.

By the way, you signed your call wrong.

73 Tom

1604. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:37:20 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c567d$f8i$1@slb6.atl.mindspring.net>
Source record: 165347

Hi Rick:

Welcome...

Nope not taking "ugly" pills. Just trying to "stimulate" thought.

That's what NG's are for, right?

What's wrong with "reflected power" and "reflections" with DC circuits [aka zero frequency]?

Why is that so... well... distasteful to some?

If the " reflection mechanics equations" work at some frequency f, why won't they still work as f approaches zero?

As we let f become smaller and smaller gradually approaching zero frequency, at what particular f do reflections actually stop? Do they? Or ... don't they?

This is not Zeno's paradox in disguise, it actually works!

There really is a reflected power at DC or zero frequency.

It's really quite illuminating to consider this possibility, for once you do accept reflections for DC circuits, many other things become crystal clear and you will gain many useful insights into reflections with AC circuits...

It frees one of all that "mental baggage" associated with whirling phasors and such...

I'll start another thread to stimulate discussion and thought on reflections at DC.

-Peter K1PO

"Rick Littlefield" <k1bqt@aol.com> wrote in message
news:20010424200200.12882.00000873@ng-cs1.aol.com...
> Hi Peter--
>
> >180 degrees, I get... if one is 50 volts DC the other is -50 volts DC
that's
> clearly 180, but 90 degrees, now there's a challenge.<
>
> No challenge at all. Like your argument, it's a big fat zero! Geezuz,
are you
> taking ugly pills, or what???
>
> Rick K1BQT

1605. I want document about indepedently-fed log periodic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:40:32 UTC
From: ������ <naranica@cheju1.cheju.ac.kr>
Message-ID: <sf0Bl#RzAHA.364@news1.sys.netsgo.com>
Source record: 165349

I'm a graduate school student majoring in antenna Eng.

Recently I'm studying indepedently-fed log periodic antenna for testing EMC.

It's very difficult to find the documents about indepedently-fed log periodic antenna.

So, I'm looking for someone to help me.

Please help me.

I want document about indepedently-fed log periodic antenna.

1606. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:41:36 UTC
From: richardharrison@webtv.net
Message-ID: <676-3AE61D40-36@storefull-117.iap.bryant.webtv.net>
Source record: 165356

Tom, W8JI wrote:
"A conductor does not need to be resonant to have a large effect on the pattern."

If a conductor is not near resonance it accepts little energy from a radio wave and therefore has little effect. Resonant structures near broadcast antennas only require detuning to disappear as factors in the broadcast pattern.

Best regards, Richard Harrison, KB5WZI

1607. Re: Thanx Cecil,Dan,Ralph,Reg & Roy

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:43:14 UTC
From: Mad Dog <lgssl@netzero.net>
Message-ID: <9c56n4$botf4$1@ID-20128.news.dfncis.de>
Source record: 165348

It is necessary to determine the electrical length of coax when you dont
have a
MFJ antenna analyzer.

--
714 Sandpile,
The Mad Dog wavin' good bye
"Scott McClements" <yetbbwa@grove.iup.edu> wrote in message
news:3AE47A41.432082E@grove.iup.edu...
> I am curious why you need to determine the velocity factor of RG-8X?
>
> Scott.
>
>
>
> Mad Dog wrote:
>
> > For the helpful information y'all supplied. This RG8/X has a
> > foamed/polyethylene insulator
> > that is solid white, i guess it's back to the drawing board to determine
the
> > V/F.
> > Or i could switch to a different brand that has a low loss,high
shielding
> > and consistent V/F
> > such as Times LMR400. The system i am building is for 11meter use but i
am
> > engineering
> > the rig piece by piece for minimal loss and stray RF.
> > Thanx again Gentleman...........
> > --
> > 714 Sandpile,
> > The Mad Dog wavin' good bye
>

1608. Re: BALUNS?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:48:49 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3AE61EF0.5FA02709@netdoor.com>
Source record: 165350

The RadioWorks sells baluns of this type. made for balanced line to coax. coax gets the rf outa the shack and the balun matches the balanced to the unbalanced feedline. Works great in keeping the rf out side where it belonges.

Butch

kazering wrote:

> A marketing term. I can't remember who, but someone is
> marketing a balun designed to be mounted outside the shack
> under the eaves. If you find it easier to poke holes for
> coax, you can run a short length coax to the "remote" balun,
> then run the twinlead from the "remote" to the
> antenna(presumably some much longer run)
>
> Good for a stealth antenna mounted in someone elses yard, or
> for folks out on the prairie where trees are scarce.

1609. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:50:42 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c570gosm1@slb7.atl.mindspring.net>
Source record: 165351

Denver:

[snip]
"Denver Braughler" <Braughler@bwcc.com> wrote in message
news:3AE61452.732074EF@bwcc.com...
> "Peter O. Brackett" wrote:
> > 180 degrees, I get... if one is 50 volts DC the other is -50 volts DC
that's
> > clearly 180,
> Wrong.
>
> > but 90 degrees, now there's a challenge.
> Obviously you are confused about what phase entails.
> In order to have phase, there must be a regular waveform.
> It could be completely positive or negative with respect to earth.
> What matters is the voltage difference between two points on the wave.
[snip]

Confused? Me? What?

Well it so happens that you really can have phase shifts between DC signals... all that it requires is the acceptance of "imaginary" as well as "real" parts of DC voltages and currents.

I assume that you are familiar with the unit imaginary usually denoted as "j" by electrical engineers, or as "i" by math types.

Now...

Say that a DC voltage has the value V1 = 2 + j3 volts, and another DC voltage has the value V2 = 2 - j3 volts, what is the "phase angle" between those two voltages?

Clearly it is 90 degrees!

And so... I can mathematically manipulate DC phase relationships using complex arithmetic.

In fact I can even build electrical circuits to "emulate" or even "be" complex at DC. I can do this in the lab very easily, and could even put such devices into mass production as well. They are not very economic, just intellectually enlightening.

To do this in the lab, one needs to set up duplicate circuits, one circuit for the "real" part and a second circuit for the "imaginary" part, and other "circuits" to cross couple the real and imaginary circuits as necessary.

Then one can even display these complex DC signals on an oscilloscope, by displaying the real part on the horizontal axes and the imaginary part on the vertical axis.

There's no need for a sweep circuit in a complex DC oscilloscope since the signals are all DC and do not change with time, only their amplitudes and phase angles are different at different parts of the circuitry.

-Peter K1PO

1610. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:55:33 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae61fdd.787795385@news.accessunited.com>
Source record: 165352

On Tue, 24 Apr 2001 17:37:14 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>If you are trying to imply that all antenna's exhibit minimum SWR when they
>are resonant, this is not correct. The feedpoint impedance being purely
>resistive does not guarantee that it also has minimum SWR. Its a function
>of Zo and the antenna R at resonance. I can send measured or computed data
>on several antennas proving this. I would really like to know who comes up
>with all this stuff.

Also, just because reactance is zero on the feedline at some point
along the line, it does not mean the antenna is resonant....

You really need to measure at the antenna, unless you know the line
characteristics well and can measure complex impedance accurately.

Lowest SWR or zero reactance down the feedline someplace does not mean
the antenna is resonant!

73 Tom

1611. Re: Best coax for VHF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 00:59:01 UTC
From: N3VST <not@chance.com>
Message-ID: <gjpF6.10191$0d.4797526@newsrump.sjc.telocity.net>
Source record: 165353

If you have the LMR 400 use it. Because you are asking, it souds as if your new to this hobby. So were the rest of us at one time. KISS Keep I Simple Stupid, a basic rule for everything. Make things easy for yourself. Avoid hardline until later, after setting up a few stations. Stick with somthing flexable Lmr 400, belden 9913F, or somthing else with less than 1.5 Db loss over 100ft @ 150Mhz. It is easy to go overboard with some of the advice you'll get. This method will keep your coax and connecters to a cost of less than $80. Hell I have a 75 ft run of RG 213U and love what the antenna did for me. Sure I could add hardline, but would I really notice a difference for the $100 or so I would spend to still talk to the same group of guys every night. You will need to balance cost, performace, available, and ease to work with. I say stay with the LMR 400
"Todd" <n9xrg@hotmail.com> wrote in message
news:vc68etka1545s86lm7ka6strodqui22h8d@4ax.com...
> I am, to be honest, confused about all the information as to which
> coax is best for 2 meter operation. I am getting ready to set up my
> station and I was thinking about using LMR-400. Any advice would be
> appreciated.
>
> 73,
>
> N9XRG

1612. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 01:01:53 UTC
From: richardharrison@webtv.net
Message-ID: <674-3AE62201-286@storefull-117.iap.bryant.webtv.net>
Source record: 165357

Tom, W8JI wrote:
"I simply said the effect of SWR is "generally" to increase loss in the feedline and mismatch the transmitter."

If the SWR is in a quarter-wave matching section, isn`t its effect to match the load to the transmitter, "generally"?

Best regards, Richard Harrison, KB5WZI

1613. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 01:09:47 UTC
From: k1bqt@aol.com
Message-ID: <20010424210947.04023.00000783@ng-mn1.aol.com>
Source record: 165354

Hi Peter--

I'll ignore your capacity to induce. That is, unless you can find a better excuse!

Rick K1BQT

1614. Re: BALUNS?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 01:21:47 UTC
From: k3bu@aol.com
Message-ID: <20010424212147.03255.00001835@ng-fi1.aol.com>
Source record: 165358

> If it made in a larger container, such
>as a 3 LB coffee can, it is a "country" balun for legal limit. If it is
>made in a 50 gallon steel drum, it is a Texas balun for floor model Henry.

If it is wound on concacrete sewer pipe with 2" copper tubing it is for Italian
300W (add zeroes according to region :-)

Yuri

1615. WTB: duplexer 2m and 70cm

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 01:35:13 UTC
From: JAD <jdavoli@NOSPAMerols.com>
Message-ID: <9c59i3$b1j$1@bob.news.rcn.net>
Source record: 165360
Cross-posted to:
alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.swap

Hi. I need a duplexer for 2 meter and 440, with SO-239 split to two PL-259 "pigtails." I'm not interested in any other configuration.

E-mail me with the details and price.

remember to remove the word "NOSPAM" from my e-mail address to reply.

Thanks,

Joe

jdavoli@NOSPAMerols.com

1616. Re: T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 01:37:10 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AE62A46.EEE53FA8@spam.me.not>
Source record: 165362

Wonder how many times he's gonna repost this?

::grin:;

-SSB

Al wrote:
>
> I really like mine, does a fine job, I found one thing I didn't care for:
> when it rains the resonance changes...73..Alan
> Timothy J. Fiebig <timothy.j.fiebig@exxonmobil.com> wrote in message
> news:3AE41700.C61B8BB6@exxonmobil.com...
> > Looking for comments on the performance of the T.G.M Mini Quad antenna
> > MQ-1. Does anyone own one or has owned one. Also would like to hear
> > about the Curshcraft mini beam.
> >
> > Thanks,
> >
> > tjf
> >

1617. Re: Using a dip meter on a cubical quad

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 01:42:07 UTC
From: k3bu@aol.com
Message-ID: <20010424214207.03255.00001849@ng-fi1.aol.com>
Source record: 165363

>
>My question is, how can I use a dip meter to determine the resonant
>frequency of a 6m cubical quad driven element centered at 52MHz?
>
>I have a Heathkit HD-1250 solid state dip meter. The dip meter is is
>good working order since I can determine an unknown capacitance and also
>determine the resonant frequency of a coaxial line shorted at both ends.
>
>The problem I am having is that I cannot find a dip anywhere in the
>approximate
>frequency range. I have searched full scale on the 25-51MHz and
>48-100MHz coils.
>

The first question is, what are you trying to do, tune the quad antenna to
frequency? (how many elements, wire #, etc.)
Are you trying to tune the single quad element out of antenna, or the whole
antenna?
In this case the simpler approach would be to model the quad array in EZNEC,
optimize it and then build it to dimensions, and you would be right on, no need
to prune, just check the resonant frequency with your SWR bridge.

To dip the Yagi or Quad elements with dipper is very difficult, coupling is not
sufficient (you can insert coupling hairpin or few turns, but that affects
element tuning too) and you have to try to measure it in its final destination
(height, surroundings). If you are trying to make array of more elements, then
the mutual coupling will detune the loop, and you could be "seeing" other
elements (dips) if you can couple sufficiently.

If there are reasons to find out resonant frequencies of elements in the array,
the best method is to model the array in computer program, then find the
individual element resonant frequencies (with other elements missing), then
prune the real elements (alone) to the same frequencies and hope all else is
the same. Then you would be close. This is usefull if elements are made out
material that modeling programs have problems to handle (various materials,
insulated wire, etc.)

73 Yuri, K3BU

1618. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 01:45:01 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c5a6b$18s$1@slb6.atl.mindspring.net>
Source record: 165364

Cecil:

I am not arguing with the IEEE Definition of power. That's just fine with me.

I am arguing that the common definition of "reflected power" in transmission line dynamics, is a "fiction".

I am not saying that reflections don't exist, they do... read my lips... I believe in reflections, and despite that belief I assert that the "reflected power" defined by some wave mechanics is a pure fiction. Cecil, you are being mesmerized by "words" which you are translating into a "visualization" that simply doesn't exist.

It's just that there is no such power as Pr = Pi - Pt! It is a "made up" value, period end of story.

Please follow the following example closely, it's simple.

I connect a 10 volt battery with a 4 Ohm internal resistance to a 1 Ohm load, through a lossless transmission line.

Is there a mismatch? Is there any reflected power? Of course!

If so, how much and where exactly is it dissipated?

The battery will deliver I = 10/(4 + 1) = 2 Amps to the 1 Ohm load through the lossless transmission line.

The voltage V across the load will be V = 2 * 1 = 2 volts.

At the load, V = 2 volts, I = 2 amps, pretty simple stuff...

And so the load absorbs 4 watts from the source. Pt = V * I = 2 * 2 = 4 Watts.

Now let's invoke all the usual wave mechanics equations.

The reflected voltage is b = V - IR, (Remember that stuff, it's your favorite...)

First we must select a "reference impedance R" to calculate the refected "waves".

Usually the "wave mechanic" chooses the value for R to be the "surge resistance" of the transmission line.

What lossless transmission line connects the battery to our load, oops we didn't specifiy it's surge resistance, heh, heh... shall we...make it say a

50 Ohm line, or...no... instead let's postpone that for the moment.

Let's just call it R for now and we'll give it a value later....

the reflected voltage wave will be:

b = (V - IR) = (2 - 2R) ... The reflected volts, a calculated value... doesn't exist anywhere in the circuit.

Note that if the load had been 4 Ohms, the reflected voltage would have been zero!

And so since there is a non-zero reflected voltage why then... we must have a reflected power!

Right?

But wait... what if we set the reference surge resistance to R = 1, why then b would become zero!!!!

As you can see from the above, we can make the "reflected voltage" b anything we wish merely by "selecting" our reference impedance R. And so...

- COUNT ONE -

Reflected Power is a fiction simply on the basis of us selecting an arbitrary reference impedance for our reflectometer.

But no... Peter's probably just "playing" with us again... Heh, heh..

Just to satisfy you lets set R = 50 Ohms like in the Bird wattmeters, don't take Peter's silly old 1 Ohm value.

Now...

b = (2 - 2 * 50) = 2 - 100 = -98 volts ... The reflected voltage a ficticious quantity, which never appears in the cirucuit.

The reflected current of course is given by the usual wave mechanics formula as Iref = b/R = (-98/50) amps, this current is also ficticious it also never appears in the circuit.

And the ficticious reflected power Pr is then simply calculated as the product of the ficticious reflected voltage and the ficticious reflected current. I challenge you to find any point in the circuit where the reflected voltage and/or the reflected current can be found! Here's that ficticious reflected power all 192.09 watts of it! Heh, heh.

Pr = b * Iref = (-98) * (-98)/50 = 192.09 watts reflected.

Hmm... now lets see...

The battery has an open circuit voltage of 10 volts driving a total of 5 Ohms. That is 4 Ohms internal resistance and a 1 Ohm load in series. Thus the battery is delivering 2 Amps to 5 Ohms at 10 volts. The total power including the power in the internal resistance is simply:

P = 10 * 2 = 20 watts.

The power delivered to the load was calculated above as:

Pt = 4 watts.

That leaves 20 - 4 = 16 watts being dissipated in the internal 4 Ohm resistance. Pinternal = 8 volts times 2 amps = 16 watts.

Two resistors in the circuit, one dissipates 16 watts, the other dissipates 4 watts.

The lossless transmission line dissipates nothing.

Now... where the HELL is that elusive 192.09 watts of reflected power? Where????

-COUNT TWO-

Is the 192.09 watts of reflected power dissipated in the internal resistance, NO!

Is it dissipated in the load, NO!

Is it dissipated in the sum of the internal resistance and the load, NO!

Is it dissipated in the surge resistance of the lossless transmission line, NO!

Then where the HELL is it????

Cecil, Reflected Power... is NOWHERE... it's nothing but a dammed fiction.

It can be defined, and it can be used in intermediate calculations by High Priests, and such... but reflected power is a big nada, zilch, nuttin.

Like the human appendix, useless.

Reflected Power is a fiction, nothing more nothing less.

Give me V and I, that I can deal with. Reflected votage I can deal with as well it has it's uses, but leave your dammed Reflected Power at home.

QED!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AE5EE07.5ADF074F@IEEE.org...
> "Peter O. Brackett" wrote:
> > That's "energy" not "power".
> > This difference is more than sematic... it is subtle but simple when you
> > "get it".
>
> Don't tell us that you are basing your entire argument on the definition
> of power. You're gonna lose if you accept the IEEE definition of power,
> i.e. joules/second passing a point (no work required). Do you also claim

> that commercial power generation plants don't exist? :-)
>
> So please answer this question: Does reflected energy exist? If the answer
> is yes, then reflected power exists according to the IEEE definition of
> power.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1619. Re: ¼s§i«Å¶Ç ¬°±z±a¨ÓµL¦¬¯q !

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 01:47:34 UTC
From: k3bu@aol.com
Message-ID: <20010424214734.03255.00001854@ng-fi1.aol.com>
Source record: 165365

>
>ï¿½sï¿½ïï¿½Å¶ï¿½ ï¿½ï¿½ï¿½zï¿½aï¿½ÓµLï¿½ï¿½ï¿½ï¿½ï¿½q !
>
>http://welcome.to/adhk
>
>ï¿½Aï¿½Î¦Xï¿½ï¿½ï¿½qï¿½Bï¿½ï¿½ï¿½~ï¿½Bï¿½tï¿½Ó¤ï¿½ï¿½ï¿½ï¿½ï¿½~ï¿½ï¿½ï¿½sï¿½Bï¿½ï¿½ï¿½ï¿½ï¿½ï¿½ï¿½ï¿½Pï¿½Bï¿½sï¿½~ï¿½ï¿½ï¿½Ð¡B
>
>ï¿½ï¿½qï¿½ï¿½ï¿½ï¿½ï¿½Å¶Çµï¿½ï¿½ï¿½ï¿½Ó·~ï¿½Î³~ï¿½Aï¿½ï¿½ï¿½ï¿½ï¿¶Qï¿½ï¿½ï¿½qï¿½Î³Ìµuï¿½ï¿½ï¿½É¶ï¿½ï¿½A
>
>ï¿½Ó¨ï¿½ï¿½tï¿½aï¿½É¨ï¿½ì°ªï¿½ï¿½Þ©Ò±aï¿½Óªï¿½ï¿½Lï¿½ï¿½ï¿½sï¿½ïï¿½ï¿½ï¿½qï¿½I
>
>
>
>

That looks like Freaktal alphabet, NO?
or invitation to Chinese virus?

1620. Re: I want document about indepedently-fed log periodic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 01:56:28 UTC
From: k3bu@aol.com
Message-ID: <20010424215628.03255.00001858@ng-fi1.aol.com>
Source record: 165366

>
>It's very difficult to find the documents about indepedently-fed log
>periodic antenna.
>

Try INDEPENDENTLY

What is it anyway, what is independent in the log antenna, each driven element has own feed? Why would you want to do that?

Yuri, K3BU

1621. Re: duplexer 2m and 70cm

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 02:01:04 UTC
From: Mike Yetsko <joe@user.com>
Message-ID: <tecc0cjosbb83c@corp.supernews.com>
Source record: 165367
Cross-posted to:
alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.swap

Mine's not for sale, but that's EXACTLY (ok, to be sure
I'd have to go climb in the trunk of my car...) what I think
I have. Hmm, it MAY not have the pigtails... I'd have to
check. But changing connector sex is easy.

It's an MFJ that I bought through HRO a number of years
ago. I'm using it with my Alinco dual-band (has two
separate pigtails) to feed a single NMO base mount that
currently has a Diamond dual-band antenna on it.

I think I paid less than $30 for it.

Mike

JAD <jdavoli@NOSPAMerols.com> wrote in message
news:9c59i3$b1j$1@bob.news.rcn.net...
> Hi. I need a duplexer for 2 meter and 440, with SO-239 split to two
PL-259
> "pigtails." I'm not interested in any other configuration.
>
> E-mail me with the details and price.
>
> remember to remove the word "NOSPAM" from my e-mail address to reply.
>
> Thanks,
>
> Joe
>
> jdavoli@NOSPAMerols.com
>
>
>

1622. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 02:06:45 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c5bf3$952$1@slb2.atl.mindspring.net>
Source record: 165368

John:

Sorry, I should have explained... TDR technology and FDM technology are not "comensurate" in the sense of dimensional analysis.

How best to explain this... lets see...

Power is a quantity having units of energy per unit time, say Joules per second, and is a continuous phenomena, and in general will be continuously present over all the time interval supported by most measuremts, while pulses are transient and carry energy with units of Joules not Joules per second.

In the TDR examples you propose, usually, if the line is sufficiently long, the pulses do not overlap, and consequently can never be "subtracted" from each other to give a continuous power reading on a meter.

And so one will not generally construct a "reflected value" for isolated pulses simply by subtracting two values measured at the same point on a line at the same time. i.e. the "standard" Bird Wattmeter will only indicate two separate "blips" as the pulses pass by, if indeed it indicates anything.

The transient case and the steady state case will not yeild the same results on conventional measuring instruments.

Of course, as you realize, that is why TDR technology was developed in the first place, to allow "meaningful" measurements of transients to be made.

The "reflected power" of which we are speaking is not the same as the energy in a reflected pulse. And the two cannot be directly compared. They don't have the same units. A better way of clearly examining this steady state problem reflected power fiction is to take it to the steady state limit and assume direct current, because then power is still a valid thing. Joules per second is fine at DC.

One cannot subtract energy from power i.e. Joules from Joules per second. And reflected power is defined by a subtractions. It's like comparing apples and oranges. One must subtract power from power or energy from energy and not mix the dimensions if one expects to get valid answers.

Check out a book which explains "dimensional analysis" which should make this clear. For example P. W. Bridgman's, "Dimensional Analysis".

-Peter K1PO

"John O'Flaherty" <oflahert@toast.net> wrote in message
news:3AE5ED51.6D03FE3F@toast.net...
> "Peter O. Brackett" wrote:

>
> > John:
> >
> > Nope, time domain reflectometry is not fiction.
> >
> > But then it does not deal with power, but with transients.
> >
> > And no one in the TDR field ever tries to write down an equation that
states
> > that you can determine a reflected pulse by subtracting the transmitted
> > pulse from the incident pulse.
> >
> > Fuzzy thinking...
>
> What thinking was fuzzy, please?
>
> john
>
>

1623. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 02:07:19 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9c5bbp$78v$1@plutonium.btinternet.com>
Source record: 165271

Yes Wes, I made a mess of it. I'll try again.

If nothing is done except vary frequency while observing the SWR meter, when the indicated SWR is at its minimum the system is at resonance whatever the minimum value might be.

Reg.

1624. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 02:10:41 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9c5bn1$a3p$0@208.206.142.94>
Source record: 165269

W6RCecilA wrote:
>
> Dick Carroll wrote:
> > Then he found the voltage and
> > current minimums,which he said were 90ï¿½ apart and easier to find than
> > the maximums, and applied the cosine rule....
>
> You mean misapplied the cosine rule.

Indeed. I should have said "applied the cosine rule". What he said was
that AC theory states that power = E x I x cosine of the angle between
the two. As an engineer you should be familar with the formula for
computing AC power.

Power is measured at a point.

Why? Is the reflected power any different at various points along the
feedline?
Looks to me like "20 watts reflected" means 20 watts reflected anywhere
betweem the matcher and the load.

> The current and voltage associated with that power must be measured
> at that same point, not one of them a quarter wavelength away.

You might as well say that voltage and current are in phase.

The Z0
> of the transmission line keeps the power factor of the forward power
> close to unity and does the same thing for reflected power. For
> most practical purposes, the phase angle between the forward current
> and forward voltage can be considered to be zero. Ditto for the
> phase angle between the reflected current and reflected voltage.
> Forward power and reflected power are separate entities.
>
> A transmission line is a transformer. Consider the result of multiplying
> the voltage on the primary of a transformer by the current out of the
> secondary by the cosine of the angle between them. You can easily prove
> that "power" is greater than the total power input into the system. Now
> if I put that in a ham mag article, would you believe I could get more
> power out of a transformer than I put in?

Someteimes I get the idea that a lot of you highly educated guys are
mostly BS artists. Most of us experienced hams wind up with the same
result without all the bafflegab.

1625. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 02:12:26 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c5bpn$1k$1@slb6.atl.mindspring.net>
Source record: 165270

Wes:

Yes, but the "jist" of our discussion has been about the "definition" of "reflected power" that definition espoused by it's proponents is, actually a mathematical formula, which must be dimensionally correct.

The formula is: Pr = Pi - Pt in Watts or Joules per second.

Our discussion is about the validity of the quantity on the left Pr, and if it really exists anywhere or is it a mathematical artifice.

It is a mathematical artifice, and a fiction, for in all but a very singular case Pr =0, you will never find an element in a network or transmission system which actually dissipates Pr!

It's obvious when you examine it, but many do not examine it the words "reflected power" evoke a model or visualization in peoples minds which is incorrect.

It 's awfully hard to dispell this myth.

-Peter K1PO

"Wes Stewart " <nospam_n7ws@arrl.net> wrote in message news:3ae5f3e9.11359009@news.aepnet.org...
> On Tue, 24 Apr 2001 17:05:27 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >John:
> >
> >Nope, time domain reflectometry is not fiction.
> >
> >But then it does not deal with power, but with transients.
> >
> >And no one in the TDR field ever tries to write down an equation that states
> >that you can determine a reflected pulse by subtracting the transmitted
> >pulse from the incident pulse.
> >
> >Fuzzy thinking...
>
> There may be fuzzy thinking here but.....
>
> In most TDRs, it is not a pulse that is transmitted, but a very fast
> risetime impulse. The reflections do in fact combine with the impulse
> and sum algebraically. I guess if you want to change the sign of one
> of these, you can call it subtraction.

>
> Steve Adam in chapter 6.2 of his book, "Microwave Theory and
> Applications", Prentice-Hall, 1969, gives equations for determining
> the characteristics of complex discontinuities using a TDR and
> examining the sum of the impulse and the reflection(s).
>
> Since the impulse generator is purposely a well-match source (to
> prevent re-reflections) there is a resistive (Zo) load in the system.
> Last I recall, volts across a resistance constitutes "power", so I
> must conclude that there is power in the reflections. They are after
> all, measured by sampling the voltage at the output of the impulse
> generator.
>
> Wes Stewart, N7WS
>
>
>
>
>
>

1626. Re: END FEED WITH LADDER LINE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 02:14:20 UTC
From: theplanters95@aol.comnospam
Message-ID: <20010424221420.16023.00000673@ng-xc1.aol.com>
Source record: 165272

During Christmas Holidays in NC, I asked my family to put up something like what you are talking about. The antenna was about 60 feet long end feed with tv twinlead. One end of the twinlead to the antenna, the other end to ground. It was about 20 feet off the ground. Using my trusty Dentron Jr. Monitor Tuner, I worked up and down the east coast, and Europe on 20m and 17 M. It tuned up and all bands 80-10M Try it and see if you like it.

Randy KA4NMA

1627. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 02:15:38 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c5c03$8pk$1@slb4.atl.mindspring.net>
Source record: 165273

Cecil:

I don't deny reflections or ghosts on TV. They exist.

Have you ever measured the reflected power in those ghosts using a Bird wattmeter or equivalent?

i.e. by subtracting IR from V...

Seems to me we had this discussion over a year ago when I shared the SWR bridge circuit analysis with you.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AE5F4BE.D37D1978@IEEE.org...
> "Peter O. Brackett" wrote:
>
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote:
> > > Make your transmission line lossless and one wavelength long
> > > and you will get reflections at any frequency.
>
> > For how long?
>
> For as long as power is applied after steady-state has been reached.
> This is easily proven by observing ghosts on a TV.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1628. Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 02:22:07 UTC
From: theplanters95@aol.comnospam
Message-ID: <20010424222207.16023.00000674@ng-xc1.aol.com>
Source record: 165274

Yes, before I get flamed, I know this is off topic.

Can regular house wiring be used for a power connection? I am talking about the 3 wire 12 gauge version. I am planning on using my Icom 706MKII in my Ford explorer. I am going on several long trips this summer and would like to try HF mobile.

For the Antenna, I am planning on using a Cecil 10-20m Special. (Again, thanks for the info and coil stock). The antenna is built, now to mount it. I already have a flat bar bumper mount, and just need to find some bolt, washers and nut for it. If I set up the antenna for 20M, can I use my antenna tuner to tune other bands (17m, 10m, and 6m)?

I'm a full time graduate student, so this needs to be done cheaply.

Please respond directly to theplanters95_nospam@aol.com after removing the no spam and underline.

73,
Randy KA4NMA

1629. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 02:23:25 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c5cea$t70$1@nntp9.atl.mindspring.net>
Source record: 165275

Cecil:

Hey man, you'r taking this reflected power stuff far too seriously.

It's all a fiction, nothing to lose sleep over.

Next thing you know someone will start selling all of that cheap reflected power to California. There's a ton of it around!

Just add up all the reflected power on all those wattmeters in use by hams, surely there's a few kilowatts there to help those poor Californians.

I wonder how we can tap off some of that wasted reflected power. Where does it all go?

My HF rig is on 40 meters right now and the "power meter" on my ATR 30 says that my reflected power is 15 watts, can I siphon some of that off to charge my car battery?

Heh, heh...

Thanks for being such a good sport...

-Peter K1PO [I've got reflected power for sale cheap!]

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AE5F764.ABE0F3F@IEEE.org...
> "Peter O. Brackett" wrote:
> > You will see that all of the "reflected power" mathematical apparatus still
> > works for DC as it did for AC.
>
> Of course the reflection model works, else it wouldn't be as useful.
> I don't know for sure, but a quantum physics model might work just
> as well or better. Why don't you calculate everything at the quantum
> level and get back to us? :-)
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1630. Re: Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 02:28:02 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9c5cni$e76$0@208.206.142.94>
Source record: 165276

Tom W8JI wrote:
>
> On 24 Apr 2001 03:36:53 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>
> > Why does the NEC prohibit running a ground wire inside a conduit? Does
> >it act as a waveguide beyond cutoff?
> >
> >Dick
>
> A ground wire is a different case than the actual feedline.
>
> With the feedline, we don't mind diverting energy. With the ground
> wire, we want to keep it in that wire.

Which is exactly why I asked the question in the first place.

Back in the early 80's Bill Orr, W6SAI's column in Ham Radio magazine showed a lightning avoidance system called "waveguide beyind cutoff" which was nothing more than running the coax from your antennas through a section of steel EMT conduit which was grounded on the shack end. It was said that this would help reduce the liklihood of lightning reaching the radio shack. I made mention of this once on another venue and was taken to task for it, when other authorities present stated categorically that this scheme was incorrect, that the conduit was merely a feedline in this instance.
Later I noticed that some version of NEC prohibited running a ground wire in conduit and smelled a rat...Looks like the late esteemed Mr. Orr wasn't so far off base after all.

Dick

1631. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 02:29:02 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c5cor$q17$1@slb6.atl.mindspring.net>
Source record: 165277

Rick:

Come on now... as a ham, author, experimenter and great engineer you are the best.

But as a poet? Heh, heh.

How's the weather up there in NH these days?

I may be up that way in the next few weeks, got some business in Chelmsford and Nashua,
"Rick Littlefield" <k1bqt@aol.com> wrote in message news:20010424210947.04023.00000783@ng-mn1.aol.com...
> Hi Peter--
>
> I'll ignore your capacity to induce. That is, unless you can find a better
> excuse!
>
> Rick K1BQT

1632. Internet Dish? What to get?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 03:21:28 UTC
From: N4IXT <n4ixt@mindspring.com>
Message-ID: <9c6cpl$75o$1@slb7.atl.mindspring.net>
Source record: 165224

Howdy,

This isn't exactly Ham related, but it is an antenna question, so I hope you'll bear with me.

I currently live way out in the country. I chose this property because it has lots of space and no restrictions, so I'm free to set up a big antenna farm (whoopee!).

The problem is there's NO cable service, NO DSL, and the best speed I can get on the modem is 28 K, and that's on a good day, average is about 24k. So I'm seriously considering getting one of those satellite dishes that allows you to do both up and downloads at fairly high speed (up ranges from 64 to 128, down is about 400k). Not as good as cable/dsl, but a darn site better then the 24k I get now.

There's two main sellers, one is StarBand (ala Dish Network) and the other is DirecPC, which is sold thru several ISPs including Earthlink and Pegasus. Problem is I don't know anyone who has used these. So, I'm asking for some experiences from any of you who have! Any input would be appreciated.

Thanks and 73's,

Robert / N4IXT

1633. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 03:24:05 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3ae64364$0$42873$1dc6e903@news.corecomm.net>
Source record: 165278

Use multistrand flexible wire for your power feed.

Dave Nagel, WD9BDZ

Theplanters95 wrote:
>
> Yes, before I get flamed, I know this is off topic.
>
> Can regular house wiring be used for a power connection? I am talking about
> the 3 wire 12 gauge version. I am planning on using my Icom 706MKII in my Ford
> explorer. I am going on several long trips this summer and would like to try
> HF mobile.
>
> For the Antenna, I am planning on using a Cecil 10-20m Special. (Again, thanks
> for the info and coil stock). The antenna is built, now to mount it. I
> already have a flat bar bumper mount, and just need to find some bolt, washers
> and nut for it. If I set up the antenna for 20M, can I use my antenna tuner to
> tune other bands (17m, 10m, and 6m)?
>
> I'm a full time graduate student, so this needs to be done cheaply.
>
> Please respond directly to theplanters95_nospam@aol.com after removing the no
> spam and underline.
>
> 73,
> Randy KA4NMA

1634. Re: duplexer 2m and 70cm

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 03:34:19 UTC
From: JAD <jdavoli@NOSPAMerols.com>
Message-ID: <9c5ghd$l7q$1@bob.news.rcn.net>
Source record: 165279
Cross-posted to:
alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.swap

Mike,
I wish MFJ made a duplexer WITH pigtails, as I am combining two separate rigs without, and do not want to bother with the additional cables (or associated loss.)

I an pretty sure someone has one around that they are not using......
"Mike Yetsko" <joe@user.com> wrote in message
news:tecc0cjosbb83c@corp.supernews.com...
> Mine's not for sale, but that's EXACTLY (ok, to be sure
> I'd have to go climb in the trunk of my car...) what I think
> I have. Hmm, it MAY not have the pigtails... I'd have to
> check. But changing connector sex is easy.
>
> It's an MFJ that I bought through HRO a number of years
> ago. I'm using it with my Alinco dual-band (has two
> separate pigtails) to feed a single NMO base mount that
> currently has a Diamond dual-band antenna on it.
>
> I think I paid less than $30 for it.
>
> Mike
>
> JAD <jdavoli@NOSPAMerols.com> wrote in message
> news:9c59i3$b1j$1@bob.news.rcn.net...
> > Hi. I need a duplexer for 2 meter and 440, with SO-239 split to two
> PL-259
> > "pigtails." I'm not interested in any other configuration.
> >
> > E-mail me with the details and price.
> >
> > remember to remove the word "NOSPAM" from my e-mail address to reply.
> >
> > Thanks,
> >
> > Joe
> >
> > jdavoli@NOSPAMerols.com
> >
> >
> >
>
>

1635. DENVER--20 meter bean For Sale

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 03:41:52 UTC
From: Bill <m6rf@yahoo.com>
Message-ID: <3AE64780.105FA1E5@yahoo.com>
Source record: 165280

I have a TELEX/HyGAIN 4 element 20 meter beam for sale.

Gain is 8.2dB, front-to-back is15dB minimum to 28 dB
maximem, 50 ohm impedance, VSWR 1.2:1, will handle full
legal power, boom length is 26 feet, Maximum wind survival
is 100mph.

The beam is in excellent condition and is ON THE GROUND
ready to be picked up. And it comes with the book.

The price is $150. I live in the Denver area.

Thanks,
Bill

m6rf@yahoo.com
303-674-0510

1636. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:04:24 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE64CC8.EEC6B09D@bwcc.com>
Source record: 165281

Richard Harrison wrote:
> If the SWR is in a quarter-wave matching section, isn`t its effect to
> match the load to the transmitter, "generally"?
Is this a hot tip about SWR placement?

1637. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:20:20 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE65084.432965AF@IEEE.org>
Source record: 165284

Dick Carroll wrote:
>
> W6RCecilA wrote:
> Power is measured at a point.
>
> Why? Is the reflected power any different at various points along the
> feedline?

What I meant by that is that the current and voltage must be measured
at the same point for the calculated power to be valid.
--
http://www.mindspring.com/~w6rca

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-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1638. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:20:37 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE65095.DD82E410@bwcc.com>
Source record: 165283

"Peter O. Brackett" wrote:
> The power delivered to the load was calculated above as:
> Pt = 4 watts.
>
> That leaves 20 - 4 = 16 watts being dissipated in the internal 4 Ohm
> resistance. Pinternal = 8 volts times 2 amps = 16 watts.
> Two resistors in the circuit, one dissipates 16 watts, the other dissipates
> 4 watts.
>
> The lossless transmission line dissipates nothing.
This is fine.

I didn't see anyone claiming that the reflected power represented additional energy in the total system.

Reflected power is power which is not dissipated by the load or the source until it has bounced back and forth a zillion times. The those zillion tiny echoes can be integrated (summed) into your missing 192.09 W.

1639. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:25:02 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE6519E.81C71817@bwcc.com>
Source record: 165286

"Peter O. Brackett" wrote:
> I wonder how we can tap off some of that wasted reflected power. Where does
> it all go?
It is dissipated too.
This is not perpetual motion.
The reflected power is a portion of the input power.

1640. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:28:38 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE65276.24BDA0AF@IEEE.org>
Source record: 165287

"Peter O. Brackett" wrote:
> Cecil, Reflected Power... is NOWHERE... it's nothing but a dammed fiction.

Assume a one second long lossless 50 ohm coax line, a 100 ohm load,
and 100 joules/sec input into the coax from the generator. At the end
of two seconds the feedline contains 150 joules of energy. How can
the feedline contain more energy than the generator is generating?
--
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1641. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:36:33 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE65451.3338A498@IEEE.org>
Source record: 165288

"Peter O. Brackett" wrote:
> It is a mathematical artifice, and a fiction, for in all but a very singular
> case Pr =0, you will never find an element in a network or transmission
> system which actually dissipates Pr!

With a generator delivering 100 joules/sec into a one second long lossless
transmission line with an SWR of 5.83:1, there is 300 joules of energy
left in the transmission line when the transmitter is shut off, 200 joules
of which is reflected energy. If the transmitter is disconnected entirely,
all 300 joules of that stored energy will be dissipated in the load after
the transmitter is disconnected.
--
http://www.mindspring.com/~w6rca

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1642. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:39:21 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE654F9.1848D62@IEEE.org>
Source record: 165289

"Peter O. Brackett" wrote:
>
> Cecil:
>
> I don't deny reflections or ghosts on TV. They exist.
>
> Have you ever measured the reflected power in those ghosts using a Bird
> wattmeter or equivalent?

If there were zero power in the reflections, there would be no ghosts.
Zero power could not drive the 75 ohm input of a TV receiver.
--
http://www.mindspring.com/~w6rca

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1643. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:41:43 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9c5ki7$lh2$7@bashir.peak.org>
Source record: 165295

Tom W8JI <2w8ji@akorn.net> wrote:
: On 24 Apr 2001 04:10:41 GMT, Bill Nelson <billn@spock.peak.org> wrote:

:>It can affect the radiation pattern, but not much. Remember that the
:>antenna is almost vertical - so is the other backstay. It is basically
:>a base loaded Marconi, and probably with a rather imperfect ground.

: The induced current in a close-spaced wire is generally opposite that
: in the exciting wire. Connected or not, grounded or not, it can make a
: large change in pattern and efficiency.

Sure, but it is only close-spaced at one end.

:>One thing that does need to be checked is that unused backstay is not
:>a resonant length at the operating frequencies - In this case, the
:>combination of stay and mast need to be checked. If the rig performs
:>poorly over all the marine frequencies, then this is unlikely to be
:>the problem.

: It all needs to be looked at. A conductor does not need to be resonant
: to have a large effect on the pattern.

:>This type of antenna has been used for many years, with decent results.
:>So something has to be wrong with the installation itself. Aside from
:>potential antenna problems, it could be a defective marine radio, or
:>a defective tuner. There is a small chance that it could be defective
:>coax - although that might be obvious. It could be a combination of
:>all of these.

: Could be. The problem could be anything. There simply isn't enough
: information. The only thing that we do know is SWR doesn't mean
: anything.

Agreed. That is why I was asking more questions - especially in regards
to power measurements.

--
Bill Nelson (billn@peak.org)

1644. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:44:18 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9c5kn2$lh2$8@bashir.peak.org>
Source record: 165296

Tom W8JI <2w8ji@akorn.net> wrote:
: On 24 Apr 2001 04:10:41 GMT, Bill Nelson <billn@spock.peak.org> wrote:

:>It can affect the radiation pattern, but not much. Remember that the
:>antenna is almost vertical - so is the other backstay. It is basically
:>a base loaded Marconi, and probably with a rather imperfect ground.

: The induced current in a close-spaced wire is generally opposite that
: in the exciting wire. Connected or not, grounded or not, it can make a
: large change in pattern and efficiency.

:>One thing that does need to be checked is that unused backstay is not
:>a resonant length at the operating frequencies - In this case, the
:>combination of stay and mast need to be checked. If the rig performs
:>poorly over all the marine frequencies, then this is unlikely to be
:>the problem.

: It all needs to be looked at. A conductor does not need to be resonant
: to have a large effect on the pattern.

Oops, I forgot this in my previous response.

If the nearby conductor is not close to resonant, then it will not
affect the radiation pattern significantly. It will not absorb or
reradiate enough energy to matter.

--
Bill Nelson (billn@peak.org)

1645. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:47:07 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3AE656CB.5029A04C@haertig.com>
Source record: 165290

Richard,

Take your 90 degree AM tower and put a floating 225 degree tower 90 degrees away from it. Are you telling me that the effect on the omnidirectional pattern is minimal?

Any guess as to the F/B ratio?

The only re-radiators that have minimum effect are short ones, ones that are very far away and ones that are orthogonal.

Gray

Richard Harrison wrote:
>
> Tom, W8JI wrote:
> "A conductor does not need to be resonant to have a large effect on the
> pattern."
>
> If a conductor is not near resonance it accepts little energy from a
> radio wave and therefore has little effect. Resonant structures near
> broadcast antennas only require detuning to disappear as factors in the
> broadcast pattern.
>
> Best regards, Richard Harrison, KB5WZI

--
Telecommunications Engineering
Gray Frierson Haertig & Assoc.
820 North River Street, Suite 100
Portland, Oregon 97227
503-282-2989
503-282-3181 FAX
gfh@haertig.com

1646. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:48:36 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE65724.289C6463@IEEE.org>
Source record: 165291

"Peter O. Brackett" wrote:
> I wonder how we can tap off some of that wasted reflected power. Where does
> it all go?

It is not wasted as it fills up the transmission line to achieve the
Z0-match. It is dissipated after the generator is shut off. There's
that pesky conservation of energy principle to be honored. A one second
long transmission line with a 5.83:1 SWR being fed by a 100 joule/sec
generator contains 300 joules of energy during steady-state if a Z0-
match exists. Forward power is 200 joules/sec and reflected power is
100 joules/sec.
--
http://www.mindspring.com/~w6rca

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1647. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:50:43 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE657A3.319F657D@bwcc.com>
Source record: 165292

W6RCecilA wrote:
> At the end of two seconds the feedline contains 150 joules of energy.
Please state how you measured this to complete your argument.

1648. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 04:58:09 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE65961.4622DBAD@bwcc.com>
Source record: 165294

W6RCecilA wrote:
> A one second long transmission line
That sounds like a lot of energy at first glance.
But such a line length would be in the 100000+ mile range, wouldn't it?

1649. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 05:10:59 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9c5m93$lh2$9@bashir.peak.org>
Source record: 165303

Peter O. Brackett <ab4bc@ix.netcom.com> wrote:
: John:

: Nope, time domain reflectometry is not fiction.

: But then it does not deal with power, but with transients.

It deals with voltage, and thus with current. If you have the two, you
have power.

What you are saying is the equivalent of stating that a pulsed radar does
not transmit any power, as the transmitted signal is only a transient pulse.

: And no one in the TDR field ever tries to write down an equation that states
: that you can determine a reflected pulse by subtracting the transmitted
: pulse from the incident pulse.

Ah, but I can write down an equation that will calculate the expected
magnitude of the voltage of the reflected pulse. Matter of fact, that
is one of the main factors for qualifying coax/fiber - the dB loss of
a test pulse when reflected from the unterminated far end.

Further, I can use a directional coupler and measure the magnitude of the
reflected power.

: Fuzzy thinking...

No comment.

--
Bill Nelson (billn@peak.org)

1650. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 05:12:40 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9c5mc8$g8f$0@208.206.142.94>
Source record: 165297

W6RCecilA wrote:
>
> "Peter O. Brackett" wrote:
> > That's "energy" not "power".
> > This difference is more than sematic... it is subtle but simple when you
> > "get it".
>
> Don't tell us that you are basing your entire argument on the definition
> of power. You're gonna lose if you accept the IEEE definition of power,
> i.e. joules/second passing a point (no work required). Do you also claim
> that commercial power generation plants don't exist? :-)
>
> So please answer this question: Does reflected energy exist? If the answer
> is yes, then reflected power exists according to the IEEE definition of
> power.

Shure wish they'd been out of stock when Cecil ordered that IEEE
dictionary a colujple years ago.

1651. test

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 05:15:20 UTC
From: Rod Marsh <rredbeak@ihug.com.au>
Message-ID: <9c5miu$5kg$1@bugstomper.ihug.com.au>
Source record: 165298

12345

1652. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 05:25:50 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE65FDE.21AF0C1D@IEEE.org>
Source record: 165299

Denver Braughler wrote:
>
> W6RCecilA wrote:
> > A one second long transmission line
> That sounds like a lot of energy at first glance.
> But such a line length would be in the 100000+ mile range, wouldn't it?

Yep, it's just a thought experiment to make the math easy.
--
http://www.mindspring.com/~w6rca

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1653. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 05:29:37 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9c5nc1$lh2$10@bashir.peak.org>
Source record: 165302

Denver Braughler <Braughler@bwcc.com> wrote:
: "Peter O. Brackett" wrote:
:> I wonder how we can tap off some of that wasted reflected power. Where does
:> it all go?

Ever hear of a circulator? Power going in port A goes out port B. Power going in port B goes out port C.

Hook up a transmitter, through a wattmeter, to port A of the circulator. Hook up a second wattmeter, if you wish, to port B and then connect that to an unmatched load. Hook up a third wattmeter to port C and connect that to a matched load - to eliminate rereflections that would complicate the experiment.

To make it simple, use 50 ohm coax and a 200 ohm pure resistance for the load out of port B. Further, use short lengths of coax so the coax loss is immaterial. The circulator loss will have to be accepted - and will be available from the manufacturer.

You can now calculate the power in watts that will appear on the wattmeter connected to port C - given the power supplied at port A.

This has to be reflected power - there is no other explanation. If there is, please enlighten me. That 50 ohm load resistor on port C certainly is getting hot.

--
Bill Nelson (billn@peak.org)

1654. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 05:30:54 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae65dcf.8197464@news.aepnet.org>
Source record: 165300

On Tue, 24 Apr 2001 16:21:42 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>In circuits texts, "impulse" is used to mean an infinitely narrow, often
>infinitely high pulse (usually with finite area). In TDR work, the term
>is often used to mean an approximation to an impulse, i.e., a very
>narrow pulse. Impulses are often used for long-line TDRs, like the ones
>used for troubleshooting long communications cables. High speed TDRs
>used for evaluating connectors, connections, interfaces, PC board runs,
>and the like generate a step (the integral of an impulse) with very fast
>risetime (some in the neighborhood of 10 ps), the fast risetime being
>necessary for good spatial resolution. I'm pretty sure that's what Wes
>means. And, yep, everything does sum nicely. I've been away from it for
>a while now, but did spend several years designing high-speed TDR
>equipment. In the course of doing that I did quite a bit of customer
>support, worked with the applications engineers, and taught a few
>classes. So I can probably answer most general questions about TDR, at
>least about the high speed variety.

Mea Culpa. I meant to say "step" everywhere I said "impulse."

In H-P network analyzers that have the TDR option, there are both
"impulse" and "step" modes available.

These analyzsers actually make measurements in the frequency domain
and do a conversion to the time domain. Time gates can then be placed
around discontinuities (such as connectors or test fixtures) that are
obscuring some desired response and the unwanted responses are
removed. The "cleaned up" response can be converted back to the
frequency domain and displayed without the obscuring effects of the
unwanted discontinuities.

Wes Stewart N7WS
>
>Roy Lewallen, W7EL
>
>Wes Stewart wrote:
>>
>> On Tue, 24 Apr 2001 17:05:27 -0400, "Peter O. Brackett"
>> <ab4bc@ix.netcom.com> wrote:
>>
>> >John:
>> >
>> >Nope, time domain reflectometry is not fiction.
>> >
>> >But then it does not deal with power, but with transients.

>> >
>> >And no one in the TDR field ever tries to write down an equation that states
>> >that you can determine a reflected pulse by subtracting the transmitted
>> >pulse from the incident pulse.
>> >
>> >Fuzzy thinking...
>>
>> There may be fuzzy thinking here but.....
>>
>> In most TDRs, it is not a pulse that is transmitted, but a very fast
>> risetime impulse. The reflections do in fact combine with the impulse
>> and sum algebraically. I guess if you want to change the sign of one
>> of these, you can call it subtraction.
>>
>> Steve Adam in chapter 6.2 of his book, "Microwave Theory and
>> Applications", Prentice-Hall, 1969, gives equations for determining
>> the characteristics of complex discontinuities using a TDR and
>> examining the sum of the impulse and the reflection(s).
>>
>> Since the impulse generator is purposely a well-match source (to
>> prevent re-reflections) there is a resistive (Zo) load in the system.
>> Last I recall, volts across a resistance constitutes "power", so I
>> must conclude that there is power in the reflections. They are after
>> all, measured by sampling the voltage at the output of the impulse
>> generator.
>>
>> Wes Stewart, N7WS

1655. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 05:31:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE66134.99234425@IEEE.org>
Source record: 165301

Denver Braughler wrote:
>
> W6RCecilA wrote:
> > At the end of two seconds the feedline contains 150 joules of energy.
> Please state how you measured this to complete your argument.

I measured 200 joules input into the system in two seconds and 50
joules extracted by the load in two seconds. Since the one second
long feedline is lossless, it must contain the rest of the energy,
i.e. 150 joules.
--
http://www.mindspring.com/~w6rca

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1656. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 05:39:20 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9c5nu8$lh2$11@bashir.peak.org>
Source record: 165307

W6RCecilA <Cecil.A.Moore@ieee.org> wrote:

: You mean misapplied the cosine rule. Power is measured at a point.
: The current and voltage associated with that power must be measured
: at that same point, not one of them a quarter wavelength away. The Z0
: of the transmission line keeps the power factor of the forward power
: close to unity and does the same thing for reflected power. For
: most practical purposes, the phase angle between the forward current
: and forward voltage can be considered to be zero. Ditto for the
: phase angle between the reflected current and reflected voltage.
: Forward power and reflected power are separate entities.

Yep. Further, if you measure the voltage and current on some point on
a length of coax that has "standing waves", you will see that the
composite voltage and current due to the forward and reflected waves
are not in phase. The amplitude of the resultant voltage and current,
as well as the phase angle between them, varies as you change position
along the coax.

--
Bill Nelson (billn@peak.org)

1657. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 05:39:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE66319.C03F7A87@IEEE.org>
Source record: 165304

Bill Nelson wrote:
> This has to be reflected power - there is no other explanation. If there
> is, please enlighten me. That 50 ohm load resistor on port C certainly is
> getting hot.

Use it to heat your coffee.
--
http://www.mindspring.com/~w6rca

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1658. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 05:46:25 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9c5obh$lh2$12@bashir.peak.org>
Source record: 165308

Dick Carroll <dixie@townsqr.com> wrote:

: W6RCecilA wrote:

:> The current and voltage associated with that power must be measured
:> at that same point, not one of them a quarter wavelength away.

: You might as well say that voltage and current are in phase.

They are, if you are only talking about the forward power or the
reflected power. If you are talking about the vector sum of the
two, then they are in phase only at certain intervals along the
line. Hm, I will try to find references for this - it may take
some digging as I have not used them in years.

: Someteimes I get the idea that a lot of you highly educated guys are
: mostly BS artists. Most of us experienced hams wind up with the same
: result without all the bafflegab.

Sure. You can get the same results without even knowing what voltage
or current are. But some of us like to understand what is happening,
not just what to do to get the desired results.

--
Bill Nelson (billn@peak.org)

1659. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 05:49:52 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE66580.408F3AA4@bwcc.com>
Source record: 165305

W6RCecilA wrote:
> I measured 200 joules input into the system in two seconds and 50
> joules extracted by the load in two seconds. Since the one second
> long feedline is lossless, it must contain the rest of the energy,
> i.e. 150 joules.

Yeah, yeah.
But these guys want to know where you stuck your voltmeter and ammeter.

How do you know that your load dissipated 50 J?

At steady state the joules input must equal the joules dissipated.

1660. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 05:57:31 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE6674B.41D60196@bwcc.com>
Source record: 165306

Bill Nelson wrote:
> Ever hear of a circulator? Power going in port A goes out port B. Power
> going in port B goes out port C.

I don't know whether you were asking me.
But, no, I've not heard of this device.
How do you distinguish power coming in on B from power going out on B?

So what are the wattmeter readings?

How are B and C distinguishable from parallel loads behind A?

1661. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 06:07:45 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AE669B1.8B402AA0@oio.net>
Source record: 165309

Randy,
Yes, you can use 3/12 for your power lead. May be a little difficult to route through the vehicle, but it'll work. You can also use a 20 meter antenna for higher bands, but you may not like the performance on the other bands. Mobiles are always at a disadvantage with antenna efficiency, so using a 'non-resonant' antenna is going to be even worse. It'll still be better than nothing, so do it anyway...
'Doc

1662. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 06:07:52 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9c5pjo$lh2$13@bashir.peak.org>
Source record: 165314

I-Oannes Karahalus Filos]+[EE 10 Konx Om Panx <Perseus@hol.gr> wrote:
: Whats up Doc ? :) Dont be afraid. I,m a <real> Duke even if the title smell
: bad to you. Straight blood line from the Duke of Mystra who came from
: Konstantinopolis at 1200 (High General of Byzantine army) to suport and
: protect the brother of Emperor Komninos and Peloponnisos (Kingdom of Mystra)
: from the Turks. His name was Nikolos Filos . (Nick Friend).

Are you the eldest son of the eldest son etc - going all the way back?
If not, then you are probably not a Duke.

By the way, isn't "Duke" a granted title, not an inherited one?

--
Bill Nelson (billn@peak.org)

1663. Re: Using a dip meter on a cubical quad

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 06:12:20 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9c5ps4$lh2$14@bashir.peak.org>
Source record: 165315

N3WWN wrote:
:>
:> One more thing, should the coil/meter be perpendicular to the element or
:> parallel to it?

It doesn't matter. Make a small single turn look - and attach it across the feedpoint. Make it large enough that the coil from your dipper can be inserted.

Vary the coupling by varying how deeply the dipper coil is inserted into the test loop. The lower the coupling, the sharper will be the resonance peaks.

--
Bill Nelson (billn@peak.org)

1664. Re: I want document about indepedently-fed log periodic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 06:15:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE66B82.FE2ACED7@eznec.com>
Source record: 165310

What's the difference between an "independently-fed" log periodic antenna and one that's fed in the common manner (by connecting to the interelement transmission line at the short end)? Would you perhaps be referring to a twin-boom log periodic antenna? LP antennas and feed systems are covered very well in Lo and Lee, _Antenna Handbook_, ISBN0-442-01592-5, 3, 1, and 8 for volumes 1-4. The _ARRL Antenna Book_ also contains some good practical design information.

Roy Lewallen, W7EL

"ï¿½ï¿½ï¿½ï¿½ï¿½ï¿½" wrote:
>
> I'm a graduate school student majoring in antenna Eng.
>
> Recently I'm studying indepedently-fed log periodic antenna for testing EMC.
>
> It's very difficult to find the documents about indepedently-fed log
> periodic antenna.
>
> So, I'm looking for someone to help me.
>
> Please help me.
>
> I want document about indepedently-fed log periodic antenna.

1665. Re: Thanx Cecil,Dan,Ralph,Reg & Roy

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 06:22:07 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE66D0F.C0D0D7D5@eznec.com>
Source record: 165311

What test equipment do you have? I usually use a signal generator and oscilloscope. You could also use a signal generator and RF voltmeter, or a dip meter. Or, if you have a general coverage receiver, I suppose you could hook a shorted piece of coax at the receiver input with a T connector and find the lowest frequency where the receiver goes dead. That would be where the line is an electrical half wavelength. You could also do this with an open stub which would be a quarter wavelength where the receiver goes dead, but this wouldn't be quite as accurate due to fringing at the end. I haven't actually tried this receiver method, so maybe someone else can comment on how practical it is. (Is the null deep enough and narrow enough to be useful?)

Roy Lewallen, W7EL

Mad Dog wrote:
>
> It is necessary to determine the electrical length of coax when you dont
> have a
> MFJ antenna analyzer.

1666. Re: BALUNS?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 06:24:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE66D8E.25D1C776@eznec.com>
Source record: 165312

In that case, to answer the original question, the "remote" balun is the same as any other, so you could use any other 4:1 current balun for this purpose or use this "remote" balun anywhere else you'd usually use a current balun.

Roy Lewallen, W7EL

Butch Magee wrote:
>
> The RadioWorks sells baluns of this type. made for balanced line to
> coax. coax gets the rf outa the shack and the balun matches the
> balanced to the unbalanced feedline. Works great in keeping the rf out
> side where it belonges.
>
> Butch
>
> kazering wrote:
>
> > A marketing term. I can't remember who, but someone is
> > marketing a balun designed to be mounted outside the shack
> > under the eaves. If you find it easier to poke holes for
> > coax, you can run a short length coax to the "remote" balun,
> > then run the twinlead from the "remote" to the
> > antenna(presumably some much longer run)
> >
> > Good for a stealth antenna mounted in someone elses yard, or
> > for folks out on the prairie where trees are scarce.

1667. Re: Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 06:37:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE670A2.97E07FF0@eznec.com>
Source record: 165313

The problem with describing a coax going through a conduit as a "waveguide beyond cutoff" is that it isn't. A waveguide, as distinct from a coaxial cable, has no separate inner conductor. Only certain distributions of E and H fields are possible (called "modes"). It turns out that if the waveguide is too small at a given frequency, fields conforming to any possible modes are severely attenuated. This is a waveguide beyond cutoff.

But if you put another conductor down the middle of the coax, a mode called TEM (transverse electromagnetic) becomes possible. This mode allows propagation of signals down to an arbitrarily low frequency with low loss. Unlike modes in waveguides without this center conductor, this TEM mode has no low frequency cutoff. This is why you can get low frequency signals down a small coax, but not a small waveguide. As soon as you put a coax into a conduit, you convert the conduit from a waveguide into a coaxial structure capable of supporting TEM propagation. There will be no low frequency cutoff as in a waveguide.

Roy Lewallen, W7EL

Dick Carroll wrote:
>
> Tom W8JI wrote:
> >
> > On 24 Apr 2001 03:36:53 GMT, Dick Carroll <dixie@townsqr.com> wrote:
> >
> > > Why does the NEC prohibit running a ground wire inside a conduit? Does
> > >it act as a waveguide beyond cutoff?
> > >
> > >Dick
> >
> > A ground wire is a different case than the actual feedline.
> >
> > With the feedline, we don't mind diverting energy. With the ground
> > wire, we want to keep it in that wire.
>
> Which is exactly why I asked the question in the first place.
>
> Back in the early 80's Bill Orr, W6SAI's column in Ham Radio magazine
> showed a lightning avoidance system called "waveguide beyind cutoff"
> which was nothing more than running the coax from your antennas through
> a section of steel EMT conduit which was grounded on the shack end. It
> was said that this would help reduce the liklihood of lightning reaching
> the radio shack. I made mention of this once on another venue and was
> taken to task for it, when other authorities present stated

> categorically that this scheme was incorrect, that the conduit was
> merely a feedline in this instance.
> Later I noticed that some version of NEC prohibited running a ground
> wire in conduit and smelled a rat...Looks like the late esteemed Mr. Orr
> wasn't so far off base after all.
>
> Dick

1668. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 06:41:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE671A3.39114B56@eznec.com>
Source record: 165316

I don't have a lot of mobile experience, but know that insulation on
wire designed for automotive use is able to put up with the temperature
extremes found in engine and passenger compartments, and is resistant to
oil and other petroleum products. There's no difference in the wire
itself, just the insulation. I wouldn't expect any trouble from house
wire over a short period, but for a long term, permanent installation
I'd spend a few bucks at the auto supply store for some wire that's
designed for the purpose. Auto wire is almost always stranded, too,
which makes it more flexible and easier to work with.

Roy Lewallen, W7EL

Theplanters95 wrote:
>
> Yes, before I get flamed, I know this is off topic.
>
> Can regular house wiring be used for a power connection? I am talking about
> the 3 wire 12 gauge version. I am planning on using my Icom 706MKII in my Ford
> explorer. I am going on several long trips this summer and would like to try
> HF mobile.
>
> For the Antenna, I am planning on using a Cecil 10-20m Special. (Again, thanks
> for the info and coil stock). The antenna is built, now to mount it. I
> already have a flat bar bumper mount, and just need to find some bolt, washers
> and nut for it. If I set up the antenna for 20M, can I use my antenna tuner to
> tune other bands (17m, 10m, and 6m)?
>
> I'm a full time graduate student, so this needs to be done cheaply.
>
> Please respond directly to theplanters95_nospam@aol.com after removing the no
> spam and underline.
>
> 73,
> Randy KA4NMA

1669. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 06:41:42 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3AE671A0.9F7751CA@haertig.com>
Source record: 165317

Non-resonant reradiators can have pretty big affect on antenna patterns.

The only reradiators that have minimal impact are those that are far
away, very short, or are orthogonal. A few simple eznec models will
prove this to your satisfaction.

Whether the reradiator is floating or grounded can make a pretty big
difference as well.

Though on a boat I suppose they're all floating. (c:

Gray

Bill Nelson wrote:

> If the nearby conductor is not close to resonant, then it will not
> affect the radiation pattern significantly. It will not absorb or
> reradiate enough energy to matter.
>
> --
> Bill Nelson (billn@peak.org)

--
Telecommunications Engineering
Gray Frierson Haertig & Assoc.
820 North River Street, Suite 100
Portland, Oregon 97227
503-282-2989
503-282-3181 FAX
gfh@haertig.com

1670. Re: DENVER--20 meter bean For Sale

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 07:25:11 UTC
From: Zoran Brlecic <zbrlecic@earthlink.net>
Message-ID: <3AE67C5F.6D0FC448@earthlink.net>
Source record: 165318

That's one hell of a big-ass bean. Did you trade your cow for it?

73 .... WA7AA

--
Support freedom of speech, or I'll kill you!

1671. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 07:29:16 UTC
From: Zoran Brlecic <zbrlecic@earthlink.net>
Message-ID: <3AE67D4D.9B741AE3@earthlink.net>
Source record: 165219

Bill Nelson wrote:

> Are you the eldest son of the eldest son etc - going all the way back?
> If not, then you are probably not a Duke.
>
> By the way, isn't "Duke" a granted title, not an inherited one?

Let it be known that from this day forward I shall be referred to as the Emperor. You serfs may call me "your majesty" if you wish, provided you kneel and face the ground when I pass.

Zoran WA7AA

--
Support freedom of speech, or I'll kill you!

1672. Re: WTB: duplexer 2m and 70cm

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 09:26:54 UTC
From: amateurradio1@sssnet.cam
Message-ID: <3ae6961e.320960991@news.sssnet.com>
Source record: 165220
Cross-posted to:
alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.swap

You don't want a duplexer, what your looking for is a DIPLEXER.
Duplexers are used on repeater stations to allow a transmitter and
receiver to use the same antenna at the same time (i.e. with a
duplexer your local two meter repeater can both transmit and listen on
the same antenna at the same time, this allows fill duplex operation).

A diplexer is used to allow a dual band radio or two radios on
different bands to use the same antenna (i.e. You have a VHF and UHF
mobile in your car, a diplexer will allow you to talk on one radio
while still listening on the other band, and do this with one dual
band antenna).

There are several manufactures of Diplexers, MHJ, Diamond, are the
ones that come to mind. I know that Diamond makes (or made) a
diplexer with a single SO-239, and two pig tails with PL-259s because
I have one that is attached to our local packet radio, and UHF
repeater.

Regards,
Del N8OFP

On Tue, 24 Apr 2001 21:35:13 -0400, "JAD" <jdavoli@NOSPAMerols.com>
wrote:

>Hi. I need a duplexer for 2 meter and 440, with SO-239 split to two PL-259
>"pigtails." I'm not interested in any other configuration.
>
>E-mail me with the details and price.
>
>remember to remove the word "NOSPAM" from my e-mail address to reply.
>
>Thanks,
>
>Joe
>
>jdavoli@NOSPAMerols.com
>
>
>

1673. Site updated

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 09:57:32 UTC
From: F5lcy <f5lcy@wanadoo.fr>
Message-ID: <9c67tdjfd7@wanadoo.fr>
Source record: 165221

F6KEH amateur radio resouces site has been updated !

Site in french, english and spanish

http://f6keh.free.fr/index_r

1674. Re: T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 10:28:08 UTC
From: G&R <"stop the spam"@limbo.hell>
Message-ID: <YExF6.630899$Pm2.10620638@news20.bellglobal.com>
Source record: 165222

If this is the type of antenna you are looking for, please consider our
antenna "NEW" a true mini quad.

www.degendesigns.com

73

Guenther
info@degendesigns.com

"Timothy J. Fiebig" <timothy.j.fiebig@exxonmobil.com> wrote in message
news:3AE41700.C61B8BB6@exxonmobil.com...
> Looking for comments on the performance of the T.G.M Mini Quad antenna
> MQ-1. Does anyone own one or has owned one. Also would like to hear
> about the Curshcraft mini beam.
>
> Thanks,
>
> tjf
>

1675. Re: I want document about indepedently-fed log periodic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 10:34:48 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9c693b$ds7$1@neptunium.btinternet.com>
Source record: 165223

> I'm a graduate school student majoring in antenna Eng.
>
> Recently I'm studying indepedently-fed log periodic antenna for
testing EMC.
>
> It's very difficult to find the documents about indepedently-fed
log
> periodic antenna.
>
==========
Have you thought of asking your teacher/instructor/professor. It
is surprising they havn't already told you. Or have they left it
to you as an excercise in 'initiative'.

1676. Re: Using a dip meter on a cubical quad

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 12:30:06 UTC
From: N3WWN <ralloway@futuretek.cx>
Message-ID: <f4c7c9.3s8.ln@ns2.ecommanagement.com>
Source record: 165214

Thanks for all of the responses!

I'll try to answer all of the questions with this post to keep posting volume down.

KB7QHC:
I like your opinion that the horse and buggy will get me further than a go cart! hi hi

The way I see it, if I can figure out this simple device, that information will lend itself to other situations later on.

I tried the coupling loop last night. I took a short (1ft approx) peice of RG-58A/U coax and made a 4 loop coil on both ends. I also disconnected the loop from the spreaders and straightened it out to a single long wire, which the HD-1250 manual says you can check at odd quarter wavelenghts. When I did this at the first quarter wavelength from one end, I get the biggest dip at approx 80MHz. The dip meter is a little off - a max of about 2MHz around 50MHz, so I'm not too concerned about perfect tuning...just ball parking it.

I don't see how it could resonate at about 80MHz since a full wave 6m element is approx 18ft long and the element is cut long - approx 19.5ft. It should, therefore, resonate lower, but I see no dip at 40MHz.

I don't think decoupling should be an issue since I don't currently have any feedline attached to the feed point.

David Pearce:

Well, my body is about 2 to 3 feet from the antenna at any/all times. I'm testing this indoors with the element suspended in the middle of the room (yes, it's a large room! hi hi)

I'm hoping to get the antenna resonance fairly close no matter where I am located since I'm hoping to use this antenna in a portable fashion (I'm making it bolt together so I can dismantle, place in the car, and take to the mountains and such).

Bill Nelson:

At the feedpoint, there is already a small loop (approx 2/3 turn) between the element and the SO-239 connector, which I've tried to use by inserting the coil into it with no luck.

When you say "lower the coupling", is lower further down the coil or further up towards the actual turns?

K3BU:

I'm trying to tune the driven element only at this point. Just for approximation. The 2nd and only other element is not in proximity at this point (the driven element is not on the spreader anymore and was never on the boom)

I'm using LB Cebik's basic program to determine element spacing and length based on wire diameter (using 12AWG bare copper). His program describes 19.204ft for the driven element, which I'm fairly close to since I"m at about 19.5ft.

Thanks again for everyone's comments, questions, and advice! I'm learning!

73!

-Rich
N3WWN

1677. WTB: TET Beam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 12:37:10 UTC
From: keller john <john-l-keller@uiowa.edu>
Message-ID: <3AE6C4F6.FACD703D@uiowa.edu>
Source record: 165225

Hi,
Looking for a TET antenna. Have an HB 43 SP that needs rebuilding.
Looking for a parts antenna or a complete beam if equal to or better
than the HB 43 SP.
John
N0LT

1678. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:00:39 UTC
From: richardharrison@webtv.net
Message-ID: <15238-3AE6CA77-2@storefull-115.iap.bryant.webtv.net>
Source record: 165234

Gray Frierson Haertig wrote:
"Whether the radiator is floating or grounded can make a pretty big difference as well."

Sure, if grounded, the first resonant length is 1/4-wave. If it is not grounded, the first resonant length is 1/2-wavelength.

A table or graph for parasitic array design will indicate the amount of induced current and its effect on antenna pattern. If the parasitic element is at right angles, or far away, it has little effect.

Best regards, Richard Harrison, KB5WZI

1679. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:02:05 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c6hrr$76s$1@slb6.atl.mindspring.net>
Source record: 165226

Denver:

Heh, heh...

Nice try.

A rose by any other name!

So you propose to try to disguise the "fiction" of "reflected power" by dividing it up into "zillions" of tiny pieces, to small for anyone to notice individually, and then slip the "fiction" under our noses that way, integrating it back up into a big thing after we are all asleep!

The "Trojans" would have been proud (If they could integrate!)

Bless you Denver,

-Peter K1PO [Reflected Power is a "crock"!]

"Denver Braughler" <Braughler@bwcc.com> wrote in message news:3AE65095.DD82E410@bwcc.com...
> "Peter O. Brackett" wrote:
> > The power delivered to the load was calculated above as:
> > Pt = 4 watts.
> >
> > That leaves 20 - 4 = 16 watts being dissipated in the internal 4 Ohm
> > resistance. Pinternal = 8 volts times 2 amps = 16 watts.
> > Two resistors in the circuit, one dissipates 16 watts, the other dissipates
> > 4 watts.
> >
> > The lossless transmission line dissipates nothing.
> This is fine.
>
> I didn't see anyone claiming that the reflected power represented additional energy in the total system.
>
> Reflected power is power which is not dissipated by the load or the source until it has bounced back and forth a zillion times. The those zillion tiny echoes can be integrated (summed) into your missing 192.09 W.

1680. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:04:25 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c6i06rvl1@slb6.atl.mindspring.net>
Source record: 165227

Cecil:

In the steady state, the one second latency or transport delay of the transmission line holds the same number of Joules of energy that it did at the start. DC is DC...

That's what "steady state" means.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AE65276.24BDA0AF@IEEE.org...
> "Peter O. Brackett" wrote:
> > Cecil, Reflected Power... is NOWHERE... it's nothing but a dammed fiction.
>
> Assume a one second long lossless 50 ohm coax line, a 100 ohm load,
> and 100 joules/sec input into the coax from the generator. At the end
> of two seconds the feedline contains 150 joules of energy. How can
> the feedline contain more energy than the generator is generating?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1681. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:05:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c6i2h$2f$1@nntp9.atl.mindspring.net>
Source record: 165228

Denver:

Cecil probably measured the mass of the line and arrived at the energy
through the formula E = m * c * c!

-Peter K1PO

"Denver Braughler" <Braughler@bwcc.com> wrote in message
news:3AE657A3.319F657D@bwcc.com...
> W6RCecilA wrote:
> > At the end of two seconds the feedline contains 150 joules of energy.
> Please state how you measured this to complete your argument.

1682. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:07:58 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c6i6scfl1@slb7.atl.mindspring.net>
Source record: 165229

Dick:

Yeah... by now Cecil's IEEE Dictionary is so dog eared and thumb worn that
he probably can only read half the definitions any more.

I wonder if the IEEE will have the gall to reprint that disaster?

-Peter K1PO

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9c5mc8$g8f$0@208.206.142.94...
>
>
> W6RCecilA wrote:
> >
> > "Peter O. Brackett" wrote:
> > > That's "energy" not "power".
> > > This difference is more than sematic... it is subtle but simple when
you
> > > "get it".
> >
> > Don't tell us that you are basing your entire argument on the definition
> > of power. You're gonna lose if you accept the IEEE definition of power,
> > i.e. joules/second passing a point (no work required). Do you also claim
> > that commercial power generation plants don't exist? :-)
> >
> > So please answer this question: Does reflected energy exist? If the
answer
> > is yes, then reflected power exists according to the IEEE definition of
> > power.
>
>
> Shure wish they'd been out of stock when Cecil ordered that IEEE
> dictionary a colujple years ago.

1683. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:10:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c6iao$7nt$1@slb7.atl.mindspring.net>
Source record: 165230

Cecil:

Yes, I agree... but that is not the steady state.

Call it "reflected energy" NOT "reflected power" and I'll go away!

Heh, heh.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE65451.3338A498@IEEE.org...
> "Peter O. Brackett" wrote:
> > It is a mathematical artifice, and a fiction, for in all but a very
singular
> > case Pr =0, you will never find an element in a network or transmission
> > system which actually dissipates Pr!
>
> With a generator delivering 100 joules/sec into a one second long lossless
> transmission line with an SWR of 5.83:1, there is 300 joules of energy
> left in the transmission line when the transmitter is shut off, 200 joules
> of which is reflected energy. If the transmitter is disconnected entirely,
> all 300 joules of that stored energy will be dissipated in the load after
> the transmitter is disconnected.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1684. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:10:36 UTC
From: dcollin@connix.com
Message-ID: <3ae6ca86.2713832@news.mybizz.net>
Source record: 165231

On 25 Apr 2001 02:22:07 GMT, theplanters95@aol.comnospam
(Theplanters95) wrote:

>Can regular house wiring be used for a power connection? I am talking about
>the 3 wire 12 gauge version. I am planning on using my Icom 706MKII in my Ford
>explorer. I am going on several long trips this summer and would like to try
>HF mobile.

It'll work, but you'd do much better with the heavy gauge wiring used
to supply power to high power audio equipment that people keep in
their trunks these days. Besides using well insulated #4 or #6 wire,
they also have excellent fuse holders, etc. Any shop that sells and
installs such equipment can help you, or go to www.crutchfield.com or
you may know someone who has some of this stuff around.

Fords, especially, are noted for LOTS of noise, usually from the fuel
pump, and your power leads will be especially susceptible to it. Some
guys use COAX (yep) as power leads, one length each for +/-, where
just center is connected, and the braid provides RF shielding.

>For the Antenna, I am planning on using a Cecil 10-20m Special. (Again, thanks
>for the info and coil stock). The antenna is built, now to mount it. I
>already have a flat bar bumper mount, and just need to find some bolt, washers
>and nut for it. If I set up the antenna for 20M, can I use my antenna tuner to
>tune other bands (17m, 10m, and 6m)?

Maybe. Bandwidth on most mobile antennas is pretty narrow, and even
if you do get a usable SWR, very little of the radio's power will be
radiated through the antenna. Low SWR doesn't equal efficiency.

1685. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:12:56 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE6CD58.9D7C8D10@IEEE.org>
Source record: 165233

Denver Braughler wrote:
> How do you know that your load dissipated 50 J?

Because the load was 291.5 ohms and the Z0 of the transmission
line was 50 ohms. With 100 joules/sec incident to the load, 1/2
of the power will be accepted and 1/2 the power will be reflected.
With a one second long transmission line, there will be no power
incident to the load for the first second. There will be 100 joules/sec
incident to the load for the next second. We look at the system at
the end of two seconds and find 150 joules still in the transmission
line.

> At steady state the joules input must equal the joules dissipated.

With a one second long transmission line, two seconds is nowhere
near steady-state. With the above conditions an a 100 joules/sec
generator, the transmission line will contain 300 joules during
steady state, 100 joules of generated power, 100 joules of reflected
power, and 100 joules of "re-reflected" power. Forward power is
200 joules/sec.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1686. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:14:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c6ii9bfg1@slb7.atl.mindspring.net>
Source record: 165232

Bill:

We were not discussing what you "could" write down, we were discussing the validity, the truth or fiction, of what some other folks have already written down.

In fact the reflected power Pr and promulgated by certain wave mechanics is a fiction.

In all of the interesting cases of steady state wave mechanics there is no such reflected power present.

The only time it is not a fiction is when it is zero! Jeesh, what a crock that reflected power is!

-Peter K1PO

"Bill Nelson" <billn@spock.peak.org> wrote in message news:9c5m93$lh2$9@bashir.peak.org...
> Peter O. Brackett <ab4bc@ix.netcom.com> wrote:
> : John:
>
> : Nope, time domain reflectometry is not fiction.
>
> : But then it does not deal with power, but with transients.
>
> It deals with voltage, and thus with current. If you have the two, you
> have power.
>
> What you are saying is the equivalent of stating that a pulsed radar does
> not transmit any power, as the transmitted signal is only a transient pulse.
>
> : And no one in the TDR field ever tries to write down an equation that states
> : that you can determine a reflected pulse by subtracting the transmitted
> : pulse from the incident pulse.
>
> Ah, but I can write down an equation that will calculate the expected
> magnitude of the voltage of the reflected pulse. Matter of fact, that
> is one of the main factors for qualifying coax/fiber - the dB loss of
> a test pulse when reflected from the unterminated far end.
>
> Further, I can use a directional coupler and measure the magnitude of the
> reflected power.
>

> : Fuzzy thinking...
>
> No comment.
>
> --
> Bill Nelson (billn@peak.org)
>

1687. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:15:42 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c6ilcgkp1@slb2.atl.mindspring.net>
Source record: 165235

Denver:

I then propose that you tap off that "valuable" reflected power and sell it to the good citizens of California, they are looking for some free power.

-Peter K1PO

"Denver Braughler" <Braughler@bwcc.com> wrote in message news:3AE6519E.81C71817@bwcc.com...
> "Peter O. Brackett" wrote:
> > I wonder how we can tap off some of that wasted reflected power. Where does
> > it all go?
> It is dissipated too.
> This is not perpetual motion.
> The reflected power is a portion of the input power.

1688. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:16:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE6CE2B.6FFC7F77@IEEE.org>
Source record: 165236

W6RCecilA wrote:
> Assume a one second long lossless 50 ohm coax line, a 100 ohm load,
> and 100 joules/sec input into the coax from the generator. At the end
> of two seconds the feedline contains 150 joules of energy. How can
> the feedline contain more energy than the generator is generating?

Ooops, the load should have been 291.5 ohms. I wanted a load reflecting
1/2 the incident power. That's an SWR of 5.83:1, not 2:1.
--
http://www.mindspring.com/~w6rca

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1689. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:20:18 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <maAF6.3160$AU4.265784@bgtnsc04-news.ops.worldnet.att.net>
Source record: 165237

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9c6iao$7nt$1@slb7.atl.mindspring.net...
> Cecil:
>
> Yes, I agree... but that is not the steady state.
>
> Call it "reflected energy" NOT "reflected power" and I'll go away!
>
> Heh, heh.
>
> -Peter K1PO

If you consider the concept of delivered power to be valid, why can't you understand forward and reflected power.

Power is a derived quantity from the voltage and current in the system.

There is a forward traveling voltage and current. Therefore, the forward power can be determined.

There is a rearward traveling voltage and current. Therefore, the rearward power can be determined.

There is a total voltage (Vforward + Vrearward) and there is a total current (Iforward - Irearward). Therefore, the total or net power can be determined. This total power is the delivered power. Delivered power is a quantity derived from the forward and reflected waves.

As for the validity of reflected voltage and current, just realize that the line, surge or input impedance of a transmission line can only be determined after the reflected wave arrives back at the point of measurement. If it is prevented from arriving back at the measuring point, the line impedance would always be Zo. These relationships are fundamental to understanding wave behavior in a transmission line system. I really don't understand why the concept of reflected power is an issue.

Steve, VE9SRB

1690. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:21:59 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c6j16apm1@nntp9.atl.mindspring.net>
Source record: 165238

Cecil:

You rascal. You really do understand.

Yes it's true that "energy" stored in the lossless line (Is NOT "power" but "energy".) and it will come pouring out of the lossless line when the source is shut off. After the "steady state".

Of course if the lossless line had zero length, then.... there is still that pesky ficticious reflected power to deal with, it won't go away just because we make the line length zero!

Heh, heh...

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AE65724.289C6463@IEEE.org...
> "Peter O. Brackett" wrote:
> > I wonder how we can tap off some of that wasted reflected power. Where does
> > it all go?
>
> It is not wasted as it fills up the transmission line to achieve the
> Z0-match. It is dissipated after the generator is shut off. There's
> that pesky conservation of energy principle to be honored. A one second
> long transmission line with a 5.83:1 SWR being fed by a 100 joule/sec
> generator contains 300 joules of energy during steady-state if a Z0-
> match exists. Forward power is 200 joules/sec and reflected power is
> 100 joules/sec.
> --
> http://www.mindspring.com/~w6rca
>
>
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1691. Re: Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:22:18 UTC
From: richardharrison@webtv.net
Message-ID: <15237-3AE6CF8A-7@storefull-115.iap.bryant.webtv.net>
Source record: 165244

Dick Carroll wrote:
"Looks like the late esteemed Mr. Orr wasn`t so far off base after all."

Bill Orr was right on target with his advice to run coax through steel EMT conduit to inhibit lightning conduction. It works for me. As for calling conduit a "waveguide below cut-off", when it contains insulated conductors extending to the outside world, that`s a stretch. It`s more like coax which is capable of only one propagation mode, and one mode is all that is required. Permeability is the active agent.

Best regards, Richard Harrison, KB5WZI

1692. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:29:44 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <cjAF6.3168$AU4.266477@bgtnsc04-news.ops.worldnet.att.net>
Source record: 165239

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9c6ii9bfg1@slb7.atl.mindspring.net...
> Bill:
>
> We were not discussing what you "could" write down, we were discussing the
> validity, the truth or fiction, of what some other folks have already
> written down.
>
> In fact the reflected power Pr and promulgated by certain wave mechanics
is
> a fiction.
>
> In all of the interesting cases of steady state wave mechanics there is no
> such reflected power present.
>
> The only time it is not a fiction is when it is zero! Jeesh, what a crock
> that reflected power is!
>
> -Peter K1PO
>

Peter, consider a Zo matched antenna with a lossless transmission line between the transmitter and the antenna. The total power delivered to the antenna is equal to the forward power in the transmission line.

In a system where the antenna is not Zo matched and the forward power in the transmission line is equal to that in the matched system, the power delivered to the antenna will be less than that delivered to the Zo matched antenna. The difference will be equal to the reflected power, beacuse it is reflected and not "delivered". How much more real do you need reflected power to be?

Steve, VE9SRB

1693. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:29:52 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE6D150.DEB8432C@IEEE.org>
Source record: 165240

"Peter O. Brackett" wrote:
> In the steady state, the one second latency or transport delay of the
> transmission line holds the same number of Joules of energy that it did at
> the start.

Yep, and even though the transmission line is one second long and the
generator is putting out 100 joules/sec, the transmission line contains
300 joules, 200 joules of which is reflected power on its way back to
the Z0-match point or on its way back to the load for a second try.

The load should have been 291.5 ohms, not 100 ohms. There is a triple
latency involved. There's the one second latency for the generated
power to make it from the generator to the load. The load rejects
half of that power so there is a second latency while the rejected
(reflected) power goes back to the tuner which furnishes a Z0-match.
The reflected power joins the generated power to make the forward
power double the generated power and experiences the latency yet
a third time. The actual energy reflection is an infinite series.

With a 50 ohm feedline and a 291.5 ohm load, half the incident power
is rejected by the load and is instrumental in forming the Z0-match
at the tuner. Without reflected energy, a Z0-mismatch could not be
transformed into a Z0-match.
--
http://www.mindspring.com/~w6rca

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1694. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:31:31 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE6D1B3.8C05FD09@toast.net>
Source record: 165241

"Peter O. Brackett" wrote:

> John:
>
> Sorry, I should have explained... TDR technology and FDM technology are not
> "comensurate" in the sense of dimensional analysis.
>
> How best to explain this... lets see...
>
> Power is a quantity having units of energy per unit time, say Joules per
> second, and is a continuous phenomena, and in general will be continuously
> present over all the time interval supported by most measuremts, while
> pulses are transient and carry energy with units of Joules not Joules per
> second.
>
> In the TDR examples you propose, usually, if the line is sufficiently long,
> the pulses do not overlap, and consequently can never be "subtracted" from
> each other to give a continuous power reading on a meter.
>
> And so one will not generally construct a "reflected value" for isolated
> pulses simply by subtracting two values measured at the same point on a line
> at the same time. i.e. the "standard" Bird Wattmeter will only indicate two
> separate "blips" as the pulses pass by, if indeed it indicates anything.
>
> The transient case and the steady state case will not yeild the same results
> on conventional measuring instruments.
>
> Of course, as you realize, that is why TDR technology was developed in the
> first place, to allow "meaningful" measurements of transients to be made.
>
> The "reflected power" of which we are speaking is not the same as the energy
> in a reflected pulse. And the two cannot be directly compared. They don't
> have the same units. A better way of clearly examining this steady state
> problem reflected power fiction is to take it to the steady state limit and
> assume direct current, because then power is still a valid thing. Joules
> per second is fine at DC.
>
> One cannot subtract energy from power i.e. Joules from Joules per second.
> And reflected power is defined by a subtractions. It's like comparing
> apples and oranges. One must subtract power from power or energy from
> energy and not mix the dimensions if one expects to get valid answers.
>
> Check out a book which explains "dimensional analysis" which should make
> this clear. For example P. W. Bridgman's, "Dimensional Analysis".

>

I only mentioned tdr because you seemed to be questioning the reality of reflections.
While the usual measurement of a reflected pulse may consider its energy, that energy is moving, and there is an associated power. The joules are transferred, and they are transferred in a fixed measurable time, and so the power associated with a pulse exists as surely as its energy does.

john

1695. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:35:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE6D29D.45ADD036@IEEE.org>
Source record: 165242

"Peter O. Brackett" wrote:
> So you propose to try to disguise the "fiction" of "reflected power" by
> dividing it up into "zillions" of tiny pieces, to small for anyone to notice
> individually, and then slip the "fiction" under our noses that way,
> integrating it back up into a big thing after we are all asleep!

The "zillions" of tiny pieces is the energy. The steady-state power,
a scalar, is a net lump sum. I notice you haven't touched my example
of a 100 joule/sec generator and a one second long lossless transmission
line with an SWR of 5.83:1.
--
http://www.mindspring.com/~w6rca

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1696. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:39:14 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE6D382.8EB4340@toast.net>
Source record: 165243

"Peter O. Brackett" wrote:

> Wes:
>
> Yes, but the "jist" of our discussion has been about the "definition" of
> "reflected power" that definition espoused by it's proponents is, actually a
> mathematical formula, which must be dimensionally correct.
>
> The formula is: Pr = Pi - Pt in Watts or Joules per second.
>
> Our discussion is about the validity of the quantity on the left Pr, and if
> it really exists anywhere or is it a mathematical artifice.
>
> It is a mathematical artifice, and a fiction, for in all but a very singular
> case Pr =0, you will never find an element in a network or transmission
> system which actually dissipates Pr!
>
> It's obvious when you examine it, but many do not examine it the words
> "reflected power" evoke a model or visualization in peoples minds which is
> incorrect.
>
> It 's awfully hard to dispell this myth.

Power is rate of transfer of energy. Since when is there a requirement that there be dissipation for power to exist? In a matched transmission system, the energy moves down the line, and there is measurable power at each point along the line, but there is no dissipation except at the end. In an infinitely long lossless transmission line, there is power everywhere that the wave front has reached, and dissipation nowhere.

john

1697. Re: Internet Dish? What to get?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 13:58:34 UTC
From: Liz Marr <tech@cc-ent.com>
Message-ID: <9c6l73$cfkme$1@ID-79785.news.dfncis.de>
Source record: 165245

I'm working on the same question - no answers yet, plus I have a hill in the way of the satellite. Here are some links that I found:

http://www.practicallynetworked.com/sharing/direcpc.htm

http://www.dishfree.com/direcpctwoway.html

"N4IXT" <n4ixt@mindspring.com> wrote in message news:9c6cpl$75o$1@slb7.atl.mindspring.net...

> The problem is there's NO cable service, NO DSL, and the best speed I can
> get on the modem is 28 K, and that's on a good day, average is about 24k. So
> I'm seriously considering getting one of those satellite dishes that allows
> you to do both up and downloads at fairly high speed (up ranges from 64 to
> 128, down is about 400k). Not as good as cable/dsl, but a darn site better
> then the 24k I get now.

1698. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:01:24 UTC
From: truelove39@aol.com
Message-ID: <20010425100124.06912.00000143@ng-fc1.aol.com>
Source record: 165246

Bill Nelson billn@spock.peak.org wrote:

The SWR is measured and displayed at the remote head following the coupler's tuning solution. I don't know where the measurement is made. This is a software auto-tuner; not an RF-powered tuner like the SGC 230.

The only coax is from the transciever to the tuner. The coupler's output is via GTO.

The PEP is 150w, switchable to 25W

The length of the "unused" backstay is approx. 60' It is "grounded" at the masthead where it is attached to the mast.
The "bottom" is insulated by virtue of the attachment point (chainplate) being bolted to the fiberglas hull.
This makes it about a half-wavelength on 8mHz. I can say that the tuner has great difficulty obtaining a solution (and sometimes cannot) on 4mHz, and so perhaps this is due to the "unused" backstay.

I'm a bit hampered in supplying more info, as the boat is in Trinidad, and I'm in Vermont.

Regards,
John

1699. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:02:40 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae6d7cc.1090198@news.accessunited.com>
Source record: 165247

On Wed, 25 Apr 2001 03:07:19 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Yes Wes, I made a mess of it. I'll try again.
>
>If nothing is done except vary frequency while observing the SWR
>meter, when the indicated SWR is at its minimum the system is at
>resonance whatever the minimum value might be.
>---
>Reg.

That's true Reg if you talk about the SYSTEM, and not of the antenna,
and if the system passes a point where reactance is zero and
resistance at that point is not shifting rapidly with frequency.

Adding any amount of reactance increases SWR, but it certainly does
not mean the antenna is resonant when the impedance measured elsewhere
has no reactance!

73 Tom

1700. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:02:45 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE6D905.1CBEF7F2@IEEE.org>
Source record: 165248

"Peter O. Brackett" wrote:
> In all of the interesting cases of steady state wave mechanics there is no
> such reflected power present.

Peter, please answer the following question:

During steady-state with a 100 joules/sec generator and a one second long
lossless transmission line with an SWR of 5.83:1, the transmission line
contains 300 joules of energy. How did 300 joules get into a one second
long transmission line being driven by a 100 joules/sec generator?
--
http://www.mindspring.com/~w6rca

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1701. Re: Internet Dish? What to get?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:05:26 UTC
From: "David Michael Kelly"
Message-ID: <79mdetcpv8jti74r8fmjhnpl40fik9kbbf@4ax.com>
Source record: 165249

On Tue, 24 Apr 2001 22:21:28 -0500, "N4IXT" <n4ixt@mindspring.com>
wrote:

>This isn't exactly Ham related, but it is an antenna question, so I hope
>you'll bear with me.

>There's two main sellers, one is StarBand (ala Dish Network) and the other
>is DirecPC, which is sold thru several ISPs including Earthlink and Pegasus.

alt.satellite.direcpc
alt.satellite.starband

That should get you a good start.<g>
--
david
AC7LY

1702. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:10:14 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae6d9b0.1574408@news.accessunited.com>
Source record: 165250

On Tue, 24 Apr 2001 20:01:53 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Tom, W8JI wrote:
>"I simply said the effect of SWR is "generally" to increase loss in the
>feedline and mismatch the transmitter."
>
>If the SWR is in a quarter-wave matching section, isn`t its effect to
>match the load to the transmitter, "generally"?
>
>Best regards, Richard Harrison, KB5WZI

But of course we aren't talking about stubs, and you know that. But
allowing for a troll, I included the work "generally".

The effect of SWR in the stub is to increase loss in the stub, and the
effect of SWR between the stub and the antenna is to increase loss in
that section of line.

After the stub, towards the transmitter, the combined effect results
in lower SWR on that section of line, which has the general effect of
making the line at that point less lossy and the transmitter matched.

73 Tom

1703. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:15:29 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <5_AF6.3342$AU4.269100@bgtnsc04-news.ops.worldnet.att.net>
Source record: 165251

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9c5bbp$78v$1@plutonium.btinternet.com...
> Yes Wes, I made a mess of it. I'll try again.
>
> If nothing is done except vary frequency while observing the SWR
> meter, when the indicated SWR is at its minimum the system is at
> resonance whatever the minimum value might be.
> ---
> Reg.
>
>

This is not necessarily true at all.

A minimum SWR does not imply "resonance". Let's just talk about the point where the measurement is made. Considering impedance, resonance is a condition where the reactance is zero and the impedance only has a resistive component. Over a given range of frequencies, the impedance may never go through resonance but you will still measure a minimum SWR.

This resonance - minimum SWR concept, comes from the fact that for a given impedance, Z = R + jX, minimum SWR for this value of R will occur when X = 0. The important point is that this minimum SWR is only for this R. This concept cannot be extended to imply that the minimum SWR of an antenna or a system will occur when the system is resonant. Many antennas and systems will have their minimum SWR occur at a frequency where the antenna or the system is not resonant.

Steve VE9SRB

1704. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:19:53 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <d2BF6.3348$AU4.269473@bgtnsc04-news.ops.worldnet.att.net>
Source record: 165252

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ae6d7cc.1090198@news.accessunited.com...
> On Wed, 25 Apr 2001 03:07:19 +0100, "Reg Edwards"
> <g4fgq.regp@btinternet.com> wrote:
>
> >Yes Wes, I made a mess of it. I'll try again.
> >
> >If nothing is done except vary frequency while observing the SWR
> >meter, when the indicated SWR is at its minimum the system is at
> >resonance whatever the minimum value might be.
> >---
> >Reg.
>
> That's true Reg if you talk about the SYSTEM, and not of the antenna,
> and if the system passes a point where reactance is zero and
> resistance at that point is not shifting rapidly with frequency.
>

Measuring a minimum SWR anywhere in the system does not mean the system is
resonant at that point. It only means that the system has minimum SWR.
Many antennas and systems will have their minimum SWR occur at a frequency
other than their resonant frequency.

It is true that for any given impedance R + jX, that minimum SWR occurs when
X = 0 (R being fixed). This is a different concept and issue than whether
or not a system will have minimum SWR at resonance.

Steve

> Adding any amount of reactance increases SWR, but it certainly does
> not mean the antenna is resonant when the impedance measured elsewhere
> has no reactance!
>
> 73 Tom

1705. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:22:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE6DD8B.C0BD8BEF@IEEE.org>
Source record: 165254

"Peter O. Brackett" wrote:
> You rascal. You really do understand.
> Yes it's true that "energy" stored in the lossless line (Is NOT "power" but
> "energy".) and it will come pouring out of the lossless line when the source
> is shut off. After the "steady state".

I suspected you didn't accept the IEEE Dictionary definition of power.
By the IEEE definition, if energy is moving then there is, by definition,
power passing a point. And of course at RF, energy cannot stand still.
According to the IEEE, joules/sec passing a point is defined as power
even if none of it is dissipated at that point.
--
http://www.mindspring.com/~w6rca

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1706. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:22:06 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae6db72.2024098@news.accessunited.com>
Source record: 165253

On Tue, 24 Apr 2001 19:41:36 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Tom, W8JI wrote:
>"A conductor does not need to be resonant to have a large effect on the >pattern."
>
>If a conductor is not near resonance it accepts little energy from a >radio wave and therefore has little effect. Resonant structures near >broadcast antennas only require detuning to disappear as factors in the >broadcast pattern.
>
>Best regards, Richard Harrison, KB5WZI

Not true at all Richard, and I would expect you to know that.

Any long or large conductor can have a large effect on pattern. The only conductors that have minimal effect are very short conductors comperaed to the size of the nearby antenna and the wavelength.

One example you should be aware of is power lines. Even if the poles (incombination with ground wires and static wires at the top) are NOT resonant, the severly distort the pattern of AM BC stations. The vertical conductor has to be sectionalized by tuning an area of it to parallel resonance, which has the effect of breaking it as if an insulator was inserted.

There are counteless example of non-resonant conductors that radiate or extract appreciable energy, including things like terminated Rhombics. They are non-resonant, as is the reflector on a dish antenna.

My 5/8th wl insulated tower causes a 6 dB null in the pattern of a vertical that is 500 feet away, and it is "not resonant".

Let's not confuse people trying to learn, by making misstatements just because we might be sore at someone else.

73 Tom

1707. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:25:26 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae6dd71.2535380@news.accessunited.com>
Source record: 165255

On 25 Apr 2001 04:41:43 GMT, Bill Nelson <billn@spock.peak.org> wrote:

>Tom W8JI <2w8ji@akorn.net> wrote:
>: On 24 Apr 2001 04:10:41 GMT, Bill Nelson <billn@spock.peak.org> wrote:
>
>
>:>It can affect the radiation pattern, but not much. Remember that the
>:>antenna is almost vertical - so is the other backstay. It is basically
>:>a base loaded Marconi, and probably with a rather imperfect ground.
>
>: The induced current in a close-spaced wire is generally opposite that
>: in the exciting wire. Connected or not, grounded or not, it can make a
>: large change in pattern and efficiency.
>
>Sure, but it is only close-spaced at one end.

No, that isn't true. It only requires the conductor to be large and in
the way. My 318 foot tower is non-resonant, yet it put a measureable
null (about 6 dB) in the pattern of a vertical 500 feet away.

This fellow is talking about other conductors that are only a small
fraction of a wavelength away!!!

>: It all needs to be looked at. A conductor does not need to be resonant
>: to have a large effect on the pattern.

I stand by that statement.

73 Tom

1708. WTB AEA 2 meter Isopole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:29:55 UTC
From: thompson@mindspring.com
Message-ID: <9c6n29$6jm$1@slb0.atl.mindspring.net>
Source record: 165257

Let's try again. I am looking for a 2 meter Isopole to replace mine damaged
by lightning.
Condition and price in e-mail please.

73 Dave K4JRB
thompson@mindspring.com

1709. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:30:21 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae6de58.2766673@news.accessunited.com>
Source record: 165256

On Wed, 25 Apr 2001 08:00:39 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Gray Frierson Haertig wrote:
>"Whether the radiator is floating or grounded can make a pretty big
>difference as well."
>
>Sure, if grounded, the first resonant length is 1/4-wave. If it is not
>grounded, the first resonant length is 1/2-wavelength.
>
>A table or graph for parasitic array design will indicate the amount of
>induced current and its effect on antenna pattern. If the parasitic
>element is at right angles, or far away, it has little effect.
>
>Best regards, Richard Harrison, KB5WZI

So the reflector in my dish antenna is resonant?

How about the screen behind my UHF TV antenna? Is it resonant?

What about power poles near BC stations?

What about the guy lines?

What about a Rhombic? Does it absorb energy and re-radiate energy even though it is non-resonant?

Why does my signal refuse to go past metal roofs that aren't resonant?

Sorry, a conductor does NOT need to be resonant to have a large effect on the system. This is especially true when it is closeby, although it can have an effect at a large distance also.

73 Tom

1710. Re: Iron pipe choke?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:39:23 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae6df95.3083313@news.accessunited.com>
Source record: 165258

On 25 Apr 2001 02:28:02 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>
>
> Which is exactly why I asked the question in the first place.
>
> Back in the early 80's Bill Orr, W6SAI's column in Ham Radio magazine
>showed a lightning avoidance system called "waveguide beyind cutoff"
>which was nothing more than running the coax from your antennas through
>a section of steel EMT conduit which was grounded on the shack end. It
>was said that this would help reduce the liklihood of lightning reaching
>the radio shack. I made mention of this once on another venue and was
>taken to task for it, when other authorities present stated
>categorically that this scheme was incorrect, that the conduit was
>merely a feedline in this instance.
> Later I noticed that some version of NEC prohibited running a ground
>wire in conduit and smelled a rat...Looks like the late esteemed Mr. Orr
>wasn't so far off base after all.

He was off base Dick in his explaination of how it works, because it forms a coaxial line and not a waveguide. But he was correct in that burying the cable helps. It is just a question of how much help, and that depends on what you do with the connectiuons in the system.

Certainly a cable brought in though a well-grounded metal conduit would be much less problematic than one through "air" would be, but not for the reasons he gave.

What you want is good attenuation over a wide frequency range for lightning. Running the cable through conduit still provides almost no change at very low frequencies, although it can reduce voltage between the shield and ground and reduce common mode currents after the cable leaves the conduit.

The best course would be to directly bury the cable, or ground it to the conduit at both ends. Remember lightning has a broad frequency range of energy, and you need to bypass all of it. That requires a combination of methods.

73 Tom

1711. Re: Best coax for VHF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 14:42:39 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae6e218.3726483@news.accessunited.com>
Source record: 165259

On Tue, 24 Apr 2001 20:59:01 -0400, "N3VST" <not@chance.com> wrote:

>If you have the LMR 400 use it.

If it is the hollow LMR-400, how do you keep water out of it?

73 Tom

1712. Re: Best coax for VHF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 15:01:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE6E6B3.67A97A7C@IEEE.org>
Source record: 165260

Tom W8JI wrote:
>
> On Tue, 24 Apr 2001 20:59:01 -0400, "N3VST" <not@chance.com> wrote:
>
> >If you have the LMR 400 use it.
>
> If it is the hollow LMR-400, how do you keep water out of it?

My LMR-400 is "solid" foam. Are you thinking about 9913?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1713. WTB: HyGain TH3 driven element insulators

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 15:12:32 UTC
From: Gary Powell <n4dl@worldnet.att.net>
Message-ID: <APBF6.35806$IJ1.3031529@bgtnsc05-news.ops.worldnet.att.net>
Source record: 165261

I need a pair of the driven element insulators that the end of the element fits into for a TH3. I would like new or near new condition.

Gary, N4DL

1714. Anyone have a Baby Boomer Quad?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 15:31:16 UTC
From: kiki <lolo@pis.com>
Message-ID: <3AE6EDC4.81C5D3EA@pis.com>
Source record: 165262

http://www.degendesigns.com/prod01.htm

They claim its close to the performance of a full sized quad.
Hard to believe.

Wonder how it compares to a hexbeam?

1715. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 15:41:24 UTC
From: richardharrison@webtv.net
Message-ID: <29943-3AE6F024-31@storefull-113.iap.bryant.webtv.net>
Source record: 165264

Cecil, W6RCA wrote:
"The "zillions" of tiny pieces is the energy."

How about a different look at incident and reflected power?

A transmitter applies output to a long and nearly lossless transmission line. Current is in-phase because Zo is a resistance. After very long time and distance, the traveling wave hits an open or short in the line. No change in energy because the open or short is lossless. There is a phase inversion in current or voltage upon reflection, not both.

Travel direction is reversed, but the reflected wave voltage and current go through zero together as before reflection, but now they are out-of-phase. They are not in quadrature as are voltage and current in the SWR.

The Bird wattmeter depends on the either in-phase or out-of-phase reletionship in the forward or reverse waves on a transmission line to separate the power directions. It does so quite reliably.

The Bird wattmeter is simple. It takes a voltage sample at any point on a transmssion line. It also takes a current sample at the same point. It relies on line impedance to give the same meter deflection by either sample. This is carefully arranged to be exactly equal by design and adjustment of the plug-ins. Mutual induction is reversable depending on the switched direction of the plug-in.

If the Bird wattmeter is switched to add the voltage and current samples, forward power is sensed. If the Bird wattmeter is switched to subtract the voltage and current samples, reflected power is sensed. (as these are already out-of-phase, when they are subtracted they add) Since the samples are designed to produce equal deflections of the meter, the unwanted direction sensing always cancels.

Operation of the Bird Wattmeter is proof enough that reflected power is not fictional.

Best regards, Richard Harrison, KB5WZI

1716. Re: WTB: duplexer 2m and 70cm

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 16:00:30 UTC
From: arrow146@aol.com
Message-ID: <20010425120030.03330.00000965@ng-mn1.aol.com>
Source record: 165263

>Subject: Re: WTB: duplexer 2m and 70cm
>From: amateurradio1@sssnet.cam (Del LaBo)
>Date: Wed, Apr 25, 2001 2:26 AM
>Message-id: <3ae6961e.320960991@news.sssnet.com>
>
>You don't want a duplexer, what your looking for is a DIPLEXER.

I don't know why you use the term DIPLEXER. It may be a correct term, but it
is not going to help the fellow find what he is looking for. What he is
looking for is a high pass and a low pass filter.
If you look in the AES or HRO catalog you will find most manufactures
(including myself) call this a Duplexer.

73 Al Lowe N0IMW
<A HREF="http://members.aol.com/_ht_a/Arrow146/index.html">ArrowAntenna.com</A>

1717. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 16:21:55 UTC
From: richardharrison@webtv.net
Message-ID: <1977-3AE6F9A3-22@storefull-116.iap.bryant.webtv.net>
Source record: 165266

Tom, W8JI wrote:
"So you say, but not at low angles over a small ground system."

The FCC publishes a radiation figure of nearly 280 millivolts per meter at one mile for a 5/8-wave vertical antenna versus nearly 240 millivolts per meter for a 1/2-wave vertical. Both antennas supply an identical 1 KW of radiated power with identical ground conditions. That`s gain for the 5/8-wave. And, it`s gain at a low angle (zero degrees). It is along the surface of the earth.

Tom is so often wrong and so seldom admits his mistakes.

Best regards, Richard Harrison, KB5WZI

1718. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 16:42:43 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3AE6FE83.D70EECB6@haertig.com>
Source record: 165265

So what about a 225 degree long radiator. Not resonant at all - whether grounded or not. How much distortion of the pattern of a 90 degree vertical, 90 degrees away, do you think it might cause - whether grounded or not?

Gray

Richard Harrison wrote:
>
> Gray Frierson Haertig wrote:
> "Whether the radiator is floating or grounded can make a pretty big
> difference as well."
>
> Sure, if grounded, the first resonant length is 1/4-wave. If it is not
> grounded, the first resonant length is 1/2-wavelength.
>
> A table or graph for parasitic array design will indicate the amount of
> induced current and its effect on antenna pattern. If the parasitic
> element is at right angles, or far away, it has little effect.
>
> Best regards, Richard Harrison, KB5WZI

--
Telecommunications Engineering
Gray Frierson Haertig & Assoc.
820 North River Street, Suite 100
Portland, Oregon 97227
503-282-2989
503-282-3181 FAX
gfh@haertig.com

1719. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 17:19:48 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae704d0.12615953@news.accessunited.com>
Source record: 165267

On Wed, 25 Apr 2001 11:21:55 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Tom, W8JI wrote:
>"So you say, but not at low angles over a small ground system."
>
>The FCC publishes a radiation figure of nearly 280 millivolts per meter
>at one mile for a 5/8-wave vertical antenna versus nearly 240 millivolts
>per meter for a 1/2-wave vertical. Both antennas supply an identical 1
>KW of radiated power with identical ground conditions. That`s gain for
>the 5/8-wave. And, it`s gain at a low angle (zero degrees). It is along
>the surface of the earth.
>
>Tom is so often wrong and so seldom admits his mistakes.
>
>Best regards, Richard Harrison, KB5WZI

Why is it constantly necessary to attack me Richard? It's getting a little boring.

You quote things in textbooks out of context, misapply the information, and declare yourself a winner. Much like N1IR does.

That is all OK, but a line should be drawn wher you annouce to the world you think I am stupid and you think I refuse to admit my mistakes. That's just YOUR opinion...and doesn't indicate you are right or wrong. I could just as likely have the same opnion of you, but what good would it do to state it?

Now in you quote above, the mistake is probably you never even read what I wrote. I plainly stated that ONLY ground mounted antennas over a large groundplane exhibeted gain.

Sorry Richard, but a 5/8th wl BCB antenna mounted on the surface of the earth IS an antenna that is ground mounted over a very large groundplane.

Remove the earth, elevate the antenna, or increase the frequency until earth losses are major and the gain vanishes. Also, if you read text carefully concerning BC antennas you would see the favored antenna is about .6 or less tall, not 5/8 wave. The 5/8th wave has problems, caused by the high angle lobe. It is not a desired antenna...even for BC work.

73 Tom

1720. Re: Thanx Cecil,Dan,Ralph,Reg & Roy

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 17:43:08 UTC
From: Scott McClements <yetbbwa@grove.iup.edu>
Message-ID: <3AE70CAC.8326E105@grove.iup.edu>
Source record: 165268

Yes, I see. Now I am curious why you need the electrical length of your 50 Ohm coax (RG-8X)?

Scott.

Mad Dog wrote:

> It is necessary to determine the electrical length of coax when you dont
> have a
> MFJ antenna analyzer.
>
> --
> 714 Sandpile,
> The Mad Dog wavin' good bye
> "Scott McClements" <yetbbwa@grove.iup.edu> wrote in message
> news:3AE47A41.432082E@grove.iup.edu...
> > I am curious why you need to determine the velocity factor of RG-8X?
> >
> > Scott.
> >
> >
> >
> > Mad Dog wrote:
> >
> > > For the helpful information y'all supplied. This RG8/X has a
> > > foamed/polyethylene insulator
> > > that is solid white, i guess it's back to the drawing board to determine
> the
> > > V/F.
> > > Or i could switch to a different brand that has a low loss,high
> shielding
> > > and consistent V/F
> > > such as Times LMR400. The system i am building is for 11meter use but i
> am
> > > engineering
> > > the rig piece by piece for minimal loss and stray RF.
> > > Thanx again Gentleman.....
> > > --
> > > 714 Sandpile,
> > > The Mad Dog wavin' good bye
> >

1721. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 17:46:43 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3AE70D83.3B589D5D@netdoor.com>
Source record: 165169

If it ain't friggin' fractals it snot wad SWRs. ENOUGH!!

butch said that

W6RCecilA wrote:

> "Peter O. Brackett" wrote:
> > So you propose to try to disguise the "fiction" of "reflected power" by
> > dividing it up into "zillions" of tiny pieces, to small for anyone to notice
> > individually, and then slip the "fiction" under our noses that way,
> > integrating it back up into a big thing after we are all asleep!
>
> The "zillions" of tiny pieces is the energy. The steady-state power,
> a scalar, is a net lump sum. I notice you haven't touched my example
> of a 100 joule/sec generator and a one second long lossless transmission
> line with an SWR of 5.83:1.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1722. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 17:48:34 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE70DF2.1365@wt.net>
Source record: 165174

Theplanters95 wrote:
>
> Yes, before I get flamed, I know this is off topic.
>
> Can regular house wiring be used for a power connection? I am talking about
> the 3 wire 12 gauge version. I am planning on using my Icom 706MKII in my Ford
> explorer. I am going on several long trips this summer and would like to try
> HF mobile.

Sure, it will work, but I consider that a little thin for mobile use.
Depends how long also. I like real thick power wiring in a mobile
because the voltage drop is less. You have less stabilty problems as far
as "FM'ing", chirping , etc. #12 would probably work ok for the most
part, but I use #6 jumper cable wire myself. Also I use anderson power
connectors on everything. You would be better off using 10-2 rather than
12-3 if you used house wire. You don't need that third ground wire.
Better to use 2 thicker ones, than 3 that are thinner being as the third
won't even be used. Thicker wire will give you more stabilty as your
battery voltage drops if used with the motor off for a while. If there
is one thing I can't stand, it's FM'ing when running SSB due to low
voltage. You get unstable and it will sound like someone is grabbing you
by the neck and swinging you around. I hate to chirp also. You hear this
a lot when people try to run rigs off cig lighter plugs etc. MK

--
http://web.wt.net/~nm5k

1723. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 17:50:50 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE70E7A.630C91AC@bwcc.com>
Source record: 165170

Peter O. Brackett wrote:
> So you propose to try to disguise the "fiction" of "reflected power" by
> dividing it up into "zillions" of tiny pieces, to small for anyone to notice
> individually, and then slip the "fiction" under our noses that way,
> integrating it back up into a big thing after we are all asleep!
Need I remind you that you had asked about a DC circuit?
The first reflection is not so tiny as to be unnoticeable at RF.

1724. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 17:52:15 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE70ECF.F80B7AFA@bwcc.com>
Source record: 165171

"Peter O. Brackett" wrote:
> Cecil probably measured the mass of the line and arrived at the energy
> through the formula E = m * c * c!
I like his explanation a lot better.

1725. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 17:55:18 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE70F86.7DC6F360@bwcc.com>
Source record: 165172

"Peter O. Brackett" wrote:
> In the steady state, the one second latency or transport delay of the
> transmission line holds the same number of Joules of energy that it did at
> the start. DC is DC...
>
> That's what "steady state" means.
What do you mean by "at the start", please?

1726. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 17:59:34 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE71086.E8FC7571@bwcc.com>
Source record: 165173

Peter O. Brackett wrote:
> "Denver Braughler" wrote:
> > Peter O. Brackett wrote:
> > > I wonder how we can tap off some of
> > > that wasted reflected power. Where does
> > > it all go?
> > It is dissipated too.
> > This is not perpetual motion.
> > The reflected power is a portion of the input power.
> I then propose that you tap off that "valuable" reflected power and sell it
> to the good citizens of California, they are looking for some free power.
No one said that it was free, or "valuable", or "wasted" for that matter.
Your proposal is non sequitur to the facts I stated.

1727. Re: Internet Dish? What to get?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 18:13:55 UTC
From: deyoreo@re.ray.com
Message-ID: <3ae71318.25117657@proxy.res.ray.com>
Source record: 165175

I've been using DirecPC about 1.5 yrs now, and I love it. Download
almost allways>450Kbits/sec. I never got more than 16Kbits/sec over my
56K modem. I bought mine from an installer, did the install myself.
Alot of talk about FAP, but I never went over the limit.
I'ld recommend it, if nothing else available.
On Tue, 24 Apr 2001 22:21:28 -0500, "N4IXT" <n4ixt@mindspring.com>
wrote:

>Howdy,
>
>This isn't exactly Ham related, but it is an antenna question, so I hope
>you'll bear with me.
>
>I currently live way out in the country. I chose this property because it
>has lots of space and no restrictions, so I'm free to set up a big antenna
>farm (whoopee!).
>
>The problem is there's NO cable service, NO DSL, and the best speed I can
>get on the modem is 28 K, and that's on a good day, average is about 24k. So
>I'm seriously considering getting one of those satellite dishes that allows
>you to do both up and downloads at fairly high speed (up ranges from 64 to
>128, down is about 400k). Not as good as cable/dsl, but a darn site better
>then the 24k I get now.
>
>There's two main sellers, one is StarBand (ala Dish Network) and the other
>is DirecPC, which is sold thru several ISPs including Earthlink and Pegasus.
>Problem is I don't know anyone who has used these. So, I'm asking for some
>experiences from any of you who have! Any input would be appreciated.
>
>Thanks and 73's,
>
> Robert / N4IXT
>
>

1728. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 18:59:45 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE71EA1.5A7C45DC@eznec.com>
Source record: 165176

It was pointed out to me -- correctly -- some time ago that current doesn't flow -- charge does. And current has precisely the same relationship to charge as power does to energy.

Let's never hear you say that current flows!

I allow myself this imprecision because to do otherwise would interfere with communication.

Roy Lewallen, W7EL

"Peter O. Brackett" wrote:
>
> Cecil:
>
> Yes, I agree... but that is not the steady state.
>
> Call it "reflected energy" NOT "reflected power" and I'll go away!
>
> Heh, heh.
>
> -Peter K1PO

1729. homebuilt dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 19:01:37 UTC
From: LAPORTE CLAUDE <cl.laporte@belgacom.net>
Message-ID: <3ae72a35$0$3123$456d72a3@news.skynet.be>
Source record: 165184

Hello ,

I want to make a dish myself (+/- 2meter).
anyone out there who has some experience on this.
where can i find a good (easy to use) program for calculating the parabol?
it will be used for Meosat and Inmarsat.
Every answer or hint will bring me a step forward.

Thanks and have a nice day
73
ON1AGG

1730. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 19:08:12 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE7209C.27BF4F96@eznec.com>
Source record: 165177

Hm, that's only 1.3 dB.

But Tom has been talking about sky wave, and your figures are for ground wave. The sky-wave gain of a 5/8 wave vertical over a 1/4 wave vertical when mounted on flat ground depends on the ground characteristics, and can vary from a dB or two to a negative value depending on the ground characteristics. It's an interesting modeling exercise for the EZNEC demo program.

Roy Lewallen, W7EL

Richard Harrison wrote:
>
> Tom, W8JI wrote:
> "So you say, but not at low angles over a small ground system."
>
> The FCC publishes a radiation figure of nearly 280 millivolts per meter
> at one mile for a 5/8-wave vertical antenna versus nearly 240 millivolts
> per meter for a 1/2-wave vertical. Both antennas supply an identical 1
> KW of radiated power with identical ground conditions. That`s gain for
> the 5/8-wave. And, it`s gain at a low angle (zero degrees). It is along
> the surface of the earth.
>
> Tom is so often wrong and so seldom admits his mistakes.
>
> Best regards, Richard Harrison, KB5WZI

1731. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 19:25:14 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE7249A.F86A4BFE@bwcc.com>
Source record: 165178

Roy Lewallen wrote:
> It was pointed out to me -- correctly -- some time ago that current
> doesn't flow -- charge does.
Eeeeh.

Right on that current means "flow [of something]".

> And current has precisely the same
> relationship to charge as power does to energy.
But what if charge is merely oscillating almost "in place"?

It is energy that is flowing through the long distances.

1732. Re: Using a dip meter on a cubical quad

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 19:34:48 UTC
From: temporary0191398@aol.com
Message-ID: <20010425153448.15622.00002033@ng-fc1.aol.com>
Source record: 165179

Rich--
Here are some thoughts, which I invite gurus to comment on or correct.
The antenna resonance will be affected by proximity to the antenna, so stand behind it or even point the antenna skyward while measuring.

A coupling loop at the feed point would help. However, such a loop will affect the antenna resonance. I would get a short piece of coax, and use the dipper to cut the coax to a multiple of a half wavelength. Then use the coax to feed the antenna with the coupling loop at the other end. One turn is probably sufficient.

--Wayne W5GIE

1733. Re: Internet Dish? What to get?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 19:42:21 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE7289D.1D73C7CB@IEEE.org>
Source record: 165180

deyoreo@re.ray.com wrote:
> I've been using DirecPC about 1.5 yrs now, and I love it. Download
> almost allways>450Kbits/sec. I never got more than 16Kbits/sec over my
> 56K modem. I bought mine from an installer, did the install myself.
> Alot of talk about FAP, but I never went over the limit.
> I'ld recommend it, if nothing else available.

Unfortunately, I would have to buy a new computer because mine
doesn't meet their minimum standards.
--
http://www.mindspring.com/~w6rca

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1734. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 19:45:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE72954.1A637F9@IEEE.org>
Source record: 165181

Denver Braughler wrote:
> It is energy that is flowing through the long distances.

And if someone doesn't believe it, line up a bunch of large
ball bearings, put your head against one end, and let someone
at the other end hit it with a sledge hammer. The whole line
moves very, very little but it moves enough to get your
attention. :-)
--
http://www.mindspring.com/~w6rca

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1735. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 19:46:51 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <LQFF6.35089$RF1.2977723@bgtnsc06-news.ops.worldnet.att.net>
Source record: 165182

"Denver Braughler" <Braughler@bwcc.com> wrote in message
news:3AE7249A.F86A4BFE@bwcc.com...
> Roy Lewallen wrote:
> > It was pointed out to me -- correctly -- some time ago that current
> > doesn't flow -- charge does.
> Eeeeh.
>
> Right on that current means "flow [of something]".
>
> > And current has precisely the same
> > relationship to charge as power does to energy.
> But what if charge is merely oscillating almost "in place"?
>
> It is energy that is flowing through the long distances.

It's funny how a discussion on SWR changes so much.

Current (Amperes) is a base unit. Quantities such as Coulombs, Volts,
Joules, etc, are derived quantities related to current and other base units
such as time, mass and length.

How does this relate to SWR?

1736. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 19:48:37 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <pSFF6.35090$RF1.2977975@bgtnsc06-news.ops.worldnet.att.net>
Source record: 165183

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE72954.1A637F9@IEEE.org...
> Denver Braughler wrote:
> > It is energy that is flowing through the long distances.
>
> And if someone doesn't believe it, line up a bunch of large
> ball bearings, put your head against one end, and let someone
> at the other end hit it with a sledge hammer. The whole line
> moves very, very little but it moves enough to get your
> attention. :-)
> --

Without a doubt, this is the best post I've seen on the subject. Cecil, is
there any reflected energy traveling back to the sledge hammer?

1737. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 19:52:33 UTC
From: kb7qhc@home.com
Message-ID: <3ae70f84.2559911468@news.seanet.com>
Source record: 165185

On Tue, 24 Apr 2001 19:35:29 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>Really though, I am serious, all of the same formulae and concepts used for
>wave mechanics work equally as well at DC as at RF. They must of course,
>otherwise they would not be "valid". It's just that the "thought" of
>reflected power at DC really "challenges" the visualizations that some folks
>carry around in their heads.
>

Hi Peter,

This presumption that "they must work" does not necessarily follow you
down to DC. It doesn't even necessarily mean that it even works below
1 MHz.

Too many here use the short-cut math provided for technicians as
though they were the literal equations from the hand of Maxwell.

You seriously endanger your question with inclusions such as:
>But since you raise the question of phase at DC...I wonder, what does it
>mean to be 90 degrees out of phase with DC?
and even worse the statement above
>reflected power at DC
which are self-contradictions. Reflected in any dictionary
necessarily carries the concept of time with it. DC contains no such
characteristic and if you turn to argue that it must be applied at
some time you have walked away from DC and entered into transient
analysis.

73's
Richard Clark, KB7QHC

1738. Re: ¤s¤i¤Ŷ¤ ¤¤¤z¤a¤ЧL¤¤¤¤¤q !

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 19:55:31 UTC
From: kb7qhc@home.com
Message-ID: <3ae82b76.2567065995@news.seanet.com>
Source record: 165186

On 25 Apr 2001 01:47:34 GMT, k3bu@aol.com (Yuri Blanarovich) wrote:

>>
>>ï¿½sï¿½ïï¿½Å¶ï¿½ ï¿½ï¿½ï¿½zï¿½aï¿½ÓµLï¿½ï¿½ï¿½ï¿½ï¿½q !
>>
>>http://welcome.to/adhk
>>
>>ï¿½Aï¿½Î¦Xï¿½ï¿½ï¿½qï¿½Bï¿½ï¿½ï¿½~ï¿½Bï¿½ï¿½tï¿½Ó¤ï¿½ï¿½ï¿½ï¿½ï¿½~ï¿½ï¿½ï¿½sï¿½Bï¿½ï¿½ï¿½ï¿½ï¿½ï¿½ï¿½ï¿½Pï¿½Bï¿½sï¿½~ï¿½ï¿½ï¿½Ð¡B
>>
>>ï¿½ï¿½ï¿½qï¿½ï¿½ï¿½ï¿½ï¿½Å¶Çµï¿½ï¿½ï¿½ï¿½Ó·~ï¿½Î³~ï¿½Aï¿½ï¿½ï¿½ï¿½Ï¶Qï¿½ï¿½ï¿½qï¿½Î³Ìµuï¿½ï¿½ï¿½É¶ï¿½ï¿½A
>>
>>ï¿½Ó¨ï¿½ï¿½tï¿½aï¿½É¨ï¿½ì°ªï¿½ï¿½Þ©Ò±aï¿½Óªï¿½ï¿½Lï¿½ï¿½ï¿½sï¿½ïï¿½ï¿½ï¿½qï¿½I
>>
>>
>>
>>
>
>That looks like Freaktal alphabet, NO?
>or invitation to Chinese virus?
>

Hi Yuri,

I think its the formula for antigravity that was suppressed in the
first millennia.

73's
Richard Clark, KB7QHC

1739. Re: homebuilt dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:00:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE72CC7.E018C83E@IEEE.org>
Source record: 165187

LAPORTE CLAUDE wrote:
> I want to make a dish myself (+/- 2meter).
> where can i find a good (easy to use) program for calculating the parabol?

y^2 = 2px :-)
--
http://www.mindspring.com/~w6rca

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1740. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:01:52 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE72D30.A8DA89CD@bwcc.com>
Source record: 165188

W6RCecilA wrote:
> Denver Braughler wrote:
> > It is energy that is flowing through the long distances.
> And if someone doesn't believe it, line up a bunch of large
> ball bearings, put your head against one end, and let someone
> at the other end hit it with a sledge hammer. The whole line
> moves very, very little but it moves enough to get your
> attention. :-)

My attention? Yeah.
Some other people, I'm not so sure.

1741. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:03:24 UTC
From: richardharrison@webtv.net
Message-ID: <2031-3AE72D8C-7@storefull-111.iap.bryant.webtv.net>
Source record: 165193

Gray Frierson Haertig wrote:
"How muh distortion of the pattern of a 90 degree vertical, 90 derees away, do you think it might cause - whether grounded on not?"

If a parasitically excited element is placed at 90 degrees from a radiator, some of the radiated wave travels the 90-degree distance to the parasitic element and excites re-radiated energy which by Lenz`s law is 180-degrees out-of-phase with the excitation. Some of this re-radiated energy returns through the 90-degree distance to the originial radiator where it is now in phase with the newly emerging energy. This produces forward gain. The pattern can be affected. My guess is that the best case must be less than a double of effective field, and I would expect less.

I suspect that the radiator would be a grounded vertical. If it is 1/4-wave, it must be grounded to be effective as a radiator. If the parasitic element is also 1/4-wave and is ungrounded, it will have little effect. It will have almost no current.

In a 2-tower directional AM BC-band array of 1/4-wave radiators, if one of the towers is simply floated above ground, the self-impedance of of the other tower can usually be accurately measured. The floating tower is out of the picture.

In a 2-tower array of 1/2-wave radiators, all that is necessary to make a self-impedance measurement of only one tower is simply to short the second tower to ground. Whip out the bridge and measure away. Gray already knows all of this. Maybe I didn`t understand his question.

In the boat, the mast stay has one end returned to a fiberglas deck. If significant current is appearing in this cable, a wire can be attached to detune the structure, or another wire can be added in parallel with the backstay. This is a very simple problem.

Best regards, Richard Harrison, KB5WZI

1742. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:03:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE72D8D.6151F361@IEEE.org>
Source record: 165190

VE9SRB wrote:
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote:

> > Denver Braughler wrote:
> > > It is energy that is flowing through the long distances.
> >
> > And if someone doesn't believe it, line up a bunch of large
> > ball bearings, put your head against one end, and let someone
> > at the other end hit it with a sledge hammer. The whole line
> > moves very, very little but it moves enough to get your
> > attention. :-)
>
> Without a doubt, this is the best post I've seen on the subject. Cecil, is
> there any reflected energy traveling back to the sledge hammer?

Only if it's Peter's head at the other end. :-)
--
http://www.mindspring.com/~w6rca

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1743. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:04:12 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE72DBC.F45D5577@bwcc.com>
Source record: 165189

VE9SRB wrote:
> is there any reflected energy traveling back to the sledge hammer?
That would depend on how much energy my head absorbed.
If the bearings were lined up and abutting a steel beam in the basement of the World Trade Center, I would expect much of the energy to be reflected.

1744. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:05:56 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE72E24.922858E7@bwcc.com>
Source record: 165191

VE9SRB wrote:
> It's funny how a discussion on SWR changes so much.
Some of us are actually trying to understand what is really going on.
Others are genuinely interested in trying to explain it.
So naturally the subject matter must branch into the underlying mechanisms, the extreme conditions, and the exceptions.

1745. Re: Looking for Ground Planes 101

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:11:52 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE72F88.FB38BAB9@IEEE.org>
Source record: 165192

CLVANCIL wrote:
> I have an UHF antenna where the radials are set at 30 degrees is this for
> better matching or by accident?

Depends on how they got to 30 degrees. :-)
--
http://www.mindspring.com/~w6rca

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1746. Re: Antenna analyzer question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:21:29 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9c7cc1elm1@uranium.btinternet.com>
Source record: 165196

Reg wrote -
> >If nothing is done except vary frequency while observing the SWR
> >meter, when the indicated SWR is at its minimum the system is at
> >resonance whatever the minimum value might be.
==========
Tom wrote -
> That's true Reg if you talk about the SYSTEM, and not of the
antenna,
> and if the system passes a point where reactance is zero and
> resistance at that point is not shifting rapidly with frequency.
==========
Yes, when the SWR meter is next to the transmitter I carefully
specify it is the system I am talking about.

I made the contribution because some people appear to be under the
impression the system is resonant only at the frequency where the
SWR is 1-to-1.

Such erroneous ideas arise from the other misconception that an SWR
meter at the transmitter end of the antenna feedline indicates the
SWR on that feedline. In fact it does not indicate an SWR anywhere.
It does not even respond to an SWR.

The magazine authers, technical editors, meter manufacturers and
salesmen have been fooling us hams for the best part of a century.

And Tom, from your remark that the resistive component of input
impedance should not be changing very rapidly with frequency as the
frequency passes through resonance indicates you understand very
well what's going on.

I agree, my statement is an approximation.

If we take as an example the feedpoint at the centre of a 1/2-wave
dipole, at which point the Q of the antenna is roughly 10, the
reactance changes very rapidly through resonance. The resistive
component of feedpoint impedance is, of course, the antenna
radiation resistance which changes versus frequency relatively
slowly and the approximation is good enough.

Reg.

1747. keeping water out of 9913

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:24:29 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3ae7333c$0$62153$bbae4d71@news.net-link.net>
Source record: 165194

Put a dab of RTV silicone in the hollow to plug up coax before putting on
the connector--that is if you are not in a hurry, otherwise make a good
"drip loop" at your connections.

1748. Re: what do you think about ....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:30:13 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AE733D5.42E8DA81@oio.net>
Source record: 165195

F4CKV,
With a tuner, your antenna should work very well on
almost all HF bands. If you decide you don't like it,
can I have it???
'Doc

1749. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:35:47 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3ae735e4$0$62139$bbae4d71@news.net-link.net>
Source record: 165197

I have never had a problem with "FM'ing" while operating with the stock 10 or 12 gauge cables with IC-735 or 706's when the engine is running. The batter will lose high voltage capacity rather quickly if you are hitting the rig pretty heavy, such as going for a long county hunter run.

Many accessory jacks on newer vehicles are fused at 25 amps--more than enough to operate modern rigs at full output. Many cigar lighters are also fused at 20 or 25 amps as well.

Heavy gauge wire will not reduce motor noise. I think it will pick up more of it.

My Ford truck fuel pumps radiated noise that was picked up through the antenna, not the power cables. There is a fuel pump fix but it costs about $300.00 labor included if out of wtty. So I bought a new Suburban.

You are hooking up close to a $1,000.00 radio--best to run stock cord direct to battery. Don't use the house wire or other cheap stuff just to save $15.00! Battery will act as somewhat of a filter for line noise. Run cable under vehicle and up through hole (grommet) in fire wall and up near the battery, keeping it as far away from noise makers like spark plugs as you can. Use a ground strap at the rig. Use both wires on the battery--do NOT ground black wire to frame for power return. FUSE BOTH LINES! Put the fuses close to the battery.
Mark Keith wrote in message <3AE70DF2.1365@wt.net>...
>Theplanters95 wrote:
>>
>> Yes, before I get flamed, I know this is off topic.
>>
>> Can regular house wiring be used for a power connection? I am talking
about
>> the 3 wire 12 gauge version. I am planning on using my Icom 706MKII in
my Ford
>> explorer. I am going on several long trips this summer and would like to
try
>> HF mobile.
>
>Sure, it will work, but I consider that a little thin for mobile use.
>Depends how long also. I like real thick power wiring in a mobile
>because the voltage drop is less. You have less stabilty problems as far
>as "FM'ing", chirping , etc. #12 would probably work ok for the most
>part, but I use #6 jumper cable wire myself. Also I use anderson power
>connectors on everything. You would be better off using 10-2 rather than
>12-3 if you used house wire. You don't need that third ground wire.
>Better to use 2 thicker ones, than 3 that are thinner being as the third

>won't even be used. Thicker wire will give you more stabilty as your
>battery voltage drops if used with the motor off for a while. If there
>is one thing I can't stand, it's FM'ing when running SSB due to low
>voltage. You get unstable and it will sound like someone is grabbing you
>by the neck and swinging you around. I hate to chirp also. You hear this
>a lot when people try to run rigs off cig lighter plugs etc. MK
>
>--
>http://web.wt.net/~nm5k

1750. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:49:52 UTC
From: richardharrison@webtv.net
Message-ID: <1978-3AE73870-12@storefull-116.iap.bryant.webtv.net>
Source record: 165200

Roy, W7EL wrote:
"But Tom has been talking about sky wave,"
Tom wrote:
"So you say, but not at low angles over a small ground system.

Roy knows that the ground system has almost the same effect on either 1/2-wave or 5/8-wave antenna. Roy also knows that the strength of radiation of vertical antennas of 1/2-wave and 5/8-wave lengths have nearly their same strengths at zero degrees and 10 degrees, and that the 5/8 wave is stronger than the 1/2-wave. It is plain dumb to try to find some special case in which Tom might be right. Yes, there is some strained construction considering lossy loading coils or something that might be an exception in which the 5/8-wave wouldf be inferior to a 1/2-wave. But, in general, 5/8-wave produces a peak in the low-angle radiation obtainable from a vertical antenna. Yes, a Franklin can be made from a phase-inverter between two 1/2-wave verticals stacked one on the other and it will outdo the lone 5/8-wave. But lets be resonable and admit that the 5/8-wave vertical has more gain at low anges than the 1/2-wave vertical, as a general rule.

Best regards, Richard Harrison, KB5WZI

1751. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 20:54:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE73984.6BD3F3C6@eznec.com>
Source record: 165198

Richard Harrison wrote:
>
> Gray Frierson Haertig wrote:
> "How muh distortion of the pattern of a 90 degree vertical, 90 derees
> away, do you think it might cause - whether grounded on not?"
>
> If a parasitically excited element is placed at 90 degrees from a
> radiator, some of the radiated wave travels the 90-degree distance to
> the parasitic element and excites re-radiated energy which by Lenz`s law
> is 180-degrees out-of-phase with the excitation. Some of this
> re-radiated energy returns through the 90-degree distance to the
> originial radiator where it is now in phase with the newly emerging
> energy. This produces forward gain. The pattern can be affected. My
> guess is that the best case must be less than a double of effective
> field, and I would expect less.
> . . .

But we can change a reflector to a director simply by changing its length, without changing the spacing at all (which is typically much less than 90 degrees for a Yagi). How do you explain this with Lenz's law?

Roy Lewallen, W7EL

1752. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:04:25 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7e47$8u6$1@nntp9.atl.mindspring.net>
Source record: 165199

Richard:

I'm interested in your opinion here...

The "equation" for the so-called reflected voltage, usually given the symbol "b" is simply:

b = V - IR

(There is no magic in this equation, this is simply the equation for the voltage across a Wheatstone bridge circuit arranged to compare an unknown impedance Z against a known impedance R. It also happens to be the equation used to express the "echo" or "reflection" when a signal or travelling wave travelling in one direction on a media with surge impedance R is "bounced off" a discontinuity of impedance Z and returns in the other direction. It so happens that the mathematical model for both phenomena is identical. Nice of God to arrange that, eh?)

V is a voltage at a point, and I is the current flowing past or through that point, and R is the "reference impedance" against which the metrologist wishes to "measure" the reflection.

b = V - IR volts , straight clean and simple.

Now clearly V and I can be, and usually are, functions of time.

And so the equation for b holds for all times t and can be re-written to show that functional dependence on "t" explicitly as:

b(t) = V(t) - I(t) * R (* is multiplication)

It is also true that, in the AC sinusoidal steady state, where all signals are sinusoids of the same frequency "f", the same equation holds true. Where now b, V and I are interperted as the steady state "value" of the sinusoidal AC signals. Where the "value" must be common for all instances of the variables in the equation, i.e. use RMS or Peak or Average, or whatever, as long as it is used consistently. Here the equation can also be re-written to show that functional dependence upon frequency "f" explicitly as:

b(f) = V(f) - I(f) * R

Now in this case, am I to understand that you are suggesting that the above equation fails to hold true below some "cutoff" frequency?

If so, then what is that frequency? And...

What is the manner in which the equation fails to hold as frequency is reduced through that frequency.

Does the equation instantly fail at all frequencies below cutoff, or does it gradually fail by becomming less and less true as you pass lower in frequency?

I'm interested to know your opinion on this?

I love this equation... b = V - IR... for it is the essence of wave mechanics. It "says everything"! Use it when an actual current I, not ficticious, is flowing through an actual impedance Z, not ficticious, to produce the actual voltage V = IZ.

The reflected voltage "b" (b = V - IR) is simply the output of a simple bridge circuit, and a very nice comparison of the "actual" voltage V to a ficticious voltage IR that would, or could, exist across a, perhaps ficticious, reference impedance R, if the "actual" currrent I was flowing through R.

But I is not flowing through R, unless perhaps in that convenient case when R=Z!

If the impedance Z through which I is actually flowing should happen to equal R, why then b = 0!

What a great equation, b tells you when Z is equal to R! And...

b = V - IR tells you, in some sense, how far away Z is from R.

"b" - the equation of a simple bridge circuit!

b = V - IR, true at all times "t" for all waveforms, and for sinusoidal steady state, true at all frequencies "f".

But unless Z = R, it is entirely "ficticious" as it does not exist in the circuit being examined, only in the mind or equipment of the metrologist!

Using this "elegant" function b, to derive yet another "fiction", the so-called "Reflected Power" is IMHO... a generalization without purpose, and whose use only serves to confuse, not illuminate. There simply is no such power!

I say, lets keep that simple useful ficticious quantity reflected voltage b, but let's get rid of that misleading "reflected power"!

Is there any hope of doing this? And perhaps saving generations of new technicians and engineers from false assumptions?

Richard, I'm interested in your thoughts and comments, and... please discuss the frequency, let's call it fcutoff, below which the equation for b fails to be true.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3ae70f84.2559911468@news.seanet.com...
> On Tue, 24 Apr 2001 19:35:29 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:

>
> >
> >Really though, I am serious, all of the same formulae and concepts used
for
> >wave mechanics work equally as well at DC as at RF. They must of course,
> >otherwise they would not be "valid". It's just that the "thought" of
> >reflected power at DC really "challenges" the visualizations that some
folks
> >carry around in their heads.
> >
>
> Hi Peter,
>
> This presumption that "they must work" does not necessarily follow you
> down to DC. It doesn't even necessarily mean that it even works below
> 1 MHz.
>
> Too many here use the short-cut math provided for technicians as
> though they were the literal equations from the hand of Maxwell.
>
> You seriously endanger your question with inclusions such as:
> >But since you raise the question of phase at DC...I wonder, what does it
> >mean to be 90 degrees out of phase with DC?
> and even worse the statement above
> >reflected power at DC
> which are self-contradictions. Reflected in any dictionary
> necessarily carries the concept of time with it. DC contains no such
> characteristic and if you turn to argue that it must be applied at
> some time you have walked away from DC and entered into transient
> analysis.
>
> 73's
> Richard Clark, KB7QHC

1753. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:16:01 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7epv$ug9$1@slb1.atl.mindspring.net>
Source record: 165201

Richard:

[snip]
">
> The Bird wattmeter is simple. It takes a voltage sample at any point on
> a transmssion line. It also takes a current sample at the same point. It
> relies on line impedance to give the same meter deflection by either
> sample. This is carefully arranged to be exactly equal by design and
> adjustment of the plug-ins. Mutual induction is reversable depending on
> the switched direction of the plug-in.
>
> If the Bird wattmeter is switched to add the voltage and current
> samples, forward power is sensed. If the Bird wattmeter is switched to
> subtract the voltage and current samples, reflected power is sensed. (as
> these are already out-of-phase, when they are subtracted they add) Since
> the samples are designed to produce equal deflections of the meter, the
> unwanted direction sensing always cancels.
>
> Operation of the Bird Wattmeter is proof enough that reflected power is
> not fictional.
[snip]

Therein lies the fallicy of your argument. For as you said... the Bird Wattmeter samples voltage and current, it does not sample power! The scale on its' face is enscribed with power, but it is only indicating voltage and/or current.

The Bird Wattmeter is nothing more nor less than a simple bridge circuit which measures I and V and indicates the voltage quantity "b" in one orientation and the voltage quantity "a" in the other orientation:

b = V - IR... reflected volts.
a = V + IR... incident or "forward" volts.

The Bird does not measure power, it is measuring the difference in volts between V and IR, b = V - IR or the sum of volts V and IR, R is merely the reference inside the meter (R = 50 Ohms for the Bird Model 43)!

And, as the Bird company unfortunately does,... simply marking a scale on a meter face with the word "watts" when it is really indicating volts "b" or "a" does not a power make.

One could compute a ficticious power from the ficticious voltage difference by say using the equation Pr = b*b/R or some such, and then marking the scale on the meter face that way, but marking a scale, does not make power!

Reflected power is a fiction, it does not exist, never did, never will....

-Peter K1PO

1754. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:18:45 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7ev2$1l1$1@slb2.atl.mindspring.net>
Source record: 165202

Denver:

Start, what?

I always "start" with a coffee and bagel with lox and cream cheese at the "restaurant at the end of the universe".

And Mr. Adams the chef there told me that the answer was "42", I've stopped searching ever since.

-Peter K1PO

"Denver Braughler" <Braughler@bwcc.com> wrote in message news:3AE70F86.7DC6F360@bwcc.com...
> "Peter O. Brackett" wrote:
> > In the steady state, the one second latency or transport delay of the
> > transmission line holds the same number of Joules of energy that it did at
> > the start. DC is DC...
> >
> > That's what "steady state" means.
> What do you mean by "at the start", please?

1755. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:28:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7fgj$r1m$1@slb0.atl.mindspring.net>
Source record: 165203

John:

Sorry, it seems that you have missed my point.

Read my lips...

I do not question reflections.

I do not question reflections.

I do not question reflections.

Reflections do exist.

I DO QUESTION REFLECTED POWER.

Reflected power is a ficticious crock, it doesn't exist, it never did, never will. There is simply no such power.

Reflections are real!

However, if you calculate a ficticious voltage quantity b = V - IR as the difference of an actual voltage V and a perhaps ficticious voltage IR, and then use that ficticious voltage b to calculate a ficticious power Pr = b*b/R from that ficticious voltage and a perhaps ficticious R, that Power Pr is definitely a "fiction"

Reflected Power is not "reflections"!

Reflected Power is a misleading crock, it does not exist, never did, never will.

The damage in misdirection and misunderstanding caused the use of this ficticious quantity far outweighs its potential usefulness as an intermediate quantity in some mathematical manipulations.

-Peter K1PO

"John O'Flaherty" <oflahert@toast.net> wrote in message news:3AE6D1B3.8C05FD09@toast.net...
> "Peter O. Brackett" wrote:
>
> > John:
> >
> > Sorry, I should have explained... TDR technology and FDM technology are not
> > "comensurate" in the sense of dimensional analysis.
> >
> > How best to explain this... lets see...

> >
> > Power is a quantity having units of energy per unit time, say Joules per
> > second, and is a continuous phenomena, and in general will be
continuously
> > present over all the time interval supported by most measuremts, while
> > pulses are transient and carry energy with units of Joules not Joules
per
> > second.
> >
> > In the TDR examples you propose, usually, if the line is sufficiently
long,
> > the pulses do not overlap, and consequently can never be "subtracted"
from
> > each other to give a continuous power reading on a meter.
> >
> > And so one will not generally construct a "reflected value" for isolated
> > pulses simply by subtracting two values measured at the same point on a
line
> > at the same time. i.e. the "standard" Bird Wattmeter will only indicate
two
> > separate "blips" as the pulses pass by, if indeed it indicates anything.
> >
> > The transient case and the steady state case will not yeild the same
results
> > on conventional measuring instruments.
> >
> > Of course, as you realize, that is why TDR technology was developed in
the
> > first place, to allow "meaningful" measurements of transients to be
made.
> >
> > The "reflected power" of which we are speaking is not the same as the
energy
> > in a reflected pulse. And the two cannot be directly compared. They
don't
> > have the same units. A better way of clearly examining this steady
state
> > problem reflected power fiction is to take it to the steady state limit
and
> > assume direct current, because then power is still a valid thing.
Joules
> > per second is fine at DC.
> >
> > One cannot subtract energy from power i.e. Joules from Joules per
second.
> > And reflected power is defined by a subtractions. It's like comparing
> > apples and oranges. One must subtract power from power or energy from
> > energy and not mix the dimensions if one expects to get valid answers.
> >
> > Check out a book which explains "dimensional analysis" which should

make
> > this clear. For example P. W. Bridgman's, "Dimensional Analysis".
> >
>
> I only mentioned tdr because you seemed to be questioning the reality of
> reflections.
> While the usual measurement of a reflected pulse may consider its energy,
that
> energy is moving, and there is an associated power. The joules are
transferred,
> and they are transferred in a fixed measurable time, and so the power
associated
> with a pulse exists as surely as its energy does.
>
> john
>

1756. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:31:17 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7fmjtek1@slb2.atl.mindspring.net>
Source record: 165204

Cecil:

Heh, heh. Now that hurt!

How about Duke? Where did the Aggies end up?

-Peter K1PO [Cary, NC]

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE72D8D.6151F361@IEEE.org...
> VE9SRB wrote:
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote:
>
> > > Denver Braughler wrote:
> > > > It is energy that is flowing through the long distances.
> > >
> > > And if someone doesn't believe it, line up a bunch of large
> > > ball bearings, put your head against one end, and let someone
> > > at the other end hit it with a sledge hammer. The whole line
> > > moves very, very little but it moves enough to get your
> > > attention. :-)
> >
> > Without a doubt, this is the best post I've seen on the subject. Cecil,
is
> > there any reflected energy traveling back to the sledge hammer?
>
> Only if it's Peter's head at the other end. :-)
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1757. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:33:16 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7fq9fh1@slb7.atl.mindspring.net>
Source record: 165205

Steve:

Hey let's start another thread... I was thinking of calling it "Direct Reflections".

In that thread we could develop the whole theory of reflections in DC circuits.

What think?

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message news:LQFF6.35089$RF1.2977723@bgtnsc06-news.ops.worldnet.att.net...
>
> "Denver Braughler" <Braughler@bwcc.com> wrote in message
> news:3AE7249A.F86A4BFE@bwcc.com...
> > Roy Lewallen wrote:
> > > It was pointed out to me -- correctly -- some time ago that current
> > > doesn't flow -- charge does.
> > Eeeeh.
> >
> > Right on that current means "flow [of something]".
> >
> > > And current has precisely the same
> > > relationship to charge as power does to energy.
> > But what if charge is merely oscillating almost "in place"?
> >
> > It is energy that is flowing through the long distances.
>
> It's funny how a discussion on SWR changes so much.
>
> Current (Amperes) is a base unit. Quantities such as Coulombs, Volts,
> Joules, etc, are derived quantities related to current and other base units
> such as time, mass and length.
>
> How does this relate to SWR?
>
>
>
>

1758. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:40:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7g83$m54$1@nntp9.atl.mindspring.net>
Source record: 165206

Cecil:

Like the used car salesman who claims to lose money on every sale, but makes up for it with "volume".

Heh, heh... the line got loaded with energy before I came along with my reflection meters.

Unfortunately when the line was getting loaded with its' Joules, I was having coffee and a bagel at the "restaurant at the end of the universe", where I was told the answer was "42".

And so... now I just don't know how those Joules got there. Since its' the "steady state" I simply don't care. Heh, heh, come to think of it, sometimes when I am in an unsteady state I don't care.

On the other hand, what if the line had zero length, and the generator was directly connected to the mismatched load...

Why then there would still be that "pesky" reflected power hovering around, and no where for it to store its' family Joules!

What?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AE6D905.1CBEF7F2@IEEE.org...
> "Peter O. Brackett" wrote:
> > In all of the interesting cases of steady state wave mechanics there is no
> > such reflected power present.
>
> Peter, please answer the following question:
>
> During steady-state with a 100 joules/sec generator and a one second long
> lossless transmission line with an SWR of 5.83:1, the transmission line
> contains 300 joules of energy. How did 300 joules get into a one second
> long transmission line being driven by a 100 joules/sec generator?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1759. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:42:47 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7gcg$jv8$1@slb4.atl.mindspring.net>
Source record: 165207

Cecil:

Pesky IEEE!

Messing with my fun.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE6DD8B.C0BD8BEF@IEEE.org...
> "Peter O. Brackett" wrote:
> > You rascal. You really do understand.
> > Yes it's true that "energy" stored in the lossless line (Is NOT "power"
but
> > "energy".) and it will come pouring out of the lossless line when the
source
> > is shut off. After the "steady state".
>
> I suspected you didn't accept the IEEE Dictionary definition of power.
> By the IEEE definition, if energy is moving then there is, by definition,
> power passing a point. And of course at RF, energy cannot stand still.
> According to the IEEE, joules/sec passing a point is defined as power
> even if none of it is dissipated at that point.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1760. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:44:29 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE7453D.F7494F29@bwcc.com>
Source record: 165208

```
Peter O. Brackett wrote:
> Denver Braughler wrote:
> > Peter O. Brackett wrote:
> > > In the steady state, the one second latency or transport delay of the
> > > transmission line holds the same number of Joules
> > > of energy that it did at the start. DC is DC...
> > >
> > > That's what "steady state" means.
> > What do you mean by "at the start", please?
> Start, what?
Don't ask me.
You are the one who said it.
```

1761. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:46:15 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE745A7.DBDB1364@bwcc.com>
Source record: 165209

"Peter O. Brackett" wrote:
> Reflections do exist.
If they do, and you're not saying that they don't, in what sense do you say that they exist?
Where are they?
How can they be observed and quantified?

1762. Re: Internet Dish? What to get?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:48:54 UTC
From: "David Michael Kelly"
Message-ID: <iiheetga1br182u6tb957eani640e2tv14@4ax.com>
Source record: 165210

On Wed, 25 Apr 2001 14:42:21 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Unfortunately, I would have to buy a new computer because mine
>doesn't meet their minimum standards.

Buy? Why not build, it's very easy. Not only that you end up with a
WAY better computer. Buy practically any ASUS motherboard and slap
some components on it and volia you got a whiz bang machine. For first
timers I recommend www.esctechnologies.com. They will install any
component you buy from them and if you buy an OS they used to even
install that. With the price of CPUs and memory going through the
floor there couldn't be a better time.

--
david
AC7LY

1763. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:49:24 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE74664.B7BB0FF1@bwcc.com>
Source record: 165211

"Peter O. Brackett" wrote:
> On the other hand, what if the line had zero length, and the generator was
> directly connected to the mismatched load...
>
> Why then there would still be that "pesky" reflected power hovering around,
> and no where for it to store its' family Joules!
I just don't see how this is a problem. The reflection would travel instantaneously.

1764. B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:57:37 UTC
From: kev200bhm@aol.com
Message-ID: <20010425175737.01918.00000199@ng-cn1.aol.com>
Source record: 165213

Has anyone have any experience with the Barker & Williamson wide band folded dipole, I don't know the model no. but it covers 160 thru 10 meters, 90ft long.
Thanks,
K4PBN

1765. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 21:58:06 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE7486E.AEA6806D@bwcc.com>
Source record: 165212

Peter O. Brackett wrote:
> Why then there would still be that "pesky" reflected power hovering around,
> and no where for it to store its' family Joules!
Take a sledgehammer for a steel rod for a handle and whack a steel beam directly.
Tell me where the reflected energy goes.
You'll feel it going right back into the generator.

1766. Rochester NY TA53 for sale

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 22:03:41 UTC
From: John Kennedy <jkenned1@rochester.rr.com>
Message-ID: <1RHF6.192$r3.321322@typhoon.nyroc.rr.com>
Source record: 165215

```
5 yrs old, on ground in exclnt condition. All traps good.
Prefer pickup, can do local delivery
$300
John Kennedy
```

1767. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 22:07:02 UTC
From: k3bu@aol.com
Message-ID: <20010425180702.20724.00000212@ng-mq1.aol.com>
Source record: 165216

>
>One could compute a ficticious power from the ficticious voltage difference
>by say using the equation Pr = b*b/R or some such, and then marking the
>scale on the meter face that way, but marking a scale, does not make power!
>
>Reflected power is a fiction, it does not exist, never did, never will....
>
>-Peter K1PO
>
>
>

Isn't it easier to match the PA impedance to coax impedance, then match the antenna impedance to coax impedance and save the time arguing about "reflections"?
That's what I do. I design my antennas for 50 feedpoint impedance without "matching" crap (save abt 20% of power). Is this too "radical"?

Have a flat SWR day!

Yuri, K3BU

1768. FS - MFJ-259B, Case, Grid Dip Coil Kit

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 22:07:26 UTC
From: kk4tl@aol.com
Message-ID: <20010425180726.06291.00002066@ng-cg1.aol.com>
Source record: 165217

For Sale MFJ-259B Antenna Analyzer with case and grid dip coil kit and original manual. The box is missing. It is 8 months old and has been used twice. I am the original owner. Bought it new at Memphis Amateur Electronics. Specs at :
Analyzer - http://www.mfjenterprises.com/analyzers/mfj259.html
Coil Kit - http://www.mfjenterprises.com/analyzers/mfj66.html
Case - http://www.mfjenterprises.com/analyzers/mfj29b.html
$200.00 Shipped US. Payment by check, MO or Pay-Pal.
(Pay-Pal tonight, I ship tomorrow.)
Email direct if interested. KK4TL@AOL.COM

1769. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 22:08:49 UTC
From: k3bu@aol.com
Message-ID: <20010425180849.20724.00000213@ng-mq1.aol.com>
Source record: 165218

>
>Tom is so often wrong and so seldom admits his mistakes.
>
>Best regards, Richard Harrison, KB5WZI
>
>

I will second that!!!
But he likes to ridicule others who do not subscribe to his "bible" :-)

Yuri, K3BU

1770. Re: ¼s§i«Å¶Ç ¬°±z±a¨ÓµL¦¬¯q !

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 22:11:44 UTC
From: k3bu@aol.com
Message-ID: <20010425181144.20724.00000215@ng-mq1.aol.com>
Source record: 165069

>Hi Yuri,
>
>I think its the formula for antigravity that was suppressed in the
>first millennia.
>
>73's
>Richard Clark, KB7QHC
>
>
>

I dunno, haven't looked into that area yet. Gotta get back to school learn them new alphibets or gravitases.

Yuri

1771. Re: Using a dip meter on a cubical quad

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 22:17:45 UTC
From: k3bu@aol.com
Message-ID: <20010425181745.20724.00000219@ng-mq1.aol.com>
Source record: 165070

>
>I'm using LB Cebik's basic program to determine element spacing and
>length based on wire diameter (using 12AWG bare copper). His program
>describes 19.204ft for the driven element, which I'm fairly close to
>since I"m at about 19.5ft.
>
>Thanks again for everyone's comments, questions, and advice! I'm
>learning!
>
>73!
>
>-Rich
> N3WWN
>
>

Just use his formula, calculate the antenna confirguration way you want it. Put it up, measure the resonant frequency, if it is off from wwhat it supposed to be, just trim all elements by percentage of error and you will be right on.

If you want perfect 3 el quad, I can supply you dimensions that need no measuring or tweaking. Just give me frequency, height and wire diameter or gauge.

73 Yuri, K3BU@aol.com

1772. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 22:31:19 UTC
From: kb7qhc@home.com
Message-ID: <3ae74fb2.2576341152@news.seanet.com>
Source record: 165071

On Wed, 25 Apr 2001 17:04:25 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>Richard, I'm interested in your thoughts and comments, and... please discuss
>the frequency, let's call it fcutoff, below which the equation for b fails
>to be true.
>
>-Peter K1PO
>

Hi Peter,

Fair enough, but right now I am wearing my Java hat. To respond to
your serious enquiry will take some time for me to get back to my
resources and reconsider your posting (which means some hours from
now).

73's
Richard Clark, KB7QHC

1773. Direct Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 22:39:00 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7jli$q4i$1@nntp9.atl.mindspring.net>
Source record: 165073

In steady state DC circuits is there a place for impedance matching, reflection analysis, and reflected power?

Let's consider our transmitter to be a 12 volt battery with internal resistance of say 3 Ohms.

This battery has an open circuit voltage of Voc = 12 Volts and a short circuit current of Isc = Voc/Rint = 12/3 = 4 Amps.

Now let's connect this transmitter, er... battery to a load of resistance 2 Ohms through a lossless transmission line of sufficiently short length to allow us to do the experiment in our basement lab, heh, heh... no 1000 mile long lossless lines please.

We now have our 2 Ohm load connected and the charges (electrons or protons, or what?) are flowing.

Now in this situation, is the battery mismatched to the load? How much power is delivered to the load? How much power is dissipated in the battery's internal resistance? How much reflected power is there and where is it dissipated?

Let's see...

The total resistance in the circuit is 3 Ohms internal battery resistance plus 2 Ohms load resistance...

Rtotal = 3 + 2 = 5 Ohms

The current I through the lossless transmission line and into the load will be:

I = Voc/Rtotal = 12/5 = 2.4 Amps.

The voltage across the load will be:

V = 2.4 * 2 = 4.8 Volts.

The power delivered to the load, let's call it Pd and (Dare I say) dissipated in the load will be:

Pd = V*I = 4.8*2.4 = 11.52 Watts.

The power dissipated in the internal battery resistance will be:

Pint = 2.4 * 7.2 = 17.28 Watts.

And so the total power being extracted from that poor struggling battery and dissipated in the load and internal resistance will be:

Ptotal = 17.28 + 11.52 = 28.8 Watts.

Aside: If the load had been "matched" to the "transmitter" er... battery, the load would not have been 2 Ohms but 3 Ohms for a total of 6 Ohms in the circuit, with a current of 12/6 = 2 Amps, and a load voltage of 6 Volts, with a load power of 12 Watts and an internal power of 12 Watts for a total of 24 Watts.

Now let's calculate the "reflected power" in this mismatched situation...

Let's see now we start by calculating the ficticious "reflected voltage" b measured somewhere on the lossless transmission line. (Oh heck lets make it at the transmitter end.):

b = V - IR

But wait! We haven't yet specified R???

Heh, heh... what is the "surge resistance" R of our lossless transmission line? Does it matter? What?

OK for picayune readers we might have to choose R to be the value of the perfectly matched load, i.e. R = 3 Ohms. But I insist that it doesn't matter a damm, because it's all a fiction anyway.

Using R = 3 Ohms as the surge resistance of our lossless line.

b = V - IR = 4.8 - 2.4 * 3 = 4.8 - 7.2 = -2.4 Volts

So the ficticious reflected voltage which does not exist anywhere in the circuitry for this "mismatched "2 Ohm load is -2.4 Volts.

Clearly by elementary analysis (Use V squared over R or however you wish to calculate it.) we can now calculate the ficticious reflected power... Pr

Pr = b*b/R = (-2.4)*(-2.4)/3 = 5.76/3 = 1.92 Watts. of purely ficticious reflected power!

Now where is this 1.92 Watts of ficticious reflected power delivered?

Is the 1.92 Watts of ficticious reflected power dissipated in the load? NO! The load is dissipating 11.52 Watts.

Is the 1.92 Watts of ficticious reflected power dissipated in the internal resistance? NO! The internal resistance is dissipating 17.28 Watts.

Jeesh... we've got 1.92 Watts of ficticious reflected power all dressed up and no place to go!

I say, since it didn't cost us any money to create this ficticious 1.92 Watts of reflected power, that we just ship it to those poor Californians. They really need all the free power they can get!

In fact if all of us hams could just harness those tiny amounts of reflected power created in our antenna systems by these wonderous equations all over the world and send them to California we could probably eliminate the West Coast Energy Crises.

Reflected Power, AC, DC, whatever.... a crock in any form, bah, humbug!

-Peter K1PO

1774. Re: homebuilt dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 22:40:33 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <BnIF6.58777$_P.15685244@news3.rdc1.on.home.com>
Source record: 165072

Well building it out of 1" galvanised steel, stress it into a bowl shape
using rope (f/d ratio 0.4). When it is in that shape build your form =) its
about that easy.

--
Rob St.Denis

"LAPORTE CLAUDE" <cl.laporte@belgacom.net> wrote in message
news:3ae72a35$0$3123$456d72a3@news.skynet.be...
> Hello ,
>
> I want to make a dish myself (+/- 2meter).
> anyone out there who has some experience on this.
> where can i find a good (easy to use) program for calculating the parabol?
> it will be used for Meosat and Inmarsat.
> Every answer or hint will bring me a step forward.
>
> Thanks and have a nice day
> 73
> ON1AGG
>
>
>

1775. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 22:48:04 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7k6i$t1e$1@nntp9.atl.mindspring.net>
Source record: 165075

Hi Yuri:

Good to hear you "on frequency".

Yup, I'm having a flat SWR day...

When are you planning on heading for the Cape?

-Peter K1PO

"Yuri Blanarovich" <k3bu@aol.com> wrote in message
news:20010425180702.20724.00000212@ng-mq1.aol.com...
> >
> >One could compute a ficticious power from the ficticious voltage
difference
> >by say using the equation Pr = b*b/R or some such, and then marking the
> >scale on the meter face that way, but marking a scale, does not make
power!
> >
> >Reflected power is a fiction, it does not exist, never did, never
will....
> >
> >-Peter K1PO
> >
> >
> >
>
> Isn't it easier to match the PA impedance to coax impedance, then match
the
> antenna impedance to coax impedance and save the time arguing about
> "reflections"?
> That's what I do. I design my antennas for 50 feedpoint impedance without
> "matching" crap (save abt 20% of power). Is this too "radical"?
>
> Have a flat SWR day!
>
> Yuri, K3BU

1776. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 22:50:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7kbu$2sp$1@nntp9.atl.mindspring.net>
Source record: 165074

Thread:

Hey, I was trying to win the Guiness Record for the World's Longest NG
Thread, when...

Someone, not me, started another thread up the line entitled "Direct
Reflections".

Don't no one go up there, let's keep this un goin!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE5814B.67BCFF0A@IEEE.org...
> "Peter O. Brackett" wrote:
> > Is the refelected power travelling back down the wires while the forward
> > power is travelling outward? What? Thoughts, comments?
>
> Make the transmission line one wavelength long and add unique modulation
> to each cycle. You will see the forward wave modulation(s) going forward
> and the reflected wave modulation(s) going backwards. All this is
extremely
> easy to see with a few TV receiver experiments. Hang a 75 ohm coax stub
> on your TV input terminal and you will certainly see the effect of
> reflections in the ghosting on the screen.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1777. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 23:09:57 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE75945.C6528750@bwcc.com>
Source record: 165076

"Peter O. Brackett" wrote:
> Hey, I was trying to win the Guiness Record for the World's Longest NG
> Thread, when...

Compared to "no code kills"?
You won't get that long a thread on SWR.
Now if you want to talk about requiring Morse Code...

1778. Re: Direct Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 23:11:09 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE7598D.1D98612A@bwcc.com>
Source record: 165077

"Peter O. Brackett" wrote:
> But wait!
Yeah, who started this thread anyway?

1779. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 23:21:30 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3ae75bf7$0$14448$1dc6e903@news.corecomm.net>
Source record: 165078

You will get the full spectrum of opinion on this antenna.
I use one for both amateur and CAP HF communications. I find that it does the job for what I want.
Other people will tell you that it is the worst piece of junk to come down the pike. They are welcome to their opinions.

I use the B&W 80-10 antenna. I have heard that the 160 meter version does not do well on 160 but I have no personal experience. I have used all amateur bands on my antenna with satisfactory results world wide. That is all I ask of a sky hook.
However if you compare this antenna with a purpose build dipole the dipole will win overall for the specific band or sub band you have cut it for.
The main reason to use the B&W folded dipole is the lack of need for an antenna tuner to match the transmitter. If you have an automatic tuner then use it on a regular dipole if not use the B&W.

David G. Nagel, WD9BDZ

KEV200BHM wrote:
>
> Has anyone have any experience with the Barker & Williamson wide band folded
> dipole, I don't know the model no. but it covers 160 thru 10 meters, 90ft long.
> Thanks,
> K4PBN

1780. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 23:33:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7mr9$qd6$1@slb0.atl.mindspring.net>
Source record: 165079

Denver:

Heh, heh... you don't know these reflected power and conjugate match "junkies", theyr'e worse than those anti-CW fanatics and CW diehards.

Hey, speaking of CW, why do they call it Continuous Wave when it's always being keyed on and off.

Why don't they just call it On Off Keying "OOK" or something like that?

Best,

-Peter K1PO

"Denver Braughler" <Braughler@bwcc.com> wrote in message news:3AE75945.C6528750@bwcc.com...
> "Peter O. Brackett" wrote:
> > Hey, I was trying to win the Guiness Record for the World's Longest NG
> > Thread, when...
>
> Compared to "no code kills"?
> You won't get that long a thread on SWR.
> Now if you want to talk about requiring Morse Code...

1781. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 23:43:29 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae7611e.103478736@news.aepnet.com>
Source record: 165080

On Wed, 25 Apr 2001 17:31:17 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
wrote:

>Cecil:
>
>Heh, heh. Now that hurt!
>
>How about Duke? Where did the Aggies end up?

Duke had a big advantage. They were allowed to have more than five players on
the court. In a failed attempt to not attract attention, these other men wore
black and white stripes. It didn't work. TIme and time again TV replays showed
these guys in action. Too bad Lute Olson is such a nice guy and didn't make a
stink about an obvious scam. Also too bad most of his starters are heading for
the NBA before finishing their college careers.

Without the extra players, Duke would have lost to Maryland, who then would have
been defeated by Arizona. On the off chance that Duke might have still defeated
MD with only five players on the court, they would have gotten their clock
cleaned by AZ under the same circumstances.

N7WS
>
>-Peter K1PO [Cary, NC]
>

1782. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 23:51:06 UTC
From: k1bqt@aol.com
Message-ID: <20010425195106.20568.00000592@ng-cu1.aol.com>
Source record: 165081

>Hey, I was trying to win the Guiness Record<

To do that, you'll have to meet me at the Press Room in Portsmouth, NH when you come North. I'll buy, but don't plan to drive. Do you play concertina or penny whistle?

Rick K1BQT

1783. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 23:52:36 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae76154.36303093@news.accessunited.com>
Source record: 165105

On Wed, 25 Apr 2001 15:03:24 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>is 180-degrees out-of-phase with the excitation. Some of this
>re-radiated energy returns through the 90-degree distance to the
>originial radiator where it is now in phase with the newly emerging
>energy. This produces forward gain. The pattern can be affected. My
>guess is that the best case must be less than a double of effective
>field, and I would expect less.

Richard, that is not how an antenna generally developes gain. The phase of the fields at any point does not have to add....it simply must cancel less than the field in other directions.

The effect is much more complicated than simply adding the two fields together. As a matter of fact, the highest gain in a two element antenna occurs when the fields at the most in-phase point are almost in phase quadrature.

>I suspect that the radiator would be a grounded vertical. If it is
>1/4-wave, it must be grounded to be effective as a radiator. If the
>parasitic element is also 1/4-wave and is ungrounded, it will have
>little effect. It will have almost no current.

That's because it is electrically much shorter than a 1/2 wl, and not grounded.

>In a 2-tower directional AM BC-band array of 1/4-wave radiators, if one
>of the towers is simply floated above ground, the self-impedance of of
>the other tower can usually be accurately measured. The floating tower
>is out of the picture.

Yes, but that does not apply to what any of us were talking about.

>In a 2-tower array of 1/2-wave radiators, all that is necessary to make
>a self-impedance measurement of only one tower is simply
>to short the second tower to ground. Whip out the bridge and measure
>away. Gray already knows all of this. Maybe I didn`t understand his
>question.

1/2 wl and grounded is a point of minimum interaction. But if the length is not 1/2 wavelength, if it is longer or not significantly shorter and floating, it can greatly affect the pattern. An element does not have to be resonant to affect the pattern . It simply has to be electrically long, and near the other elements.

>In the boat, the mast stay has one end returned to a fiberglas deck. If
>significant current is appearing in this cable, a wire can be attached
>to detune the structure, or another wire can be added in parallel with
>the backstay. This is a very simple problem.

Maybe, maybe not. We don't know enough about the problem to answer it.

73 Tom

1784. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 23:54:11 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae76277.103823843@news.aepnet.com>
Source record: 165082

On Wed, 25 Apr 2001 17:28:03 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
wrote:

>John:
>
>Sorry, it seems that you have missed my point.
>
>Read my lips...
>
>I do not question reflections.
>
>I do not question reflections.
>
>I do not question reflections.
>
>Reflections do exist.
>
>I DO QUESTION REFLECTED POWER.
>
>Reflected power is a ficticious crock, it doesn't exist, it never did, never
>will. There is simply no such power.

When are you going to address my waveguide thermistor power sensor connected to
the return arm of a waveguide directional coupler.

Why does the termination get hot? Huh?

Wes Stewart N7WS

1785. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-25 23:55:29 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7o4u$f6o$1@nntp9.atl.mindspring.net>
Source record: 165083

All you really need is wire!

Sounds like the name of a song.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE33529.A4D9E549@IEEE.org...
> Gray Frierson Haertig wrote:
> > You're not paying attention again. The ladder line hasn't arrived from
> > The Wireman yet!
>
> And neither has the coax. :-)
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1786. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:00:06 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7odkovd1@slb6.atl.mindspring.net>
Source record: 165084

Roy:

You are correct. Tuners and ladder line are just too "complicated" for beginners.

Ride the tricycle first and graduate to the two wheeler later.

One hard part for beginners these days with the single band coax fed dipole is the struggle to put those dammed "259" connectors on the coax. Not an easy job without a big 200 Watt soldering iron, and try to find one of those today!

I like the ladder line, cuz you can actually make the connecions with pliers and such.

-Peter K1PO

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:3AE35390.AB6434AC@eznec.com...
> Sure you can use ladder line on a dipole. You can make a dipole
> non-resonant. You can feed a dipole off center. You can use ladder line
> to feed Yagis, verticals, and small loops. But the quickest and easiest
> way to get on the air, in my humble opinion, is to put up a resonant
> dipole and feed it with coax. Then you can use any length of line, don't
> need to worry about it lying on the ground, getting wet, running through
> trees, or whatever. Coax is cheap and readily available, and you can put
> on a connector to plug it right into your rig. You'll get a decent
> impedance match regardless of the line length. I recommend using a
> current balun, which can be as simple as coiling up a few turns of the
> coax near the feedpoint. The ARRL Handbook has some suitable dimensions.
> But you can often get by without one with no obvious ill effects.
>
> When the new ham's ladder line arrives, he can work on the puzzle of how
> to connect it to the rig, how to make a balun at the rig, how to make
> the line an odd number of half wavelengths so he can get a good
> impedance match to the rig. (Or, he can learn about Smith charts and
> stubs.) Then, after he's done all that and replaced the coax with ladder
> line, he won't find a half dB of improvement. When it rains, in fact,
> he'll likely see a degradation.
>
> This is all in the context of getting on the air quickly on a single
> band and without a tuner. When a tuner is purchased or built, the ladder
> line makes sense.
>
> Roy Lewallen, W7EL
>

> W6RCecilA wrote:
> >
> > Roy Lewallen wrote:
> > > ... but Allen is right -- you can get
> > > on the air in an hour or two with a dipole, and be operating while
> > > you're waiting for the tuner to show up on ebay or the ladder line to
> > > arrive from the Wireman.
> >
> > Why can't you use ladder-line on a dipole? :-)
> > --
> > http://www.mindspring.com/~w6rca
> >
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1787. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:01:50 UTC
From: richardharrison@webtv.net
Message-ID: <3898-3AE7656E-13@storefull-112.iap.bryant.webtv.net>
Source record: 165087

Roy, W7EL wrote
"How do you explain this with Lenz`s law."

If a parasitic element is parallel to the electric field of the radiation, it tends to short the electric field and current flows in the element. This current sets up its own electromagnetic field.

The incident and induced fields combine vectorially and so depend on the magnitude and phase of current in the parasitic element. An element that is not exactly resonant has reactance. The sign and magnitude of the reactance depend on the length and position of the parasitic element and whether the element is too short or too long to be resonant. Reactance flips sign at resonance. The director or reflector bit results from vector combinations.

If I thought Roy was sincere in a quest for knowledge, I might expand the explanation, but alas I think he is just trying to irritate, so I`m through.

Lenz`s law is applicable to every induction.

Best regards, Richard Harrison, KB5WZI

1788. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:03:32 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae76360.36827025@news.accessunited.com>
Source record: 165086

On Wed, 25 Apr 2001 15:49:52 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>5/8 wave is stronger than the 1/2-wave. It is plain dumb to try to find >some special case in which Tom might be right.

The example I gave is absolutely correct Richard.

A 5/8th wl antenna without a large groundplane can have no gain at low angles over a 1/2 wl antenna. The very reason it has gain is because of refelections from the groundplane around the antenna.

What CB'ers do, and even many amateur manufacturers, is move a 5/8th wl antenna up some distance above the surface of the earth and claim the antenna has "3dB gain". In fact, when the 5/8th wl antenna is above ground by any distance and if a flat highly conducting very large groundplane is not moved to the same height, the antenna will actually be worse than a half-wave at the same height....if all matching losses are the same.

What most people forget is the groundplane around the antenna....that extends out for a few wavelengths....is the source of the "gain". That is what creates the "image" of the antenna....not the meager ground system right at the antenna base.

This was well explained in an article by Jon Bloom called "The 5/8th wave Antenna Mystique". It appeared in QST, and is a must-read for those who are stuck on the incorrect assumption that 5/8th wl antennas have gain when installed where they are not surrounded by a large highly conducting groundplane that extends out a few wavelengths in each direction.

Rather than argue against personal attacks by you and Yuri, I suggest people read that article. It covers the problem nicely.

73 Tom

1789. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:04:23 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7oll$l5b$1@slb2.atl.mindspring.net>
Source record: 165085

Wes:

I wondered where those guys in stripes were recruited... hmm... North Carolina you say. Interesting.

-Peter K1PO

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message news:3ae7611e.103478736@news.aepnet.com...
> On Wed, 25 Apr 2001 17:31:17 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
> wrote:
>
> >Cecil:
> >
> >Heh, heh. Now that hurt!
> >
> >How about Duke? Where did the Aggies end up?
>
> Duke had a big advantage. They were allowed to have more than five players on
> the court. In a failed attempt to not attract attention, these other men wore
> black and white stripes. It didn't work. TIme and time again TV replays showed
> these guys in action. Too bad Lute Olson is such a nice guy and didn't make a
> stink about an obvious scam. Also too bad most of his starters are heading for
> the NBA before finishing their college careers.
>
> Without the extra players, Duke would have lost to Maryland, who then would have
> been defeated by Arizona. On the off chance that Duke might have still defeated
> MD with only five players on the court, they would have gotten their clock
> cleaned by AZ under the same circumstances.
>
> N7WS
> >
> >-Peter K1PO [Cary, NC]
> >
>
>

1790. Re: what do you think about ....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:05:33 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae765db.37462198@news.accessunited.com>
Source record: 165106

On Mon, 23 Apr 2001 07:49:23 GMT, f4ckv@radioamateur.org (F4CKV)
wrote:

>73 to all
>
> I would like to get some info to know what do you think about my antenna
>project:
>
> For HF band I'll make an 320 m delta loop at 10m. hight it would be a
>2 lambda loop on 160 m , 107 m per side, the laod would be with to wire
>with 12 cm spacing.

The pattern may not be useful for DX on some bands (especially 160 and
80 meters), but it should load up nicely with a proper matching
system.

73 Tom

1791. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:08:32 UTC
From: Tom Donaly <dtdonaly@pacbell.net>
Message-ID: <3AE76700.FF@pacbell.net>
Source record: 165104

Tom W8JI wrote:
>
> I wonder what other people think about the prospect of the ionosphere
> being heated by contest operators, and that causing the bands to open
> up?
>
> That was a topic on a contesting reflector.
>
> It seems a few people think that the power levels from activity during
> contests actually causes the ionization to change. An offshoot of that
> was an opinion that the ionosphere is non-linear....and that 10 dB of
> transmitter power change produces more than ten dB of receiver signal
> level change.
>
> No, this was not an April 1 joke.
>
> Opinions?
>
> 73 Tom

I don't see how any of this could be any more ridiculous than
discussing the phase of DC through a transmission line. Evidently,
the hams on the contesting reflector are ill-informed. At least
they're not behaving like lunatics.

Tom Donaly KA6RUH

1792. Re: keeping water out of 9913

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:08:51 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae7663d.37560048@news.accessunited.com>
Source record: 165109

On Wed, 25 Apr 2001 16:24:29 -0400, "Rudy Marcelletti"
<rudym@net-link.net> wrote:

>Put a dab of RTV silicone in the hollow to plug up coax before putting on
>the connector--that is if you are not in a hurry, otherwise make a good
>"drip loop" at your connections.

How do you stop condensation? Every time I've tried to use 9913, it
fills up with water. The only time I have been successful is when I
have sealked the top, ran the line vertically, and left the bottom
open so condensation can "leak out".

Even with sealed lines at BC stations, we always had to have them
pressurized with dry air to keep they dry for a period of years.

73 Tom

1793. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:13:26 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae76709.37764089@news.accessunited.com>
Source record: 165110

On 25 Apr 2001 21:57:37 GMT, kev200bhm@aol.com (KEV200BHM) wrote:

>Has anyone have any experience with the Barker & Williamson wide band folded
>dipole, I don't know the model no. but it covers 160 thru 10 meters, 90ft long.
>Thanks,
>K4PBN

This antenna is essentially like a dipole with a dummy resistor across
the feedpoint.

Efficiency will be anything from a few percent or less on 160 meters
to almost 50% on some bands. I measured some of the prototype antennas
that were played with by people at Amp Supply...who I believe later
sold the design to B&W.

LB Cebik has modeled the antenna, rather than argue you can look at
his data. It agrees closely with the real world measurements. Maybe
someone knows the web address.

73 Tom

1794. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:18:05 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE7693D.E15DD689@bwcc.com>
Source record: 165088

"Peter O. Brackett" wrote:
> Heh, heh... you don't know these reflected power and conjugate match
> "junkies", theyr'e worse than those anti-CW fanatics and CW diehards.
But fewer in number, so you might get slower growing thread.

> Hey, speaking of CW, why do they call it Continuous Wave when it's always
> being keyed on and off.
Perhaps it's CW as opposed to a modulated wave?

> Why don't they just call it On Off Keying "OOK" or something like that?
I don't think that quite captures the essence either.
OOK could be binary.

1795. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:19:55 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7pj4oi1@slb4.atl.mindspring.net>
Source record: 165089

Wes:

OK, OK... I agree your thermistor get's hot... I don't have a problem with that.

Sorry, I was not trying to "blow you off"... I was trying to "manage" the world's longest NG thread and, like herding cats, it's not easy. Gimme a break, eh?

And I agree that "something" comes out of every port of a directional coupler be it microwave or otherwise.

But your thermistor is not getting hot from dissipating that danged ficticious Reflected Power Pr = b*b/R which results from that specious calculation: Pr = Pi - Pt.

See the new thread Direct Reflections for an example of such a calculation.

How's the wx in Tuscon (or is that Tucson)?

Heh, heh.

BTW... my kid sister is a graduate of U of Arizona, Tucson, she's a journalist used to be a stringer for the Tombstone rag, and so I should have known better.

Is TI treating Burr Brown right, or will we ever know?

Best Regards,

-Peter K1PO

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message news:3ae76277.103823843@news.aepnet.com...
> On Wed, 25 Apr 2001 17:28:03 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
> wrote:
>
> >John:
> >
> >Sorry, it seems that you have missed my point.
> >
> >Read my lips...
> >
> >I do not question reflections.
> >
> >I do not question reflections.
> >

> >I do not question reflections.
> >
> >Reflections do exist.
> >
> >I DO QUESTION REFLECTED POWER.
> >
> >Reflected power is a ficticious crock, it doesn't exist, it never did,
never
> >will. There is simply no such power.
>
> When are you going to address my waveguide thermistor power sensor
connected to
> the return arm of a waveguide directional coupler.
>
> Why does the termination get hot? Huh?
>
> Wes Stewart N7WS
>

1796. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:24:19 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c7pr5qvv1@nntp9.atl.mindspring.net>
Source record: 165090

Rick:

I don't play instruments anymore, years of copying CW on 80m traffic nets has ruined my ears, but I can "step dance"... do they allow dancing at the Press Room?

I'll look forward to that meeting. I'm sure it will have a better ending than my meeting at the Colonial Inn in Concord, MA with the "doktor".

-Peter K1PO

"Rick Littlefield" <k1bqt@aol.com> wrote in message news:20010425195106.20568.00000592@ng-cu1.aol.com...
> >Hey, I was trying to win the Guiness Record<
>
> To do that, you'll have to meet me at the Press Room in Portsmouth, NH when you
> come North. I'll buy, but don't plan to drive. Do you play concertina or
> penny whistle?
>
> Rick K1BQT
>

1797. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:28:31 UTC
From: kb7qhc@home.com
Message-ID: <3ae76b79.2583452608@news.seanet.com>
Source record: 165091

On Wed, 25 Apr 2001 23:54:11 GMT, nospam_n7ws@arrl.net (Wes Stewart)
wrote:

>On Wed, 25 Apr 2001 17:28:03 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
>wrote:
>
>>John:
>>
>>Sorry, it seems that you have missed my point.
>>
>>Read my lips...
>>
>>I do not question reflections.
>>
>>I do not question reflections.
>>
>>I do not question reflections.
>>
>>Reflections do exist.
>>
>>I DO QUESTION REFLECTED POWER.
>>
>>Reflected power is a ficticious crock, it doesn't exist, it never did, never
>>will. There is simply no such power.
>
>When are you going to address my waveguide thermistor power sensor connected to
>the return arm of a waveguide directional coupler.
>
>Why does the termination get hot? Huh?
>
>Wes Stewart N7WS

Hi Peter,

Make that two of us who ask why.

73's
Richard Clark, KB7QHC

1798. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:30:22 UTC
From: kb7qhc@home.com
Message-ID: <3ae86be2.2583557028@news.seanet.com>
Source record: 165092

On Wed, 25 Apr 2001 19:01:50 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>
>If I thought Roy was sincere in a quest for knowledge, I might expand
>the explanation, but alas I think he is just trying to irritate, so I`m
>through.

Hi Richard,

A very unfair characterization. Roy shows far more tolerance than the
lot of us combined.

73's
Richard Clark, KB7QHC

1799. Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:38:12 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae76ce1.39260790@news.accessunited.com>
Source record: 165093

I wonder what other people think about the prospect of the ionosphere being heated by contest operators, and that causing the bands to open up?

That was a topic on a contesting reflector.

It seems a few people think that the power levels from activity during contests actually causes the ionization to change. An offshoot of that was an opinion that the ionosphere is non-linear....and that 10 dB of transmitter power change produces more than ten dB of receiver signal level change.

No, this was not an April 1 joke.

Opinions?

73 Tom

1800. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:39:59 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae76df9.39540320@news.accessunited.com>
Source record: 165094

On 25 Apr 2001 23:51:06 GMT, k1bqt@aol.com (Rick Littlefield) wrote:

>>Hey, I was trying to win the Guiness Record<
>
>To do that, you'll have to meet me at the Press Room in Portsmouth, NH when you
>come North. I'll buy, but don't plan to drive. Do you play concertina or
>penny whistle?
>
>Rick K1BQT

Peter has way too much time on his hand now that Chip has passed away
to the land of the twisted.

73 Tom

1801. FYI:Antenna help, advice, problems (Was R-7000 Problem)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:40:01 UTC
From: AC6V <ac6v@ix.netcom.com>
Message-ID: <3AE76E60.F910EE55@ix.netcom.com>
Source record: 165095

After posting here for R-7000 help, a recommedation was made to URL:
http://www.eham.net/reviews/
I found several users there that had the same problem I had and after cleaning trap contacts and a new screw and star washer -- solved the problem. So got antenna problems?-- see HF Directional Antennas (84), HF Mobile Antennas (27), and HF Vertical and Wire Antennas (83). Lots more reviews for all kind of equipment.

--
73 From Rod AC6V In San Diego
700 Ham Topics & 6,000 Links
http://ac6v.com/
I Doubt, Therefore I Might Be!!!

1802. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:46:05 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE76FCD.CE4078A9@bwcc.com>
Source record: 165096

Tom W8JI wrote:
> I wonder what other people think about the prospect of the ionosphere
> being heated by contest operators, and that causing the bands to open
> up?
Perhaps you could clue them in on the mass of the ionosphere.
A few MW won't heat up all that air.

1803. Re: My first antenna for HF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:53:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE7718A.FAB8D935@eznec.com>
Source record: 165097

Well, no, I didn't mean to imply that tuners and ladder line are too complicated for beginners. But feeding a dipole with ladder line if you don't have a tuner might be.

Roy Lewallen, W7EL

"Peter O. Brackett" wrote:
>
> Roy:
>
> You are correct. Tuners and ladder line are just too "complicated" for
> beginners.
>
> Ride the tricycle first and graduate to the two wheeler later.
>
> One hard part for beginners these days with the single band coax fed dipole
> is the struggle to put those dammed "259" connectors on the coax. Not an
> easy job without a big 200 Watt soldering iron, and try to find one of those
> today!
>
> I like the ladder line, cuz you can actually make the connecions with pliers
> and such.
>
> -Peter K1PO
>
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:3AE35390.AB6434AC@eznec.com...
> > Sure you can use ladder line on a dipole. You can make a dipole
> > non-resonant. You can feed a dipole off center. You can use ladder line
> > to feed Yagis, verticals, and small loops. But the quickest and easiest
> > way to get on the air, in my humble opinion, is to put up a resonant
> > dipole and feed it with coax. Then you can use any length of line, don't
> > need to worry about it lying on the ground, getting wet, running through
> > trees, or whatever. Coax is cheap and readily available, and you can put
> > on a connector to plug it right into your rig. You'll get a decent
> > impedance match regardless of the line length. I recommend using a
> > current balun, which can be as simple as coiling up a few turns of the
> > coax near the feedpoint. The ARRL Handbook has some suitable dimensions.
> > But you can often get by without one with no obvious ill effects.
> >
> > When the new ham's ladder line arrives, he can work on the puzzle of how
> > to connect it to the rig, how to make a balun at the rig, how to make
> > the line an odd number of half wavelengths so he can get a good
> > impedance match to the rig. (Or, he can learn about Smith charts and
> > stubs.) Then, after he's done all that and replaced the coax with ladder

> > line, he won't find a half dB of improvement. When it rains, in fact,
> > he'll likely see a degradation.
> >
> > This is all in the context of getting on the air quickly on a single
> > band and without a tuner. When a tuner is purchased or built, the ladder
> > line makes sense.
> >
> > Roy Lewallen, W7EL
> >
> > W6RCecilA wrote:
> > >
> > > Roy Lewallen wrote:
> > > > ... but Allen is right -- you can get
> > > > on the air in an hour or two with a dipole, and be operating while
> > > > you're waiting for the tuner to show up on ebay or the ladder line to
> > > > arrive from the Wireman.
> > >
> > > Why can't you use ladder-line on a dipole? :-)
> > > --
> > > http://www.mindspring.com/~w6rca
> > >
> > > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1804. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:56:45 UTC
From: richardharrison@webtv.net
Message-ID: <1976-3AE7724D-125@storefull-116.iap.bryant.webtv.net>
Source record: 165099

Tom, W8JI wrote:
"How about the screen behind my UHF TV antenna?"
It is non-resonant, but extensive, nothing like a simple non-resonant conductor.

"What about power poles near BC stations?"
These are no where near resonance so neither they nor the stations had to be moved.

"What about the guy lines?"
That question started this discussion long ago. Nearly all medium-wave broadcast stations breakup guys in non-resonant lengths that cause no problems.

"What about a Rhombic? Does it absorb energy and re-radiate energy even though it is non-resonant?"
Certainly. It is multiple wavelengths long and the wires are aligned for coincidence of the radiation lobes in its long wires. This is not simple parasitic excitation. It is cumulative response to a traveling wave.

"Why does my signal refuse to go past metal roofs that aren`t resonant?"
We just went through a knock-down, drag-out over shielding. Surely Tom remembers how induced currents in the shield`s surface counteract the incident signal. But, skinny cable does not make a shield.

"Sorry, a conductor does NOT need to be resonant to have a large effect on the system".
Of course, that is true in some particular cases, the ones that Tom will swear that he was thinking of all the time, but it is false in the case of lesser conductors, far from resonance, and having little mutual impedance with the radiator which might be affected by re-radiation.

Best regards, Richard Harrison, KB5WZI

1805. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 00:57:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE77269.4E4D2BE2@eznec.com>
Source record: 165098

No, I wasn't intending to irritate. I just couldn't reconcile your explanation of how a parasitic element works, with its radiated field always being 180 degrees from the incident field, with the fact that a Yagi pattern can be dramatically altered by modifying the element length. The explanation you just gave is closer to what I know happens. But it seems to contradict your initial explanation.

Roy Lewallen, W7EL

Richard Harrison wrote:
>
> Roy, W7EL wrote
> "How do you explain this with Lenz`s law."
>
> If a parasitic element is parallel to the electric field of the
> radiation, it tends to short the electric field and current flows in the
> element. This current sets up its own electromagnetic field.
>
> The incident and induced fields combine vectorially and so depend on the
> magnitude and phase of current in the parasitic element. An element that
> is not exactly resonant has reactance. The sign and magnitude of the
> reactance depend on the length and position of the parasitic element and
> whether the element is too short or too long to be resonant. Reactance
> flips sign at resonance. The director or reflector bit results from
> vector combinations.
>
> If I thought Roy was sincere in a quest for knowledge, I might expand
> the explanation, but alas I think he is just trying to irritate, so I`m
> through.
>
> Lenz`s law is applicable to every induction.
>
> Best regards, Richard Harrison, KB5WZI
>
>

1806. End-Fed Antenna Question - Ligntning Magnet?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 01:00:19 UTC
From: gbrown@nc.rr.com
Message-ID: <3ae772e2.10125452@news-server>
Source record: 165100

Presently using an Icom AH-4 automatic coupler in the second-story shack, grounded to an 8-foot copper clad rod buried directly below shack at outside wall.

Recently-installed antenna is a 90-foot uninsulated "flex-weave" long-wire (leaving the shack via a SPST knife switch) going at about a 45 degree angle draped over the top of a 50-foot pine. The wire runs down the trunk, about a foot away and is tied off with an egg insulator to a branch about 10 feet from the ground. I got lucky with a sling-shot and fishing reel to get to the top of the tree on my 1st try!

1st two contacts were Aruba on 20M and Ottawa on 75M, the other night.

Question: what is the best way to ensure some protection from lightning, in case I forget the knife switch after a QSO? I feed the antenna from the shack via a 6-foot piece of #25 insulated stranded Copperweld, leftover from a previous hidden antenna. I had the crazy notion the short piece of thin wire leaving the shack might serve as a fusible link. Comments?

Gary
K4GPB
Cary, NC

1807. Re: Anyone have a Baby Boomer Quad?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 01:39:55 UTC
From: G&R <"stop the spam"@limbo.hell>
Message-ID: <L%KF6.639578$f36.18437620@news20.bellglobal.com>
Source record: 165101

Thank you for the enquiry.

Yes we have one fully operational unit out in use currently (after several initial designs and models).

To date, our experience has been that the performance of the antenna is as modeled and published on
our web page. Additionally, the antenna has survived wind, snow and ice in the worst possible combinations with out damage.

For better information on actual performance I would request that you contact VE3 CVS at

erwins@degendesigns.com

the user antenna shown in the photo. His experiences of comparison are that of an R5 Vertical also shown in the photo.

As such, we can only state that our initial design criteria was that of size, multi-band, performance and the added bonus of portability. This antenna has been up and down several times for both review and testing.

Should you have any further questions, please contact me (Guenther - I handle mechanical design and marketing) directly at

info@degendesigns.com

73

Guenther

"kiki" <lolo@pis.com> wrote in message news:3AE6EDC4.81C5D3EA@pis.com...
> http://www.degendesigns.com/prod01.htm
>
> They claim its close to the performance of a full sized quad.
> Hard to believe.
>
> Wonder how it compares to a hexbeam?
>

1808. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 02:00:20 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <3AE780F0.16CDCE9C@att.net>
Source record: 165102

Because the wave is of continuous (same) amplitude while it is present. As opposed to a damped wave which decays upon its onset, as generated by a spark gap, etc.

You are kidding, right?

What? <:}

72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
Amateur Radio W5YR, in the 55th year and it just keeps getting better!
Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437

"Peter O. Brackett" wrote:

Hey, speaking of CW, why do they call it Continuous Wave when it's always
> being keyed on and off.
>
> Why don't they just call it On Off Keying "OOK" or something like that?
>
> Best,
>
> -Peter K1PO

1809. OK, I want a combiner or diplexer.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 02:07:15 UTC
From: JAD <jdavoli@NOSPAMerols.com>
Message-ID: <9c7vq4$2o9$1@bob.news.rcn.net>
Source record: 165103
Cross-posted to:
alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.swap

Del, I could not agree with you more, but if you look in ANY description of these in amateur catalogs, publications, or even on the package, you will see them described as "duplexers," which of course, they are not.....

I would call them "combiners," after the commercial ones that combine several Rx or Tx to master antennas on a commercial tower. Combiners or diplexers, if I posted for either of these, I would not get what I want......

'73 de Joe

BY THE WAY.....I STILL NEED ONE!
"Del LaBo" <amateurradio1@sssnet.cam> wrote in message
news:3ae6961e.320960991@news.sssnet.com...
> You don't want a duplexer, what your looking for is a DIPLEXER.
> Duplexers are used on repeater stations to allow a transmitter and
> receiver to use the same antenna at the same time (i.e. with a
> duplexer your local two meter repeater can both transmit and listen on
> the same antenna at the same time, this allows fill duplex operation).
>
>
> A diplexer is used to allow a dual band radio or two radios on
> different bands to use the same antenna (i.e. You have a VHF and UHF
> mobile in your car, a diplexer will allow you to talk on one radio
> while still listening on the other band, and do this with one dual
> band antenna).
>
> There are several manufactures of Diplexers, MHJ, Diamond, are the
> ones that come to mind. I know that Diamond makes (or made) a
> diplexer with a single SO-239, and two pig tails with PL-259s because
> I have one that is attached to our local packet radio, and UHF
> repeater.
>
> Regards,
> Del N8OFP
>
> On Tue, 24 Apr 2001 21:35:13 -0400, "JAD" <jdavoli@NOSPAMerols.com>
> wrote:
>
> >Hi. I need a duplexer for 2 meter and 440, with SO-239 split to two
PL-259
> >"pigtails." I'm not interested in any other configuration.
> >

> >E-mail me with the details and price.
> >
> >remember to remove the word "NOSPAM" from my e-mail address to reply.
> >
> >Thanks,
> >
> >Joe
> >
> >jdavoli@NOSPAMerols.com
> >
> >
> >
>

1810. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 02:24:38 UTC
From: richardharrison@webtv.net
Message-ID: <3896-3AE786E6-99@storefull-112.iap.bryant.webtv.net>
Source record: 165111

Roy Lewallen wrote:
"I just couldn`t reconcile your explanation of how a parasitic element works from the incident field always being 180 degrees---"

OK. I see the rub. Gray specified the problem I was trying to solve. Gray specified a 90-degree parasitic element spaced at 90-degrees from the radiator. A 90-degree grounded parasitic element is resonant and contributes no aditional phase shift one way or the other, as I remembered the problem. Now, I am remembering 225 degrees. Don`t know which memory is faulty. If it was 225 degrees, the parasitic element wasn`t resonant. It would be capacitive and take a lot less current from the radiation.

My description would be accurate for the way I remembered the problem I was trying to explain. I am sorry if it proves to be the wrong problem.

But, the question is really: What can be done if the backstay/mast/other-rigging foul the performance of a sailboat antenna. Chances are it can be fixed by detuning just as guy-wires can be detuned. Ed Laport says just short a guy insulator if a cable happens to hit resonance. Others suggest attaching a parallel wire at one end of a resonant section and adjusting it as a now-folded section for detuning. If it is far from resonance, its current and effect are insignificant, else guys on towers used as radiators might be a disaster. We have ample experience that they are not. You should look at the rigging for a curtain array used in international broadcasting. I`ve constructed quite a few myself. Many supporting cables are close and parallel to the radiators carrying 100KW or more. They run cool and the patterns measure almost exactly as predicted. The trick is simply breaking them into pieces with insulators which are far from resonance. That`s all there is to it.

Best regards, Richard Harrison, KB5WZI

1811. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 02:32:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c81ah$b88$1@slb7.atl.mindspring.net>
Source record: 165107

Hello George:

Good to hear you "on frequency".

Right I was kidding. I have some "old books" from the days of spark which explain... damped versus continuous, etc...

But it is interesting how "words" get misused and misinterperted over time.

A special interest group in our society has changed the whole meaning of "gay".

And... another special interest group has attributed meaning to "reflected power". Heh, heh.

Best,

-Peter K1PO

"George, W5YR" <w5yr@att.net> wrote in message news:3AE780F0.16CDCE9C@att.net...
> Because the wave is of continuous (same) amplitude while it is present. As
> opposed to a damped wave which decays upon its onset, as generated by a
> spark gap, etc.
>
> You are kidding, right?
>
> What? <:}
>
> 72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
> Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
> Amateur Radio W5YR, in the 55th year and it just keeps getting better!
> Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437
>
> "Peter O. Brackett" wrote:
>
> Hey, speaking of CW, why do they call it Continuous Wave when it's always
> > being keyed on and off.
> >
> > Why don't they just call it On Off Keying "OOK" or something like that?
> >
> > Best,
> >
> > -Peter K1PO

1812. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 02:34:35 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c81f8ulp1@slb6.atl.mindspring.net>
Source record: 165108

Tom:

Heh, heh... too much time.

My daddy used to say that if you have spare time you should work it to death... but he died before the Internet was invented!

Got any "reflected power" over there in GA.

Regards,

-Peter K1PO

"Tom W8JI" <2w8ji@akorn.net> wrote in message news:3ae76df9.39540320@news.accessunited.com...
> On 25 Apr 2001 23:51:06 GMT, k1bqt@aol.com (Rick Littlefield) wrote:
>
> >>Hey, I was trying to win the Guiness Record<
> >
> >To do that, you'll have to meet me at the Press Room in Portsmouth, NH when you
> >come North. I'll buy, but don't plan to drive. Do you play concertina or
> >penny whistle?
> >
> >Rick K1BQT
>
> Peter has way too much time on his hand now that Chip has passed away
> to the land of the twisted.
>
> 73 Tom

1813. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 03:01:53 UTC
From: mike.luther@ziplog.com
Message-ID: <tef3t1nic7281c@corp.supernews.com>
Source record: 165112

In <3ae76ce1.39260790@news.accessunited.com>, 2w8ji@akorn.net (Tom W8JI) writes:

>I wonder what other people think about the prospect of the ionosphere
>being heated by contest operators, and that causing the bands to open
>up?

>That was a topic on a contesting reflector.

>It seems a few people think that the power levels from activity during
>contests actually causes the ionization to change. An offshoot of that
>was an opinion that the ionosphere is non-linear....and that 10 dB of
>transmitter power change produces more than ten dB of receiver signal
>level change.
>
>No, this was not an April 1 joke.
>
>Opinions?
>
>73 Tom

I've sorta kept track of Project Haarp. If a concentrated focused 500+
megawatts at HF frequencies doesn't get back any more changes in the
thing than they seemingly do, how in the heavens would even all those
KW's we use do any good - as - relatively unfocused energy?

--> Sleep well; OS2's still awake! ;)

Mike.Luther@ziplog.com
Mike.Luther@f3000.n117.z1.fidonet.org

1814. Re: OK, I want a combiner or diplexer.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 03:05:30 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AE7907A.A40E25E9@hiwaay.net>
Source record: 165113
Cross-posted to:
alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.swap

Ok- just went to the MFJ site- they call the gadget a "duplexer", and it
is for either separate 2M and 70cm xmitter to dual antenna, or dual band
xmitter to separate antennas. I know you wanted a single input and
"pigtail" out but this one has a single UHF female and two UHF males,
apparently with no flexibility, because they are very close.
Does this help?

Bill-W4BSG

JAD wrote:
>
> Del, I could not agree with you more, but if you look in ANY description of
> these in amateur catalogs, publications, or even on the package, you will
> see them described as "duplexers," which of course, they are not.....
>
> I would call them "combiners," after the commercial ones that combine
> several Rx or Tx to master antennas on a commercial tower. Combiners or
> diplexers, if I posted for either of these, I would not get what I
> want......
>
> '73 de Joe
>
> BY THE WAY.....I STILL NEED ONE!
> "Del LaBo" <amateurradio1@sssnet.cam> wrote in message
> news:3ae6961e.320960991@news.sssnet.com...
> > You don't want a duplexer, what your looking for is a DIPLEXER.
> > Duplexers are used on repeater stations to allow a transmitter and
> > receiver to use the same antenna at the same time (i.e. with a
> > duplexer your local two meter repeater can both transmit and listen on
> > the same antenna at the same time, this allows fill duplex operation).
> >
> >
> > A diplexer is used to allow a dual band radio or two radios on
> > different bands to use the same antenna (i.e. You have a VHF and UHF
> > mobile in your car, a diplexer will allow you to talk on one radio
> > while still listening on the other band, and do this with one dual
> > band antenna).
> >
> > There are several manufactures of Diplexers, MHJ, Diamond, are the
> > ones that come to mind. I know that Diamond makes (or made) a
> > diplexer with a single SO-239, and two pig tails with PL-259s because
> > I have one that is attached to our local packet radio, and UHF
> > repeater.

> >
> > Regards,
> > Del N8OFP
> >
> > On Tue, 24 Apr 2001 21:35:13 -0400, "JAD" <jdavoli@NOSPAMerols.com>
> > wrote:
> >
> > >Hi. I need a duplexer for 2 meter and 440, with SO-239 split to two
> PL-259
> > >"pigtails." I'm not interested in any other configuration.
> > >
> > >E-mail me with the details and price.
> > >
> > >remember to remove the word "NOSPAM" from my e-mail address to reply.
> > >
> > >Thanks,
> > >
> > >Joe
> > >
> > >jdavoli@NOSPAMerols.com
> > >
> > >
> > >
> >

1815. Re: OK, I want a combiner or diplexer.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 03:19:54 UTC
From: Eddie Haskell <harleybum@easyriders.com>
Message-ID: <utMF6.2352$d14.366615@typhoon.we.rr.com>
Source record: 165114
Cross-posted to:
alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.swap

Comet makes what your looking for and HRO has them....around $70
tho....Eddie

1816. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 03:45:51 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <pi2fetgeb3gipre4ge9b0jh2ad9q5q497p@4ax.com>
Source record: 165115

On Wed, 25 Apr 2001 17:04:25 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>I'm interested in your opinion here...
>
>The "equation" for the so-called reflected voltage, usually given the symbol
>"b" is simply:
>
>b = V - IR
>
>(There is no magic in this equation, this is simply the equation for the
>voltage across a Wheatstone bridge circuit arranged to compare an unknown
>impedance Z against a known impedance R. It also happens to be the equation
>used to express the "echo" or "reflection" when a signal or travelling wave
>travelling in one direction on a media with surge impedance R is "bounced
>off" a discontinuity of impedance Z and returns in the other direction. It
>so happens that the mathematical model for both phenomena is identical.
>Nice of God to arrange that, eh?)

Nice perhaps, but there is nothing here to distinguish this
Kirchoffian analysis from forward, much less reflected waves. This
may be a secondary consideration you wish to offer, but starting in
the middle of an argument does not make a complete argument.
>
>V is a voltage at a point, and I is the current flowing past or through that
>point, and R is the "reference impedance" against which the metrologist
>wishes to "measure" the reflection.
>
>b = V - IR volts , straight clean and simple.

Again nothing distinctive. And by that I mean: why choose this mode
of discussion?

You have recited a voltage, but omit discusion of the source. The
same goes for current. Are we to assume they are of the same source,
different sources? This is serious defect to your argument. R being
a "reference impedance" does not necessarily mean that I is traversing
it (especially given the subject of SWR where we would assume NO, the
current AND voltage are not due to the reference value).

>
>Now clearly V and I can be, and usually are, functions of time.
>
>And so the equation for b holds for all times t and can be re-written to

>show that functional dependence on "t" explicitly as:
>
>b(t) = V(t) - I(t) * R (* is multiplication)

An elaboration that still conveys nothing notable (that is, distinctly
different) about forward or reflected waves.

Basically your argument is an enumeration of facts. If this is meant
to serve as an ï¿½tude before the main exercise, it is tedius.

>
>It is also true that, in the AC sinusoidal steady state, where all signals
>are sinusoids of the same frequency "f", the same equation holds true.
>Where now b, V and I are interperted as the steady state "value" of the
>sinusoidal AC signals. Where the "value" must be common for all instances
>of the variables in the equation, i.e. use RMS or Peak or Average, or
>whatever, as long as it is used consistently. Here the equation can also be
>re-written to show that functional dependence upon frequency "f" explicitly
>as:
>
>b(f) = V(f) - I(f) * R
>
>Now in this case, am I to understand that you are suggesting that the above
>equation fails to hold true below some "cutoff" frequency?
>
>If so, then what is that frequency? And...

Your equations could satisfy any circuit, but they are not
illustrative about the subject - yet.

>
>What is the manner in which the equation fails to hold as frequency is
>reduced through that frequency.
>
>Does the equation instantly fail at all frequencies below cutoff, or does it
>gradually fail by becomming less and less true as you pass lower in
>frequency?
>
>I'm interested to know your opinion on this?

You have an equation without any reactance, a DC analysis is
satisfied, and even an AC analysis. However, being non-reactive it is
neither general nor particularily responsive to the subject. And
you've yet to get around to SWR.

>
>I love this equation... b = V - IR... for it is the essence of wave
>mechanics. It "says everything"! Use it when an actual current I, not
>ficticious, is flowing through an actual impedance Z, not ficticious, to
>produce the actual voltage V = IZ.

These editorializations of characteristics being "not ficticious" must
presume all characteristics before it were - this, again, seriously

cripples your argument.

>
>The reflected voltage "b" (b = V - IR) is simply the output of a simple
>bridge circuit, and a very nice comparison of the "actual" voltage V to a
>ficticious voltage IR that would, or could, exist across a, perhaps
>ficticious, reference impedance R, if the "actual" currrent I was flowing
>through R.

Hi Peter,

There is no need going any further. The rambling to this point hasn't
even established the basic circuit description for supporting a
standing wave, much less the discussion of its constituent elements.

I noticed you proceeded to open another thread. Perhaps it responds
to my objections above

73's
Richard Clark, KB7QHC

1817. Re: Direct Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 03:57:05 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c869v$6e5$1@slb3.atl.mindspring.net>
Source record: 165116

Denver:

[snip]
"Denver Braughler" <Braughler@bwcc.com> wrote in message
news:3AE7598D.1D98612A@bwcc.com...
> "Peter O. Brackett" wrote:
> > But wait!
> Yeah, who started this thread anyway?
[snip]

So you left the "other" thread and came up here, eh?

I wonder who started this thread? Heh, heh.

BTW... since someone posted the DC circuit with reflected power on this thread, I thought I would just work out a nice imaginary resistor L-Network "tuner" for that DC battery reflected power setup.

This neat "L-Network" imaginary resistor tuner will match the 2 Ohm load to the 3 Ohm battery just fine, resulting in no reflected power at all, then no one has to "explain" that pesky ficticious stuff.

All you need are two imaginary valued resistors one of value +jsqrt(2) and the other of value -j3sqrt(2) to make the "L-Network" tuner. I just happened to have those values available here in my home lab.

I hooked up the imaginary resistor of value -j3sqrt(2) across the 12 volt battery terminals and placed the +jsqrt(2) valued resistor in series with the lossless line.

This imaginary L-Network setup results in the battery "seeing" exactly 3 Ohms, and results in a current from the battery of exactly 2 Amps.

A perfectly matched condition! The imaginary resistor L-Network works sort of like a DC transformer would.

There will be exactly 6 volts across the -j3sqrt(2) resistor, and the current through this imaginary resistor will be jsqrt(2) Amps.

The load will now absorb 12 Watts and the internal battery resistance will dissipate 12 Watts. And the battery will be sourcing a total of 24 Watts.

And the "reflected voltage" and reflected power are gone...

Now if you are feeling a little queasy, and you don't want to run this system at DC as the thread originator has done, and if you prefer AC, why then just replace the battery with an AC source and increase the frequency from zero upwards until it gets up to a few MHz or so... just wherever you

want it.

Once you get to your chosen frequency you could then replace those imaginary resistors with a capacitor and an inductor of appropriate value to have those reactances equal to the imaginary resistor values. Then...

What's the difference?

AC, DC, reflections, no reflections... it's all the same.

Direct reflections... why not?

Thoughts, comments,

-Peter K1PO

1818. Re: Lightning Mean?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 04:11:37 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE79FF9.B7CF0043@bwcc.com>
Source record: 165117

Gary Brown wrote:
> I had the crazy notion the short piece of thin wire leaving the
> shack might serve as a fusible link. Comments?

Lightning comes down ten miles across the sky to your QTH, gets within a few feet of the earth, and a short piece of wire will melt off and the lightning will give up and go away?

1. You don't want anything melting inside (or outside for that matter). Melting means hot. Hot mean ignition temperature for paper, carpet, or whatever it falls/spatters/explodes on.
2. If it did melt, lightning will cross the gap anyway.
3. When it does melt, the metal droplets in the air will continue to make a great conductor. The air will become plasma, and the lightning won't care that you little wire melted. It will look for something else to melt too.

1819. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 04:22:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE7A26F.EB280EE6@IEEE.org>
Source record: 165119

KEV200BHM wrote:
> Has anyone have any experience with the Barker & Williamson wide band folded
> dipole, I don't know the model no. but it covers 160 thru 10 meters, 90ft long.

Efficiency depends on how much current flows through the loading resistor.
--
http://www.mindspring.com/~w6rca

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1820. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 04:22:35 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3AE7A28B.51E1AD94@haertig.com>
Source record: 165118

Richard Harrison wrote:

>
> "What about the guy lines?"
> That question started this discussion long ago. Nearly all medium-wave
> broadcast stations breakup guys in non-resonant lengths that cause no
> problems.
>

Actually, they break up guy lines into electrically short pieces not
non-resonant pieces. Electrically short pieces will be non-resonant,
but much longer pieces, say 225 degrees, will also be non-resonant and
can have a profound effect on the pattern.

Gray

--
Telecommunications Engineering
Gray Frierson Haertig & Assoc.
820 North River Street, Suite 100
Portland, Oregon 97227
503-282-2989
503-282-3181 FAX
gfh@haertig.com

1821. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 04:34:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE7A53A.71803523@IEEE.org>
Source record: 165120

"Peter O. Brackett" wrote:
> And, as the Bird company unfortunately does,... simply marking a scale on a
> meter face with the word "watts" when it is really indicating volts "b" or
> "a" does not a power make.

If all the boundary condition assumptions are met, it can be proven
mathematically that the meter reading is directly proportional to
either forward or reflected joules/sec, i.e. power.
--
http://www.mindspring.com/~w6rca

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1822. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 04:41:12 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE7A6E8.75001843@IEEE.org>
Source record: 165121

"Peter O. Brackett" wrote:
> On the other hand, what if the line had zero length, and the generator was
> directly connected to the mismatched load...
> Why then there would still be that "pesky" reflected power hovering around,
> and no where for it to store its' family Joules!

That is called the mathematically trivial case.
--
http://www.mindspring.com/~w6rca

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1823. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 04:44:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE7A79D.650E9467@IEEE.org>
Source record: 165122

"Peter O. Brackett" wrote:
> Hey, speaking of CW, why do they call it Continuous Wave when it's always
> being keyed on and off.

I keep telling them that it is impossible for a Continuous Wave
to convey any information. :-)
--
http://www.mindspring.com/~w6rca

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1824. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 05:42:44 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE7B554.75CE@wt.net>
Source record: 165123

Tom W8JI wrote:
>
> I wonder what other people think about the prospect of the ionosphere
> being heated by contest operators, and that causing the bands to open
> up?
>
> That was a topic on a contesting reflector.
>
> It seems a few people think that the power levels from activity during
> contests actually causes the ionization to change. An offshoot of that
> was an opinion that the ionosphere is non-linear....and that 10 dB of
> transmitter power change produces more than ten dB of receiver signal
> level change.
>
> No, this was not an April 1 joke.
>
> Opinions?
>
> 73 Tom

I don't think thats true, but I've been convinced for years that every time the shuttle blasts off, two days later the bands go all to heck. I think they blast a hole in the atmosphere that does damage to the ionosphere for a while. May be a fluke, but check it out for yourself. Watch the band cdx for a few days after each shuttle blasts off. Of course , it would seem to me any hole they blasted would be fairly local, but who know how big the effects if other portions have to fill in the "gaps". I sort of the the shuttle does the sort of damage they expected HAARP to, but ended up not being as bad as expected. MK
--
http://web.wt.net/~nm5k

1825. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 06:01:53 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae7b833.20399985@news.aepnet.org>
Source record: 165124

On Wed, 25 Apr 2001 23:44:13 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>"Peter O. Brackett" wrote:
>> Hey, speaking of CW, why do they call it Continuous Wave when it's always
>> being keyed on and off.
>
>I keep telling them that it is impossible for a Continuous Wave
>to convey any information. :-)

Doesn't the presence or absence of the signal convey information?

Wes Stewart N7WS
>--
>http://www.mindspring.com/~w6rca
>
>
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1826. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 06:02:11 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae7b9e0.20828256@news.aepnet.org>
Source record: 165125

On Wed, 25 Apr 2001 20:19:55 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Wes:
>
>OK, OK... I agree your thermistor get's hot... I don't have a problem with
>that.
>
>Sorry, I was not trying to "blow you off"... I was trying to "manage" the
>world's longest NG thread and, like herding cats, it's not easy. Gimme a
>break, eh?
>
>And I agree that "something" comes out of every port of a directional
>coupler be it microwave or otherwise.
>
>But your thermistor is not getting hot from dissipating that danged
>ficticious Reflected Power Pr = b*b/R which results from that specious
>calculation: Pr = Pi - Pt.
>
>See the new thread Direct Reflections for an example of such a calculation.
>
>How's the wx in Tuscon (or is that Tucson)?

Is this an attempt to change the subject? It's Tucson and today it
was supposed to be in the low ninties. Getting cloudy tho.
>
>Heh, heh.
>
>BTW... my kid sister is a graduate of U of Arizona, Tucson, she's a
>journalist used to be a stringer for the Tombstone rag, and so I should have
>known better.

Probably better than working for Gannet, Murdock, et. al.

>
>Is TI treating Burr Brown right, or will we ever know?

Probably not. Raytheon didn't trreat Hughes right. The latest
shareholders report has the CEO claiming that Raytheon is "the
employer of choice." Funny, I had jury duty a couple of weeks ago and
ran into a former co-worker. He says that anyone with fewer than 10
years and some mobility is fleeing. They ran me off after 33 years.

Now back to that thermistor....

73,

Wes N7WS

1827. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 06:24:31 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE7BF1F.41D6@wt.net>
Source record: 165126

Rudy Marcelletti wrote:
>
> I have never had a problem with "FM'ing" while operating with the stock 10
> or 12 gauge cables with IC-735 or 706's when the engine is running. The
> batter will lose high voltage capacity rather quickly if you are hitting the
> rig pretty heavy, such as going for a long county hunter run.

Usually it will happen when the engines not running. I've heard many do
it. Usually when people get out camping etc, and run for a while with
the motor off. It's not enough to run the battery down, but the voltage
does drop a bit as you operate. With the thick wire, I have more
operating time available before the voltage drop is enough to be a
problem than someone using thinner wire. Some rigs are more voltage
sensitive than others. But many I've heard do this were icoms. Being I
use icoms mobile, I got in the habit of thick wire to avoid this.
>
> Many accessory jacks on newer vehicles are fused at 25 amps--more than
> enough to operate modern rigs at full output. Many cigar lighters are also
> fused at 20 or 25 amps as well.

I'd still rather run wire straight to the battery.
>
> Heavy gauge wire will not reduce motor noise. I think it will pick up more
> of it.

No, it doesn't really have much to do with the noise, unless you were
using car wiring that picked up noise from other devices. Like you say,
usually the battery will act as a filter of sorts, but you want wire
direct to it for this to help.
>

> You are hooking up close to a $1,000.00 radio--best to run stock cord direct
> to battery. Don't use the house wire or other cheap stuff just to save
> $15.00! Battery will act as somewhat of a filter for line noise. Run cable
> under vehicle and up through hole (grommet) in fire wall and up near the
> battery, keeping it as far away from noise makers like spark plugs as you
> can. Use a ground strap at the rig. Use both wires on the battery--do NOT
> ground black wire to frame for power return. FUSE BOTH LINES! Put the
> fuses close to the battery.

I agree. Thats why I use #6 jumper cable wire straight to the battery.
I'd alway rather be overkill than underkill in that dept. I run a lot
with the motor off when camping. My extra deep cycle battery that is for
the radio only is also using #6 wire to the rig. It's about 15 ft long
or so. Many times I run a rig off picnic tables etc with that battery
and wiring. If the charge gets low, I just unhook the anderson plug from

the rig, and plug into the anderson connector in the car. That way I can charge both batteries off the car at the same time. Every thing I have that runs off 12v uses anderson connecters. The only way to go for 12v connectors I think. They make everything else look micky mouse. But the best part is they are non polarized. Any plug will plug into any other plug. One thing...The stock power cord that comes with the rig...I leave it on the rig uncut. That way when I'm camping I have plenty of power cord to move around a bit. So I'd have the 15 ft of #6, going to the stock cord which is also 10-15 ft or so. Another reason I like the first one heavy. Also I see no real problem using house wire as long as it's fused and kept to where it can't cut into the body and ground out. To me, wire is wire, as long as it's copper. The gauge is what really matters to me. One reason why I like the jumper cable wire is the thick insulation it has. It's generally harder to nick and cut. I use the same deep cycle and a 12 amp automatic charger for 12v rigs here in the house. Many tell me I need to get a power supply, but when the lights go off, I'm still on the air. I prefer the battery. Eventually, I plan to run a 500w amp off batteries also. Probably two batteries in parallel though for that though. MK
--
http://web.wt.net/~nm5k

1828. Re: Using a dip meter on a cubical quad

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 08:05:17 UTC
From: N3WWN <ralloway@futuretek.cx>
Message-ID: <tvg9c9.17r.ln@ns2.ecommanagement.com>
Source record: 165052

In article <20010425181745.20724.00000219@ng-mq1.aol.com>, "Yuri
Blanarovich" <k3bu@aol.com> wrote:

>>
>>I'm using LB Cebik's basic program to determine element spacing and
>>length based on wire diameter (using 12AWG bare copper). His program
>>describes 19.204ft for the driven element, which I'm fairly close to
>>since I"m at about 19.5ft.
>>
>>Thanks again for everyone's comments, questions, and advice! I'm
>>learning!
>>
>>73!
>>
>>-Rich
>> N3WWN
>>
>>
>
> Just use his formula, calculate the antenna confirguration way you want
> it. Put it up, measure the resonant frequency, if it is off from wwhat
> it supposed to be, just trim all elements by percentage of error and you
> will be right on.

See, that is my current problem. My dip meter is calibrated correctly.
My element is cut about 3 inches too long, and therefore should resonate
at a lower frequency. The problem is that it is resonating at 80MHz with
19.5ft of wire.

> If you want perfect 3 el quad, I can supply you dimensions that need no
> measuring or tweaking. Just give me frequency, height and wire diameter
> or gauge.

Well, a 3 ele quad is a little large for my purposes (want to take it
mobile) but the dimensions may come in handy for a base quad! I was
going to center on 52MHz since I have an all mode xcvr. Without FM, I
would have chosen 51MHz. The height will be variable, but I'd say at
least 15ft. I am using 12AWG wire.

Thanks!

-Rich
N3WWN

> 73 Yuri, K3BU@aol.com
>

1829. Re: Using a dip meter on a cubical quad

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 08:11:13 UTC
From: N3WWN <ralloway@futuretek.cx>
Message-ID: <1bh9c9.9ar.ln@ns2.ecommanagement.com>
Source record: 165053

In article <20010425153448.15622.00002033@ng-fc1.aol.com>,
"Temporary0191398" <temporary0191398@aol.com> wrote:

> Rich-- Here are some thoughts, which I invite gurus to comment on or
> correct. The antenna resonance will be affected by proximity to the
> antenna, so stand behind it or even point the antenna skyward while
> measuring.

At the current time, the antenna is not really an antenna hi hi

Currently, the wire is removed from the spreaders, straightened out, and
hung from 2 wooden chairs in the middle of a large room.

> A coupling loop at the feed point would help. However, such a loop will
> affect the antenna resonance. I would get a short piece of coax, and
> use the dipper to cut the coax to a multiple of a half wavelength. Then
> use the coax to feed the antenna with the coupling loop at the other
> end. One turn is probably sufficient.

So, for example, I could use RG58 cut to 1/2 wavelength of the center
frequency for the element (approx 9.5ft) and form a 1 turn loop at the
end of the coax and use that with the meter instead of using the meter
near the element?

When measuring a 1/2 wavelength, the meter should still be resonant at
the full wavelength frequency, correct? So if I'm measuring a 1/2 wl, 1
wl, or a 3/2 wl, I'd still be looking for the dip at 52MHz.

Thanks and 73!

-Rich
N3WWN

> --Wayne W5GIE

1830. VHF Airband

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 08:31:39 UTC
From: david hill <davidh@melbpc.org.au>
Message-ID: <9c8m9b$89i$1@possum.melbpc.org.au>
Source record: 165127

I have a Icom A4 handheld that I use on my powered parachute flying machine and I would like to increase the effectiveness of this unit. To this view I am thinking of improving on the approximately 8inch rubber antenna thingy that comes standard with this unit.

The PPC is very small and of all metal tubular construction, there is no site that could be considered as a ground plane.

My thinking (very muddled thinking) is to construct what I understand is called a sleeved monopole from 75 ohm coax. Making the arms for the 118.1 - 123.5 MHZ frequency that I use 60cms long.

I'd appreciate advice re this concept and answers the following questions and to any others that I should of thought of but did not,

1...is this the correct length?
.
.

2...if answer to above is yes how much would the rec/transmit efficiency degrade if I used only half this length?
.
.
3... how close to a metal frame member can I mount this antenna?
.
.
4.... how does the length of coax from the Icom to the start of the sleeve effect the operation, (I would be using about 1.2 mt)
.
.
5... I understand that this should be mounted vertical is this true?
.
.
6... what loss in efficiency would happen if I mounted it horizontal?
.
.
7... would this antenna work if mounted as a circle rather than extended our straight?
.
.

8... is there some other antenna design that I should be
considering?
.
.
9... pointers to sites that would assist in designing other
forms of antenna.
.
.

The over all aim is to achieve clear rec/transmit on the air
band over a range of about 30miles.

Any and all advice greatly received
and apologies for asking stupid questions, if in fact that is
what I am doing. as you can tell antennae are not my normal
science.

many thanks
David Hill

--
DavidH [:-)>X

1831. Re: VHF Airband

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 09:20:04 UTC
From: "Thomas C. Sefranek" <tcs@cmcorp.com>
Message-ID: <3AE7E811.D94D587D@cmcorp.com>
Source record: 165128

david hill wrote:

> I have a Icom A4 handheld that I use on my powered parachute
> flying machine and I would like to increase the effectiveness of
> this unit. To this view I am thinking of improving on the
> approximately 8inch rubber antenna thingy that comes standard
> with this unit.
>
> The PPC is very small and of all metal tubular construction,
> there is no site that could be considered as a ground plane.

The frame approximates a reasonable ground plane at 100 MHz.

> My thinking (very muddled thinking) is to construct what I
> understand is called a sleeved monopole from 75 ohm coax. Making
> the arms for the 118.1 - 123.5 MHZ frequency that I use 60cms
> long.

75 ohm coax is not magic, you can use 50 ohm stuff too.

> I'd appreciate advice re this concept and answers the following
> questions and to any others that I should of thought of but did not,
>
> 1...is this the correct length?
> .
> Here across the pond we do 468/Fr to get feet of length.
>
> 2...if answer to above is yes how much would the rec/transmit
> efficiency degrade if I used only half this length?
> .
> . Your back to the rubber dummy load.

>
> 3... how close to a metal frame member can I mount this antenna?
> .

I'd mount it ON the metal frame...
But probably a different configuration.

> .
> 4.... how does the length of coax from the Icom to the start of
> the sleeve effect the operation, (I would be using about 1.2
> mt)
> .

Length = Loss, but not much.

> .
> 5... I understand that this should be mounted vertical is this
> true?

It would give you the best omnidirectional coverage.
and almost none straight down.

> .
> 6... what loss in efficiency would happen if I mounted it
> horizontal?
> .

You degrade your signal along the axis.
(Like the vertical case above.)

>
> .
> 7... would this antenna work if mounted as a circle rather than
> extended our straight?
> .

Everything works to some extent.
(Back to the rubber dummy load, I think!)

> .
> 8... is there some other antenna design that I should be
> considering?
> .

Turnstile antenna connected to the frame.

> .
> 9... pointers to sites that would assist in designing other
> forms of antenna.
> .
>
>
> The over all aim is to achieve clear rec/transmit on the air
> band over a range of about 30miles.

At what height?

> Any and all advice greatly received
> and apologies for asking stupid questions, if in fact that is
> what I am doing. as you can tell antennae are not my normal
> science.

Antennas... Science... Surely you jest!
It's magic, consider the evidence of the frac(tured) furor.

> many thanks
> David Hill
>
> --
> DavidH [:-)>X

--
*
| __O Thomas C. Sefranek tcs@cmcorp.com
|_-\<,_ Amateur Radio Operator: WA1RHP
(*)/ (*) Bicycle mobile on 145.41, 448.625 MHz

http://hamradio.cmcorp.com/inventory/Inventory.html
http://www.harvardrepeater.org

1832. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 09:43:01 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae7eb83.71683963@news.accessunited.com>
Source record: 165129

On Wed, 25 Apr 2001 19:56:45 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Tom, W8JI wrote:
>"How about the screen behind my UHF TV antenna?"
>It is non-resonant, but extensive, nothing like a simple non-resonant >conductor.

OK, so if it is a large conductor it has an effect even if non-resonant.

>"What about power poles near BC stations?"
>These are no where near resonance so neither they nor the stations had >to be moved.

Not true. Power poles near directional arrays often have to be sectionalized with tuning networks that parallel tune a section of the vertical conductors to prevent interaction. The pole does not have to be resonant to cause a problem, it simply has to be in the pattern and a tall pole.

>"What about the guy lines?"
>That question started this discussion long ago. Nearly all medium-wave >broadcast stations breakup guys in non-resonant lengths that cause no >problems.

But they use very short sections. They could easily save money by only making the guy wire non-resonant....but instead they break the lines up into very short sections.

>"What about a Rhombic? Does it absorb energy and re-radiate energy even >though it is non-resonant?"
>Certainly. It is multiple wavelengths long and the wires are aligned for >coincidence of the radiation lobes in its long wires. This is not simple >parasitic excitation. It is cumulative response to a traveling wave.

It is non-resonant.

>"Why does my signal refuse to go past metal roofs that aren`t resonant?"
>We just went through a knock-down, drag-out over shielding. Surely Tom >remembers how induced currents in the shield`s surface counteract the >incident signal. But, skinny cable does not make a shield.

At what point does this "resonance" effect suddenly appear?

>"Sorry, a conductor does NOT need to be resonant to have a large effect >on the system".
>Of course, that is true in some particular cases, the ones that Tom will

>swear that he was thinking of all the time, but it is false in the case
>of lesser conductors, far from resonance, and having little mutual
>impedance with the radiator which might be affected by re-radiation.

What is a "lesser conductor"?

It is not necessary for a conductor to be resonant to have a profound
effect on the pattern.

73 Tom

1833. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 09:50:31 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae7edcf.72271783@news.accessunited.com>
Source record: 165130

On Wed, 25 Apr 2001 21:24:38 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>almost exactly as predicted. The trick is simply breaking them into >pieces with insulators which are far from resonance. That`s all there is >to it.

Although you've modified the statement to make the conductor "far" from resonance, that is not entirely true. The conductor has to be small compared to the wavelength and small compared to the distance to the radiator to have minimal effect.

Non-resonant conductors can have a profound effect when close to an element. Especially when the conductor is over 1/2 wl long and only 1/8 wl from the antenna. You have to be very careful what you are doing, and it will be virtually impossible to find a magic length that does not affect the pattern when the radio is used on multiple frequencies or bands.

If it was this easy, I wouldn't have dozens of insulators in my guy lines. Neither would BC stations. It is more than just resonance at work.

73 Tom

1834. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 10:21:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE7F6B2.F03DCD41@eznec.com>
Source record: 165131

Richard Harrison wrote:
>
> Roy, W7EL wrote:
> "But Tom has been talking about sky wave,"
> Tom wrote:
> "So you say, but not at low angles over a small ground system.
>
> Roy knows that the ground system has almost the same effect on either
> 1/2-wave or 5/8-wave antenna. Roy also knows that the strength of
> radiation of vertical antennas of 1/2-wave and 5/8-wave lengths have
> nearly their same strengths at zero degrees and 10 degrees, and that the
> 5/8 wave is stronger than the 1/2-wave. . .

Sorry, Richard, but you give me too much credit. I definitely don't know that the strengths from these antennas are nearly the same at zero and 10 degrees. And I'm glad I don't! As I'll show below, the zero and 10 degree strengths differ by 45 dB at a distance of just one mile, and more as you get further away. For those who are interested, here's what I do know. . .

These are some numbers from EZNEC pro analysis including ground wave. All are for 1 kW power, average ground (cond. = 5 mS/m, diel. const. = 13) except for the right two columns which are perfect ground, and no ground system loss. Ground is flat and infinite in extent. d is the distance from the antenna. All values are in mV/m RMS.

	3.5 MHz		14 MHz		Perf Gnd	
elev angle deg	0	10	0	10	0	10
1/4 wave vert						
d = 1 mi	57.85	91.59	6.851	75.07	194.5	187.4
d = 100 mi	0.0047	0.896	0.00066	0.750	1.945	1.874
5/8 wave vert						
d = 1 mi	77.32	110.5	11.27	116.4	272.6	235.1
d = 100 mi	0.0065	1.107	0.0011	1.172	2.726	2.351

Over perfect ground, the 5/8 wave vertical has a gain of 2.93 dB over the 1/4 wave vertical at zero elevation angle. This is the source of the "3 dB" gain figure you often hear for a 5/8 wave vertical.

Over perfect ground, the gain drops to 1.97 dB at 10 degrees elevation. This is because the beam of the 5/8 wave vertical is narrower in the vertical plane. Over perfect ground, the gain doesn't change with frequency (assuming that the antennas are the same heights in

wavelengths at each frequency).

But this isn't the real world. What happens in reality is that the very low angle radiation is propagated only by ground wave, which drops off in strength very rapidly. Take a look at the 1 and 100 mile figures at zero degree elevation angle. You can see that the field strength is dropping about as the square of the distance. That is, the field strength at 100 miles is about 1/10,000 the field strength at 1 mile. In contrast, you can see that at 10 degrees elevation, the field strength drops off in about direct proportion to the distance. So the ground wave (zero elevation angle) signal dies out more quickly as you go away from the antenna. Over perfect ground, the 1/4 wave antenna field at 10 degrees elevation is just 0.32 dB lower than the field at zero degrees. But at 100 miles, the field at 10 degrees is much stronger than the field at zero degrees -- by 45 dB at 3.5 MHz, and 61 dB at 14 MHz, for both antennas. This is not a minor amount!

Interestingly, the rate of ground wave signal attenuation is about the same from 1 to 100 miles at both frequencies, but the 14 MHz signal suffers more attenuation in the first mile, so it ends up considerably weaker.

Beyond the point where the ground wave has decayed to essentially zero, the sky wave continues. This is composed of a direct field from the antenna, and one reflected from the ground. Very low angle signals are attenuated badly in this process, resulting in zero sky wave at zero elevation angle, and very little at the first few degrees of elevation. The amount of loss incurred is a function of ground conductivity and frequency. Take a look at the different values for 100 miles, 10 degrees. The 1/4 wave vertical signal is down 6.4 dB at 3.5 MHz and 8.0 dB at 14 MHz compared to the perfect ground value. This represents the attenuation of the reflection/summation process. You can see that the attenuation is greater at 14 MHz than at 3.5. For the 5/8 wave vertical, the signal is down 6.5 dB at 3.5 MHz and . . . 6.1 dB at 14 MHz. This result frankly surprised me. Why isn't the difference greater at 14 MHz as it was for the 1/4 wave vertical? I double checked the results, and everything else seems to be consistent. For example, the gain at 100 miles, 10 degrees is just about exactly what a purely sky wave analysis shows. The field strength for perfect ground is just about exactly what theory predicts. I noticed that the one mile 10 degree field strength is lower at 14 MHz than 3.5 MHz (by 1.73 dB) for the quarter wave vertical, but it's actually slightly higher at 14 MHz than 3.5 for the 5/8 wave vertical. the 100 mile results follow from this, since the ground wave attenuation rate is about the same, and the natural sky wave falloff as 1/d is exactly the same, for both frequencies. The only explanation I can quickly come up with is that it might have to do with the fact that the reflection from the 5/8 wave antenna for a given elevation angle takes place over a larger area of ground than for a 1/4 wave antenna. I don't know how this would cause the results, though. Some extensive modeling of antennas of various heights and heights above ground might shed some light on the topic.

Finally, let's look at the gain of the 5/8 wave over the 1/4 wave, in dB, at these various distances and angles:

3.5 MHz 14 MHz Perf Gnd
elev angle deg 0 10 0 10 0 10

d = 1 mi 2.52 1.63 4.32 3.81 2.93 1.97
d = 100 mi 2.82 1.84 4.44 3.88 2.93 1.97
(infinite d)(*) ---- 1.84 ---- 3.88 2.93 1.97

(*) from EZNEC sky wave analysis

You can see that the gain of the 5/8 wave vertical over the 1/4 wave is around 1.6 dB at 3.5 MHz and 3.9 dB at 14 MHz at long distances, 10 degrees elevation, and average ground. Ground wave gain is 2.5 - 2.8 dB at 3.5 MHz and 4.3 - 4.4 dB at 14 MHz over the range of 1 - 100 miles and average ground. Modifying the ground characteristics will change these values.

So what's the gain of a 5/8 wave vertical over a 1/4 wave? Can we depend on perfect-ground or ground wave figures to guide us? You be the judge. And remember, this is for a perfectly flat ground of infinite extent. As Tom has said, things get a lot different when the antenna is sitting on a car roof.

Roy Lewallen, W7EL

Notes:

1. 100 miles is pushing a bit beyond the region of really good accuracy from EZNEC pro's ground wave analysis -- not because there's any problem with the calculation, but the flat earth model begins to be inadequate. However, the flat ground model does have the advantage of simplifying the problem so that various factors can be observed without complicating issues.

2. I've only reported the vertical component of the field. A radial component is also present. At 10 degrees elevation it's negligible for the purposes of this analysis. At 0 degree elevation, it's about 20% of the vertical component over this quality ground. If you want, you can approximate the total field by increasing the zero degree elevation angle fields by about 2%.

1835. Re: End-Fed Antenna Question - Lightning Magnet?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 10:35:31 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3ae7f9fb_1@news.cybertours.com>
Source record: 165132

"Gary Brown" <gbrown@nc.rr.com> wrote in message
news:3ae772e2.10125452@news-server...
> Presently using an Icom AH-4 automatic coupler in the second-story shack,
> grounded to an 8-foot copper clad rod buried directly below shack at
outside
> wall.
>
> Recently-installed antenna is a 90-foot uninsulated "flex-weave" long-wire
> (leaving the shack via a SPST knife switch) going at about a 45 degree
angle
> draped over the top of a 50-foot pine. The wire runs down the trunk,
about a
> foot away and is tied off with an egg insulator to a branch about 10 feet
from
> the ground. I got lucky with a sling-shot and fishing reel to get to the
top of
> the tree on my 1st try!
>
> 1st two contacts were Aruba on 20M and Ottawa on 75M, the other night.
>
> Question: what is the best way to ensure some protection from lightning,
in case
> I forget the knife switch after a QSO? I feed the antenna from the shack
via a
> 6-foot piece of #25 insulated stranded Copperweld, leftover from a
previous
> hidden antenna. I had the crazy notion the short piece of thin wire
leaving the
> shack might serve as a fusible link. Comments?
>
> Gary
> K4GPB
> Cary, NC

Hi Gary,
Take it from experience with Lightening nothing will stop a direct hit Short of real ground, I've even had enough energy to jump a Knife Switch in the past that was left in the grounded position and wipe out a RX frontend.

Best thing I know of for Single wire feed is a direct DC Conection to Ground. Air Gaps will help but are not reliable.. You can Mont some non reactive resistors from antenna to ground, 1 meg ohm or more should do , this help drain off staic build up on the line and make it les likely for a direct hit. Also would go to http://www.polyphaser.com/ppc_technical.asp and down load some of Poy phaser's articles on Lighting protection and

grounding.. very good stuff.
hope this is of Help,
73 Dave KC1DI

1836. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 10:39:35 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3ae7fae9_2@news.cybertours.com>
Source record: 165133

"David G. Nagel" <nagel@core.com> wrote in message
news:3ae75bf7$0$14448$1dc6e903@news.corecomm.net...
> You will get the full spectrum of opinion on this antenna.
> I use one for both amateur and CAP HF communications. I find that it
> does the job for what I want.
> Other people will tell you that it is the worst piece of junk to come
> down the pike. They are welcome to their opinions.
>
> I use the B&W 80-10 antenna. I have heard that the 160 meter version
> does not do well on 160 but I have no personal experience. I have used
> all amateur bands on my antenna with satisfactory results world wide.
> That is all I ask of a sky hook.
> However if you compare this antenna with a purpose build dipole the
> dipole will win overall for the specific band or sub band you have cut
> it for.
> The main reason to use the B&W folded dipole is the lack of need for an
> antenna tuner to match the transmitter. If you have an automatic tuner
> then use it on a regular dipole if not use the B&W.
>
> David G. Nagel, WD9BDZ
>
> KEV200BHM wrote:
> >
> > Has anyone have any experience with the Barker & Williamson wide band
folded
> > dipole, I don't know the model no. but it covers 160 thru 10 meters,
90ft long.
> > Thanks,
> > K4PBN

See LB's Fine analysis at http://www.cebik.com/t2fd.html
Dave

1837. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 11:15:46 UTC
From: k1bqt@aol.com
Message-ID: <20010426071546.16054.00001205@ng-cd1.aol.com>
Source record: 165134

>the Bird company unfortunately does,... simply marking a scale on a meter face with the word "watts" when it is really indicating volts "b" or "a" does not a power make.<

If you think most power meters only read voltage, then you may not understand how they actually work.

Rick K1BQT

1838. Re: Direct Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 11:49:18 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <2XTF6.37295$IJ1.3137128@bgtnsc05-news.ops.worldnet.att.net>
Source record: 165135

Peter:

You're taking this way too seriously. Relax, go have a beer and enjoy the day. We'll still be here tomorrow.

Take care

Steve

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message news:9c7jli$q4i$1@nntp9.atl.mindspring.net...
> In steady state DC circuits is there a place for impedance matching,
> reflection analysis, and reflected power?
>
> Let's consider our transmitter to be a 12 volt battery with internal
> resistance of say 3 Ohms.
>
> This battery has an open circuit voltage of Voc = 12 Volts and a short
> circuit current of Isc = Voc/Rint = 12/3 = 4 Amps.
>
> Now let's connect this transmitter, er... battery to a load of resistance
2
> Ohms through a lossless transmission line of sufficiently short length to
> allow us to do the experiment in our basement lab, heh, heh... no 1000
mile
> long lossless lines please.
>
> We now have our 2 Ohm load connected and the charges (electrons or
protons,
> or what?) are flowing.
>
> Now in this situation, is the battery mismatched to the load? How much
> power is delivered to the load? How much power is dissipated in the
> battery's internal resistance? How much reflected power is there and
where
> is it dissipated?
>
> Let's see...
>
> The total resistance in the circuit is 3 Ohms internal battery resistance
> plus 2 Ohms load resistance...
>
> Rtotal = 3 + 2 = 5 Ohms
>
> The current I through the lossless transmission line and into the load

will
> be:
>
> I = Voc/Rtotal = 12/5 = 2.4 Amps.
>
> The voltage across the load will be:
>
> V = 2.4 * 2 = 4.8 Volts.
>
> The power delivered to the load, let's call it Pd and (Dare I say)
> dissipated in the load will be:
>
> Pd = V*I = 4.8*2.4 = 11.52 Watts.
>
> The power dissipated in the internal battery resistance will be:
>
> Pint = 2.4 * 7.2 = 17.28 Watts.
>
> And so the total power being extracted from that poor struggling battery
and
> dissipated in the load and internal resistance will be:
>
> Ptotal = 17.28 + 11.52 = 28.8 Watts.
>
> Aside: If the load had been "matched" to the "transmitter" er... battery,
> the load would not have been 2 Ohms but 3 Ohms for a total of 6 Ohms in
the
> circuit, with a current of 12/6 = 2 Amps, and a load voltage of 6 Volts,
> with a load power of 12 Watts and an internal power of 12 Watts for a
total
> of 24 Watts.
>
> Now let's calculate the "reflected power" in this mismatched situation...
>
> Let's see now we start by calculating the ficticious "reflected voltage" b
> measured somewhere on the lossless transmission line. (Oh heck lets make
it
> at the transmitter end.):
>
> b = V - IR
>
> But wait! We haven't yet specified R???
>
> Heh, heh... what is the "surge resistance" R of our lossless transmission
> line? Does it matter? What?
>
> OK for picayune readers we might have to choose R to be the value of the
> perfectly matched load, i.e. R = 3 Ohms. But I insist that it doesn't
> matter a damm, because it's all a fiction anyway.
>

> Using R = 3 Ohms as the surge resistance of our lossless line.
>
> b = V - IR = 4.8 - 2.4 * 3 = 4.8 - 7.2 = -2.4 Volts
>
> So the ficticious reflected voltage which does not exist anywhere in the
> circuitry for this "mismatched "2 Ohm load is -2.4 Volts.
>
> Clearly by elementary analysis (Use V squared over R or however you wish
to
> calculate it.) we can now calculate the ficticious reflected power... Pr
>
> Pr = b*b/R = (-2.4)*(-2.4)/3 = 5.76/3 = 1.92 Watts. of purely ficticious
> reflected power!
>
> Now where is this 1.92 Watts of ficticious reflected power delivered?
>
> Is the 1.92 Watts of ficticious reflected power dissipated in the load?
NO!
> The load is dissipating 11.52 Watts.
>
> Is the 1.92 Watts of ficticious reflected power dissipated in the internal
> resistance? NO! The internal resistance is dissipating 17.28 Watts.
>
> Jeesh... we've got 1.92 Watts of ficticious reflected power all dressed up
> and no place to go!
>
> I say, since it didn't cost us any money to create this ficticious 1.92
> Watts of reflected power, that we just ship it to those poor Californians.
> They really need all the free power they can get!
>
> In fact if all of us hams could just harness those tiny amounts of
reflected
> power created in our antenna systems by these wonderous equations all over
> the world and send them to California we could probably eliminate the West
> Coast Energy Crises.
>
> Reflected Power, AC, DC, whatever.... a crock in any form, bah, humbug!
>
> -Peter K1PO
>
>
>
>
>
>
>
>
>
>
>

>

1839. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 12:42:18 UTC
From: clay <clayman1234@mycom.com>
Message-ID: <3AE817E4.914E8C8A@mycom.com>
Source record: 165136

hi, as other have written, go with larger wire, instead of romex
house wire, (even if you strip off the white jacket)

get some #10 red and blk stranded thhn from home depot lowes, menards etc.

you can follow the hood release cable from car inside to engine area.
use coat hanger or screwdriver to poke the rubber plug.
you can now pull the pair back in the car and route it nice.

this wire is gas oil resistant and will provide good service.
do wire direct to battery it will help with noise.
you could put a clamp on ferrite on both power leads at fuel pump.

73 clay

Theplanters95 wrote:

> Yes, before I get flamed, I know this is off topic.
>
> Can regular house wiring be used for a power connection? I am talking about
> the 3 wire 12 gauge version. I am planning on using my Icom 706MKII in my Ford
> explorer. I am going on several long trips this summer and would like to try
> HF mobile.
>
> For the Antenna, I am planning on using a Cecil 10-20m Special. (Again, thanks
> for the info and coil stock). The antenna is built, now to mount it. I
> already have a flat bar bumper mount, and just need to find some bolt, washers
> and nut for it. If I set up the antenna for 20M, can I use my antenna tuner to
> tune other bands (17m, 10m, and 6m)?
>
> I'm a full time graduate student, so this needs to be done cheaply.
>
> Please respond directly to theplanters95_nospam@aol.com after removing the no
> spam and underline.
>
> 73,
> Randy KA4NMA

1840. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 12:48:23 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE81917.BDB70D4A@IEEE.org>
Source record: 165137

Wes Stewart wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >I keep telling them that it is impossible for a Continuous Wave
> >to convey any information. :-)
>
> Doesn't the presence or absence of the signal convey information?

There is no absence of the signal with a Continuous Wave. With an
absence (interruption), it wouldn't be continuous. From Webster's:
"continuous - marked by *uninterrupted* extension in time."
They should have chosen DW for Discontinuous Wave instead of CW for
Continuous Wave. :-)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1841. WANTED: 10-80m Vertical for Roof Top

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 12:50:42 UTC
From: w7axe@aol.com
Message-ID: <20010426085042.15622.00002193@ng-fc1.aol.com>
Source record: 165138

Hello,

Can anyone could give me any good suggestions or recommendations on a 10-80m vertical to be mounted on the roof of a metal building? I am limited on space (office qth) and cannot ground mount. Anyone have a similar application that has worked well (satisfactory) to them? I am planning on using a 3-5 foot tripod with about 5 ft of mast. The building is 40x100, approximately 20ft high.

Thanks for your time.......73 John W7AXE w7axe@aol.com

1842. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 12:54:21 UTC
From: Barry D <x123x123@yahoo.com>
Message-ID: <1UUF6.1278$HF.175962@news4.rdc1.on.home.com>
Source record: 165139

> I agree. Thats why I use #6 jumper cable wire straight to the battery.
> I'd alway rather be overkill than underkill in that dept. I run a lot
> with the motor off when camping. My extra deep cycle battery that is for
> the radio only is also using #6 wire to the rig. It's about 15 ft long
> or so. Many times I run a rig off picnic tables etc with that battery
> and wiring. If the charge gets low, I just unhook the anderson plug from
> the rig, and plug into the anderson connector in the car. That way I can
> charge both batteries off the car at the same time. Every thing I have
> that runs off 12v uses anderson connecters. The only way to go for 12v
> connectors I think. They make everything else look micky mouse. But the
> best part is they are non polarized. Any plug will plug into any other
> plug. One thing...The stock power cord that comes with the rig...I leave
> it on the rig uncut. That way when I'm camping I have plenty of power
> cord to move around a bit. So I'd have the 15 ft of #6, going to the
> stock cord which is also 10-15 ft or so. Another reason I like the first
> one heavy. Also I see no real problem using house wire as long as it's
> fused and kept to where it can't cut into the body and ground out. To
> me, wire is wire, as long as it's copper. The gauge is what really
> matters to me. One reason why I like the jumper cable wire is the thick
> insulation it has. It's generally harder to nick and cut. I use the same
> deep cycle and a 12 amp automatic charger for 12v rigs here in the
> house. Many tell me I need to get a power supply, but when the lights go
> off, I'm still on the air. I prefer the battery. Eventually, I plan to
> run a 500w amp off batteries also. Probably two batteries in parallel
> though for that though. MK

I would have thought you need more than two batteries in parallel for 500 watts. I suppose it also depends how long you are going to transmit before recharging.

Barry D.

1843. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 12:56:35 UTC
From: Gerald Schmitt <KK5YY@arrl.net>
Message-ID: <196get49f88mts669t2eh7thgr5kcdmkl3@4ax.com>
Source record: 165140

On Thu, 26 Apr 2001 00:13:26 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:

>On 25 Apr 2001 21:57:37 GMT, kev200bhm@aol.com (KEV200BHM) wrote:
>
>>Has anyone have any experience with the Barker & Williamson wide band folded
>>dipole, I don't know the model no. but it covers 160 thru 10 meters, 90ft long.
>>Thanks,
>>K4PBN
>
>This antenna is essentially like a dipole with a dummy resistor across
>the feedpoint.

Not quite correct. It is a folded dipole with a feed balun and a
terminating resistor. I believe the balun is a 6 to 1 and the
resistor is generally 600 to 800 ohms non inductive.
>
>Efficiency will be anything from a few percent or less on 160 meters
>to almost 50% on some bands. I measured some of the prototype antennas
>that were played with by people at Amp Supply...who I believe later
>sold the design to B&W.

I doubt that they sold any rights as the military has been using these
things for many years. The advanrage for them is no tume time and easy
frequency hopping, down side is they are not efficient.
>
>LB Cebik has modeled the antenna, rather than argue you can look at
>his data. It agrees closely with the real world measurements. Maybe
>someone knows the web address.

http://www.cebik.com/t2fd.htm
>
>73 Tom

1844. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 13:02:04 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <xLMG90AMxB66EAGI@ifwtech.com>
Source record: 165033

Roy Lewallen wrote:
>Richard Harrison wrote:
>>
>> Roy, W7EL wrote:
>> "But Tom has been talking about sky wave,"
>> Tom wrote:
>> "So you say, but not at low angles over a small ground system.
>>
>> Roy knows that the ground system has almost the same effect on either
>> 1/2-wave or 5/8-wave antenna. Roy also knows that the strength of
>> radiation of vertical antennas of 1/2-wave and 5/8-wave lengths have
>> nearly their same strengths at zero degrees and 10 degrees, and that the
>> 5/8 wave is stronger than the 1/2-wave. . .
>
>Sorry, Richard, but you give me too much credit. I definitely don't know
>that the strengths from these antennas are nearly the same at zero and
>10 degrees. And I'm glad I don't! As I'll show below, the zero and 10
>degree strengths differ by 45 dB at a distance of just one mile, and
>more as you get further away. For those who are interested, here's what
>I do know. . .
>
>These are some numbers from EZNEC pro analysis including ground wave.
>All are for 1 kW power, average ground (cond. = 5 mS/m, diel. const. =
>13) except for the right two columns which are perfect ground, and no
>ground system loss. Ground is flat and infinite in extent. d is the
>distance from the antenna. All values are in mV/m RMS.
>
> 3.5 MHz 14 MHz Perf Gnd
>elev angle deg 0 10 0 10 0 10
>
>1/4 wave vert
>
>d = 1 mi 57.85 91.59 6.851 75.07 194.5 187.4
>d = 100 mi 0.0047 0.896 0.00066 0.750 1.945 1.874
>
>5/8 wave vert
>
>d = 1 mi 77.32 110.5 11.27 116.4 272.6 235.1
>d = 100 mi 0.0065 1.107 0.0011 1.172 2.726 2.351
>

Thanks for those interesting figures, Roy.

One thing I'm not clear about is how (or if) NEC takes account of ground
losses at the feedpoints of the two different types of antenna.

Presumably the assumption is that the effective series resistance of ground losses at the feedpoint is negligible in both cases, so that the full 1 kW is delivered to each of the two different antennas?

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

1845. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 13:14:06 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <eB7oOktWl=QhnXgJMsbW3bK4E+78@4ax.com>
Source record: 165141

kev200bhm@aol.com (KEV200BHM) wrote:

>Has anyone have any experience with the Barker & Williamson wide band folded
>dipole, I don't know the model no. but it covers 160 thru 10 meters, 90ft long.
>Thanks,
>K4PBN

Instead of spending $300 on the B&W dipole, spend $300 on an antenna tuner, and use it to tune a cheapo 90-foot-or-so dipole, fed with twin-lead. Better signal. And you can use the tuner for other antenna projects.

Bob
k5qwg

1846. anyone try a TGM multi-band quad?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 13:28:26 UTC
From: KG6ENA <kg6ena@home.com>
Message-ID: <3AE82276.605543FE@home.com>
Source record: 165142

I am curious as to if anyone owns or has used a TGM multi-band quad.
Their webpages are at http://www3.sympatico.ca/tgmc/ . Looks like the
gain figures are ok over a wire, but the SWR ranges look kinda high to
me. Comments?

thanks

steve
kg6ena

1847. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 13:39:02 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <qr8getc4jmvr1e8j3pa1igimajhpoc7l5u@4ax.com>
Source record: 165143

On Wed, 25 Apr 2001 12:48:34 -0500, Mark Keith <nm5k@wt.net> wrote:

>I like real thick power wiring in a mobile
>because the voltage drop is less.

Some radios are not much affected by voltage drop. Using an external field strength meter and a steady carrier, my IC-730 shows no change in output whether the engine is running or not, so a small voltage drop in the DC power lead would be of no consequence. The difference between engine running or not is about one full volt. Other radios may be different, so you should test yours to be sure.

73, Bill W7TI

1848. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 13:42:50 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <ba9get80sf9o0soggqksfr7frcdsukum6e@4ax.com>
Source record: 165144

On Wed, 25 Apr 2001 16:35:47 -0400, "Rudy Marcelletti" <rudym@net-link.net>
wrote:

>Run cable
>under vehicle and up through hole (grommet) in fire wall and up near the
>battery, keeping it as far away from noise makers like spark plugs as you
>can.

Depending on the car, a possibly easier way to route the DC cable is via the door hinge area and under the front fender and under the hood. My Escort is this way and I was able to run the cord without drilling any holes. Works great.

73, Bill W7TI

1849. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 13:44:16 UTC
From: John O'Flaherty <oflahert@toast.net>
Message-ID: <3AE82630.F18B5EE0@toast.net>
Source record: 165145

"Peter O. Brackett" wrote:

> John:
>
> Sorry, it seems that you have missed my point.
>
> Read my lips...
>
> I do not question reflections.
>
> I do not question reflections.
>
> I do not question reflections.

I see you're demonstrating their existence. :-)

john

1850. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 13:49:25 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae825e0.86627284@news.accessunited.com>
Source record: 165146

On Thu, 26 Apr 2001 06:56:35 -0600, Gerald Schmitt <KK5YY@arrl.net>
wrote:

>Not quite correct. It is a folded dipole with a feed balun and a
>terminating resistor. I believe the balun is a 6 to 1 and the
>resistor is generally 600 to 800 ohms non inductive.

That's still essentially a dipole with resistor loading. People
attribute some "magic" to the fact it is a folded diople, or that the
resistor is in the conductor opposite the feedpoint, but you can get
the same results with a few transformers and a single dipole....and a
resistor load across the feedpoint.

There is no magic, it is a resistor loaded dipole.

>>Efficiency will be anything from a few percent or less on 160 meters
>>to almost 50% on some bands. I measured some of the prototype antennas
>>that were played with by people at Amp Supply...who I believe later
>>sold the design to B&W.
>
>I doubt that they sold any rights as the military has been using these
>things for many years. The advanrage for them is no tume time and easy
>frequency hopping, down side is they are not efficient.

The owner of Amp Supply sold B&W the "design", some aspects of which
were patented (not that that means anything). He was playing with both
an inverted V configuration and a T2FD that was sloped. I was there, I
saw the antenna. I still have some old load resistors.

>>LB Cebik has modeled the antenna, rather than argue you can look at
>>his data. It agrees closely with the real world measurements. Maybe
>>someone knows the web address.
>
> http://www.cebik.com/t2fd.htm

Thanks.

73 Tom

1851. Re: Direct Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 13:59:47 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c99k1ehb1@nntp9.atl.mindspring.net>
Source record: 165147

Steve:

Hey... serious, me?

What?

Steve, I'm off work for a few days, sitting on a sailing yacht here in the Carribean, preparing a pitcher of Margaritas for later, and messing with my friends on a USENET NG from my Sony laptop computer, what could be more fun?

Got sunburn on my forehead, nose, etc... I forgot to put the SPF 30 on the first couple of days!

After a little fishing here this morning, I think I'll go ashore later this evening and see what the locals are doing.

Try and sell em some imaginary resistors or maybe some cheap reflected power, heh, heh.

Jeesh... your post just reminded me, I have to go back to work next Monday...

Cheers,

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message
news:2XTF6.37295$IJ1.3137128@bgtnsc05-news.ops.worldnet.att.net...
> Peter:
>
> You're taking this way too seriously. Relax, go have a beer and enjoy the
> day. We'll still be here tomorrow.
>
> Take care
>
> Steve
>
>
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> news:9c7jli$q4i$1@nntp9.atl.mindspring.net...
> > In steady state DC circuits is there a place for impedance matching,
> > reflection analysis, and reflected power?
> >
> > Let's consider our transmitter to be a 12 volt battery with internal
> > resistance of say 3 Ohms.
> >
> > This battery has an open circuit voltage of Voc = 12 Volts and a short

> > circuit current of Isc = Voc/Rint = 12/3 = 4 Amps.
> >
> > Now let's connect this transmitter, er... battery to a load of
resistance
> 2
> > Ohms through a lossless transmission line of sufficiently short length
to
> > allow us to do the experiment in our basement lab, heh, heh... no 1000
> mile
> > long lossless lines please.
> >
> > We now have our 2 Ohm load connected and the charges (electrons or
> protons,
> > or what?) are flowing.
> >
> > Now in this situation, is the battery mismatched to the load? How much
> > power is delivered to the load? How much power is dissipated in the
> > battery's internal resistance? How much reflected power is there and
> where
> > is it dissipated?
> >
> > Let's see...
> >
> > The total resistance in the circuit is 3 Ohms internal battery
resistance
> > plus 2 Ohms load resistance...
> >
> > Rtotal = 3 + 2 = 5 Ohms
> >
> > The current I through the lossless transmission line and into the load
> will
> > be:
> >
> > I = Voc/Rtotal = 12/5 = 2.4 Amps.
> >
> > The voltage across the load will be:
> >
> > V = 2.4 * 2 = 4.8 Volts.
> >
> > The power delivered to the load, let's call it Pd and (Dare I say)
> > dissipated in the load will be:
> >
> > Pd = V*I = 4.8*2.4 = 11.52 Watts.
> >
> > The power dissipated in the internal battery resistance will be:
> >
> > Pint = 2.4 * 7.2 = 17.28 Watts.
> >
> > And so the total power being extracted from that poor struggling battery
> and

> > dissipated in the load and internal resistance will be:
> >
> > Ptotal = 17.28 + 11.52 = 28.8 Watts.
> >
> > Aside: If the load had been "matched" to the "transmitter" er...
battery,
> > the load would not have been 2 Ohms but 3 Ohms for a total of 6 Ohms in
> the
> > circuit, with a current of 12/6 = 2 Amps, and a load voltage of 6 Volts,
> > with a load power of 12 Watts and an internal power of 12 Watts for a
> total
> > of 24 Watts.
> >
> > Now let's calculate the "reflected power" in this mismatched
situation...
> >
> > Let's see now we start by calculating the ficticious "reflected voltage"
b
> > measured somewhere on the lossless transmission line. (Oh heck lets make
> it
> > at the transmitter end.):
> >
> > b = V - IR
> >
> > But wait! We haven't yet specified R???
> >
> > Heh, heh... what is the "surge resistance" R of our lossless
transmission
> > line? Does it matter? What?
> >
> > OK for picayune readers we might have to choose R to be the value of the
> > perfectly matched load, i.e. R = 3 Ohms. But I insist that it doesn't
> > matter a damm, because it's all a fiction anyway.
> >
> > Using R = 3 Ohms as the surge resistance of our lossless line.
> >
> > b = V - IR = 4.8 - 2.4 * 3 = 4.8 - 7.2 = -2.4 Volts
> >
> > So the ficticious reflected voltage which does not exist anywhere in the
> > circuitry for this "mismatched "2 Ohm load is -2.4 Volts.
> >
> > Clearly by elementary analysis (Use V squared over R or however you wish
> to
> > calculate it.) we can now calculate the ficticious reflected power... Pr
> >
> > Pr = b*b/R = (-2.4)*(-2.4)/3 = 5.76/3 = 1.92 Watts. of purely
ficticious
> > reflected power!
> >
> > Now where is this 1.92 Watts of ficticious reflected power delivered?

> >
> > Is the 1.92 Watts of ficticious reflected power dissipated in the load?
> NO!
> > The load is dissipating 11.52 Watts.
> >
> > Is the 1.92 Watts of ficticious reflected power dissipated in the
internal
> > resistance? NO! The internal resistance is dissipating 17.28 Watts.
> >
> > Jeesh... we've got 1.92 Watts of ficticious reflected power all dressed
up
> > and no place to go!
> >
> > I say, since it didn't cost us any money to create this ficticious 1.92
> > Watts of reflected power, that we just ship it to those poor
Californians.
> > They really need all the free power they can get!
> >
> > In fact if all of us hams could just harness those tiny amounts of
> reflected
> > power created in our antenna systems by these wonderous equations all
over
> > the world and send them to California we could probably eliminate the
West
> > Coast Energy Crises.
> >
> > Reflected Power, AC, DC, whatever.... a crock in any form, bah, humbug!
> >
> > -Peter K1PO
> >
> >
> >
> >
> >
> >
> >
> >
> >
> >
> >
> >
> >
>
>

1852. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:08:53 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c9a52ij1@slb2.atl.mindspring.net>
Source record: 165148

Cecil:

[snip]
> If all the boundary condition assumptions are met, it can be proven
> mathematically that the meter reading is directly proportional to
> either forward or reflected joules/sec, i.e. power.
> --
> http://www.mindspring.com/~w6rca
[snip]

Agreed!

Bird has left it to the poor uneducated Model 43 owners to meet those "iffy" conditions.

Cecil have you ever read that great poem called "If" by Rudyard Kipling?

"If" the dog hadn't stopped to smell the "xxxxx" he might have caught the rabbit!

My whole point is that Bird, and others, just glibly label their meter faces with Watts, no more... they label them with "Reflected Watts" and "Forward Watts", when there are no such things.

Those manufacturers offer not one whit of information to the poor owners of those Model 43's about managing those boundary condition assumptions, or whatever...

Wow it's hot here in the Carribbean today, but we got a very nice breeze out of the East!

Best,

-Peter K1PO

-Peter K1PO

1853. About the YO-YO-TENNA Deluxe Dipole...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:09:37 UTC
From: ARS--KC8BCR@webtv.net
Message-ID: <15483-3AE82C21-108@storefull-131.iap.bryant.webtv.net>
Source record: 165149
Cross-posted to: rec.radio.swap,alt.ham-radio.marketplace,rec.radio.amateur.antenna,rec.radio.amateur.equipment

About the YO-YO-TENNA Deluxe, Portable Dipole Antenna System:

The ad came out earlier than we anticipated in WORLDRADIO magazine. Many of you are e-mailing that we don't have it featured on our website. You're right, they caught us off guard. BUT---the original YO-YO-TENNA is featured on the website. So just imagine TWO of these "fishing reel" style antennas connected to a PL-259 connector that you can plug directly into your HF transceiver or HF tuner. Introductory cost is $29.95 postpaid.

If you're an SWL, and want an RCA phono plug or 1/8" phone plug connecting the two reels, just let me know and I can fix you up pronto.

73, Bill - WA8MEA @ Jackson Co., MI QRP Club Station: KC8BCR

Our website - http://qth.com/dwm

1854. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:09:56 UTC
From: Bill Tippett <btippett@alum.MIT.edu>
Message-ID: <3AE82C34.DDA871BF@alum.MIT.edu>
Source record: 165161

Roy and Tom...related question: I have a 178' shunt-fed Rohn 45 tower (nothing else on it) that I use for transmit on 160 meters. It has a good ground system with ~110 radials ranging from 70-150' depending on the direction and it works well on 160. I thought this would be an excellent performer on 80 since it is ~5/8 wavelengths. However I found that it had terrible performance on 80...worse than a 1/4 wave GP with only 2 elevated radials! I believe others (WB9Z and ON4UN) have had similar experiences with "too tall" towers on 80. Wonder if either of you have any explanation for this? I've alwqays wondered if it had something to do with my matching system but it seemed to resonate as expected...i.e. a lower gamma tap than the 160 tap at ~60'.

73, Bill W4ZV

1855. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:20:48 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c9arj$4cf$1@slb5.atl.mindspring.net>
Source record: 165150

Rick:

[snip]
> If you think most power meters only read voltage, then you may not
understand
> how they actually work.
>
> Rick K1BQT
[snip]

I agree some professional wattmeters measure power directly, say using thermal effects, or by direct analog multiplication of I and V and not by a translation from voltage and current measurement.

Let's just say that, most amateur radio power meters "read" voltages by means of simple voltage sampling bridge cirucuits and their meter faces or digital displays are labeled in Watts.

I am sure there are many power meters and directional couplers that I don't understand. Probably as many as their are engineers to design them. On the other hand, I have designed and put into production a few different designs of literally millions of precision directional couplers for very wideband transmission line applications. And... they all seem to work.

Lot's of grey in my beard, lots of power measurements been seen by these weakening eyes, lots of free "reflected power" gone under the bridge, lots of missed opportunities, [If only I had asked Norma Jean to mary me when we were dating, I begged her not to go to Hollywood] and by now... I think I understand.

Heh, heh... probably just in time to go to the big ham shack in the sky.

Where exactly is the "Press Room"?

-Peter K1PO

1856. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:26:51 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE8302B.3667E39B@IEEE.org>
Source record: 165152

"Peter O. Brackett" wrote:
> Those manufacturers offer not one whit of information to the poor owners of
> those Model 43's about managing those boundary condition assumptions, or
> whatever...

"Let the buyer beware."
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1857. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:27:34 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c9b8a$b51$1@slb5.atl.mindspring.net>
Source record: 165151

John:

The only thing I question is "reflected power".

Why is that so terrible?

It just doesn't exist, it's a fiction.

John, do the numbers like I do, they just don't add up! They never do.
[Except for that one case when "reflected power" is zero.]

It's only simple grade school arithmetic.

That fiction called "reflected power" does not deny the existence of
reflections, which are real.

Just because reflected power as defined by the "experts" and "High Priests"
is a fiction, does not make reflections a fiction.

-Peter K1PO

"John O'Flaherty" <oflahert@toast.net> wrote in message
news:3AE82630.F18B5EE0@toast.net...
> "Peter O. Brackett" wrote:
>
> > John:
> >
> > Sorry, it seems that you have missed my point.
> >
> > Read my lips...
> >
> > I do not question reflections.
> >
> > I do not question reflections.
> >
> > I do not question reflections.
>
> I see you're demonstrating their existence. :-)
>
> john
>

1858. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:33:32 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c9bj9$p5d$1@slb2.atl.mindspring.net>
Source record: 165153

Cecil:

Oh... mathematically trivial cases eh...

Well let's see... the Bird Model 43 still registers forward and reflected power when the lines are vanishingly small.

I often connect my 50 Ohm transmitter on 3750 kHz to two 50 Ohm dummy loads in parallel through my Bird with about a total of 1 foot of 50 Ohm transmission line made up into a "Y".

Why? Just to check the "calibration" of the Bird.

Anybody else do that?

And...

The Bird Model 43 reflected power goes nearly off scale?

Is that trivial?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AE7A6E8.75001843@IEEE.org...
> "Peter O. Brackett" wrote:
> > On the other hand, what if the line had zero length, and the generator was
> > directly connected to the mismatched load...
> > Why then there would still be that "pesky" reflected power hovering around,
> > and no where for it to store its' family Joules!
>
> That is called the mathematically trivial case.
> --
> http://www.mindspring.com/~w6rca
>
>
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1859. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:34:52 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c9bm5$5gv$1@slb4.atl.mindspring.net>
Source record: 165154

Cecil:

I wonder what IEEE Dictionary says about "Continuous Wave" or CW.

Look it up for us.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE81917.BDB70D4A@IEEE.org...
> Wes Stewart wrote:
> >
> > W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> > >I keep telling them that it is impossible for a Continuous Wave
> > >to convey any information. :-)
> >
> > Doesn't the presence or absence of the signal convey information?
>
> There is no absence of the signal with a Continuous Wave. With an
> absence (interruption), it wouldn't be continuous. From Webster's:
> "continuous - marked by *uninterrupted* extension in time."
> They should have chosen DW for Discontinuous Wave instead of CW for
> Continuous Wave. :-)
> --
> http://www.mindspring.com/~w6rca
>
>
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1860. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:38:57 UTC
From: "M.J.Powell" <mike@pickmere.demon.co.uk>
Message-ID: <12m$nKABMD66Ew0j@pickmere.demon.co.uk>
Source record: 165039

In article <3AE7A79D.650E9467@IEEE.org>, W6RCecilA
<Cecil.A.Moore@IEEE.org> writes
>"Peter O. Brackett" wrote:
>> Hey, speaking of CW, why do they call it Continuous Wave when it's always
>> being keyed on and off.
>
>I keep telling them that it is impossible for a Continuous Wave
>to convey any information. :-)

There used to be a saying in the Armed Forces here in WW II that 'Every
time you switch on a transmitter you commit treason'.

Because you are giving information to the enemy.

73

Mike
--
M.J.Powell

1861. Re: keeping water out of 9913

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:39:51 UTC
From: Brian Reid <reidb@nbnet.nb.ca>
Message-ID: <3AE83342.226ED9A@nbnet.nb.ca>
Source record: 165155

Condensation can be a problem for sure. It will only form if there is an air space, fill the cavity of the fitting with dielectric grease and screw it on. I wipe the excess grease off the outside(that squeezes out) and wrap the fitting with silicone tape.

Brian
VE9WTH

Tom W8JI wrote:

> On Wed, 25 Apr 2001 16:24:29 -0400, "Rudy Marcelletti"
> <rudym@net-link.net> wrote:
>
> >Put a dab of RTV silicone in the hollow to plug up coax before putting on
> >the connector--that is if you are not in a hurry, otherwise make a good
> >"drip loop" at your connections.
>
> How do you stop condensation? Every time I've tried to use 9913, it
> fills up with water. The only time I have been successful is when I
> have sealked the top, ran the line vertically, and left the bottom
> open so condensation can "leak out".
>
> Even with sealed lines at BC stations, we always had to have them
> pressurized with dry air to keep they dry for a period of years.
>
> 73 Tom

1862. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:40:35 UTC
From: richardharrison@webtv.net
Message-ID: <4703-3AE83363-126@storefull-118.iap.bryant.webtv.net>
Source record: 165163

Gray Frierson Haertig wrote:
"Actually they break up the guy lines into electrically short pieces not non-resonant pieces."

True. Ed Laport reports the work of Abbot and Fisher in "Radio Antenna Engineering". It shows that parasitic radiation grows with the length of the re-radiator.

Here is a summary of what Ed says of guy wires. I gave his exact words at the start of this thread ages ago.

Guy current is proportional to the induced electromotive force.

Try to put guys where the fields are weak.

If a guy is resonant, detune it.

The chance of resonance is about the same whether the guy is broken with insulators or not. So, there is little justification for guy insulators except in very strong fields and this is only to make detuning easy by shorting out one or more insulators. (This is what Gray seems to disagree with, but this is what I`ve done and the practice has caused me no trouble in many installations.)
Explore the guys for parasitic currents as you would measure current in individual wires of a transmission line. If troublesome current is found, detune the guy wire.

Ed Laport has a chart of the far-field strength ratio of radiation from a parasitic element over that from the driven element. The driven element is a 1/4-wave unipole and the parasitic element has various lengths and spacings. Ed took the data from the work of Abbot and Fisher. It is found on page 299 of "Radio Antenna Engineering"

Here are the ratio values for 1/4-wave spacing and different parasitic lengths:
0.1wl 0.1
0.15wl 0.2
0.9wl 0.28
0.375wl 0.3
0.22wl 0.3
0.2wl 0.4
0.25wl 0.55
In general, the radiation from the parasite increases with its length. Closer spacing excites the parasite more. Shorter parasites radiate less.

Best regards, Richard Harroison, KB5WZI

1863. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:43:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE83422.BC382107@IEEE.org>
Source record: 165156

"Peter O. Brackett" wrote:
> Is that trivial?

You changed the subject. You were talking about *zero* lengths of
feedline. A zero length of transmission line is certainly the trivial
case of transmission line analysis. A *zero* frequency is certainly
the trivial case of RF analysis.
--
http://www.mindspring.com/~w6rca

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1864. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:48:00 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae8351d.157757941@news.aepnet.com>
Source record: 165157

On Thu, 26 Apr 2001 07:48:23 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Wes Stewart wrote:
>>
>> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>> >I keep telling them that it is impossible for a Continuous Wave
>> >to convey any information. :-)
>>
>> Doesn't the presence or absence of the signal convey information?
>
>There is no absence of the signal with a Continuous Wave. With an
>absence (interruption), it wouldn't be continuous. From Webster's:
>"continuous - marked by *uninterrupted* extension in time."
>They should have chosen DW for Discontinuous Wave instead of CW for
>Continuous Wave. :-)

Well picture this: I put on the air a CW beacon on say 144.01666 MHz. You have a receiver operating continously, tuned to this frequency. You probably don't hear my beacon, but let's say that next week you do. Doesn't that convey the information that the band is experiencing an opening between AZ and TX?

Or by your Webster's dictionary (did your IEEE dictionary fail you) are you inferring that there is no such thing as a CW signal, because if it never existed before, it cannot ever exist?

Wes Stewart N7WS
>--
>http://www.mindspring.com/~w6rca
>
>
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1865. Re: keeping water out of 9913

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:48:45 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <hzWF6.28212$Ce4.2066349@news1.rdc1.ct.home.com>
Source record: 165158

The coax has an air core. No matter how well you seal it, moisture laden
air will be drawn as the cable is heated and cooled, or as barometric
pressure changes.

As Tom noted, the only effective means to keep the cable dry is to maintain
a positive pressure of dry air or nitrogen in the cable.

Pete

"Brian Reid" <reidb@nbnet.nb.ca> wrote in message
news:3AE83342.226ED9A@nbnet.nb.ca...
> Condensation can be a problem for sure. It will only form if there is an
air
> space, fill the cavity of the fitting with dielectric grease and screw it
on.
> I wipe the excess grease off the outside(that squeezes out) and wrap the
> fitting with silicone tape.
>
> Brian
> VE9WTH
>
> Tom W8JI wrote:
>
> > On Wed, 25 Apr 2001 16:24:29 -0400, "Rudy Marcelletti"
> > <rudym@net-link.net> wrote:
> >
> > >Put a dab of RTV silicone in the hollow to plug up coax before putting
on
> > >the connector--that is if you are not in a hurry, otherwise make a good
> > >"drip loop" at your connections.
> >
> > How do you stop condensation? Every time I've tried to use 9913, it
> > fills up with water. The only time I have been successful is when I
> > have sealked the top, ran the line vertically, and left the bottom
> > open so condensation can "leak out".
> >
> > Even with sealed lines at BC stations, we always had to have them
> > pressurized with dry air to keep they dry for a period of years.
> >
> > 73 Tom
>

1866. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 14:49:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE8357C.88B3AFCB@IEEE.org>
Source record: 165159

"Peter O. Brackett" wrote:
> I wonder what IEEE Dictionary says about "Continuous Wave" or CW.

"continuous wave (1) Waves, the successive oscillations of which are identical under steady-state conditions. (2) The output of a laser which is operated in a continuous rather than pulsed mode. (3) A carrier that is not modulated or switched. (4) A sinusoidal wave that has reached a steady state value."

"CW - see continuous wave"
--
http://www.mindspring.com/~w6rca

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1867. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 15:08:48 UTC
From: AC6V <ac6v@ix.netcom.com>
Message-ID: <3AE839FF.B525FEF0@ix.netcom.com>
Source record: 165160

Been following this thread for quite a while and would like to submit the following.
For maximum power transfer I was taught that that only occurs when the source,
transmission line and load are all of equal impedance. So when there is a mismatch
with accompaning VSWR, it is not possible to get the rated transmitter power to the
load. At URL:
http://ewhdbks.mugu.navy.mil/VSWR.htm
It states:

When a transmission line is terminated with an impedance, ZL, that is not equal to
the characteristic impedance of the
transmission line, ZO, not all of the incident power is absorbed by the termination.

"Also of considerable interest is the mismatch loss. This is a measure of how much
the transmitted power is attenuated due to reflection. It is given by the following
equation:

Mismatch Loss = -10 log (1 -r 2)

For example, an antenna with a VSWR of 2:1 would have a reflection coefficient of
0.333, a mismatch loss of 0.51 dB, and a return loss of 9.54 dB (11% of your
transmitter power is reflected back).

In some systems this is not a trivial amount and points to the need for components
with low VSWR.

If 1000 watts (60 dBm/30 dBW) is applied to this antenna, the return loss would be
9.54 dB. Therefore, 111.1 watts would be reflected and 888.9 watts (59.488
dBm/29.488 dBW) would be transmitted, so the mismatch loss would be 0.512 dB."
==========
In addition I believe one would have loss due to the dB loss of the feedline

Any way the article at URL:
http://ewhdbks.mugu.navy.mil/VSWR.htm
is the one I have always believed to be the explanation of VSWR and accompaning
losses.

So would appreciate comments from the experts.
--
73 From Rod AC6V In San Diego
700 Ham Topics & 6,000 Links
http://ac6v.com/
I Doubt, Therefore I Might Be!!!

1868. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 15:13:50 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae83b28.159305469@news.aepnet.com>
Source record: 165162

On Thu, 26 Apr 2001 00:38:12 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:

>I wonder what other people think about the prospect of the ionosphere
>being heated by contest operators, and that causing the bands to open
>up?
>
>That was a topic on a contesting reflector.
>
>It seems a few people think that the power levels from activity during
>contests actually causes the ionization to change. An offshoot of that
>was an opinion that the ionosphere is non-linear....and that 10 dB of
>transmitter power change produces more than ten dB of receiver signal
>level change.

I don't think so. I haven't kept up with the HAARP project
(http://server5550.itd.nrl.navy.mil/projects/haarp/haarpIndex.html) but it's
precursor was operating back in the seventies (as I recall) and there was a
multi-megawatt station in Colorado operating in the lower h-f spectrum. As in
HAARP, the antenna was an array of phased dipoles configured to radiate straight
up; the idea being to heat the ionosphere directly above the station.

Quite a few of us serious 2m operators set up schedules to try and use this
'artificial ionosphere' for propagation. We could hear the h-f signal come and
go and timed our transmissions accordingly. It never worked.

The Russians were also experimenting with this at the same time. I believe
there was an IEEE paper on the subject.

Wes Stewart N7WS
>
>No, this was not an April 1 joke.
>
>Opinions?
>
>73 Tom

1869. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 15:18:49 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE83C59.7E6EE6FB@IEEE.org>
Source record: 165164

Wes Stewart wrote:
> Or by your Webster's dictionary (did your IEEE dictionary fail you) are you
> inferring that there is no such thing as a CW signal, because if it never
> existed before, it cannot ever exist?

Wes, you must have missed my smiley faces. Even the IEEE Dictionary gets
the definition of "continuous" correct. A Continuous Wave signal cannot
be keyed because that would make it discontinuous. If your beacon is
truely Continuous Wave then you are breaking the law by not IDing. :-)
Obviously, a Continuous Wave must have a beginning but if it is ever
turned off, it wasn't a Continuous Wave.
--
http://www.mindspring.com/~w6rca

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1870. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 15:36:28 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3ae8411b$0$88181$bbae4d71@news.net-link.net>
Source record: 165165

Barry D wrote in message Eventually, I plan to
>> run a 500w amp off batteries also. Probably two batteries in parallel
>> though for that though. MK
>
>I would have thought you need more than two batteries in parallel for 500
>watts. I suppose it also depends how long you are going to transmit before
>recharging.
>
>Barry D.
>
I use the vehicle starting battery for the 706. I use 2 batteries off an isolator for the SGC amp. 8 gauge cable from isolator to 1st battery (about 5 feet) and 4 gauge cable from 1st battery to second battery, located next to amp. When voltage on the amp batteries gets too low (prior to FM'ing) the amp will trip off line. There is still enough capacity left in the amp batteries to jump start the vehicle. I get about 15 minutes or so of total intermittent key down time with amp, without the engine running. If I elect to not use the amp, then I have another stock cable from the amp batteries I hook to the radio, and running barefoot, can rag chew until the rooster crows.

1871. Re: keeping water out of 9913

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 15:38:20 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3ae8418a$0$88183$bbae4d71@news.net-link.net>
Source record: 165166

So how do you do that with 9913 or 9913F?
Peter J. Bertini wrote in message ...
>The coax has an air core. No matter how well you seal it, moisture laden
>air will be drawn as the cable is heated and cooled, or as barometric
>pressure changes.
>
>As Tom noted, the only effective means to keep the cable dry is to
maintain
>a positive pressure of dry air or nitrogen in the cable.
>
>Pete
>
>
>"Brian Reid" <reidb@nbnet.nb.ca> wrote in message
>news:3AE83342.226ED9A@nbnet.nb.ca...
>> Condensation can be a problem for sure. It will only form if there is an
>air
>> space, fill the cavity of the fitting with dielectric grease and screw it
>on.
>> I wipe the excess grease off the outside(that squeezes out) and wrap the
>> fitting with silicone tape.
>>
>> Brian
>> VE9WTH
>>
>> Tom W8JI wrote:
>>
>> > On Wed, 25 Apr 2001 16:24:29 -0400, "Rudy Marcelletti"
>> > <rudym@net-link.net> wrote:
>> >
>> > >Put a dab of RTV silicone in the hollow to plug up coax before putting
>on
>> > >the connector--that is if you are not in a hurry, otherwise make a
>good
>> > >"drip loop" at your connections.
>> >
>> > How do you stop condensation? Every time I've tried to use 9913, it
>> > fills up with water. The only time I have been successful is when I
>> > have sealked the top, ran the line vertically, and left the bottom
>> > open so condensation can "leak out".
>> >
>> > Even with sealed lines at BC stations, we always had to have them
>> > pressurized with dry air to keep they dry for a period of years.
>> >

>> > 73 Tom
>>
>
>

1872. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 15:46:45 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE842E5.85514CFD@IEEE.org>
Source record: 165167

AC6V wrote:
> When a transmission line is terminated with an impedance, ZL, that is not equal to
> the characteristic impedance of the
> transmission line, ZO, not all of the incident power is absorbed by the termination.

This is true but is compensated for by increasing the incident power without increasing the generated power. That's what the Z0-match provided by a tuner does.

> "Also of considerable interest is the mismatch loss.
> In some systems this is not a trivial amount and points to the need for components
> with low VSWR.

"Mismatch loss" may not be the correct term. "Additional loss due to SWR" is more accurate. And it points to the need for components with low SWR *OR* for components designed to tolerate a high SWR. A near lossless feedline, like open-wire feeder used on HF, tolerates reasonably high SWRs while maintaining (usually) negligible losses from SWR. A system Z0-match, provided by a tuner, prevents mismatch loss from being much more than I^2*R loss, at least on HF.

> If 1000 watts (60 dBm/30 dBW) is applied to this antenna, the return loss would be
> 9.54 dB. Therefore, 111.1 watts would be reflected and 888.9 watts (59.488
> dBm/29.488 dBW) would be transmitted, so the mismatch loss would be 0.512 dB."

If a Z0-match exists in the system, caused by a tuner or other means of matching, the return loss is not lost. Consider a transmission line with an SWR of 5.83:1 and a generated power of 100 watts. Neglecting losses, the forward power will be 200 watts, the reflected power will be 100 watts, and the power delivered to the load is 100 watts - equal to the generated power. Now, all we have to worry about is feedline loss which is mostly I^2*R losses at HF. Under most HF conditions, if we choose open-wire line, we will suffer negligible feedline losses.

Even if we choose 100ft of RG-213 on 40m with an SWR of 5.83:1, the loss in the feedline will be about 1.4dB or a small portion of an S-unit. So the absolute loss in this "mismatched" system driven by 100 watts is about the same as it would be in a perfectly matched system driven by 250 watts. It is something to be considered and not rejected without consideration.
--
http://www.mindspring.com/~w6rca

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1873. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 15:53:19 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE8446F.93393BD@IEEE.org>
Source record: 165168

Bill Tippett wrote:
> I believe others (WB9Z and ON4UN) have had
> similar experiences with "too tall" towers on 80. Wonder if either of
> you have any explanation for this?

One problem with a 5/8WL at HF is a relatively major lobe of radiation
at a relatively high angle. The energy from the high lobe can interfere
with the energy from the lower lobe and cause very undesirable phasing
problems at certain distances under certain propagation conditions.
--
http://www.mindspring.com/~w6rca

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1874. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 15:58:22 UTC
From: AC6V <ac6v@ix.netcom.com>
Message-ID: <3AE8459D.744F1DF9@ix.netcom.com>
Source record: 165019

Hi Cecil - thanks for the reply, but let us leave the tuner out of the equation for the moment. Now is the info at URL:
http://ewhdbks.mugu.navy.mil/VSWR.htm
True or not???
W6RCecilA wrote:

> AC6V wrote:
> > When a transmission line is terminated with an impedance, ZL, that is not equal to
> > the characteristic impedance of the
> > transmission line, ZO, not all of the incident power is absorbed by the termination.
>
> This is true but is compensated for by increasing the incident power without
> increasing the generated power. That's what the Z0-match provided by a tuner
> does.
>
> > "Also of considerable interest is the mismatch loss.
> > In some systems this is not a trivial amount and points to the need for components
> > with low VSWR.
>
> "Mismatch loss" may not be the correct term. "Additional loss due to SWR" is
> more accurate. And it points to the need for components with low SWR *OR* for
> components designed to tolerate a high SWR. A near lossless feedline, like
> open-wire feeder used on HF, tolerates reasonably high SWRs while maintaining
> (usually) negligible losses from SWR. A system Z0-match, provided by a tuner,
> prevents mismatch loss from being much more than I^2*R loss, at least on HF.
>
> > If 1000 watts (60 dBm/30 dBW) is applied to this antenna, the return loss would be
> > 9.54 dB. Therefore, 111.1 watts would be reflected and 888.9 watts (59.488
> > dBm/29.488 dBW) would be transmitted, so the mismatch loss would be 0.512 dB."
>
> If a Z0-match exists in the system, caused by a tuner or other means of matching,
> the return loss is not lost. Consider a transmission line with an SWR of 5.83:1
> and a generated power of 100 watts. Neglecting losses, the forward power will
> be 200 watts, the reflected power will be 100 watts, and the power delivered
> to the load is 100 watts - equal to the generated power. Now, all we have to
> worry about is feedline loss which is mostly I^2*R losses at HF. Under most
> HF conditions, if we choose open-wire line, we will suffer negligible feedline
> losses.
>
> Even if we choose 100ft of RG-213 on 40m with an SWR of 5.83:1, the loss in the
> feedline will be about 1.4dB or a small portion of an S-unit. So the absolute
> loss in this "mismatched" system driven by 100 watts is about the same as it
> would be in a perfectly matched system driven by 250 watts. It is something
> to be considered and not rejected without consideration.

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>
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73 From Rod AC6V In San Diego
700 Ham Topics & 6,000 Links
http://ac6v.com/
I Doubt, Therefore I Might Be!!!

1875. Re: Direct Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 16:06:03 UTC
From: kb7qhc@home.com
Message-ID: <3ae9456b.2639246575@news.seanet.com>
Source record: 165020

On Wed, 25 Apr 2001 18:39:00 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>In steady state DC circuits is there a place for impedance matching,
>reflection analysis, and reflected power?
>
>Let's consider our transmitter to be a 12 volt battery with internal
>resistance of say 3 Ohms.
>
>This battery has an open circuit voltage of Voc = 12 Volts and a short
>circuit current of Isc = Voc/Rint = 12/3 = 4 Amps.
>
>Now let's connect this transmitter, er... battery to a load of resistance 2
>Ohms through a lossless transmission line of sufficiently short length to
>allow us to do the experiment in our basement lab, heh, heh... no 1000 mile
>long lossless lines please.
>
>We now have our 2 Ohm load connected and the charges (electrons or protons,
>or what?) are flowing.
>
>Now in this situation, is the battery mismatched to the load? How much
>power is delivered to the load? How much power is dissipated in the
>battery's internal resistance? How much reflected power is there and where
>is it dissipated?
>
>Let's see...
>
>The total resistance in the circuit is 3 Ohms internal battery resistance
>plus 2 Ohms load resistance...
>
>Rtotal = 3 + 2 = 5 Ohms
>
>The current I through the lossless transmission line and into the load will
>be:
>
>I = Voc/Rtotal = 12/5 = 2.4 Amps.
>
>The voltage across the load will be:
>
>V = 2.4 * 2 = 4.8 Volts.
>
>The power delivered to the load, let's call it Pd and (Dare I say)
>dissipated in the load will be:
>

>Pd = V*I = 4.8*2.4 = 11.52 Watts.
>
>The power dissipated in the internal battery resistance will be:
>
>Pint = 2.4 * 7.2 = 17.28 Watts.
>
>And so the total power being extracted from that poor struggling battery and
>dissipated in the load and internal resistance will be:
>
>Ptotal = 17.28 + 11.52 = 28.8 Watts.
>
>Aside: If the load had been "matched" to the "transmitter" er... battery,
>the load would not have been 2 Ohms but 3 Ohms for a total of 6 Ohms in the
>circuit, with a current of 12/6 = 2 Amps, and a load voltage of 6 Volts,
>with a load power of 12 Watts and an internal power of 12 Watts for a total
>of 24 Watts.
>
>Now let's calculate the "reflected power" in this mismatched situation...
>
>Let's see now we start by calculating the ficticious "reflected voltage" b
>measured somewhere on the lossless transmission line. (Oh heck lets make it
>at the transmitter end.):
>
>b = V - IR
>
>But wait! We haven't yet specified R???
>
>Heh, heh... what is the "surge resistance" R of our lossless transmission
>line? Does it matter? What?
>
>OK for picayune readers we might have to choose R to be the value of the
>perfectly matched load, i.e. R = 3 Ohms. But I insist that it doesn't
>matter a damm, because it's all a fiction anyway.
>
>Using R = 3 Ohms as the surge resistance of our lossless line.
>
>b = V - IR = 4.8 - 2.4 * 3 = 4.8 - 7.2 = -2.4 Volts
>
>So the ficticious reflected voltage which does not exist anywhere in the
>circuitry for this "mismatched "2 Ohm load is -2.4 Volts.
>
>Clearly by elementary analysis (Use V squared over R or however you wish to
>calculate it.) we can now calculate the ficticious reflected power... Pr
>
>Pr = b*b/R = (-2.4)*(-2.4)/3 = 5.76/3 = 1.92 Watts. of purely ficticious
>reflected power!
>
>Now where is this 1.92 Watts of ficticious reflected power delivered?
>
>Is the 1.92 Watts of ficticious reflected power dissipated in the load? NO!

>The load is dissipating 11.52 Watts.
>
>Is the 1.92 Watts of ficticious reflected power dissipated in the internal
>resistance? NO! The internal resistance is dissipating 17.28 Watts.
>
>Jeesh... we've got 1.92 Watts of ficticious reflected power all dressed up
>and no place to go!
>
>I say, since it didn't cost us any money to create this ficticious 1.92
>Watts of reflected power, that we just ship it to those poor Californians.
>They really need all the free power they can get!
>
>In fact if all of us hams could just harness those tiny amounts of reflected
>power created in our antenna systems by these wonderous equations all over
>the world and send them to California we could probably eliminate the West
>Coast Energy Crises.
>
>Reflected Power, AC, DC, whatever.... a crock in any form, bah, humbug!
>
>-Peter K1PO
>

Hi Peter,

Well I see the objections remain from my response in an earlier
thread.

Again, your argument is not an argument, it is a recitation of facts.
It is unsettling when you choose to go your own way with this
assignment of the "transmission line Z." Standard theory (which you
claim to support) would have the valuation pegged at 2 Ohms, not
arbitrarily set to 3 (even if it doesn't make a difference).

And the fact remains, if you remove time from the basic consideration,
it is a non-sequitar (not a proof) that there are no standing waves (a
time based phenomenon).

Perhaps you should try this again using standard math and techniques.

73's
Richard Clark, KB7QHC

1876. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 16:25:23 UTC
From: kb7qhc@home.com
Message-ID: <3ae84ab7.2640602525@news.seanet.com>
Source record: 165021

On Wed, 25 Apr 2001 20:19:55 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Wes:
>
>OK, OK... I agree your thermistor get's hot... I don't have a problem with
>that.
>
which is then contradicted by:
>
>But your thermistor is not getting hot from dissipating that danged
>ficticious Reflected Power Pr = b*b/R which results from that specious
>calculation: Pr = Pi - Pt.

Hi Peter,

As the challenger, it is incumbent upon you to prove this statement.
Otherwise you stand to be identified as the messiah of a new formulary
of physics (and join herr doktor in that pantheon).

The heat is not derived from the power of the source? Are we witness
to a new phenomenon?

OH! I get it ;-)

You should get out of the sun and enjoy the tropical evenings more.
and if you happen to be near Martinique, try sampling their Rhum St.
James.

73's
Richard Clark, KB7QHC

1877. Re: WANTED: 10-80m Vertical for Roof Top

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 16:36:14 UTC
From: Rick Scott <kf7qz@yahoo.com>
Message-ID: <3AE84E7E.4FEAF646@yahoo.com>
Source record: 165023

W7AXE wrote:
> Can anyone could give me any good suggestions or recommendations on a 10-80m

Butternut HF6V with radials.

Rick KF7QZ

1878. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 16:47:18 UTC
From: John O'Flaherty <o'flahert@toast.net>
Message-ID: <3AE85115.E2B5CE9E@toast.net>
Source record: 165022

"Peter O. Brackett" wrote:

> John:
>
> The only thing I question is "reflected power".
>
> Why is that so terrible?
>
> It just doesn't exist, it's a fiction.
>
> John, do the numbers like I do, they just don't add up! They never do.
> [Except for that one case when "reflected power" is zero.]
>
> It's only simple grade school arithmetic.
>
> That fiction called "reflected power" does not deny the existence of
> reflections, which are real.
>
> Just because reflected power as defined by the "experts" and "High Priests"
> is a fiction, does not make reflections a fiction.

I don't think it's terrible to question anything. Everything can be questioned (except whether everything can be questioned).
So now I proceed to question:
What are these numbers that don't add up? You seem to go off into long arguments about DC, or some other straw man.Reflections of the type we've been discussing don't exist at DC. You speak of zero frequency, which has no meaning as a frequency except in contexts of heterodyning or sampling, where one adds and subtracts frequencies, and then they can go to and below zero. As I pointed out in another thread, frequencies in an absolute sense don't go to zero, they just get smaller and smaller. And everything that is true about 10 MHz is true about 10 uhz, if everything is scaled properly.
Another of the straw men is the idea that you would send reflected power to California, to put it to good use, as if anyone else had claimed that reflected power was energy permanently lost or in excess.
Where are all the mislead millions, where is the rampant error? Are you a lone prophet, or is there anyone else in the world that rejects the notion of reflected power?
What numbers don't add up, without introducing DC, without invoking dissipation?

john
--
remove apostrophe to reply

1879. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 17:14:41 UTC
From: k3bu@aol.com
Message-ID: <20010426131441.15489.00002333@ng-fc1.aol.com>
Source record: 165024

> Even the IEEE Dictionary gets
>the definition of "continuous" correct. A Continuous Wave signal cannot
>be keyed because that would make it discontinuous. If your beacon is
>truely Continuous Wave then you are breaking the law by not IDing. :-)
>Obviously, a Continuous Wave must have a beginning but if it is ever
>turned off, it wasn't a Continuous Wave.
>--
>http://www.mindspring.com/~w6rca
>

How about difference between "continuous wave" and "continuous signal" ?
You could have continuous wave that is keyed into "broken" continuous wave =
keyed continuous wave signal. According to your implication, there could be
never continuous wave that wasn't started or ended or interrupted.

If you can't match your coax to transmitter, and antenna to the coax
impedances, then you pay with loses. Nobody seems to worry about matching
antenna impedance to the space impedance for maximum power transfer. I wish
Tesla was still around.

73 Yuri, K3BU
matched all the way

1880. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 17:17:38 UTC
From: richardharrison@webtv.net
Message-ID: <7246-3AE85832-125@storefull-114.iap.bryant.webtv.net>
Source record: 165029

Tom, W8JI wrote on Mon. Apr.23, 2001,12:50am:
"A 5/8 wl antenna has NO gain over a 1/2 wl antenna when it is up in the air. In many cases, it has less."

I replied:
"A 5/8 wl antenna up in the air has a slight gain in its best direction over a 1/2 wl antenna."

It is well known that radiation increases with radiator length up to about 5/8 wl, at which point it begins to suffer from the phase-reversal which happens when the 1/2-wave length of wire is reached. Beyond 5/8 wl, the reversed phase radiation from the extended length takes away from the signal in the best direction.

Some medium-wave broadcasters use 5/8 wl antennas. Economics would rule this out were there no gain in the 5/8-wave antenna.

I quoted from a plot taken directly from the FCC rules giving the gain of a 5/8-wave antenna over a 1/2-wave antenna. Roy responded that Tom was talking about skywave propagation.

Well, the FCC curves were published to be "---useful for calculating the field intensity that the antenna will produce at great distance from the antenna by skywave propagation."

Why does Tom not admit he was wrong? A 5/8 wl antenna does have gain over a 1/2 wl antenna when it is up in the air.

Best regards, Richard Harrison, KB5WZI

1881. Re: Direct Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 17:19:28 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <AMYF6.4667$AU4.392500@bgtnsc04-news.ops.worldnet.att.net>
Source record: 165025

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9c99k1ehb1@nntp9.atl.mindspring.net...
> Steve:
>
> Hey... serious, me?
>
> What?
>
> Steve, I'm off work for a few days, sitting on a sailing yacht here in the
> Carribean, preparing a pitcher of Margaritas for later, and messing with
my
> friends on a USENET NG from my Sony laptop computer, what could be more
fun?
>

You're on a yacht in the Carribean and can't find anything more fun to do
than mess with the guys on USENET?

WHAT???

> Got sunburn on my forehead, nose, etc... I forgot to put the SPF 30 on the
> first couple of days!
>
> After a little fishing here this morning, I think I'll go ashore later
this
> evening and see what the locals are doing.
>
> Try and sell em some imaginary resistors or maybe some cheap reflected
> power, heh, heh.
>
> Jeesh... your post just reminded me, I have to go back to work next
> Monday...
>
> Cheers,
>
> -Peter K1PO
>
>
>
> "VE9SRB" <srbest@att.net> wrote in message
> news:2XTF6.37295$IJ1.3137128@bgtnsc05-news.ops.worldnet.att.net...
> > Peter:
> >
> > You're taking this way too seriously. Relax, go have a beer and enjoy
the

> > day. We'll still be here tomorrow.
> >
> > Take care
> >
> > Steve
> >
> >
> > "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> > news:9c7jli$q4i$1@nntp9.atl.mindspring.net...
> > > In steady state DC circuits is there a place for impedance matching,
> > > reflection analysis, and reflected power?
> > >
> > > Let's consider our transmitter to be a 12 volt battery with internal
> > > resistance of say 3 Ohms.
> > >
> > > This battery has an open circuit voltage of Voc = 12 Volts and a short
> > > circuit current of Isc = Voc/Rint = 12/3 = 4 Amps.
> > >
> > > Now let's connect this transmitter, er... battery to a load of
> resistance
> > 2
> > > Ohms through a lossless transmission line of sufficiently short length
> to
> > > allow us to do the experiment in our basement lab, heh, heh... no 1000
> > mile
> > > long lossless lines please.
> > >
> > > We now have our 2 Ohm load connected and the charges (electrons or
> > protons,
> > > or what?) are flowing.
> > >
> > > Now in this situation, is the battery mismatched to the load? How
much
> > > power is delivered to the load? How much power is dissipated in the
> > > battery's internal resistance? How much reflected power is there and
> > where
> > > is it dissipated?
> > >
> > > Let's see...
> > >
> > > The total resistance in the circuit is 3 Ohms internal battery
> resistance
> > > plus 2 Ohms load resistance...
> > >
> > > Rtotal = 3 + 2 = 5 Ohms
> > >
> > > The current I through the lossless transmission line and into the load
> > will
> > > be:
> > >

> > > I = Voc/Rtotal = 12/5 = 2.4 Amps.
> > >
> > > The voltage across the load will be:
> > >
> > > V = 2.4 * 2 = 4.8 Volts.
> > >
> > > The power delivered to the load, let's call it Pd and (Dare I say)
> > > dissipated in the load will be:
> > >
> > > Pd = V*I = 4.8*2.4 = 11.52 Watts.
> > >
> > > The power dissipated in the internal battery resistance will be:
> > >
> > > Pint = 2.4 * 7.2 = 17.28 Watts.
> > >
> > > And so the total power being extracted from that poor struggling
battery
> > and
> > > dissipated in the load and internal resistance will be:
> > >
> > > Ptotal = 17.28 + 11.52 = 28.8 Watts.
> > >
> > > Aside: If the load had been "matched" to the "transmitter" er...
> battery,
> > > the load would not have been 2 Ohms but 3 Ohms for a total of 6 Ohms
in
> > the
> > > circuit, with a current of 12/6 = 2 Amps, and a load voltage of 6
Volts,
> > > with a load power of 12 Watts and an internal power of 12 Watts for a
> > total
> > > of 24 Watts.
> > >
> > > Now let's calculate the "reflected power" in this mismatched
> situation...
> > >
> > > Let's see now we start by calculating the ficticious "reflected
voltage"
> b
> > > measured somewhere on the lossless transmission line. (Oh heck lets
make
> > it
> > > at the transmitter end.):
> > >
> > > b = V - IR
> > >
> > > But wait! We haven't yet specified R???
> > >
> > > Heh, heh... what is the "surge resistance" R of our lossless
> transmission

> > > line? Does it matter? What?
> > >
> > > OK for picayune readers we might have to choose R to be the value of
the
> > > perfectly matched load, i.e. R = 3 Ohms. But I insist that it doesn't
> > > matter a damm, because it's all a fiction anyway.
> > >
> > > Using R = 3 Ohms as the surge resistance of our lossless line.
> > >
> > > b = V - IR = 4.8 - 2.4 * 3 = 4.8 - 7.2 = -2.4 Volts
> > >
> > > So the ficticious reflected voltage which does not exist anywhere in
the
> > > circuitry for this "mismatched "2 Ohm load is -2.4 Volts.
> > >
> > > Clearly by elementary analysis (Use V squared over R or however you
wish
> > to
> > > calculate it.) we can now calculate the ficticious reflected power...
Pr
> > >
> > > Pr = b*b/R = (-2.4)*(-2.4)/3 = 5.76/3 = 1.92 Watts. of purely
> ficticious
> > > reflected power!
> > >
> > > Now where is this 1.92 Watts of ficticious reflected power delivered?
> > >
> > > Is the 1.92 Watts of ficticious reflected power dissipated in the
load?
> > NO!
> > > The load is dissipating 11.52 Watts.
> > >
> > > Is the 1.92 Watts of ficticious reflected power dissipated in the
> internal
> > > resistance? NO! The internal resistance is dissipating 17.28 Watts.
> > >
> > > Jeesh... we've got 1.92 Watts of ficticious reflected power all
dressed
> up
> > > and no place to go!
> > >
> > > I say, since it didn't cost us any money to create this ficticious
1.92
> > > Watts of reflected power, that we just ship it to those poor
> Californians.
> > > They really need all the free power they can get!
> > >
> > > In fact if all of us hams could just harness those tiny amounts of
> > reflected
> > > power created in our antenna systems by these wonderous equations all

> over
> > > the world and send them to California we could probably eliminate the
> West
> > > Coast Energy Crises.
> > >
> > > Reflected Power, AC, DC, whatever.... a crock in any form, bah,
humbug!
> > >
> > > -Peter K1PO
> > >
> > >
> > >
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>

1882. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 17:22:33 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <tPYF6.4672$AU4.392378@bgtnsc04-news.ops.worldnet.att.net>
Source record: 165026

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9c9b8a$b51$1@slb5.atl.mindspring.net...
> John:
>
> The only thing I question is "reflected power".
>
> Why is that so terrible?
>
> It just doesn't exist, it's a fiction.
>
> John, do the numbers like I do, they just don't add up! They never do.
> [Except for that one case when "reflected power" is zero.]
>
> It's only simple grade school arithmetic.
>
> That fiction called "reflected power" does not deny the existence of
> reflections, which are real.
>
> Just because reflected power as defined by the "experts" and "High
Priests"
> is a fiction, does not make reflections a fiction.
>
> -Peter K1PO
>

You have clearly been drinking way too many Margaritas. I think the sun has
also burned a little deeper into your forehead than you think.

Have fun.

1883. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 17:39:51 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE85D67.124E0EF6@IEEE.org>
Source record: 165027

AC6V wrote:
>
> Hi Cecil - thanks for the reply, but let us leave the tuner out of the equation for the
> moment. Now is the info at URL:
> http://ewhdbks.mugu.navy.mil/VSWR.htm
> True or not???

It is true for systems driven by a generator with a circulator and a load for the reflected power. It is misleading for the average HF ham system which normally contains a Z0-match provided by a tuner. If one doesn't want to bother with any matching at all, then the stuff on that web page is relevant. However, for the average HF ham system, it doesn't tell the whole story.

Stated simply, if the reflected power is lost then it is lost. If the reflected power is not lost, then it is not lost. In the average HF ham system, the reflected power is not lost except in some, possibly small, additional I^2*R copper losses due to the higher currents caused by the higher SWR.

When analyzing a system, we can draw the system box anywhere we choose. If we draw the box at the tuner Z0-match, then the *system* is not mismatched and therefore doesn't suffer from mismatch loss. What this means from a practical standpoint is that if we do something to keep reflected waves from reaching the transmitter, then there is no mismatch loss in the transmitter. That's what a tuner does - keeps reflected energy from reaching the transmitter.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1884. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 17:43:31 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE85E43.9C0A204E@IEEE.org>
Source record: 165028

Yuri Blanarovich wrote:
> How about difference between "continuous wave" and "continuous signal" ?

"Continuous signal" is not in the IEEE Dictionary and therefore, doesn't
matter. :-)

> I wish Tesla was still around.

Some people believe that Tesla was actually responsible for that
Siberian blast around the turn of the last century.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1885. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 17:45:51 UTC
From: richardharrison@webtv.net
Message-ID: <4703-3AE85ECF-146@storefull-118.iap.bryant.webtv.net>
Source record: 165031

Roy, W7EL wrote:
"Over perfect ground, the 5/8 wave vertical has a gain of 2.93 dB over the 1/4 wave vertical at zero elevation angle."

The FCC chart shows the field strengths of a 5/8-wave and a 1/4-wave dead even at an elevation angle of about 15 degrees. Below 15 degrees, the 5/8-wave has gain over the 1/2-wave antenna.. After all, the 5/8-wave antenna gain comes from suppression of radiation at higher elevation angles.

Best regards, Richard Harrison, KB5WZI

1886. Ham IV Rotator and Control Box

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 17:49:23 UTC
From: Chuck Costa <cvc@bigfoot.com>
Message-ID: <DcZF6.22710$Jh5.22242131@news1.rdc1.sfba.home.com>
Source record: 165030

Ham IV Rotator and Control Box excellent condition all hardware and control box included. $330 Shipped.

K6CVC@home.com

Chuck

1887. Re: Direct Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 18:15:52 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9c9ok7$dp1$1@slb1.atl.mindspring.net>
Source record: 165032

Richard:

I agree with you, I have removed the "time" element by letting frequency approach zero, but, but, but... you must admit.... there is still that pesky "reflected power" hanging around, even in the DC case!

That dammed fiction just won't go away.

Make the DC lossless line in the mismatched battery setup any characteristic impedance you want, use any reference impedance you want in the reflected voltmeter, but... the fact remains, even at DC, any self-respecting sampling directional coupler "meter", which indicates b = V - IR will show a "reflected power" indication on it's meter face when hooked into a mismatched situation, DC or AC, it simply doesn't matter. A mismatch is a mismatch.

And if there is a mismatch there must be a reflected power right?

I just came back from San Francisco, where I took the Powell street cable car across town to Hyde Pier, I like to hang out at our country's only floating National Park. Carved deeply in the wood beam near the roof of the old cable car was the inscription, "Humprhey Bogart - 1946". I asked the cable car driver if Bogart had really ridden this cable car. His answer... "It's written down, so it must be true!" Heh, heh... I love those San Francisco cable car drivers.

In the set up wer are disucssing the battery is mismatched to the load, and the reflected power was there. Was it not? Yes, No, Maybe....

Reflected Power of 1.92 Watts all dressed up with no place to go!

If that's not a "fiction", I don't know what is.

Give it up I say, it won't hurt.

You don't have to deny the existence of reflections to deny the existence of "reflected power". Reflections are very real!

All you have to do is to admit that there is no such thing as "reflected power" as it is conventionaly defined, numerically calculated and/or presented as a value on the face of measuring instruements..

It should be easier to "visualize" this fiction at DC, since clearly there are no "reflections" at DC.

Yet at DC the "fiction" still exists, and is clearly seen as the fake it is.

We can go back and do the same calculations at any single AC frequency you desire. The results will be the same. Fiction pure and simple.

Reflected Power, is just a convenient fiction useful as an intermediate step for certain calculations, nothing more nothing less.

Reflected Power has no intrinsic value per se... costs nothing to produce, no one can bill you for it, it can not operate the energizer bunny, it will not blow a fuse, and the benefit is that all it requires is only some elementary arithmetic to produce.

Reflected Power, Nuthin much! No watts there! Merely the misuse of a few words... used to describe a "made up" quantitiy describing an intermediate stage of a mathematical manipulation.

Don't need to write books about it... don't need to create religions around it...

Let's fugadaboutit and get on with the more interesting parts of reflections and transmission line dynamics.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:3ae9456b.2639246575@news.seanet.com...
> On Wed, 25 Apr 2001 18:39:00 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >In steady state DC circuits is there a place for impedance matching,
> >reflection analysis, and reflected power?
> >
> >Let's consider our transmitter to be a 12 volt battery with internal
> >resistance of say 3 Ohms.
> >
> >This battery has an open circuit voltage of Voc = 12 Volts and a short
> >circuit current of Isc = Voc/Rint = 12/3 = 4 Amps.
> >
> >Now let's connect this transmitter, er... battery to a load of resistance 2
> >Ohms through a lossless transmission line of sufficiently short length to
> >allow us to do the experiment in our basement lab, heh, heh... no 1000 mile
> >long lossless lines please.
> >
> >We now have our 2 Ohm load connected and the charges (electrons or protons,
> >or what?) are flowing.
> >
> >Now in this situation, is the battery mismatched to the load? How much
> >power is delivered to the load? How much power is dissipated in the
> >battery's internal resistance? How much reflected power is there and where
> >is it dissipated?
> >
> >Let's see...
> >

> >The total resistance in the circuit is 3 Ohms internal battery resistance
> >plus 2 Ohms load resistance...
> >
> >Rtotal = 3 + 2 = 5 Ohms
> >
> >The current I through the lossless transmission line and into the load
will
> >be:
> >
> >I = Voc/Rtotal = 12/5 = 2.4 Amps.
> >
> >The voltage across the load will be:
> >
> >V = 2.4 * 2 = 4.8 Volts.
> >
> >The power delivered to the load, let's call it Pd and (Dare I say)
> >dissipated in the load will be:
> >
> >Pd = V*I = 4.8*2.4 = 11.52 Watts.
> >
> >The power dissipated in the internal battery resistance will be:
> >
> >Pint = 2.4 * 7.2 = 17.28 Watts.
> >
> >And so the total power being extracted from that poor struggling battery
and
> >dissipated in the load and internal resistance will be:
> >
> >Ptotal = 17.28 + 11.52 = 28.8 Watts.
> >
> >Aside: If the load had been "matched" to the "transmitter" er...
battery,
> >the load would not have been 2 Ohms but 3 Ohms for a total of 6 Ohms in
the
> >circuit, with a current of 12/6 = 2 Amps, and a load voltage of 6 Volts,
> >with a load power of 12 Watts and an internal power of 12 Watts for a
total
> >of 24 Watts.
> >
> >Now let's calculate the "reflected power" in this mismatched situation...
> >
> >Let's see now we start by calculating the ficticious "reflected voltage"
b
> >measured somewhere on the lossless transmission line. (Oh heck lets make
it
> >at the transmitter end.):
> >
> >b = V - IR
> >
> >But wait! We haven't yet specified R???

> >
> >Heh, heh... what is the "surge resistance" R of our lossless transmission
> >line? Does it matter? What?
> >
> >OK for picayune readers we might have to choose R to be the value of the
> >perfectly matched load, i.e. R = 3 Ohms. But I insist that it doesn't
> >matter a damm, because it's all a fiction anyway.
> >
> >Using R = 3 Ohms as the surge resistance of our lossless line.
> >
> >b = V - IR = 4.8 - 2.4 * 3 = 4.8 - 7.2 = -2.4 Volts
> >
> >So the ficticious reflected voltage which does not exist anywhere in the
> >circuitry for this "mismatched "2 Ohm load is -2.4 Volts.
> >
> >Clearly by elementary analysis (Use V squared over R or however you wish
to
> >calculate it.) we can now calculate the ficticious reflected power... Pr
> >
> >Pr = b*b/R = (-2.4)*(-2.4)/3 = 5.76/3 = 1.92 Watts. of purely ficticious
> >reflected power!
> >
> >Now where is this 1.92 Watts of ficticious reflected power delivered?
> >
> >Is the 1.92 Watts of ficticious reflected power dissipated in the load?
NO!
> >The load is dissipating 11.52 Watts.
> >
> >Is the 1.92 Watts of ficticious reflected power dissipated in the
internal
> >resistance? NO! The internal resistance is dissipating 17.28 Watts.
> >
> >Jeesh... we've got 1.92 Watts of ficticious reflected power all dressed
up
> >and no place to go!
> >
> >I say, since it didn't cost us any money to create this ficticious 1.92
> >Watts of reflected power, that we just ship it to those poor
Californians.
> >They really need all the free power they can get!
> >
> >In fact if all of us hams could just harness those tiny amounts of
reflected
> >power created in our antenna systems by these wonderous equations all
over
> >the world and send them to California we could probably eliminate the
West
> >Coast Energy Crises.
> >
> >Reflected Power, AC, DC, whatever.... a crock in any form, bah, humbug!

> >
> >-Peter K1PO
> >
>
> Hi Peter,
>
> Well I see the objections remain from my response in an earlier
> thread.
>
> Again, your argument is not an argument, it is a recitation of facts.
> It is unsettling when you choose to go your own way with this
> assignment of the "transmission line Z." Standard theory (which you
> claim to support) would have the valuation pegged at 2 Ohms, not
> arbitrarily set to 3 (even if it doesn't make a difference).
>
> And the fact remains, if you remove time from the basic consideration,
> it is a non-sequitar (not a proof) that there are no standing waves (a
> time based phenomenon).
>
> Perhaps you should try this again using standard math and techniques.
>
> 73's
> Richard Clark, KB7QHC

1888. Re: keeping water out of 9913

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 18:23:18 UTC
From: ae517@FreeNet.Carleton.CA
Message-ID: <9c9p2mdsb1@freenet9.carleton.ca>
Source record: 165035

"Rudy Marcelletti" (rudym@net-link.net) writes:
> So how do you do that with 9913 or 9913F?
> Peter J. Bertini wrote in message ...
>>The coax has an air core. No matter how well you seal it, moisture laden
>>air will be drawn as the cable is heated and cooled, or as barometric
>>pressure changes.

Use LMR400 instead! Almost the same price, same losses, no diurnal pumping.

--
73 de va3rr/aa8lu
http://www.qsl.net/va3rr
Check out the new Ship Station Regs at:
http://www.tc.gc.ca/Actsregs/csa-lmmc/csa64x.html

1889. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 18:24:45 UTC
From: richardharrison@webtv.net
Message-ID: <29945-3AE867ED-21@storefull-113.iap.bryant.webtv.net>
Source record: 165038

Cecil, W6RCA wrote:
"One problem with a 5/8WL at HF is a relatively major lobe of raiation
at a relatively high angle."

Yes, and another possibility is that the questioner may want to reach
points too near his station. The 5/8-wave antenna does a good job
suppressing most near vertical incidence radiation.

Best regards, Richard Harrison, KB5WZI

1890. Re: OK, I want a combiner or diplexer.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 18:25:32 UTC
From: "Joseph A. Davoli" <jdavoli@erols.com>
Message-ID: <9c9p6c$b5m$1@bob.news.rcn.net>
Source record: 165034
Cross-posted to:
alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.swap

Bill

Thanks for your reply! No, it does not help at all! I know what is that I
want, and it is NOT an MFJ (see the rest of the thread above.) I believe
that Comet, Diamond and (formerly) Kenwood, make the (duplexer / diplexer /
combiner) that I am looking for, with "leads".....

I STILL NEED ONE.....!!!!!
"Bill Aycock" <baycock@hiwaay.net> wrote in message
news:3AE7907A.A40E25E9@hiwaay.net...
> Ok- just went to the MFJ site- they call the gadget a "duplexer", and it
> is for either separate 2M and 70cm xmitter to dual antenna, or dual band
> xmitter to separate antennas. I know you wanted a single input and
> "pigtail" out but this one has a single UHF female and two UHF males,
> apparently with no flexibility, because they are very close.
> Does this help?
>
> Bill-W4BSG
>
> JAD wrote:
> >
> > Del, I could not agree with you more, but if you look in ANY description
of
> > these in amateur catalogs, publications, or even on the package, you
will
> > see them described as "duplexers," which of course, they are not.....
> >
> > I would call them "combiners," after the commercial ones that combine
> > several Rx or Tx to master antennas on a commercial tower. Combiners or
> > diplexers, if I posted for either of these, I would not get what I
> > want......
> >
> > '73 de Joe
> >
> > BY THE WAY.....I STILL NEED ONE!
> > "Del LaBo" <amateurradio1@sssnet.cam> wrote in message
> > news:3ae6961e.320960991@news.sssnet.com...
> > > You don't want a duplexer, what your looking for is a DIPLEXER.
> > > Duplexers are used on repeater stations to allow a transmitter and
> > > receiver to use the same antenna at the same time (i.e. with a
> > > duplexer your local two meter repeater can both transmit and listen on
> > > the same antenna at the same time, this allows fill duplex operation).
> > >

> > >
> > > A diplexer is used to allow a dual band radio or two radios on
> > > different bands to use the same antenna (i.e. You have a VHF and UHF
> > > mobile in your car, a diplexer will allow you to talk on one radio
> > > while still listening on the other band, and do this with one dual
> > > band antenna).
> > >
> > > There are several manufactures of Diplexers, MHJ, Diamond, are the
> > > ones that come to mind. I know that Diamond makes (or made) a
> > > diplexer with a single SO-239, and two pig tails with PL-259s because
> > > I have one that is attached to our local packet radio, and UHF
> > > repeater.
> > >
> > > Regards,
> > > Del N8OFP
> > >
> > > On Tue, 24 Apr 2001 21:35:13 -0400, "JAD" <jdavoli@NOSPAMerols.com>
> > > wrote:
> > >
> > > >Hi. I need a duplexer for 2 meter and 440, with SO-239 split to two
> > PL-259
> > > >"pigtails." I'm not interested in any other configuration.
> > > >
> > > >E-mail me with the details and price.
> > > >
> > > >remember to remove the word "NOSPAM" from my e-mail address to reply.
> > > >
> > > >Thanks,
> > > >
> > > >Joe
> > > >
> > > >jdavoli@NOSPAMerols.com
> > > >
> > > >
> > > >
> > >

1891. Re: HyGain TH3 driven element insulators

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 18:28:20 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3ae868da_2@news3.prserv.net>
Source record: 165036

Gary:
If you don't find them, you can do what I did. I got a piece of fiberglass I beam (3" web, 1-1/2" flanges) about 3 feet long, and U-bolted the elements to it, while using one of the through bolts to fasten it to the boom. There were probably some other details I've forgotten, because that mod was done 5 years ago, and is still performing fine, and the fiberglass shows no signs of giving up.

--
Crazy George
Gary Powell <n4dl@worldnet.att.net> wrote in message
news:APBF6.35806$IJ1.3031529@bgtnsc05-news.ops.worldnet.att.net...
> I need a pair of the driven element insulators that the end of the element
> fits into for a TH3. I would like new or near new condition.
>
> Gary, N4DL
>
>
>

1892. I STILL NEED ONE, no offers....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 18:33:29 UTC
From: "Joseph A. Davoli" <jdavoli@erols.com>
Message-ID: <9c9pl8chc1@bob.news.rcn.net>
Source record: 165037
Cross-posted to:
alt.ham-radio.marketplace,alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.swap

Yes Eddie, HRO / AES and my local shop have the Diamond and Comet models with "tails" for around $47.....which is exactly why I am am posting here looking for one......

"Eddie Haskell" <harleybum@easyriders.com> wrote in message news:utMF6.2352$d14.366615@typhoon.we.rr.com...
> Comet makes what your looking for and HRO has them....around $70
> tho....Eddie
>
>

1893. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 19:12:53 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE87335.539C@wt.net>
Source record: 165042

Bill Turner wrote:
>
> On Wed, 25 Apr 2001 12:48:34 -0500, Mark Keith <nm5k@wt.net> wrote:
>
> >I like real thick power wiring in a mobile
> >because the voltage drop is less.
>
> ----------
>
> Some radios are not much affected by voltage drop. Using an external field
> strength meter and a steady carrier, my IC-730 shows no change in output whether
> the engine is running or not, so a small voltage drop in the DC power lead would
> be of no consequence. The difference between engine running or not is about one
> full volt. Other radios may be different, so you should test yours to be sure.
>
> 73, Bill W7TI

Sure, but you haven't talked and waited a while for the voltage to drop.
Takes a good while of operating. My past radio was a 730 and I never had
trouble with it. But of course, I was using #6 wire. A couple of the
ones I heard having these problems were using 730's. But you are
probably talking a voltage drop to down below 10-11 volts or so to have
problems. I'm using a 706 now, which normally doesn't seem too voltage
sensitive as far as operating, but it will cycle itself off if the
voltage gets to low on it. So in a way it's worse than the 730. I've
never tried it yet, but I have a feeling the 706 will shut itself down
before it got to the point of problems. I know once I let a battery drop
from unplugging the charger during a storm and it got low, and the radio
starting turning off/on/off/on in the same way it does when you start
the engine. It seems to know when the voltage drops and does this I
assume to protect it from glitches. But the voltage was pretty low in
that case. MK
--
http://web.wt.net/~nm5k

1894. Re: Direct Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 19:15:42 UTC
From: kb7qhc@home.com
Message-ID: <3ae8727d.2650784736@news.seanet.com>
Source record: 165040

On Thu, 26 Apr 2001 14:15:52 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>I agree with you, I have removed the "time" element by letting frequency
>approach zero, but, but, but... you must admit.... there is still that pesky
>"reflected power" hanging around, even in the DC case!
>
>That dammed fiction just won't go away.

Sorry, Peter, but it is your fiction that is the worse of the two.

>
>Make the DC lossless line in the mismatched battery setup any characteristic
>impedance you want, use any reference impedance you want in the reflected
>voltmeter, but... the fact remains, even at DC, any self-respecting sampling
>directional coupler "meter", which indicates b = V - IR will show a
>"reflected power" indication on it's meter face when hooked into a
>mismatched situation, DC or AC, it simply doesn't matter. A mismatch is a
>mismatch.
>
>And if there is a mismatch there must be a reflected power right?

This is your fiction - when you unnecessarily discard time.

>
>I just came back from San Francisco, where I took the Powell street cable
>car across town to Hyde Pier, I like to hang out at our country's only
>floating National Park. Carved deeply in the wood beam near the roof of
>the old cable car was the inscription, "Humprhey Bogart - 1946". I asked
>the cable car driver if Bogart had really ridden this cable car. His
>answer... "It's written down, so it must be true!" Heh, heh... I love those
>San Francisco cable car drivers.
>
My favorite city. I cannot criticize anything you may have to say
here (except perhaps that you did not go visit the USS Pampanito).

>In the set up wer are disucssing the battery is mismatched to the load, and
>the reflected power was there. Was it not? Yes, No, Maybe....

No, time has been removed, there is no reflection in steady state.

>
>Reflected Power of 1.92 Watts all dressed up with no place to go!
>
>If that's not a "fiction", I don't know what is.

Consider these postings as candidates. ;-)

>
>Give it up I say, it won't hurt.
>
>You don't have to deny the existence of reflections to deny the existence of
>"reflected power". Reflections are very real!
>
>All you have to do is to admit that there is no such thing as "reflected
>power" as it is conventionaly defined, numerically calculated and/or
>presented as a value on the face of measuring instruements..
>
>It should be easier to "visualize" this fiction at DC, since clearly there
>are no "reflections" at DC.
>
>Yet at DC the "fiction" still exists, and is clearly seen as the fake it is.
>
>We can go back and do the same calculations at any single AC frequency you
>desire. The results will be the same. Fiction pure and simple.
>
>Reflected Power, is just a convenient fiction useful as an intermediate step
>for certain calculations, nothing more nothing less.
>
>Reflected Power has no intrinsic value per se... costs nothing to produce,
>no one can bill you for it, it can not operate the energizer bunny, it will
>not blow a fuse, and the benefit is that all it requires is only some
>elementary arithmetic to produce.
>
>Reflected Power, Nuthin much! No watts there! Merely the misuse of a few
>words... used to describe a "made up" quantitiy describing an intermediate
>stage of a mathematical manipulation.
>
>Don't need to write books about it... don't need to create religions around
>it...
>
>Let's fugadaboutit and get on with the more interesting parts of reflections
>and transmission line dynamics.
>
>-Peter K1PO

Hi Peter,

Am I to presume by your last statements that you are letting the
pendulum swing again? Does time flow like a river now?

73's
Richard Clark, KB7QHC

1895. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 19:18:19 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE8747B.5AAC850D@bwcc.com>
Source record: 165041

Mark Keith wrote:
> I don't think thats true, but I've been convinced for years that every
> time the shuttle blasts off, two days later the bands go
Does this happen at any other time?
Shuttle lift-offs are contingent on weather.
Could the effect be from the weather conditions that are appropriate to launching a shuttle?

1896. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 20:39:14 UTC
From: Bill Tippett <btippett@alum.MIT.edu>
Message-ID: <3AE88772.69735301@alum.MIT.edu>
Source record: 165050

Richard Harrison wrote:
>
> Cecil, W6RCA wrote:
> "One problem with a 5/8WL at HF is a relatively major lobe of raiation
> at a relatively high angle."
>
> Yes, and another possibility is that the questioner may want to reach
> points too near his station. The 5/8-wave antenna does a good job
> suppressing most near vertical incidence radiation.

No, I wanted the antenna for long-haul paths only...>5000 miles. If I wanted local (high angle) coverage I would not use a vertical. A 5/8 wave vertical is supposed to have better low angle coverage (as Roy's model predicts) but that is not what I experienced. Still wondering why?

73, Bill W4ZV

1897. Re: Direct Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 20:40:12 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ca12pfcr1@slb3.atl.mindspring.net>
Source record: 165043

Richard:

The USS Pampanito is one wharf over from the Hyde Pier. The WWII submarine USS Pampanito is also looked after by the National Park Service and the National Park Rangers.

All of Hyde Pier and the boats/ships tied up there are a part of a National Park, it's the only "floating" National Park. It's not very big, but very interesting if you like last century sailing vessels.

Fun stuff... I love to talk to the cable car drivers, they are all long time MUNI employees and most are real characters, if you can get them to talk they have a lot of stories to tell.

On reflection, I believe that reflected voltage and current and the same for incident voltage and current, they are all useful contrivances and that we should keep on using them.

But power! NO!

Once you start "mutiplying" independent variables together... power after all is current times voltage, you had better be careful for then you enter the realm of non-linear mathematics and systems, where one's intuition, often based upon linearity and the superposition of effects, can be easliy tricked.

If only we could get Bird to mark their meter faces with forward and reflected voltages instead of that "alias" they use...power.

Richard all you need to know is volts and amps...

Leave that "Reflected Power" stuff for the "High Priests" who are forever looking for converts... and if they offer you some, don't ever drink the Koolaid.

Just ask them, where the hell is the "reflected power"?

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3ae8727d.2650784736@news.seanet.com...
> On Thu, 26 Apr 2001 14:15:52 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >I agree with you, I have removed the "time" element by letting frequency
> >approach zero, but, but, but... you must admit.... there is still that

pesky
> >"reflected power" hanging around, even in the DC case!
> >
> >That dammed fiction just won't go away.
>
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>
> >
> >Make the DC lossless line in the mismatched battery setup any
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> >impedance you want, use any reference impedance you want in the reflected
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> >directional coupler "meter", which indicates b = V - IR will show a
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> >
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> here (except perhaps that you did not go visit the USS Pampanito).
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> No, time has been removed, there is no reflection in steady state.
>
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> >

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> >presented as a value on the face of measuring instruements..
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> >are no "reflections" at DC.
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is.
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you
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> >
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reflections
> >and transmission line dynamics.
> >
> >-Peter K1PO
>
> Hi Peter,
>

> Am I to presume by your last statements that you are letting the
> pendulum swing again? Does time flow like a river now?
>
> 73's
> Richard Clark, KB7QHC

1898. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 20:46:43 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ca1f1$1rd$1@nntp9.atl.mindspring.net>
Source record: 165044

Richard and Wes:

"Hick"... those danged Margaritas...

I said the thermistors will get warm, I don't deny it.

I did not say which of the several powers would be causing them to get warm.

Certainly not the reflected power defined by the equation. Pr = b*b/R = Pi - Pt!

I caught a few fish today, ugh... I was hoping none would bite... heh, heh... and we are about to get under sail again... have to leave for the mainland on Sunday then back to work.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:3ae84ab7.2640602525@news.seanet.com...
> On Wed, 25 Apr 2001 20:19:55 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Wes:
> >
> >OK, OK... I agree your thermistor get's hot... I don't have a problem with
> >that.
> >
> which is then contradicted by:
> >
> >But your thermistor is not getting hot from dissipating that danged
> >ficticious Reflected Power Pr = b*b/R which results from that specious
> >calculation: Pr = Pi - Pt.
>
> Hi Peter,
>
> As the challenger, it is incumbent upon you to prove this statement.
> Otherwise you stand to be identified as the messiah of a new formulary
> of physics (and join herr doktor in that pantheon).
>
> The heat is not derived from the power of the source? Are we witness
> to a new phenomenon?
>
> OH! I get it ;-)
>
> You should get out of the sun and enjoy the tropical evenings more.

> and if you happen to be near Martinique, try sampling their Rhum St.
> James.
>
> 73's
> Richard Clark, KB7QHC

1899. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 20:54:52 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ca1u9$e0c$1@slb6.atl.mindspring.net>
Source record: 165045

Michael:

Are you any relation to the new Chairman of the FCC?

-Peter K1PO

"M.J.Powell" <mike@pickmere.demon.co.uk> wrote in message
news:12m$nKABMD66Ew0j@pickmere.demon.co.uk...
> In article <3AE7A79D.650E9467@IEEE.org>, W6RCecilA
> <Cecil.A.Moore@IEEE.org> writes
> >"Peter O. Brackett" wrote:
> >> Hey, speaking of CW, why do they call it Continuous Wave when it's
always
> >> being keyed on and off.
> >
> >I keep telling them that it is impossible for a Continuous Wave
> >to convey any information. :-)
>
> There used to be a saying in the Armed Forces here in WW II that 'Every
> time you switch on a transmitter you commit treason'.
>
> Because you are giving information to the enemy.
>
> 73
>
> Mike
> --
> M.J.Powell

1900. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 20:56:10 UTC
From: richardharrison@webtv.net
Message-ID: <1476-3AE88B6A-2@storefull-117.iap.bryant.webtv.net>
Source record: 165047

Tom, W8JI wrote:
"If it was that easy, I wouldn`t have dozens of insulators in my guy lines."

That`s pogress. "Dozens" is almost a number.

Today, I discovered coverage of guy wires in the new 19th edition of the ARRL Antenna Book. It starts about page 22-14. It says that if your guy wires resonate near your operating frequency they may become re-radiatrors and alter your radiation pattern, as if they were parasitic antenna elements. The extent of guy wire disruption depends on two things, it is said, resonant frequency and the degree of coupling.

The magic guy wire lengths are presented for the eight HF amateur bands on page 22-17.

There is a wealth of information in the new Antenna Book. I`m glad I got one.

Best regards, Richard Harrison, KB5WZI

1901. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 21:05:47 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE88DAB.1F41@wt.net>
Source record: 165048

Denver Braughler wrote:
>
> Mark Keith wrote:
> > I don't think thats true, but I've been convinced for years that every
> > time the shuttle blasts off, two days later the bands go
> Does this happen at any other time?
> Shuttle lift-offs are contingent on weather.
> Could the effect be from the weather conditions that are appropriate to launching a shuttle?

No, I always noticed this about 2 days after liftoff. You could have perfectly decent band cdx in the days before the launch and then it would go south about 2 days after. I've seen this happen many, many times, but I've never done any real record keeping or watching to see if it's really from the space launches. Just something I've noticed many times. Also you don't have many wx effects on HF except for static. WX effects VHF/UHF much more. All the times I've noticed this were on HF. The band would just go out like a SID. Dunno, maybe just a weird coincidence of SID's and shuttle launches... MK
--
http://web.wt.net/~nm5k

1902. Re: VHF Airband

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 21:11:14 UTC
From: JAD <jdavoli@NOSPAMerols.com>
Message-ID: <9ca2t1isp1@bob.news.rcn.net>
Source record: 165046

David,
Here's what I would do (I am a ham and pilot, and have more than a little experience with avionics.) Visit some airplane shops and try to find a used aircraft "comm" antenna for a light aircraft. A NEW one may be cheap enough..... This will be a 1/4 wave aluminum or fiberglass, probably "swept" whip. The metal frame of your paraplane will be plenty of counterpoise for this antenna. You MUST mount it vertically, either pointing up at a topmost frame member or pointing down (if you have the ground clearance.) It will not matter, up or down, but NOT sideways. These antennas are typically on a base meant to be screwed down to the aircraft skin.....you can make a mounting plate between frame members, or simply make a small mounting plate for a couple of the base screws, screw the antenna base to the plate by it's normal mounting holes with a stainless steel hose clamp sandwiched in.....WHATEVER.... to securely mount it to your aircraft. These antennas have a BNC connector at the base, and you will need the appropriate connector on the other end for your Icom (a BNC I'll bet.) Keep the 52 ohm cable dressed neatly to the frame (wire ties) and as short a run as possible.

This antenna will perform MUCH better than the helical flex rubber antenna.....

Good luck and fly safe

"david hill" <davidh@melbpc.org.au> wrote in message
news:9c8m9b$89i$1@possum.melbpc.org.au...
> I have a Icom A4 handheld that I use on my powered parachute
> flying machine and I would like to increase the effectiveness of
> this unit. To this view I am thinking of improving on the
> approximately 8inch rubber antenna thingy that comes standard
> with this unit.
>
> The PPC is very small and of all metal tubular construction,
> there is no site that could be considered as a ground plane.
>
> My thinking (very muddled thinking) is to construct what I
> understand is called a sleeved monopole from 75 ohm coax. Making
> the arms for the 118.1 - 123.5 MHZ frequency that I use 60cms
> long.
>
> I'd appreciate advice re this concept and answers the following
> questions and to any others that I should of thought of but did
> not,
>
> 1...is this the correct length?

> .
> .
>
> 2...if answer to above is yes how much would the rec/transmit
> efficiency degrade if I used only half this length?
> .
> .
> 3... how close to a metal frame member can I mount this antenna?
> .
> .
> 4.... how does the length of coax from the Icom to the start of
> the sleeve effect the operation, (I would be using about 1.2
> mt)
> .
> .
> 5... I understand that this should be mounted vertical is this
> true?
> .
> .
> 6... what loss in efficiency would happen if I mounted it
> horizontal?
> .
> .
> 7... would this antenna work if mounted as a circle rather than
> extended our straight?
> .
> .
> 8... is there some other antenna design that I should be
> considering?
> .
> .
> 9... pointers to sites that would assist in designing other
> forms of antenna.
> .
> .
>
> The over all aim is to achieve clear rec/transmit on the air
> band over a range of about 30miles.
>
> Any and all advice greatly received
> and apologies for asking stupid questions, if in fact that is
> what I am doing. as you can tell antennae are not my normal
> science.
>
> many thanks
> David Hill
>
>
> --
> DavidH [:-)>X

>
>

1903. DX QSL Service

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 21:38:14 UTC
From: AC6V <ac6v@ix.netcom.com>
Message-ID: <3AE89545.97F3779E@ix.netcom.com>
Source record: 165049

WF5E DX QSL SERVICE at URL:
http://www.qsl.net/wf5e/

Earth's Mag Field at URL:
http://www.sigmaxi.org/amsci/articles/96articles/Fuller.html

--
73 From Rod AC6V In San Diego
700 Ham Topics & 6,000 Links
http://ac6v.com/
I Doubt, Therefore I Might Be!!!

1904. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 21:45:31 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <%F0G6.28595$Ce4.2105495@news1.rdc1.ct.home.com>
Source record: 165051

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:1476-3AE88B6A-2@storefull-117.iap.bryant.webtv.net...
> > The magic guy wire lengths are presented for the eight HF amateur bands
> on page 22-17.
>
> There is a wealth of information in the new Antenna Book. I`m glad I got
> one.
>

Don't keep me in suspense... what are the magic numbers??

1905. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 22:02:25 UTC
From: kb7qhc@home.com
Message-ID: <3ae89ab5.6247883@news.seanet.com>
Source record: 165054

On Thu, 26 Apr 2001 16:46:43 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard and Wes:
>
>"Hick"... those danged Margaritas...
>
>I said the thermistors will get warm, I don't deny it.
>
>I did not say which of the several powers would be causing them to get warm.
>
>Certainly not the reflected power defined by the equation. Pr = b*b/R = Pi -
>Pt!
>
>I caught a few fish today, ugh... I was hoping none would bite... heh,
>heh... and we are about to get under sail again... have to leave for the
>mainland on Sunday then back to work.
>
>-Peter K1PO
>

Hi Peter,

How did they get warm then?

They certainly did not have the luxury of floating in the azure waters
of the caribbean!

73's
Richard Clark, KB7QHC

1906. Re: WANTED: 10-80m Vertical for Roof Top

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 22:29:15 UTC
From: lbratche <lbratche@swbell.net>
Message-ID: <Se1G6.42$mW5.4742@nnrp1.sbc.net>
Source record: 165055

I'd agree 100%. If you want the best vertical on the market, get the
Butternut.
You may want to read reviews on the Butternut and others at www.eham.com
Larry KD5IKA
"Rick Scott" <kf7qz@yahoo.com> wrote in message
news:3AE84E7E.4FEAF646@yahoo.com...
> W7AXE wrote:
> > Can anyone could give me any good suggestions or recommendations on a
10-80m
>
> Butternut HF6V with radials.
>
>
> Rick KF7QZ

1907. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 22:46:01 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3ae8a3fb.186144062@news.aepnet.com>
Source record: 165056

On Thu, 26 Apr 2001 16:46:43 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
wrote:

>Richard and Wes:
>
>"Hick"... those danged Margaritas...
>
>I said the thermistors will get warm, I don't deny it.
>
>I did not say which of the several powers would be causing them to get warm.
>
>Certainly not the reflected power defined by the equation. Pr = b*b/R = Pi -
>Pt!
>
>I caught a few fish today, ugh... I was hoping none would bite... heh,
>heh... and we are about to get under sail again... have to leave for the
>mainland on Sunday then back to work.
>
>-Peter K1PO

Obviously, I missed something along the way.

Are you saying that you are on holiday and you're squandering time posting to
this silly newsgroup? Topless babes, white sand beaches, tall cool ones....

And we call Chip a lunatic <g>

73,

Wes

>
>
>"Richard Clark" <kb7qhc@home.com> wrote in message
>news:3ae84ab7.2640602525@news.seanet.com...
>> On Wed, 25 Apr 2001 20:19:55 -0400, "Peter O. Brackett"
>> <ab4bc@ix.netcom.com> wrote:
>>
>> >Wes:
>> >
>> >OK, OK... I agree your thermistor get's hot... I don't have a problem
>with
>> >that.
>> >
>> which is then contradicted by:
>> >

>> >But your thermistor is not getting hot from dissipating that danged
>> >ficticious Reflected Power Pr = b*b/R which results from that specious
>> >calculation: Pr = Pi - Pt.
>>
>> Hi Peter,
>>
>> As the challenger, it is incumbent upon you to prove this statement.
>> Otherwise you stand to be identified as the messiah of a new formulary
>> of physics (and join herr doktor in that pantheon).
>>
>> The heat is not derived from the power of the source? Are we witness
>> to a new phenomenon?
>>
>> OH! I get it ;-)
>>
>> You should get out of the sun and enjoy the tropical evenings more.
>> and if you happen to be near Martinique, try sampling their Rhum St.
>> James.
>>
>> 73's
>> Richard Clark, KB7QHC
>
>

1908. Re: Direct Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 22:55:12 UTC
From: kb7qhc@home.com
Message-ID: <3ae8a6a2.9300353@news.seanet.com>
Source record: 165057

On Thu, 26 Apr 2001 16:40:12 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>On reflection, I believe that reflected voltage and current and the same for
>incident voltage and current, they are all useful contrivances and that we
>should keep on using them.
>
>But power! NO!
>
>Once you start "mutiplying" independent variables together... power after
>all is current times voltage, you had better be careful for then you enter
>the realm of non-linear mathematics and systems, where one's intuition,
>often based upon linearity and the superposition of effects, can be easliy
>tricked.

Hi Peter,

Non linear!!?

Time to cut off your grog rations mate! If this were true -
everything you described as part and parcel to your theory would be
chock full of modulation products. We don't have to go any further
than the nearest FCC field station (only 2 miles from my house) to
find that theory up against the wall.

73's
Richard Clark, KB7QHC

1909. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 22:58:16 UTC
From: k3bu@aol.com
Message-ID: <20010426185816.16886.00001867@ng-fo1.aol.com>
Source record: 165058

>
>Some people believe that Tesla was actually responsible for that
>Siberian blast around the turn of the last century.
>--
>http://www.mindspring.com/~w6rca

Too bad that Defense Dept. took all his writings, they are so "smart" they
still can't figure out his stuff. What you expect from guberman.

Yuri

1910. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 23:10:25 UTC
From: k3bu@aol.com
Message-ID: <20010426191025.16886.00001870@ng-fo1.aol.com>
Source record: 165060

>
>Why does Tom not admit he was wrong? A 5/8 wl antenna does have gain
>over a 1/2 wl antenna when it is up in the air.
>
>Best regards, Richard Harrison, KB5WZI
>
>
>

Because Tom is pontificantly "right," he is never wrong, even when he is.
Typical modus operandi is when he is wrong, he would go quiet on the subject
for a while, then chew on it, and after some time would come out as an expert
or professor on the subject, denying he was ever wrong. In the mean time he
would go into ridiculing the person that is right. Just watch. He would never
apologize or admit being wrong. He would twist the "conditions" in order to
"prove" he was "right".
Good thing it is only a hobby/sport :-)

Yuri

1911. Re: HyGain TH3 driven element insulators

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 23:10:40 UTC
From: Leonard <louis@mail.snider.net>
Message-ID: <7lahet4gho88vp47cr0sm5jhhtfffoivr3@4ax.com>
Source record: 165059

You probably get the parts from HyGain. I just got some parts from
them for my TH6DXX

On Thu, 26 Apr 2001 13:28:20 -0500, "Crazy George"
<munschNO@attglobal.net.SPAM> wrote:

>Gary:
>If you don't find them, you can do what I did. I got a piece of fiberglass
>I beam (3" web, 1-1/2" flanges) about 3 feet long, and U-bolted the elements
>to it, while using one of the through bolts to fasten it to the boom. There
>were probably some other details I've forgotten, because that mod was done 5
>years ago, and is still performing fine, and the fiberglass shows no signs
>of giving up.

1912. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 23:41:46 UTC
From: richardharrison@webtv.net
Message-ID: <3897-3AE8B23A-90@storefull-112.iap.bryant.webtv.net>
Source record: 165066

Peter Bertini wrote:
"Don`t keep me in suspense...what are the magic numbers?"

Well, a wire insulated at both ends should avoid multiples of 1/2-wave, or near half-wave multiples. ARRL copyrights control distribution but a small sample should be considered only a teaser or ad for the larger collection. So, here are the values for the 10-meter band as perceived with my dim eyes:
14 to 18 feet
29 to 38 feet
44 to 57 feet
Anything longer than 59 feet.

I really recommend the book. I thought it was overpriced, but it is worth the price in today`s market if you are interested in antennas.

Best regards, Richard Harrison, KB5WZI

1913. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 23:42:52 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae8b1fc.122500336@news.accessunited.com>
Source record: 165061

On Thu, 26 Apr 2001 12:43:31 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Some people believe that Tesla was actually responsible for that
>Siberian blast around the turn of the last century.
>--
>http://www.mindspring.com/~w6rca

Yep, he hired a dozen dancing girls and a band....and they had a real
blast.

1914. Re: stray voltage

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 23:49:40 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AE8B414.EC492C46@bwcc.com>
Source record: 165062

I didn't know where to stick this in with reflected power.
But I've heard a lot about stray voltages.
Could we harness them and for sale to Californians?
(This is actually a half-serious question.
Feel free to respond either way.)
At least as I understand it, stray voltages can be measured with a real voltmeter.

1915. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-26 23:53:57 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae8b2a7.122671588@news.accessunited.com>
Source record: 165063

On Thu, 26 Apr 2001 15:09:56 +0100, Bill Tippett
<btippett@alum.MIT.edu> wrote:

>Roy and Tom...related question: I have a 178' shunt-fed Rohn 45 tower
>(nothing else on it) that I use for transmit on 160 meters. It has a
>good ground system with ~110 radials ranging from 70-150' depending on
>the direction and it works well on 160. I thought this would be an
>excellent performer on 80 since it is ~5/8 wavelengths. However I found
>that it had terrible performance on 80...worse than a 1/4 wave GP with
>only 2 elevated radials! I believe others (WB9Z and ON4UN) have had
>similar experiences with "too tall" towers on 80. Wonder if either of
>you have any explanation for this? I've alwqays wondered if it had
>something to do with my matching system but it seemed to resonate as
>expected...i.e. a lower gamma tap than the 160 tap at ~60'.

Hi Bill,

I found the same thing here on 80 meters with a 180 foot series fed
tower. I also had an 80 foot tower on 40 that was a real dog.

My 5/8ths on 160 works OK at longer distances at night, but isn't
really any better than shorter towers at long distances (over 1000
miles) and is of course much worse at modest distances (50-500 miles).

What really gets me is the 5/8th 160 vertical works decent on 80
meters, only a few dB down from my 80 meter dipole (150-160 foot high
dipole). Go figure!

But your experience is the same as mine, and the same as other people
I have known that have tried 5/8th wl verticals. I think 200 feet is
about as tall as you want to go on 160.

5/8 wl vertical antennas sure don't impress me either!

73 Tom

1916. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 00:03:33 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae8b5dd.123493933@news.accessunited.com>
Source record: 165064

On Thu, 26 Apr 2001 15:13:50 GMT, nospam_n7ws@arrl.net (Wes Stewart)
wrote:

>I don't think so. I haven't kept up with the HAARP project
>(http://server5550.itd.nrl.navy.mil/projects/haarp/haarpIndex.html) but it's
>precursor was operating back in the seventies (as I recall) and there was a
>multi-megawatt station in Colorado operating in the lower h-f spectrum. As in
>HAARP, the antenna was an array of phased dipoles configured to radiate straight
>up; the idea being to heat the ionosphere directly above the station.
>
>Quite a few of us serious 2m operators set up schedules to try and use this
>'artificial ionosphere' for propagation. We could hear the h-f signal come and
>go and timed our transmissions accordingly. It never worked.
>
>The Russians were also experimenting with this at the same time. I believe
>there was an IEEE paper on the subject.

A few people seem to think propagation is enhanced during contests by
all the RF hitting the ionosphere. Yet the power density is many times
less than HAARP and others used, and they never obtained that effect.

The effect on the ionosphere is many many times smaller than solar
effects, and I really can't see any reason why a few hundred kilowatts
of total RF sprayed in all directions at random times with a low duty
cycle would come anywhere close to meagawatt ERP transmitters beamed
straight up at the ionosphere.

73 Tom

1917. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 00:06:17 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae8b73c.123844644@news.accessunited.com>
Source record: 165065

On 26 Apr 2001 23:10:25 GMT, k3bu@aol.com (Yuri Blanarovich) wrote:

>Because Tom is pontificantly "right," he is never wrong, even when he is.
>Typical modus operandi is when he is wrong, he would go quiet on the subject
>for a while, then chew on it, and after some time would come out as an expert
>or professor on the subject, denying he was ever wrong. In the mean time he
>would go into ridiculing the person that is right. Just watch. He would never
>apologize or admit being wrong. He would twist the "conditions" in order to
>"prove" he was "right".
>Good thing it is only a hobby/sport :-)
>
>Yuri

Good thing! Some of us might think people actually get angry when
others disagree with them!

Fortunately you and Richard are bigger men than that, and can take
disagreement without getting angry or childish.

By the way Yuri, there is a nice thread going about ionospheric
heating. Why not contribute?

73 Tom

1918. Re: stray voltage

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 00:16:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cadojdil1@slb0.atl.mindspring.net>
Source record: 165067

Denver:

Yes that's it... Send em all to California.

Smoke Tests, Reflected Power, Stray Voltages, Artificial Grounds, Dissipationless Resistance, Dummy Antennas, 3rd Order Intercept levels, Continuous Wave Morse transmission, current flow, 73's, 5 by 9 Signal Reports, sky hooks, Baud Rates, End Fed Dipoles, and all other such ficticious artifices, should be packed up, kicked out of ham radio and... sent to California.

Heh, heh...

But then we wouldn't seem so mysterious and interesting to the "outsiders"...

-Peter K1PO

"Denver Braughler" <Braughler@bwcc.com> wrote in message news:3AE8B414.EC492C46@bwcc.com...
> I didn't know where to stick this in with reflected power.
> But I've heard a lot about stray voltages.
> Could we harness them and for sale to Californians?
> (This is actually a half-serious question.
> Feel free to respond either way.)
> At least as I understand it, stray voltages can be measured with a real voltmeter.

1919. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 00:20:53 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cae0ieev1@slb0.atl.mindspring.net>
Source record: 165068

Tesla!

Now there's a guy who understood the real meaning of reflected power.

-Peter K1PO

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3ae8b1fc.122500336@news.accessunited.com...
> On Thu, 26 Apr 2001 12:43:31 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >Some people believe that Tesla was actually responsible for that
> >Siberian blast around the turn of the last century.
> >--
> >http://www.mindspring.com/~w6rca
>
> Yep, he hired a dozen dancing girls and a band....and they had a real
> blast.

1920. Re: End-Fed Antenna Question - Ligntning Magnet?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 00:22:34 UTC
From: gbrown@nc.rr.com
Message-ID: <3ae8bbbe.1629898@news-server>
Source record: 164969

Dave,
Thanks for the tips and pointer to a pile of info!

73,
Gary - K4GPB

1921. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 00:54:43 UTC
From: richardharrison@webtv.net
Message-ID: <29943-3AE8C353-163@storefull-113.iap.bryant.webtv.net>
Source record: 164970

Tom, W8JI wrote:
"An offshoot of that was an opinion that the ionosphere is
non-linear..."

That is an old speculation. Some of our European contributors with long memories may recall a super-power station of the era around WW-2 called "Radio Luxembourg". It was rumored to have so charged the nearby ionosphere with its power that reflected signals from the affected area had Radio Luxembourg`s modulation superimposed.

I was involved in discussions to employ the technique, big time, as a propaganda tool. Saner minds prevailed. Not only did we know nothing about the phenomenon, but were we successful, we had no idea what the unintended consequences might be. Still, we went as far as combining the outputs of 100KW transmitters through a rat-race and drove them with a common oscillator. We demonstrated that we might duplicate the power of Radio Luxembourg with what we had.

Had the experiment been really cheap to pull-off, I`m sure we would have gone ahead with it, just to see what happened. The guys who set off the first A-bomb test weren`t sure it wouldn`t end the world, but they did it anyway.

Best regards, Richard Harrison, KB5WZI

1922. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 01:20:33 UTC
From: Bill Tippett <btippett@alum.MIT.edu>
Message-ID: <3AE8C961.A7599DEB@alum.MIT.edu>
Source record: 164975

Richard Harrison wrote:

> 178 feet is a little too much for 5/8-wave at 4 MHz. Gain falls at
> lengths beyond the 0.625 wavelengths because of the growth of those
> secondary lobes Cecil identified.

I operate on 3.5 MHz CW where the length is ~.633 wavelengths...I can't believe .008 wavelengths makes a significant difference! Other ideas?

73, Bill W4ZV

1923. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 01:33:00 UTC
From: Gerald Schmitt <KK5YY@arrl.net>
Message-ID: <7iihet0v2g31iuf662vlc8ekioo1qc7g6c@4ax.com>
Source record: 164971

On Thu, 26 Apr 2001 13:49:25 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:

>On Thu, 26 Apr 2001 06:56:35 -0600, Gerald Schmitt <KK5YY@arrl.net>
>wrote:
>
>>Not quite correct. It is a folded dipole with a feed balun and a
>>terminating resistor. I believe the balun is a 6 to 1 and the
>>resistor is generally 600 to 800 ohms non inductive.
>
>That's still essentially a dipole with resistor loading. People
>attribute some "magic" to the fact it is a folded diople, or that the
>resistor is in the conductor opposite the feedpoint, but you can get
>the same results with a few transformers and a single dipole....and a
>resistor load across the feedpoint.
>
>There is no magic, it is a resistor loaded dipole.

My point was that it was not loaded at the feed but at the
termination.

Never said there was magic just tried to set the record straight.

>
>>>Efficiency will be anything from a few percent or less on 160 meters
>>>to almost 50% on some bands. I measured some of the prototype antennas
>>>that were played with by people at Amp Supply...who I believe later
>>>sold the design to B&W.
>>
>>I doubt that they sold any rights as the military has been using these
>>things for many years. The advanrage for them is no tume time and easy
>>frequency hopping, down side is they are not efficient.
>
>The owner of Amp Supply sold B&W the "design", some aspects of which
>were patented (not that that means anything). He was playing with both
>an inverted V configuration and a T2FD that was sloped. I was there, I
>saw the antenna. I still have some old load resistors.

Most interesting patenting something from the public domain perhaps
it was Trade Marked or like you say some particular features.
.
If you would be willing to part with one of the terminating
resistors I'll be at Dayton doing my satellite demos again. I have the
balun and the wire but the resistor is burned up. Mine is one of the
very early ones made out of treated paper tubes. I always thought it
was a B&W but maybe it is an Amp Supply.

>
>>>LB Cebik has modeled the antenna, rather than argue you can look at
>>>his data. It agrees closely with the real world measurements. Maybe
>>>someone knows the web address.
>>
>> http://www.cebik.com/t2fd.htm
>
>Thanks.
>
>73 Tom

1924. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 01:36:04 UTC
From: richardharrison@webtv.net
Message-ID: <29946-3AE8CD04-12@storefull-113.iap.bryant.webtv.net>
Source record: 164972

Bill Tippett wrote:
"I thought this (178-foot tower) would be an excellent performer on 80 since it is about 5/8 wavelengths."

178 feet is a little too much for 5/8-wave at 4 MHz. Gain falls at lengths beyond the 0.625 wavelengths because of the growth of those secondary lobes Cecil identified.

14 feet too long isn`t much. For grins, you might try attaching some radials to your tower around 14 feet up and retuning your shunt-feed to see what happens on 80/75-meters.

Best regards, Richard Harrison, KB5WZI

1925. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 01:49:07 UTC
From: richardharrison@webtv.net
Message-ID: <29943-3AE8D013-165@storefull-113.iap.bryant.webtv.net>
Source record: 164974

I wrote:
"So here are the values for the 10-meter band..."

I realize that it may not be clear that the listed values are to be avoided as they define a spectrum around multiples of 1/2-wavelength. Any guy length not included in the list (the spaces between the listings) should be OK.

Best regards, Richard Harrison, KB5WZI

1926. Looking for Yagi plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 01:51:39 UTC
From: Eric Ruuska <eruuska@netnitco.net>
Message-ID: <3ae8d025@news.netnitco.net>
Source record: 164973

Hey all,

Anyone know of a good website or other resource with Yagi plans for the absolute beginner? Specifically I'm looking for 2m and 6m Yagis.

Thanks and 73,
Eric Ruuska
KB9ZHN

1927. Re: Looking for Yagi plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 02:37:17 UTC
From: N3VST <not@chance.com>
Message-ID: <IX4G6.927$R2.448258@newsrump.sjc.telocity.net>
Source record: 164976

Look at www.cushcraft.com They have manuals for all their antenna's. This includes drawings and measurements as well. Good luck

Email is insecure. Want your boss, school, or government reading what you send?
If not go to http://www.pgpi.org/ learn how to make your email secure.

"Eric Ruuska" <eruuska@netnitco.net> wrote in message news:3ae8d025@news.netnitco.net...
> Hey all,
>
> Anyone know of a good website or other resource with Yagi plans for the
> absolute beginner? Specifically I'm looking for 2m and 6m Yagis.
>
> Thanks and 73,
> Eric Ruuska
> KB9ZHN
>
>

1928. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 03:11:19 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cao0n$p06$1@208.207.71.175>
Source record: 164977

Bill Nelson wrote:
>
> Dick Carroll <dixie@townsqr.com> wrote:
>
> : W6RCecilA wrote:
>
> :> The current and voltage associated with that power must be measured
> :> at that same point, not one of them a quarter wavelength away.
>
> : You might as well say that voltage and current are in phase.
>
> They are, if you are only talking about the forward power or the
> reflected power. If you are talking about the vector sum of the
> two, then they are in phase only at certain intervals along the
> line. Hm, I will try to find references for this - it may take
> some digging as I have not used them in years.
>
> : Sometimes I get the idea that a lot of you highly educated guys are
> : mostly BS artists. Most of us experienced hams wind up with the same
> : result without all the bafflegab.
>
> Sure. You can get the same results without even knowing what voltage
> or current are. But some of us like to understand what is happening,
> not just what to do to get the desired results.

I gotta tell ya, Bill, reading the widely divergent opinions of experts posting here does little to solidify one's knowledge. In fact the opposite just as frequently is the case.

Dick

1929. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 03:34:42 UTC
From: richardharrison@webtv.net
Message-ID: <1979-3AE8E8D2-14@storefull-116.iap.bryant.webtv.net>
Source record: 164979

Bill, W4ZV wrote:
"Other ideas?"

The usual suspect for poor vertical antenna performance is the ground system. In this case the tower is reported fine at 160-meters, and this should exonerate the antenna at 80-meters, except for the feed and matching systems which need changes to work at the higher frequencies.

The impedance of the shunt-feed, if the tower is tapped at the same point, would likely be a higher impedance at the higher frequency. Are the changes needed to accomodate the higher frequency all OK?

Measurements are in order to find where the power is going, if inspection doesn`t disclose its disposition. Is there a power indicator to indicate delivery of power to the antenna? Is there a bridge or analyzer to indicate antenna characteristics? Can a field strength meter be used to indicate relative strength of emissions from the antenna? A dip-meter with a diode position can serve as a "wavemeter". I`ve used a multi-meter on the a-c scale, but not all meters have diodes good at r-f. How about an r-f impedance or admittance bridge? A loop of wire soldered to a panel lamp? All of these may help determine if power is radiated or wasted and where.

A lot of fellows would love to trade their problems for Bill`s.

Best regards, Richard Harrison, KB5WZI

1930. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 03:38:58 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9capki$2ti$0@208.207.71.175>
Source record: 164978

"Peter O. Brackett" wrote:
>
> Cecil:
>
> You rascal. You really do understand.
>
> Yes it's true that "energy" stored in the lossless line (Is NOT "power" but
> "energy".) and it will come pouring out of the lossless line when the source
> is shut off. After the "steady state".
>
> Of course if the lossless line had zero length, then.... there is still
> that pesky ficticious reflected power to deal with, it won't go away just
> because we make the line length zero!
>
> Heh, heh...
>

Now I got it! *Everybody" is right! Even poor ol' maligned Carl, W5JJ.
He says that "reflected power is a fiction", Peter agrees, Wes says no,
and measures it - but only when he provides a termination that actually
allows power to develop across it. Cecil reinforces everybody by stating
that it stays bottled up in the feedline until the transmitter is turned
off, or something. Walt Maxwell says it bounces off the tuner and goes
back to the antenna where it is radiated with forward power, reinforcing
the wattmeter reading that included the amount of the reflected....

There's something here for (and from) everyone.

Dick

1931. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 05:01:01 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9caued$gh5$0@208.207.71.175>
Source record: 164980

"Peter O. Brackett" wrote:
>
> Cecil:
>
> Yes, I agree... but that is not the steady state.
>
> Call it "reflected energy" NOT "reflected power" and I'll go away!

I like it. My household wattmeter measures power, but only when something in the house loads the line. If I have a reflected wave from an antenna that has no place to dissipate, and re-reflects back to the antenna where it is radiated, I can't see reflected power being developed in the system, other than at the antenna.

Of course I don't have to genuflect in the direction of the IEEE..<g>

Dick

1932. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 05:11:50 UTC
From: CW <cmagers@sprynet.com>
Message-ID: <9cavft$r7u$1@slb3.atl.mindspring.net>
Source record: 164982

The problem with that idea is that there are launches all the time. The only ones you here anything about are things like the shuttle but commercial and government rockets are going up frequently. Anyone for a new conspiracy theory?
--
CW
KC7NOD

"Mark Keith" <nm5k@wt.net> wrote in message news:3AE7B554.75CE@wt.net...
:
> I don't think thats true, but I've been convinced for years that every
> time the shuttle blasts off, two days later the bands go all to heck. I
> think they blast a hole in the atmosphere that does damage to the
> ionosphere for a while. May be a fluke, but check it out for yourself.
> Watch the band cdx for a few days after each shuttle blasts off. Of
> course , it would seem to me any hole they blasted would be fairly
> local, but who know how big the effects if other portions have to fill
> in the "gaps". I sort of the the shuttle does the sort of damage they
> expected HAARP to, but ended up not being as bad as expected. MK
> --
> http://web.wt.net/~nm5k

1933. HELP!! Need info on TAGRA antenna! (sigma IV lookalike)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 05:20:40 UTC
From: giffshanon@aol.com
Message-ID: <20010427012040.27101.00001365@ng-fq1.aol.com>
Source record: 164983

I found a gold annodized "TAGRA" base antenna recently & really need any & all info I can get on it, gain amount, what meter it's "REALLY" designed for, possably any photo's of one, etc.
I've had no luck finding any info for it!
Could this have been manufactured outside the US??
It looks exactly like a AVANTI Sigma IV, but it's 32 feet - 5 inches long from base to tip, and appears to have a non adjustable gamma rod.
It's awesome looking & built EXTREEEEEEEMLY WELL!!!
Any help would be Greatly Appreciated!
Best Wishes,
GIFF

1934. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 05:21:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE901EB.DCF9A8ED@eznec.com>
Source record: 164981

Ian White, G3SEK wrote:

Thanks for those interesting figures, Roy.

One thing I'm not clear about is how (or if) NEC takes account of ground losses at the feedpoints of the two different types of antenna. Presumably the assumption is that the effective series resistance of ground losses at the feedpoint is negligible in both cases, so that the full 1 kW is delivered to each of the two different antennas?

There are several ways of dealing with ground system losses with NEC. With NEC-4, you can model buried conductors, so you can directly include the ground system in the model. (This can result in some pretty long calculation times for an extensive system, though.) The conductors under the ground are treated the same as ones above, but with consideration given to their different environment, and what happens to the field at the air-ground interface. NEC-2 doesn't have this capability, so the best you can do is to model a radial system just above the ground. This works moderately well, although you'll see some resonant effects with the above-ground model you won't see in a real buried system. (I've seen these same effects with real radials lying on the ground. They were greatly reduced when the radials were "stapled" to the ground to conform with its bumps and lumps.) EZNEC provides a third option not available with NEC-2 or NEC-4, a "MININEC type" ground system. The authors of MININEC simplified the code for that program by making the ground perfect during the impedance and current calculations, then using realistic conductivity and dielectric constant only for computing the reflected-wave part of the pattern. This approximation leads to serious errors when modeling low horizontal antennas, but doesn't cause an appreciable error if a horizontal antenna is higher than about 0.2 wavelength. For vertical wires, the approximation has no effect at all except when the vertical is connected to the ground. If you try connecting a wire to the standard NEC-2 ground models, you'll get an unpredictable impedance. But a connection to MININEC type ground has zero resistance, as though you had an infinite radial system. If you want, you can add a resistive "load" at the feedpoint to represent ground system loss. I've found the MININEC type ground to be very useful for just such studies as the one I posted, since it removes ground system efficiency from the discussion, allowing other effects to be more clearly seen. I used this ground model for the posted results (which is what I meant by saying the model had "zero ground system loss"). The full KW was delivered to and radiated by the antennas (which also had no conductor loss, incidentally, although this would have had only a very

minor effect). The presence of a ground radial system of moderate radius has little effect on the pattern, so including one wouldn't have an appreciable effect on the zero-ten degree comparison. The difference it would make between the 1/4 wave and 5/8 wave antenna would depend on the ground system, the ground conductivity, and the frequency. If anything but an extremely good ground system were included in the models, it would be difficult or impossible to determine how much of the observed differences was due to the ground system and how much to the other phenomena under discussion. Certainly you'd want to include a ground system model of some sort when comparing specific real antennas.

I mentioned that the low elevation angle portion of the signal incurs loss in its reflection from the ground. An interesting exercise you can do with EZNEC, even the demo version, is to set the wire loss to zero, ground type to Perfect and the plot type to 3D, then run a far field plot. (Also make sure there aren't any resistive loads.) Note the "average gain" at the bottom of the main window. It should be very close to 1 (0 dB). Then change the ground type to Real/MININEC and run again. The difference in the "average gain" is the fraction of the radiated power which was lost in its encounter with the ground. The result for the example file Vert1.EZ is 0.306 (-5.14 dB). This means that 70% of the power being radiated is being absorbed by the ground. (The lost power does include the power going into the ground wave which is dissipated within a few miles.) This is all low angle radiation, too. Repeat for a moderately high horizontal antenna and note the difference in how much is lost from a vertical compared to how much is lost from a horizontal antenna. You can see by comparing perfect-ground with MININEC-ground results that the loss is at low elevation angles from verticals and high elevation angles from horizontal antennas.

Roy Lewallen, W7EL

-- My ISP's news server barfed, and in restarting it they lost all postings from about this morning back. So I didn't get to see about half a day's worth at all. I found this on Deja but might have missed others directed toward me. If anyone did post any questions or comments directed at me in the past day or so, I'd appreciate your reposting them or emailing them to me.

1935. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 05:26:57 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AE90321.18CAEBD0@eznec.com>
Source record: 164984

Dunno what kind of meter you have, but that electric meter we all have outside our houses is measuring energy, in watt-hours. And that's what you're charged for and see on your electric bill. If it cranks up a kWh, it doesn't know or care whether you got it by consuming energy at a rate of 1 kW for one hour or by sucking 1 watt of power for 1000 hours.

Roy Lewallen, W7EL

Dick Carroll wrote:
>
> "Peter O. Brackett" wrote:
> >
> > Cecil:
> >
> > Yes, I agree... but that is not the steady state.
> >
> > Call it "reflected energy" NOT "reflected power" and I'll go away!
>
> I like it. My household wattmeter measures power, but only when
> something in the house loads the line. If I have a reflected wave from
> an antenna that has no place to dissipate, and re-reflects back to the
> antenna where it is radiated, I can't see reflected power being
> developed in the system, other than at the antenna.
>
> Of course I don't have to genuflect in the direction of the IEEE..<g>
>
> Dick

1936. butternut antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 08:51:12 UTC
From: iz1dxg <iz1dxg@libero.it>
Message-ID: <4qaG6.4376$sb5.728278@news.infostrada.it>
Source record: 164985

hi everybody someone knows how the hfv6-x works?
I've got a lot of rescrictions and therefore i don't know if i can put
buried radials around it
may be a couple but not to long.
thanks in advance
Robert IZ1DXG

1937. Re: Magic guy wire lengths...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 09:25:21 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae939d3.157280633@news.accessunited.com>
Source record: 164986

On Thu, 26 Apr 2001 20:49:07 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>I realize that it may not be clear that the listed values are to be >avoided as they define a spectrum around multiples of 1/2-wavelength. >Any guy length not included in the list (the spaces between the >listings) should be OK.

OK, I modeled a two vertical wires, with one fed and the other 58 feet long insulated from ground. The change in pattern when the second wire is added is:

160m nil
80m nil
40m 4.22 dB
30m 6.5dB
20m 3dB
17m 8 dB
15m 2.5db
12m 3.2 dB
10m 1.5dB

It looks like to make sure the second conductor does not influence pattern, you need to make sure the segments are shorter than 1/4 wl or so.

73 Tom

1938. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 09:29:41 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae93b0c.157593638@news.accessunited.com>
Source record: 164987

On Fri, 27 Apr 2001 02:20:33 +0100, Bill Tippett
<btippett@alum.MIT.edu> wrote:

>Richard Harrison wrote:
>
>> 178 feet is a little too much for 5/8-wave at 4 MHz. Gain falls at
>> lengths beyond the 0.625 wavelengths because of the growth of those
>> secondary lobes Cecil identified.
>
> I operate on 3.5 MHz CW where the length is ~.633 wavelengths...I can't
>believe .008 wavelengths makes a significant difference! Other ideas?
>
>73, Bill W4ZV

You are getting the same results I have seen, and the same results
others report Bill.

I'm sure if you had perfect ground extending for some distance things
would be better. That's probably why my 160 meter 5/8th works OK and
one I tried on 40 was very poor.

The 5/8th wave depends on ground some distance from the antenna to
produce the pattern and gain, and the ground at that distance is out
of our control. It is too expensive to add radials, and the ground is
too lossy and Brewster effect too bad above medium frequencies.

73 Tom

1939. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 09:37:55 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae93bf3.157824108@news.accessunited.com>
Source record: 164988

On Thu, 26 Apr 2001 19:33:00 -0600, Gerald Schmitt <KK5YY@arrl.net>
wrote:

>>There is no magic, it is a resistor loaded dipole.
>
>My point was that it was not loaded at the feed but at the
>termination.

The termination IS at the feedpoint, or more correctly a few inches
away! The fact it is a folded dipole rather than a regular dipole is
minor.

It's not a traveling wave antenna, it is not terminated at the far end
and fed at the near end like longwires that are terminated.

That is the point I was making, in effect the resistor might as well
be across the feedpoint.

> If you would be willing to part with one of the terminating
>resistors I'll be at Dayton doing my satellite demos again. I have the
>balun and the wire but the resistor is burned up. Mine is one of the
>very early ones made out of treated paper tubes. I always thought it
>was a B&W but maybe it is an Amp Supply.

They tried non-inductive wire wound resistors at first, but later
changed to Carborundum or Stackpole composition resistors. I have the
early failed wire wound resistors, they were too inductive to use.

Amp Supply sold them for a short period.

BTW, this is a good example of how useless patents are today. You can
patent almost anything, just by trying enough angles. It doesn't have
to be new, or even correct.

73 Tom

1940. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 09:41:30 UTC
From: Bill Tippett <btippett@alum.MIT.edu>
Message-ID: <3AE93ECA.FECA8287@alum.MIT.edu>
Source record: 164989

Richard Harrison wrote:

> The usual suspect for poor vertical antenna performance is the ground
> system. In this case the tower is reported fine at 160-meters, and this
> should exonerate the antenna at 80-meters, except for the feed and
> matching systems which need changes to work at the higher frequencies.

Correct...the ground system is very good on 160...should have been even
better for 80 since the radials are electrically longer in wavelengths.

> The impedance of the shunt-feed, if the tower is tapped at the same
> point, would likely be a higher impedance at the higher frequency. Are
> the changes needed to accomodate the higher frequency all OK?

Correct...the 160 tap point was ~60' for 50 ohms and was around ~30-35'
for 80 meters which is what you would expect.

> Measurements are in order to find where the power is going, if
> inspection doesn`t disclose its disposition. Is there a power indicator
> to indicate delivery of power to the antenna?

1500 watts measured output with an SWR bridge...1:1 SWR at resonance.

>Is there a bridge or analyzer to indicate antenna characteristics?

Tuned shunt-feed tap and matching capacitor with MFJ-259B for 50 ohms
resistive.

> Can a field strength
> meter be used to indicate relative strength of emissions from the
> antenna? A dip-meter with a diode position can serve as a "wavemeter".
> I`ve used a multi-meter on the a-c scale, but not all meters have diodes
> good at r-f. How about an r-f impedance or admittance bridge? A loop of
> wire soldered to a panel lamp? All of these may help determine if power
> is radiated or wasted and where.

I did not use a field strength meter but made on-the-air comparisons
with a reference 1/4 wl GP elevated 6' with 2 elevated radials. The 1/4
wl antenna seemed to be the better performer for DX signals even though
it had an inferior ground system.

Apparently the radiation angle of the 5/8 wl vertical had a hole around
30-35 degrees (between the predominant lower lobe and the secondary
higher lobe) that was being filled by the 1/4 wl vertical. At any rate,
I decided that the 5/8 wl vertical was definitely not an improvement for
DX signals so I went to something different. Tom's experience makes me
feel better in that it is yet another example (besides WB9Z and ON4UN)
of a tall vertical not performing well. Thanks to all for your

comments!

73, Bill W4ZV

1941. 2m antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 12:15:35 UTC
From: jason creamer <jason1@nbnet.nb.ca>
Message-ID: <3AE9637B.6D62A9C3@nbnet.nb.ca>
Source record: 164990

i am looking for advice/diagrams on 2m antenna's.. no alot of ppl say that i am in a really good location and are really suprised that i cannot get into more local repeaters. The antenna i am using now is a 1/4 wave ground plane with a standing wave of 1.1 on 144.000,1.1 on 145.000, flat on the meter on 146.000,same with 147.000,1.6 on 148.000, so really it shows the standing wave is not an issue.. but i am thinking of maybe building an antenna with a little more gain but looking for options as i don't have the equipment and space for an oversized yagi(i could only wish). so any help would be seriously considered
thanx guys
VE9JMC

1942. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 12:54:05 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <5ME08uBtvW66EA3h@ifwtech.com>
Source record: 164991

Roy Lewallen wrote:
>Ian White, G3SEK wrote:
>
>Thanks for those interesting figures, Roy.
>
>One thing I'm not clear about is how (or if) NEC takes account of ground
>losses at the feedpoints of the two different types of antenna.
>Presumably the assumption is that the effective series resistance of
>ground losses at the feedpoint is negligible in both cases, so that the
>full 1 kW is delivered to each of the two different antennas?
>
> ----------
>
[...]
>I've found the MININEC type ground to be very useful
>for just such studies as the one I posted, since it removes ground
>system efficiency from the discussion, allowing other effects to be more
>clearly seen. I used this ground model for the posted results (which is
>what I meant by saying the model had "zero ground system loss"). The
>full KW was delivered to and radiated by the antennas (which also had no
>conductor loss, incidentally, although this would have had only a very
>minor effect). The presence of a ground radial system of moderate radius
>has little effect on the pattern, so including one wouldn't have an
>appreciable effect on the zero-ten degree comparison. The difference it
>would make between the 1/4 wave and 5/8 wave antenna would depend on the
>ground system, the ground conductivity, and the frequency. If anything
>but an extremely good ground system were included in the models, it
>would be difficult or impossible to determine how much of the observed
>differences was due to the ground system and how much to the other
>phenomena under discussion. Certainly you'd want to include a ground
>system model of some sort when comparing specific real antennas.
>
[...]

Thanks again, Roy.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

1943. Re: WANTED: 10-80m Vertical for Roof Top

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 13:09:39 UTC
From: OE1MWW <please.nomail@all.com>
Message-ID: <tnriet8g5n20pt7c8vfh5bh0lp7nk9nf6s@4ax.com>
Source record: 164992

On 26 Apr 2001 12:50:42 GMT, w7axe@aol.com (W7AXE) wrote:

> Can anyone could give me any good suggestions or recommendations on a 10-80m
>vertical to be mounted on the roof of a metal building? ...

Try to have a look at http://www.sommerantennas.com and look for the
TS-25/S (must be the 'S' model!). I have one in the garage and it will
be installed, depending on wind and rain, next week. I pretty
sopisticated (or complicated) but otherwise simple antenna. No traps,
no radials, and supposed to work over on all bandas.

73's
Wolfgang OE1MWW

1944. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 13:12:04 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE97024.591E2413@IEEE.org>
Source record: 164993

Dick Carroll wrote:
> Now I got it! *Everybody" is right! Even poor ol' maligned Carl, W5JJ.
> He says that "reflected power is a fiction", Peter agrees, Wes says no,
> and measures it - but only when he provides a termination that actually
> allows power to develop across it. Cecil reinforces everybody by stating
> that it stays bottled up in the feedline until the transmitter is turned
> off, or something. Walt Maxwell says it bounces off the tuner and goes
> back to the antenna where it is radiated with forward power, reinforcing
> the wattmeter reading that included the amount of the reflected....

You've got to realize, Dick, that some of us accept the definitions in
the IEEE Dictionary and some of us don't. If we don't accept the same
definitions, valid communication is impossible. That we disagree on
definitions in no way affects reality. We are not arguing reality,
we are arguing semantics.

If you accept the engineering definitions of power as being either
"energy transferred past a point" or "energy transformed at a point"
then you are accepting main stream electrical engineering definitions.
Engineers accept that joules/sec is power. Some physicists (and engineers
pretending to be physicists :-) will argue otherwise.

Consider the following antenna system with lossless feedlines.
Point 'X' is the Z0-match

100w XMTR---51.5 ohm coax---X---1/2WL 300 ohm twinlead---51.5 ohm load

There's 100w of forward power and no reflected power on the coax.
There's 200w of forward power and 100w of reflected power on the twinlead.
Half the incident power is accepted by the load.
All of the net generated power is accepted by the load.
The 300 ohm line contains three times as much energy as it would if
it was feeding a 300 ohm load.
--
http://www.mindspring.com/~w6rca

1945. Re: Looking for Yagi plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 13:12:55 UTC
From: ae517@FreeNet.Carleton.CA
Message-ID: <9cbr8n$l1a$1@freenet9.carleton.ca>
Source record: 164994

"Eric Ruuska" (eruuska@netnitco.net) writes:
> Hey all,
>
> Anyone know of a good website or other resource with Yagi plans for the
> absolute beginner? Specifically I'm looking for 2m and 6m Yagis.

There's a nice short 2 m yagi design at:

http://www.qsl.net/dk7zb/7El-yagi.htm

and I have one at at:

http://www.qsl.net/va3rr

Have fun!

--
73 de va3rr/aa8lu
http://www.qsl.net/va3rr
Check out the new Ship Station Regs at:
http://www.tc.gc.ca/Actsregs/csa-lmmc/csa64x.html

1946. Re: anyone try a TGM multi-band quad?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 13:48:40 UTC
From: Nick G4FAL <ntotterdell@riverauto.co.uk>
Message-ID: <BOeG6.75$f61.2463@stones>
Source record: 164995

Steve

Yes

I have an MQ2 on top of my house. I put it up a couple of months ago.

Advantages:

1. It works on WARC bands as well as 20-15-10.
2. It is very small - 12' x 4' or so.
3. It does have directional properties and can be 6dB up on a wire antenna.
4. I would guess that it is better that the MA5B as it has only two elements and they are both used on each band.
5. It gets progressively better as the frequency goes up.
6. Although front-to-back is not brilliant, side rejection is pretty good.

Disadvantages:

1. As the spokes are quite prominent, it is probably as much of an eye-sore as a bigger 2 ele minibeam or say a 15m 2 ele full size.
2. It has a very narrow bandwidth on 20m and 17m; although I do tune it up 100kHz from its resonance, it is not very effective there.
3. On 20m and 17m it is pretty much the same front as back - I have lots of contacts off the back.
4. Due to the position - on top of the house - I get excessive field strength in the house and cause lots of breakthrough. Can't really blame the MQ2 for that!

Recommendation:

1. If you can use a full size beam then don't consider a minibeam.
2. It you need a minibeam then this is a damn good contender.

It isn't really a quad - only the reflector has a sort of diamond quad arrangement. I think some people would call it a quagi.

I intend to put something bigger up eventually. Probably a full size two element 15m single bander.
--
Regards

Nick G4FAL
ntotterdell@riverauto.co.uk
KG6ENA <kg6ena@home.com> wrote in message news:3AE82276.605543FE@home.com...
> I am curious as to if anyone owns or has used a TGM multi-band quad.
> Their webpages are at http://www3.sympatico.ca/tgmc/ . Looks like the
> gain figures are ok over a wire, but the SWR ranges look kinda high to
> me. Comments?

>
> thanks
>
> steve
> kg6ena

1947. CC Big Thunder Monobanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 13:57:09 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3ae97b5b$0$88188$bbae4d71@news.net-link.net>
Source record: 164996

I received my new AES catalog today and was disappointed when I discovered AES has no 10 meter CC 510 Big Thunder Monoband antennas and the 515 and 520 are listed as "discontinued" as well as the X-9, the 40 meter kit for the X-9, and the XM-240, "shorty forty" 2 element 40 meter antenna. The X-7 and XM-240 are still shown in the CC advertisement in the catalog. I have a CC X-7 with the 40 kit as well as many other CC antennas and for the most part have been very pleased.

Anyone know what, if anything, CC may be coming out with for HF antennas? I was thinking of putting up an XM240 at about 70 feet, however, if it going to be discontinued, may as well wait or explore other manufactures.

1948. Re: keeping water out of 9913

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 13:59:53 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3ae97bfd$0$88188$bbae4d71@news.net-link.net>
Source record: 164997

I did not know that. Perhaps it is best to seal the top of the coax and leave the bottom open so pressure can equalize and moisture can find it's way out. Thanks for the tip on the LMR400. I will look into it for my next coax run.
Russ Renaud wrote in message <9c9p2mdsb1@freenet9.carleton.ca>...
>"Rudy Marcelletti" (rudym@net-link.net) writes:
>> So how do you do that with 9913 or 9913F?
>> Peter J. Bertini wrote in message ...
>>>The coax has an air core. No matter how well you seal it, moisture laden
>>>air will be drawn as the cable is heated and cooled, or as barometric
>>>pressure changes.
>
>Use LMR400 instead! Almost the same price, same losses, no diurnal pumping.
>
>--
>73 de va3rr/aa8lu
>http://www.qsl.net/va3rr
>Check out the new Ship Station Regs at:
>http://www.tc.gc.ca/Actsregs/csa-lmmc/csa64x.html

1949. Re: Moble setup -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 14:07:44 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3ae97dd6$0$88186$bbae4d71@news.net-link.net>
Source record: 164998

"....but I have a feeling the 706 will shut itself down
before it got to the point of problems."

It doesn't. I inadvertently turned down the voltage on an adjustable supply (I think it went down around 6 volts). The radio did shut off but my 706 into some weird mode, that when ever you turned to a memory channel and changed the mode, you lost the previous mode. For example, if you had usb programmed and went to AM to tune up, you could not get usb back. I had to do a master reset and re-program memories. My IC-735 had no such problems when I ran it mobile--just FM'ing after quite awhile. Watch your volt meter and when the battery gets down to about 12 volts, you better recharge or the car won't start!

1950. Hardline connectors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 14:18:48 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3ae9806c$0$88183$bbae4d71@news.net-link.net>
Source record: 165000
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.antenna

I have several spools of what looks to be either 3/4" or 7/8" CATV hardline. It has a fairly heavy vinyl jacket and center conductor looks to be copper clad steel about ½" diameter.

I I have plenty of splices. I need end connectors with either sex N connector or SO-230 or PL-259. I found some with PL-259 ends for ½" hardline but I can't read the name. Where are sources for these connectors? Any one know?

1951. Maldol antennas for Yaesu FT-817

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 14:21:09 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3ae980f9$0$88186$bbae4d71@news.net-link.net>
Source record: 164999

Anybody using these? How do they work?

1952. Re: keeping water out of 9913

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 15:02:21 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae98967.177655288@news.accessunited.com>
Source record: 165001

On Fri, 27 Apr 2001 09:59:53 -0400, "Rudy Marcelletti"
<rudym@net-link.net> wrote:

>I did not know that. Perhaps it is best to seal the top of the coax and
>leave the bottom open so pressure can equalize and moisture can find it's
>way out. Thanks for the tip on the LMR400. I will look into it for my next
>coax run.

That's what i wound up doing! I confine my hollow cables to vertical
ONLY runs, seal the top, and leave the bottom unsealed.

So far so good.

Any efforts are sealing both ends has resulted in the cable trapping
moisture at the low spots.

I will NEVER buy a hollow cable again.

73 Tom

1953. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 15:09:41 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cc23l$s4s$0@208.206.142.111>
Source record: 165002

Roy Lewallen wrote:
>
> Dunno what kind of meter you have, but that electric meter we all have
> outside our houses is measuring energy, in watt-hours.

Right. And if there is no load - the main disconnect is off- there will be no power used in termination, nor any measured. It will all be reflected back to the pole transformer. That was the point I was attempting.

And from my viewpoint any reflected energy from an unmatched antenna that finds no termination back at the line input will be re-reflected back to the antenna for radiation. That's what seems to happen with the use of an antenna tuner, less line losses as always.
Wes Stewart says he has used reflected power to heat thermocouples etc. Right, they are the termination that is missing in a ham antenna/feedline system using a tuner. If no termination is found by the reflected energy, there is no reflected power developed, again save line losses, and it will be re-reflected back down the feedline toward the antenna.

Some engineers here seem to say that as long as both voltage and current are present, power is developed. No argument, but I submit that the only reason that current flows in the reflected wave is that it is being terminated *somewhere*, (again neglecting losses) - that somewhere, in the case of reflections that find no termination at the line input, is back at the antenna where they wind up after being re-reflected by the tuner. There is no reflected power developed as result of the reflection at line input.
Pure Walt Maxwell as I understand him.

Dick

1954. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 15:23:57 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE98F0D.1654081D@IEEE.org>
Source record: 165003

Dick Carroll wrote:
> If no termination is found by the
> reflected energy, there is no reflected power developed, again save line
> losses, and it will be re-reflected back down the feedline toward the
> antenna.

Dick, energy moving past a point is a *definition* of power. What
definition of power are you using?

> Some engineers here seem to say that as long as both voltage and
> current are present, power is developed.

If V*I*cos(theta) is not zero, power exists at the point where V and
I are measured. What do you mean by "developed"? Seems you might be
using "developed" to mean "dissipated".

> Pure Walt Maxwell as I understand him.

Please provide the source or quote where Walt said that reflected
energy moving along a transmission line does not result in
reflected power. Perhaps Walt will jump in here.

Again, moving energy past a point equals power at that point, by
definition.

How many megawatts does a power generation plant produce? How many
megawatts does a power transmission line handle? These questions
are meaningless if moving energy past a point doesn't result in
power at that point.
--
http://www.mindspring.com/~w6rca

1955. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 15:37:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE99241.E18A1F1F@IEEE.org>
Source record: 165004

W6RCecilA wrote:
> 100w XMTR---51.5 ohm coax---X---1/2WL 300 ohm twinlead---51.5 ohm load
>
> There's 100w of forward power and no reflected power on the coax.
> There's 200w of forward power and 100w of reflected power on the twinlead.
> Half the incident power is accepted by the load.
> All of the net generated power is accepted by the load.
> The 300 ohm line contains three times as much energy as it would if
> it was feeding a 300 ohm load.

Bart pointed out this last sentence was poorly worded. It should say:

The 300 ohm line contains three times as much energy as it would if
it was delivering 100 watts to a 300 ohm load.
--
http://www.mindspring.com/~w6rca

1956. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 15:40:07 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cc3sn$2b3$0@208.206.142.111>
Source record: 165005

W6RCecilA wrote:
>
> Dick Carroll wrote:
> > Now I got it! *Everybody" is right! Even poor ol' maligned Carl, W5JJ.
> > He says that "reflected power is a fiction", Peter agrees, Wes says no,
> > and measures it - but only when he provides a termination that actually
> > allows power to develop across it. Cecil reinforces everybody by stating
> > that it stays bottled up in the feedline until the transmitter is turned
> > off, or something. Walt Maxwell says it bounces off the tuner and goes
> > back to the antenna where it is radiated with forward power, reinforcing
> > the wattmeter reading that included the amount of the reflected....
>
> You've got to realize, Dick, that some of us accept the definitions in
> the IEEE Dictionary and some of us don't. If we don't accept the same
> definitions, valid communication is impossible. That we disagree on
> definitions in no way affects reality. We are not arguing reality,
> we are arguing semantics.
>
> If you accept the engineering definitions of power as being either
> "energy transferred past a point" or "energy transformed at a point"
> then you are accepting main stream electrical engineering definitions.
> Engineers accept that joules/sec is power. Some physicists (and engineers
> pretending to be physicists :-) will argue otherwise.
>
> Consider the following antenna system with lossless feedlines.
> Point 'X' is the Z0-match
>
> 100w XMTR---51.5 ohm coax---X---1/2WL 300 ohm twinlead---51.5 ohm load
>
> There's 100w of forward power and no reflected power on the coax.
> There's 200w of forward power and 100w of reflected power on the twinlead.
> Half the incident power is accepted by the load.
> All of the net generated power is accepted by the load.
> The 300 ohm line contains three times as much energy as it would if
> it was feeding a 300 ohm load.
>

Good explanation, Cecil.

1957. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 15:48:09 UTC
From: kb7qhc@home.com
Message-ID: <3ae99460.70162017@news.seanet.com>
Source record: 165006

On Fri, 27 Apr 2001 10:23:57 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>Dick, energy moving past a point is a *definition* of power. What
>definition of power are you using?
>

Hi Cecil,

So a truck full of ever-ready batteries going through an intersection
is the definition of power, hmmm? I would guess almost any definition
goes now.

73's
Richard Clark, KB7QHC

1958. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 15:50:19 UTC
From: kb7qhc@home.com
Message-ID: <3aea94ed.70303350@news.seanet.com>
Source record: 165007

On Fri, 27 Apr 2001 08:12:04 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>You've got to realize, Dick, that some of us accept the definitions in
>the IEEE Dictionary and some of us don't. If we don't accept the same
>definitions, valid communication is impossible. That we disagree on
>definitions in no way affects reality. We are not arguing reality,
>we are arguing semantics.
>

Hi Cecil,

And it is even more embarassing when your dictionary cannot define the
terms it uses in its own definitions. The OED never suffers that
defect and yet you defer to this travesty of the IEEE.

73's
Richard Clark, KB7QHC

1959. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 17:28:05 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE9AC25.7B627F6B@IEEE.org>
Source record: 165008

Richard Clark wrote:
> And it is even more embarassing when your dictionary cannot define the
> terms it uses in its own definitions. The OED never suffers that
> defect and yet you defer to this travesty of the IEEE.

I don't have an OED dictionary, Richard. If you do, would you quote
their definition of power?
--
http://www.mindspring.com/~w6rca

1960. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 17:40:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE9AF08.B3C2B165@IEEE.org>
Source record: 165010

Richard Clark wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >Dick, energy moving past a point is a *definition* of power. What
> >definition of power are you using?
>
> So a truck full of ever-ready batteries going through an intersection
> is the definition of power, hmmm?

Aha Richard, a classic case of reductio ad absurdum. I'm sure you
knew I was referring in context to dynamic electrical (EM) energy.

"power - the rate of generating, transferring, or using energy."

Otherwise, all those power distribution companies would have to admit
they don't have a product or service to sell if they don't distribute
power.
--
http://www.mindspring.com/~w6rca

1961. Re: 2m antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 17:40:45 UTC
From: clay <clayman@myisp.comnospamm>
Message-ID: <3AE9AF58.290F9879@myisp.comnospamm>
Source record: 165009

Hi,
http://www.cebik.com/
is a good start point, click technicals, then page down to vhf section
click on half square for 2m. you can put this up for about $ 2.00 in pvc
and #12 copper wire, just add coax and you got a 50 ohm feed.
3 units more gain then a jpole and much better then the 1/4 waves.
it takes up little room, it has good side rejection and directional.

http://www.softcom.net/users/kd6dks/quad.html
build a 2m quad beam, 2 elements or up to 5 it is here
again 50 ohm feed, great performance, about 11 units gain !
so with an ht on low you can work them and pull them in too.
cost you about $ 12. to make use either pvc pipe or pressure
treated lumber for boom (better quality wood then plain pine)

http://members.aol.com/k5oe has some good ideas.

http://www.antennex.com/
this is a great site, it is a pay site for monthly newsletter
BUT IT IS FREE to check it out and read the workshop section,
try the dual quad for 2m ! looks like a bow tie out of 1/2 " copper pipe
and some pvc and a few copper rods for elements. small space,
nice antenna.

post back here and tell us what you built and how it worked for you.

73 clay

jason wrote:

> i am looking for advice/diagrams on 2m antenna's.. etc..

1962. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 18:13:40 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AE9B6D4.42C8F34F@hiwaay.net>
Source record: 165011

Does ANYONE remember that the original question concerned the difference between two different models of one brand of antenna? I may have missed it, but with all the hash about the comparitive properties of various 5/8 and 1/2 wave length antennas, with and without ground planes, in the near and far fields, modeled or real, over real or good or no ground, I dont think the original question has even been considered.

This thread is bare of any consideration of the original query.

Bill-W4BSG

Mad Dog wrote:
>
> between the old A99 and the new Imax99 1/2wave vertical dipole?
>
> --
> 714 Sandpile,
> The Mad Dog wavin' good bye

1963. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 18:44:03 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE9BDF3.7958@wt.net>
Source record: 165012

Tom W8JI wrote:

>
> 5/8 wl vertical antennas sure don't impress me either!
>
> 73 Tom

I'm starting to think the height above ground must have an effect as far as elevated. It must be, as on 2m I've never seen a 5/8 GP with 1/4 wl radials beat a 1/4 GP. Not even once. But on 10m, I've never seen a 5/8 GP lose to any other type, even with 1/4 wl radials. Not even once. So the height above ground must have a bearing on this. Also the ground too. We have pretty good ground here so maybe thats a factor. When I ran a 40m GP at 36 ft, I also had it set up to run as a 5/8 GP on 17m. I didn't have any smaller verticals to compare too, but it beat all my wire antennas by a large amount. Worked great on 17m. So I'm starting to think when you get real high in wavelength above the ground is when these problems start cropping up. As far as the 160m 5/8 mentioned in another thread I wonder if the shunt feeding had any effect on the poor results. Normally, I would never shunt feed a 5/8 wl tower. I would insulate the base and feed with a loading coil at the base. In theory it shouldn't really matter, but who knows. This is something I'm going to look into more as I have had both good and bad results using 5/8 verticals. Like I say, on 10m, I've never had one lose yet to any other type. But 2m was a disaster. But...On 2m, I only tried 1/4 wl radials. Thats an angle I need to check out. I think I'm going to make 2m versions of each type and see if my ideas for improving it really work, or are just a dud. I do remember when I ran a 40m vertical ground mounted and tried as a 5/8 on 17m , it was lousy on 17m. Not near as good as at 36 ft up. Of course the results for 40m were about the same. The elevated with 4 40m radials won on both bands by a large amount over the ground mount with 32 40m radials. MK
--
http://web.wt.net/~nm5k

1964. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 18:47:50 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE9BED6.35F7@wt.net>
Source record: 165013

Tom W8JI wrote:

>
> 5/8 wl vertical antennas sure don't impress me either!

Another add....For the most part ground mounted 5/8's haven't impressed me either. I've never had one work worth a hoot. But of course I don't have the ground radials needed to make one work though. All the ones I had success with were well elevated. MK
--
http://web.wt.net/~nm5k

1965. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 19:18:50 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE9C61A.638FE27E@IEEE.org>
Source record: 165014

Tom W8JI wrote:
> 5/8 wl vertical antennas sure don't impress me either!

One thing people may be missing about 5/8WL verticals for HF
operation is that the vertical beamwidth of a 5/8WL vertical
at about 25 degrees is a lot smaller than a 1/4WL vertical
beamwidth at about 45 degrees. In fact, at take-off-angles
between 27 degrees and 60 degrees, the 1/4WL vertical has
more gain than the 5/8WL vertical.

With an excellent ground plane, the 5/8WL has a stronger groundwave
signal which is good for VHF operation but it has a much smaller
shortwave footprint at HF than the 1/4WL vertical.
--
http://www.mindspring.com/~w6rca

1966. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 19:24:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cch0daih1@slb4.atl.mindspring.net>
Source record: 165015

Dick:

You've got it! I love your explanation.

I couldn't have put it that lucidly and succinctly in words...

I am sure that there are many others who truly understand, but... OTOH... there are many who are "lulled" into misuse of reflection ideas by the labeling on those danged reflected power wattmeters.

What amuses me is that... often those who could be more quantitative are not, although words are good, there is nothing as convincing, to those who can deal with it, as an algebraic or arithmetic calculation to "prove" that reflected power is a "fiction".

When one computes the fictional b = (V - IR) using a simple bridge measuring device and calls it the "reflected voltage", that does not imply that "reflected power" computed or "nomographed by"... Pr = b*b/R is a real power!

A good analogy to this "misuse" or "misinterpertation" of intermediate mathematical quatities, might be the use of the addition of logarithms of numbers to perform multiplication of those same numbers. The logarithms are interesting, and perhaps useful, but they probably have no "real" relationship to the actual problem that gave rise to the requirement to multiply the numbers in the first place.

So it is with "reflected power" in most cases of practical interest, a possibly useful quantity, but not really intrinsic to the physics at hand, and the potential for misinterpertation is large.

-Peter K1PO

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9cc23l$s4s$0@208.206.142.111...
>
>
> Roy Lewallen wrote:
> >
> > Dunno what kind of meter you have, but that electric meter we all have
> > outside our houses is measuring energy, in watt-hours.
>
>
> Right. And if there is no load - the main disconnect is off- there will
> be no power used in termination, nor any measured. It will all be
> reflected back to the pole transformer. That was the point I was
> attempting.

>
> And from my viewpoint any reflected energy from an unmatched antenna
> that finds no termination back at the line input will be re-reflected
> back to the antenna for radiation. That's what seems to happen with the
> use of an antenna tuner, less line losses as always.
> Wes Stewart says he has used reflected power to heat thermocouples etc.
> Right, they are the termination that is missing in a ham
> antenna/feedline system using a tuner. If no termination is found by the
> reflected energy, there is no reflected power developed, again save line
> losses, and it will be re-reflected back down the feedline toward the
> antenna.
>
> Some engineers here seem to say that as long as both voltage and
> current are present, power is developed. No argument, but I submit that
> the only reason that current flows in the reflected wave is that it is
> being terminated *somewhere*, (again neglecting losses) - that
> somewhere, in the case of reflections that find no termination at the
> line input, is back at the antenna where they wind up after being
> re-reflected by the tuner. There is no reflected power developed as
> result of the reflection at line input.
> Pure Walt Maxwell as I understand him.
>
> Dick

1967. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 19:30:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AE9C8D3.567422FB@IEEE.org>
Source record: 165016

"Peter O. Brackett" wrote:
> So it is with "reflected power" in most cases of practical interest, a
> possibly useful quantity, but not really intrinsic to the physics at hand,
> and the potential for misinterpertation is large.

How about if, from no on, I preface all my postings with:
"Given the IEEE Dictionary definition of power, ..." :-)
--
http://www.mindspring.com/~w6rca

1968. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 19:41:56 UTC
From: John O'Flaherty <o'flahert@toast.net>
Message-ID: <3AE9CB83.70314792@toast.net>
Source record: 165018

Richard Harrison wrote:

> Tom, W8JI wrote:
> "An offshoot of that was an opinion that the ionosphere is
> non-linear..."
>
> That is an old speculation. Some of our European contributors with long
> memories may recall a super-power station of the era around WW-2 called
> "Radio Luxembourg". It was rumored to have so charged the nearby
> ionosphere with its power that reflected signals from the affected area
> had Radio Luxembourg`s modulation superimposed.
>
> I was involved in discussions to employ the technique, big time, as a
> propaganda tool. Saner minds prevailed. Not only did we know nothing
> about the phenomenon, but were we successful, we had no idea what the
> unintended consequences might be. Still, we went as far as combining the
> outputs of 100KW transmitters through a rat-race and drove them with a
> common oscillator. We demonstrated that we might duplicate the power of
> Radio Luxembourg with what we had.
>
> Had the experiment been really cheap to pull-off, I`m sure we would have
> gone ahead with it, just to see what happened. The guys who set off the
> first A-bomb test weren`t sure it wouldn`t end the world, but they did
> it anyway.

What's a rat-race?

john
--
remove apostrophe to reply

1969. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 19:43:04 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cci3mhnk1@nntp9.atl.mindspring.net>
Source record: 165017

Cecil

Agreed... if current and voltage exist at a point on a line then one can say that a certain power is passing that point. But what if the "power" passing a point never gets dissipated or generated anywhere? And what if one does not use the voltage V and current I at that point but uses fictional currents and or voltages. Is that a real power?

What is usually being done with reflected power in most common amateur radio situations is the following:

There exists a real current I and a real voltage V on a line at a particular point. "The real power" passing there would then be perfectly valid and could be calculated by P = V * I * cos(theta). Or... (if one was sure the surge resistance of the line was R), by either of P = V*V/R or P = I*I*R.

However, what happens with "reflected power" is that V and I passing that point are not used... instead the "fictional" reflected voltage "b = V - IR" is used, this reflelcted voltage b is not an actual voltage on the line, b is a linear combination of V and I.

The fictional reflected voltage b which is not present on the line is then used to "create" a "fictional" reflected power to be displayed on a meter face or digital display as Pr = b*b/R.

Since there is no voltage b present on the line, there simply is no Pr!

Hey if you wanted to you could always "say" that any voltage V is the sum of any number of other voltages, say V = V1 + V2 + V3 + ad infinitum... but that does not make them "real". And computing power which involves multiplication and or squaring of quantities leads to many possible misuses or errors in "visualization".

For instance we can arbitrarily say that, paraphrasing Reg, a certain number is really the sum of two others, say. 5 = 3 + 2. Into hom many different sums can we resolve "5", heh, heh.

But then we can't begin squaring and mulitplying "3" and "2" and expecting "nice" things to happen, for instance... is 3*3 = 9 plus 2*2 = 4 which equals 13 equal to 5*5 = 25?

That's the "danger" of "reflected power" even as an intermediate quantitiy.

I maintain that we are all much better off without "reflected power".

Reflected voltage is a fiction but still I feel that it is useful and nicely behaved, and the same with reflected current, but start multiplying fictions together and who knows what craziness can result.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE98F0D.1654081D@IEEE.org...
> Dick Carroll wrote:
> > If no termination is found by the
> > reflected energy, there is no reflected power developed, again save line
> > losses, and it will be re-reflected back down the feedline toward the
> > antenna.
>
> Dick, energy moving past a point is a *definition* of power. What
> definition of power are you using?
>
> > Some engineers here seem to say that as long as both voltage and
> > current are present, power is developed.
>
> If V*I*cos(theta) is not zero, power exists at the point where V and
> I are measured. What do you mean by "developed"? Seems you might be
> using "developed" to mean "dissipated".
>
> > Pure Walt Maxwell as I understand him.
>
> Please provide the source or quote where Walt said that reflected
> energy moving along a transmission line does not result in
> reflected power. Perhaps Walt will jump in here.
>
> Again, moving energy past a point equals power at that point, by
> definition.
>
> How many megawatts does a power generation plant produce? How many
> megawatts does a power transmission line handle? These questions
> are meaningless if moving energy past a point doesn't result in
> power at that point.
> --
> http://www.mindspring.com/~w6rca

1970. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 19:46:04 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cci99$rd2$1@slb1.atl.mindspring.net>
Source record: 164920

Cecil:

I love Bart... (brotherly!) he keeps us all honest.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AE99241.E18A1F1F@IEEE.org...
> W6RCecilA wrote:
> > 100w XMTR---51.5 ohm coax---X---1/2WL 300 ohm twinlead---51.5 ohm load
> >
> > There's 100w of forward power and no reflected power on the coax.
> > There's 200w of forward power and 100w of reflected power on the
twinlead.
> > Half the incident power is accepted by the load.
> > All of the net generated power is accepted by the load.
> > The 300 ohm line contains three times as much energy as it would if
> > it was feeding a 300 ohm load.
>
> Bart pointed out this last sentence was poorly worded. It should say:
>
> The 300 ohm line contains three times as much energy as it would if
> it was delivering 100 watts to a 300 ohm load.
> --
> http://www.mindspring.com/~w6rca

1971. Jeep Antennas, propagation and wavelength question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 19:46:06 UTC
From: KC0IDB <dmleners@geocities.com>
Message-ID: <9cciai$iv5$1@ins21.netins.net>
Source record: 164919

I remember seeing a post on antennas for jeeps a few weeks back, but I don't recall the specifics of it and unfortunately it's no longer in my newsreader. Anyway, on to the question....

I have a Jeep-CJ7 that I am putting a 2m radio in and need to put an antenna on. I don't really want to stick one on the hood and I tried one using a mag mount on the top of one of the rear wheel wells but it kept getting knocked around and didn't seem to do much good anyway. I am hoping to mount one on the outside, back corner of the jeep above the taillight. Since it's not a mag-mount and theres no metal underneath for a decent ground pattern, I am a little concerned about the radiation pattern. Will it be concentrated out the front side of the jeep (where all the metal for grounding is) or will it maintain a standard pattern?

I've been told that a 1/2 wave vertical will work better than a 1/4 or 5/8 wave due to less of a need for using the metal roof as a ground. Any truth or comments on this?

Also, since the antenna will be about 5 feet behind me and pretty much level with the seats, how much concern should I have for RF safety?

KC0IDB

1972. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 19:57:26 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cciuqjhc1@slb5.atl.mindspring.net>
Source record: 164921

Cecil:

You mean you spent good money for that danged IEEE Dictionary yet you do not own the OED... the "bible" of the English (British English) language?

What?

Where are your priorities man?

At least you should have Webster. (Daniel was a yankee, lived in New Hampshire, but he didn't have such an august institution as Oxford University to rely on for posterity.)

Go get an OED, it comes in various flavors and price points... sometimes the spelling is a little difficult for us honourable Americans.

I think we should all complain to the IEEE's chief lexicographer about the inconsistencies in that dictionary.

What does this IEEE travesty of a Dictionary do to our "image" as technicians and engineers?

I think it's terrible that a world reknowned "engineering" institution such as IEEE would print such a "travesty". This unfortunate publication does nothing to enhance the view of Engineers and Technicians as seen through the eyes of other elements of our society. Why... the Arts and Science majors will look at that IEEE Dictionary and say, "harumph, those beer guzzling, ("I'm a heck of a wreck!", "Last year I couldn't even spell Ingeenur, and now I are one!") engineers can't even define their own terms correctly.

What...

-Peter k1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AE9AC25.7B627F6B@IEEE.org...
> Richard Clark wrote:
> > And it is even more embarassing when your dictionary cannot define the
> > terms it uses in its own definitions. The OED never suffers that
> > defect and yet you defer to this travesty of the IEEE.
>
> I don't have an OED dictionary, Richard. If you do, would you quote
> their definition of power?
> --
> http://www.mindspring.com/~w6rca

1973. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 20:16:57 UTC
From: kb7qhc@home.com
Message-ID: <3ae9d122.85716874@news.seanet.com>
Source record: 164922

On Fri, 27 Apr 2001 12:40:24 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>> >Dick, energy moving past a point is a *definition* of power. What
>> >definition of power are you using?
>>
>> So a truck full of ever-ready batteries going through an intersection
>> is the definition of power, hmmm?
>
>Aha Richard, a classic case of reductio ad absurdum. I'm sure you
>knew I was referring in context to dynamic electrical (EM) energy.
>
>"power - the rate of generating, transferring, or using energy."
>
>Otherwise, all those power distribution companies would have to admit
>they don't have a product or service to sell if they don't distribute
>power.

Hi Cecil,

You will now note that there is no "point" through which energy passes
when "generating" or "using" are considered (suggesting that the
"point" has no point). AND we should all agree that Power is not
defined as energy that has "moved past a point."

Having been head to head with Gary over this (which he called power
being "expressed") it is obvious that what is being struggled for is
in the same nature of the dissipation debate (but incoherently
applied).

That is: Power is that energy that is dissipated. Newton describes
even simpler.

Odd how the dictionary vendors want to add more words to the
description than is necessary to describe it. This would be OK if
they also defined those extraneous terms they add. However, they do
not.

73's
Richard Clark, KB7QHC

1974. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 20:18:12 UTC
From: kb7qhc@home.com
Message-ID: <3aead3dc.86414106@news.seanet.com>
Source record: 164923

On Fri, 27 Apr 2001 14:30:27 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>"Peter O. Brackett" wrote:
>> So it is with "reflected power" in most cases of practical interest, a
>> possibly useful quantity, but not really intrinsic to the physics at hand,
>> and the potential for misinterpertation is large.
>
>How about if, from no on, I preface all my postings with:
>"Given the IEEE Dictionary definition of power, ..." :-)

Hi Cecil,

That would work fine with my Kill filter. ;-)

73's
Richard Clark, KB7QHC

1975. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 20:37:01 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE9D86D.3DC9@wt.net>
Source record: 164925

W6RCecilA wrote:
>
> Tom W8JI wrote:
> > 5/8 wl vertical antennas sure don't impress me either!
>
> One thing people may be missing about 5/8WL verticals for HF
> operation is that the vertical beamwidth of a 5/8WL vertical
> at about 25 degrees is a lot smaller than a 1/4WL vertical
> beamwidth at about 45 degrees. In fact, at take-off-angles
> between 27 degrees and 60 degrees, the 1/4WL vertical has
> *more gain* than the 5/8WL vertical.

I've never really noticed this much in the real world though. Say on 10m, if I compared a 1/4 wl gp to a 5/8 gp, almost all would say the 5/8 was better no matter where they were, skywave or groundwave. Same for 17m when comparing to wire antennas.
>
> With an excellent ground plane, the 5/8WL has a stronger groundwave
> signal which is good for VHF operation but it has a much smaller
> shortwave footprint at HF than the 1/4WL vertical.

True, but this is where most fail at VHF. The worst performances I've seen of 5/8 verticals were on VHF. They were horrible. But then again, back then I only used 1/4 wl radials to test. I'm going to build a "dual" 5/8 gp for 2m and compare with my 1/4 gp. This is the version I refer to in my modeling page as the "best" of all those types. Steep sloping 5/8 wl radials. If it wins against the 1/4 gp on 2m, I'll know I have it licked.
Of course, this antenna will be much more of a dual 5/8 collinear than a 5/8 gp. If that works, the next test should be to compare with a "dual 1/2 wl" version. Being as the spacing is non optimum, the dual 1/2 wl might win. That would be interesting to test, and I think 2m is the best place to do it being it's so critical on that band. If it works on VHF, it'll work on HF. HF seems to be much less critical. I know there are problems with the 5/8 designs, but I have to consider that in the real world in many cases I have seen them do very well. It wasn't just a fluke because I've used many of them, in different periods, and antennas. As far as verticals on 10m at the 20-60 ft height range, I've never seen anything beat a good 5/8 gp. Even with the 1/4 wl radials. And I know those are a bad design. The last time I compared a 10m 5/8 with 3/4 wl radials against a decoupled end fed halfwave the 5/8 was an avg 1 S unit better to all worked. I'm trying to figure out why something that shouldn't work well, did. Maybe it's our good ground cdx here. Here at this qth a 1/4 wl GP is the worst of the 3 common types here on 10m. The only other thing I could think of here is the actual

whip is taller and more clear of ground clutter. So would the 1/4 gp
with the tip at the same height of the tip of the 5/8 equal or win? Only
the shadow knows.... MK

--
http://web.wt.net/~nm5k

1976. Re: Jeep Antennas, propagation and wavelength question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 20:37:42 UTC
From: Don Putnick <dputnick@alumni.caltech.edu>
Message-ID: <3AE9D896.EAAA8156@alumni.caltech.edu>
Source record: 164924

KC0IDB wrote:
[snip]
> Also, since the antenna will be about 5 feet behind me and pretty much level
> with the seats, how much concern should I have for RF safety?

You can start with http://www.arrl.org/news/rfsafety/

Or you can check out Gordon West's study guides. Questions similar to
yours are now part of the exams

In short, it depends on frequency, antenna, distance, and power.

1977. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 20:44:46 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AE9DA3E.3CF3@wt.net>
Source record: 164926

Bill Aycock wrote:
>
> Does ANYONE remember that the original question concerned the difference
> between two different models of one brand of antenna? I may have missed
> it, but with all the hash about the comparitive properties of various
> 5/8 and 1/2 wave length antennas, with and without ground planes, in the
> near and far fields, modeled or real, over real or good or no ground, I
> dont think the original question has even been considered.
>
> This thread is bare of any consideration of the original query.
>
> Bill-W4BSG

>
> Mad Dog wrote:
> >
> > between the old A99 and the new Imax99 1/2wave vertical dipole?
> >
> > --
> > 714 Sandpile,
> > The Mad Dog wavin' good bye

Oh, I considered it, but he is comparing a 1/2 to a 1/2 wave. I assume
any increase in performance between the two to be due to better
decoupling. But I've never seen the new one, and never tried the old
one, so can't really and didn't comment. My hunch is being they are both
1/2 waves, the difference to be very minor if any. The winner will
probably be the one with the best decoupling scheme. MK

--
http://web.wt.net/~nm5k

1978. 2m Ant for inside VW Cabrio Convertable

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 21:58:03 UTC
From: Ryan Stapleton <ryan@pearl.bluewizard.net>
Message-ID: <LXIG6.32964$qc2.7886545@typhoon.southeast.rr.com>
Source record: 164928

Hello all,
I have gotten a VW Cabrio Convertable and I am slowly getting back into
the hobby and I was wondering what would be a good radio and ant
that I would want to look at? The car has a full roll bar that I was
thinking of trying to put an ant on some how, I didn't want to
make an holes or anything like that.
I am looking for mostly 2m, maybe 440 as well.

Thanks
-Ryan

1979. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 22:02:26 UTC
From: "M.J.Powell" <mike@pickmere.demon.co.uk>
Message-ID: <Ib6gsJAyxe66EwBt@pickmere.demon.co.uk>
Source record: 164931

In article <29943-3AE8C353-163@storefull-113.iap.bryant.webtv.net>,
Richard Harrison <richardharrison@webtv.net> writes
>Tom, W8JI wrote:
>"An offshoot of that was an opinion that the ionosphere is
>non-linear..."
>
>That is an old speculation. Some of our European contributors with long
>memories may recall a super-power station of the era around WW-2 called
>"Radio Luxembourg". It was rumored to have so charged the nearby
>ionosphere with its power that reflected signals from the affected area
>had Radio Luxembourg`s modulation superimposed.

There was some difficulty in telling the 'Luxembourg Effect' from the
'rusty-nail' effect but the LE did exist and is known now by cross-mod
on amateur VLF reception.

Mike

G3IJE
--
M.J.Powell

1980. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 22:09:42 UTC
From: k3bu@aol.com
Message-ID: <20010427180942.06640.00002416@ng-fo1.aol.com>
Source record: 164927

>
> No, I wanted the antenna for long-haul paths only...>5000 miles. If I
>wanted local (high angle) coverage I would not use a vertical. A 5/8
>wave vertical is supposed to have better low angle coverage (as Roy's
>model predicts) but that is not what I experienced. Still wondering
>why?
>
>73, Bill W4ZV
>
>
>

5/8 verticals have too sharp and low angle lobe (and split into high angle lobe). They would shine occasionally when propagation supports very low angles (low sunspots). Most of the time 1/4 to 1/2 wave verticals will fit the prevailing propagation modes better and seem to "beat" 5/8. As NM5K illustrated, on higher frequencies (10m) prevailing angles are lower and verticals 1/2 to 7/8 wave play better than 1/4 waves.
Same goes for 2m, where quite often repeaters are high, or refractions require bit higher angle than 5/8 provides and in most cases 1/4 waves beat 5/8s. For contester it doesn't hurt to have 5/8 in the arsenal for that occasional low angle, as well as low inverted Vee for that high angle propagation.
People keep forgetting to match the antenna performance to propagation modes and tend to go with "gospel." Once you have variety of antennas, it never ceases to amaze how with conditions change various antennas perform at different times (played with stacks?)

Yuri, K3BU
da vertical beach BU/m

1981. Re: ANTIGRAVITY SUCCEED with L/4 antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 22:17:12 UTC
From: Perseus@hol.gr
Message-ID: <3ae9ecbe.7433162@news.ntua.gr>
Source record: 164929

Ofcourse i'm not a duke cause the title dont exist today.
But indeed i have straight blood line as some other 15 known persons.
And i dont care if the title is granded or inherited.
I have wright this only to explain the signature :)

On 25 Apr 2001 06:07:52 GMT, Bill Nelson <billn@spock.peak.org> wrote:

>I-Oannes Karahalus Filos]+[EE 10 Konx Om Panx <Perseus@hol.gr> wrote:
>: Whats up Doc ? :) Dont be afraid. I,m a <real> Duke even if the title smell
>: bad to you. Straight blood line from the Duke of Mystra who came from
>: Konstantinopolis at 1200 (High General of Byzantine army) to suport and
>: protect the brother of Emperor Komninos and Peloponnisos (Kingdom of Mystra)
>: from the Turks. His name was Nikolos Filos . (Nick Friend).
>
>Are you the eldest son of the eldest son etc - going all the way back?
>If not, then you are probably not a Duke.
>
>By the way, isn't "Duke" a granted title, not an inherited one?

I am a child of Earth and of Starry Heaven;
But my race is of Heaven(Orphics)
E 10 E
Duke of Mystra

1982. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 22:18:03 UTC
From: k3bu@aol.com
Message-ID: <20010427181803.06640.00002417@ng-fo1.aol.com>
Source record: 164930

>
>That was a topic on a contesting reflector.
>
>It seems a few people think that the power levels from activity during
>contests actually causes the ionization to change. An offshoot of that
>was an opinion that the ionosphere is non-linear....and that 10 dB of
>transmitter power change produces more than ten dB of receiver signal
>level change.
>
>No, this was not an April 1 joke.
>
>Opinions?
>
>73 Tom
>

Thanks for invitation, Tom.

You made fun of me and ridiculed me (about 5th time) on Contest Reflector, my rebuttal was confiscated by reflector Gestapo, once is enough. I simply reported observation, possible explanation and belief in it, others had similar experiences (on VHF), but if you say it doesn't exist, than I am happy with explanation. Even if it doesn't exist, I will use it anyway. See you in the contest, I will be preheating my frequency!

73 Yuri
da vertical beach BUm

1983. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 22:41:59 UTC
From: richardharrison@webtv.net
Message-ID: <24383-3AE9F5B7-7@storefull-112.iap.bryant.webtv.net>
Source record: 164934

Dick Carroll wrote:
"No argument, but I submit that the only reason that current flows in the reflected wave is that it is being terminated somewhere."

Current results from its source being connected to a transmission line. Current will initially charge through the line, termination or no termination.

A change in impedance encountered by a wave causes reflection. The impedance bump, of course, may come from a termination which is mismatched to the line. I would say that electric current is caused by a difference of potential between the points of energy flow.

Best regards, Richard Harrison, KB5WZI

1984. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 23:10:51 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae9f9df.206452218@news.accessunited.com>
Source record: 164932

On Fri, 27 Apr 2001 13:44:03 -0500, Mark Keith <nm5k@wt.net> wrote:

>Tom W8JI wrote:
>
>>
>> 5/8 wl vertical antennas sure don't impress me either!
>>
>> 73 Tom
>
>I'm starting to think the height above ground must have an effect as far
>as elevated. It must be, as on 2m I've never seen a 5/8 GP with 1/4 wl
>radials beat a 1/4 GP. Not even once. But on 10m, I've never seen a 5/8
>GP lose to any other type, even with 1/4 wl radials. Not even once. So
>the height above ground must have a bearing on this.

The whole issue is too complex for a single simple answer.

As I said earlier, Jon Bloom wrote an interesting article on the
"5/8th wave Mystique" debunking the "always has 3dB" claims.

The gain does vary with height, ground characteristics, and so on.

People forget the antenna gets its gain from the ground around the
antenna, and actually the out-of-phase section of current is a
"looser".

I think the dismal performance 80 and 40 meters is because soil
conductivity is poor. And as Bill points out the antenna does have a
null at useful wave angles, when the ground is at the base height of
the antenna and is large.

Broadcasters don't even use 5/8th wave antennas because of the high
angle lobe. The high angle lobe lands withing groundwave range, and
gives rise to severe fading at the edges of groundwave range. They
prefer shorter verticals, and even call shorter verticals "non-fading
verticals" because of the bad reputation 5/8th wave antennas got out
at the fringe of groundwave.

Certainly there are many reasons why they don't work as well as
expected in many or most cases. My 5/8th wave 160 vertical about ties
my 200 foot vertical at distances of 1000 miles or more at night, but
I don't use it. The reason is I give up too much signal in closer.

During the daytime, it is a good antenna at almost any distance.

But on 80 and 40 all the 5/8th wave antennas I have tried really
weren't good. They are the next thing to dummy loads.

73 Tom

1985. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 23:12:26 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae9fc77.207116223@news.accessunited.com>
Source record: 164933

On Fri, 27 Apr 2001 14:18:50 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Tom W8JI wrote:
>> 5/8 wl vertical antennas sure don't impress me either!
>
>One thing people may be missing about 5/8WL verticals for HF
>operation is that the vertical beamwidth of a 5/8WL vertical
>at about 25 degrees is a lot smaller than a 1/4WL vertical
>beamwidth at about 45 degrees. In fact, at take-off-angles
>between 27 degrees and 60 degrees, the 1/4WL vertical has
>*more gain* than the 5/8WL vertical.
>
>With an excellent ground plane, the 5/8WL has a stronger groundwave
>signal which is good for VHF operation but it has a much smaller
>shortwave footprint at HF than the 1/4WL vertical.

Except they don't work very well at VHF Cecil. A 1/4 wl groundplane
with sloped radials works as well or better.

73 Tom

1986. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 23:21:30 UTC
From: 2w8ji@akorn.net
Message-ID: <3ae9fd1e.207282870@news.accessunited.com>
Source record: 164935

On Fri, 27 Apr 2001 23:02:26 +0100, "M.J.Powell"
<mike@pickmere.demon.co.uk> wrote:

>There was some difficulty in telling the 'Luxembourg Effect' from the
>'rusty-nail' effect but the LE did exist and is known now by cross-mod
>on amateur VLF reception.
>

It turned out the Radio Luxenbourg effect was mixing in the
transmitters, not in the ionosphere.

Radio Luxenbourg originally blamed it on the ionosphere, but it was
only their transmitters and not those of other stations running the
same and more power.

Right now I hear Radio Marti on 14010 kHz in the afternoon. VOA has
two transmitters with antennas physically too close together that are
mixing in one of the transmitters at Greenville SC.

I had the same problem with WWCR. They had a mixing product between
transmitters coming out on 1855 and 1865 kHz. It went on for years
until they installed filters in the antenna leads.

A SWBC station in north Georgia had a mixing product on 1805kHz, again
it was cured with a trap at their antenna. This stuff is pretty common
in transmitters, but Radio Luxenbourg preferred to place the blame on
the ionosphere at first...until people got wise.

73 Tom

1987. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 23:30:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEA011D.6FD6FBAC@IEEE.org>
Source record: 164936

Richard Clark wrote:
> AND we should all agree that Power is not
> defined as energy that has "moved past a point."

Yes, I was negligent when I said that, Richard. I should have said:
"Power is defined as energy that has moved past a plane". Please
forgive me. :-)
--
http://www.mindspring.com/~w6rca

1988. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 23:45:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEA0497.7318F10A@IEEE.org>
Source record: 164937

"Peter O. Brackett" wrote:
> Agreed... if current and voltage exist at a point on a line then one can say
> that a certain power is passing that point. But what if the "power"
> passing a point never gets dissipated or generated anywhere?

Peter, it all hinges on the definition of power. For a particular definition,
it doesn't matter a whit whether the power is ever dissipated or not.
Power, as defined by the IEEE, is simply energy per unit time. It may
be being dissipated but it may also be being generated or transferred.

> However, what happens with "reflected power" is that V and I passing that
> point are not used...

Yep, they are used, Peter. They are used to transform impedances. Otherwise,
matching with tuners would be impossible. The generated energy "rides on the
back" of the reflected energy to the load. The mismatched load will not
accept the net generated energy without the help of the reflected energy.

> I maintain that we are all much better off without "reflected power".

Everyone is entitled to his/her own opinion. Reflected RF energy is real
and moving. Moving energy is defined as power.

> Reflected voltage is a fiction ...

A TDR can measure the voltage in a reflection. Are TDR's fiction also?
Is that fictional voltage in TV ghosts?
--
http://www.mindspring.com/~w6rca

1989. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 23:46:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEA04DD.AFAE6AC0@IEEE.org>
Source record: 164938

Richard Clark wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >How about if, from no on, I preface all my postings with:
> >"Given the IEEE Dictionary definition of power, ..." :-)
>
> That would work fine with my Kill filter. ;-)

You have "IEEE" in your kill filter?
--
http://www.mindspring.com/~w6rca

1990. feeding several dipoles into one downlead

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 23:50:54 UTC
From: Paul Logan <Paul.Logan4@btinternet.com>
Message-ID: <9cd0hclgm1@plutonium.btinternet.com>
Source record: 164939

Hi all, I am something of a newbie when it comes to antenna experimentation
so:

anyone got any ideas on if it is ok to feed several dipoles with coax then
join all the leads into one and feed it to my scanner. The dipoles would be
at various points around my loft and cut for different VHF/ UHF frequencies,

any help here would be very welcome,

also how do i match a dipole to 50 0hms simply, is there an equation that
will let me work out coax matching sections- or do I really need to worry
about this since the antennas will be receive only

regards,

Paul L,
Ireland.

1991. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 23:52:48 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEA0650.6C3D8B96@IEEE.org>
Source record: 164941

Mark Keith wrote:
> True, but this is where most fail at VHF. The worst performances I've
> seen of 5/8 verticals were on VHF. They were horrible. But then again,
> back then I only used 1/4 wl radials to test.

I believe that the higher the current loop is on the vertical, the
longer the radials must be. It's just a matter of geometry.
--
http://www.mindspring.com/~w6rca

1992. W4RNL 2m Half Square question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 23:54:34 UTC
From: Paul Logan <Paul.Logan4@btinternet.com>
Message-ID: <9cd0o8$4qq$1@neptunium.btinternet.com>
Source record: 164940

Hi all,
said antenna can be found via this link

http://www.cebik.com/hs.html

how do I construct one of these for 164.2 mhz?. How do I change the measurements for 2m to other frequencies,

any help would be gratefully received,

regards from Ireland,

Paul L.

1993. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 23:55:52 UTC
From: kb7qhc@home.com
Message-ID: <3aea06be.99440998@news.seanet.com>
Source record: 164943

On Fri, 27 Apr 2001 18:30:37 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> AND we should all agree that Power is not
>> defined as energy that has "moved past a point."
>
>Yes, I was negligent when I said that, Richard. I should have said:
>"Power is defined as energy that has moved past a plane". Please
>forgive me. :-)

Hi Cecil,

Glad you added the smiley face. Reason is that your new "definition"
now reminds me of the opening sequence to LEXX.

73's
Richard Clark, KB7QHC

1994. Re: 2m Ant for inside VW Cabrio Convertable

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 23:55:59 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <fwbqOukgBE1Xy3PHeeKIqZ+UDXGq@4ax.com>
Source record: 164942

Ryan Stapleton <ryan@pearl.bluewizard.net> wrote:

>Hello all,
> I have gotten a VW Cabrio Convertable and I am slowly getting back into
>the hobby and I was wondering what would be a good radio and ant
>that I would want to look at? The car has a full roll bar that I was
>thinking of trying to put an ant on some how, I didn't want to
>make an holes or anything like that.
>I am looking for mostly 2m, maybe 440 as well.
>
>
>Thanks
>-Ryan

Maybe you could get a lip mount antenna, to attach to the edge of your front hood. That way, you could get some metal beneath your antenna.

Bob
k5qwg

1995. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-27 23:59:33 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEA07E5.7DC04EAB@IEEE.org>
Source record: 164944

Tom W8JI wrote:
> Except they don't work very well at VHF Cecil. A 1/4 wl groundplane
> with sloped radials works as well or better.

I ran S-meter tests in AZ, Tom. With a mag mount on a tin roof,
the 5/8WL Larson beat the 19" MFJ-1724 on 2m.
--
http://www.mindspring.com/~w6rca

1996. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 00:10:09 UTC
From: 2w8ji@akorn.net
Message-ID: <3aea0911.210342078@news.accessunited.com>
Source record: 164945

On 27 Apr 2001 22:18:03 GMT, k3bu@aol.com (Yuri Blanarovich) wrote:

>You made fun of me and ridiculed me (about 5th time) on Contest Reflector, my
>rebuttal was confiscated by reflector Gestapo, once is enough. I simply
>reported observation, possible explanation and belief in it, others had similar
>experiences (on VHF), but if you say it doesn't exist, than I am happy with
>explanation. Even if it doesn't exist, I will use it anyway. See you in the
>contest, I will be preheating my frequency!

Hi Yuri,

There really isn't anything to support claims the ionosphere heats up
and propagation gets better during contests. As a matter of fact, the
evidence is very much to the contrary.

I'm glad you are happy with my explaination. I hope it was helpful to
you.

73 Tom

1997. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 00:15:50 UTC
From: 2w8ji@akorn.net
Message-ID: <3aea0a89.210719018@news.accessunited.com>
Source record: 164946

On Fri, 27 Apr 2001 18:59:33 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Tom W8JI wrote:
>> Except they don't work very well at VHF Cecil. A 1/4 wl groundplane
>> with sloped radials works as well or better.
>
>I ran S-meter tests in AZ, Tom. With a mag mount on a tin roof,
>the 5/8WL Larson beat the 19" MFJ-1724 on 2m.

Anything beats an MFJ antenna.

Seriously, it all depends on the size of the groundplane and how flat
it is.

The context of this thread was a 1/2 wl CB antenna compared to a 5/8th
wl CB antenna, neither on a large groundplane.

I stated early on 5/8th wave antennas do work over large flat
groundplanes....no question about it. On the roof of my truck, there
was no measureable difference between a 5/8th Larson and a 1/4 wl
antenna mounted through the roof. So I use the 1/4 wave.

73 Tom

1998. Re: W4RNL 2m Half Square question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 00:17:08 UTC
From: 2w8ji@akorn.net
Message-ID: <3aea0bab.211008138@news.accessunited.com>
Source record: 164947

On Sat, 28 Apr 2001 00:54:34 +0100, "Paul Logan"
<Paul.Logan4@btinternet.com> wrote:

>Hi all,
>said antenna can be found via this link
>
>http://www.cebik.com/hs.html
>
>how do I construct one of these for 164.2 mhz?. How do I change the
>measurements for 2m to other frequencies,
>
>any help would be gratefully received,
>
>regards from Ireland,
>
>Paul L.

Be careful with that antenna. There is no feedline decoupling.

That can make the model work a lot different than a real antenna.

73 Tom

1999. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 00:50:44 UTC
From: 2w8ji@akorn.net
Message-ID: <3aea111a.212399447@news.accessunited.com>
Source record: 164948

On Fri, 27 Apr 2001 18:59:33 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Tom W8JI wrote:
>> Except they don't work very well at VHF Cecil. A 1/4 wl groundplane
>> with sloped radials works as well or better.
>
>I ran S-meter tests in AZ, Tom. With a mag mount on a tin roof,
>the 5/8WL Larson beat the 19" MFJ-1724 on 2m.
>--
>http://www.mindspring.com/~w6rca

I modeled the antennas in freespace with 4 1/4 wl radials and the
model agrees with you Cecil.

The 5/8th wl does have gain over the 1/4 wl antenna (with flat
radials). The 5/8th wl antenna with four flat 1/4 wl radials is 0.2 dB
better at zero degrees than a 1/4 wl antenna with four flat 1/4 wl
radials.

When I sloped the radials at 45 degrees, the 1/4 wl was 2.77 dB
STRONGER than the 5/8th at zero degrees.

When the 5/8th antenna had flat radials and the 1/4 wl had sloped
radials, the 1/4 wl was only 0.5dB over the 5/8th antenna.

The gain depends on the ground system and how flat and extensive the
ground system is, but then everyone said that all along.

If it were my choice, I'd use a 1/4 wl GP with sloped radials for an
elevated antenna.

73 Tom

2000. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 01:08:23 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cd51u$34l$1@uranium.btinternet.com>
Source record: 164949

W6RCecilA wrote -
How about if, from no on, I preface all my postings with:
> "Given the IEEE Dictionary definition of power, ..." :-)
==========

Isn't there an international telecoms organisation whose defining
authority exceeds that of the mere IEEE ?

Reg

2001. Re: feeding several dipoles into one downlead

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 01:09:19 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AEA183F.929004D2@oio.net>
Source record: 164950

Paul,
If the antennas are receive only, I wouldn't bother to
worry about matching impedances. If the antenna is a 1/2
wave length, the feedline something close to 50 ohms, and
the input to the receiver is 50 ohms, the mis-match won't
make any practical difference.
If you really want to make a dipole have a 50 ohm input,
'droop' the 'legs' of the dipole till you get the value
desired.
'Doc

2002. Re: Jeep Antennas, propagation and wavelength question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 01:16:45 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AEA19FD.F4A6D3CF@oio.net>
Source record: 164951

KC0IDB,
Mounting any antenna for any band at one 'corner' of a
vehicle will distort the radiation pattern. How much
distortion is really anyone's guess. At any rate, it will
probably ~not~ be noticable.
One alternative is to mount the antenna on the windshield
frame at top center. Bend the 'whip' part so that it's more
or less vertical. Ought to work just fine (depends on the
construction of the antenna, of course).
As for the radiation 'hazzard', it depends on how much
power your plan to run. With most 'bare foot' 2 meter radios,
I wouldn't waste my time worrying about it.
'Doc

2003. Re: 2m antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 01:19:45 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AEA1AB1.4753C8AF@oio.net>
Source record: 164952

jason,
Before buying/making a new antenna, try raising your
1/4 wave. Height makes a lot of difference.
'Doc

2004. Re: WANTED: 10-80m Vertical for Roof Top

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 01:23:23 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AEA1B8B.11FEF4F3@oio.net>
Source record: 164953

John,
Treat it just as you would a ground mounted vertical. Make
it stand up, run radials, tune it, and have fun. There's no
practical difference between being on the roof, or the ground.
'Doc

2005. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 01:27:15 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AEA1C73.8D92FB2@oio.net>
Source record: 164954

Tom,
Sounds like someone has too much free time!
'Doc

2006. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 01:36:07 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AEA1E87.C6B180A9@oio.net>
Source record: 164955

KEV200BHM,
Absolute, complete waste of time and money. Spending money
on that thing would be like sending the $$ to me. Ain't gonna
do you any good at all...
'Doc

2007. Re: keeping water out of 9913

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 01:37:57 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AEA1EF5.2B82F99A@oio.net>
Source record: 164956

Rudy,
Only run it UP HILL from the antenna to the shack,
never UP HILL from the shack to the antenna...
'Doc

2008. Re: J-pole theory

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 02:19:34 UTC
From: dinod@deltanet.com
Message-ID: <WMpG6.118124$J%5.40831580@news2.rdc2.tx.home.com>
Source record: 164957

Here is the updated link...

http://free.prohosting.com/~w0rcy/Jpole/jpole.html

Dino

>All about J-Poles at URL:
>http://www.frii.com/~rick/Jpole/jpole.html

2009. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 02:23:16 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <oQpG6.38814$RF1.3235025@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164958

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9cc23l$s4s$0@208.206.142.111...
>
>
> Roy Lewallen wrote:
> >
> > Dunno what kind of meter you have, but that electric meter we all have
> > outside our houses is measuring energy, in watt-hours.
>
>
> Right. And if there is no load - the main disconnect is off- there will
> be no power used in termination, nor any measured. It will all be
> reflected back to the pole transformer. That was the point I was
> attempting.
>
> And from my viewpoint any reflected energy from an unmatched antenna
> that finds no termination back at the line input will be re-reflected
> back to the antenna for radiation. That's what seems to happen with the
> use of an antenna tuner, less line losses as always.

Not all of the energy reflected from the antenna is re-reflected back to the antenna for radiation. Unfortunately, this incorrect concept is widely accepted in the amateur community.

A total re-reflection of energy will only occur at a short circuit, open circuit or a pure reactance termination.

Steve VE9SRB

> Wes Stewart says he has used reflected power to heat thermocouples etc.
> Right, they are the termination that is missing in a ham
> antenna/feedline system using a tuner. If no termination is found by the
> reflected energy, there is no reflected power developed, again save line
> losses, and it will be re-reflected back down the feedline toward the
> antenna.
>
> Some engineers here seem to say that as long as both voltage and
> current are present, power is developed. No argument, but I submit that
> the only reason that current flows in the reflected wave is that it is
> being terminated *somewhere*, (again neglecting losses) - that
> somewhere, in the case of reflections that find no termination at the
> line input, is back at the antenna where they wind up after being
> re-reflected by the tuner. There is no reflected power developed as
> result of the reflection at line input.
> Pure Walt Maxwell as I understand him.

>
> Dick

2010. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 02:27:58 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <OUpG6.38818$RF1.3236212@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164959

Peter:

In all seriousness, why do you disseminate this absolutely false technical information regarding reflected power?

Steve VE9SRB

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message news:9cci3mhnk1@nntp9.atl.mindspring.net...
> Cecil
>
> Agreed... if current and voltage exist at a point on a line then one can say
> that a certain power is passing that point. But what if the "power"
> passing a point never gets dissipated or generated anywhere? And what if
> one does not use the voltage V and current I at that point but uses
> fictional currents and or voltages. Is that a real power?
>
> What is usually being done with reflected power in most common amateur radio
> situations is the following:
>
> There exists a real current I and a real voltage V on a line at a particular
> point. "The real power" passing there would then be perfectly valid and
> could be calculated by P = V * I * cos(theta). Or... (if one was sure the
> surge resistance of the line was R), by either of P = V*V/R or P = I*I*R.
>
> However, what happens with "reflected power" is that V and I passing that
> point are not used... instead the "fictional" reflected voltage "b = V - IR"
> is used, this reflelcted voltage b is not an actual voltage on the line, b
> is a linear combination of V and I.
>
> The fictional reflected voltage b which is not present on the line is then
> used to "create" a "fictional" reflected power to be displayed on a meter
> face or digital display as Pr = b*b/R.
>
> Since there is no voltage b present on the line, there simply is no Pr!
>
> Hey if you wanted to you could always "say" that any voltage V is the sum of
> any number of other voltages, say V = V1 + V2 + V3 + ad infinitum... but
> that does not make them "real". And computing power which involves
> multiplication and or squaring of quantities leads to many possible

misuses
> or errors in "visualization".
>
> For instance we can arbitrarily say that, paraphrasing Reg, a certain
number
> is really the sum of two others, say. 5 = 3 + 2. Into hom many different
> sums can we resolve "5", heh, heh.
>
> But then we can't begin squaring and mulitplying "3" and "2" and expecting
> "nice" things to happen, for instance... is 3*3 = 9 plus 2*2 = 4 which
> equals 13 equal to 5*5 = 25?
>
> That's the "danger" of "reflected power" even as an intermediate
quantitiy.
>
> I maintain that we are all much better off without "reflected power".
>
> Reflected voltage is a fiction but still I feel that it is useful and
nicely
> behaved, and the same with reflected current, but start multiplying
fictions
> together and who knows what craziness can result.
>
> -Peter K1PO
>
>
>
>
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3AE98F0D.1654081D@IEEE.org...
> > Dick Carroll wrote:
> > > If no termination is found by the
> > > reflected energy, there is no reflected power developed, again save
line
> > > losses, and it will be re-reflected back down the feedline toward the
> > > antenna.
> >
> > Dick, energy moving past a point is a *definition* of power. What
> > definition of power are you using?
> >
> > > Some engineers here seem to say that as long as both voltage and
> > > current are present, power is developed.
> >
> > If V*I*cos(theta) is not zero, power exists at the point where V and
> > I are measured. What do you mean by "developed"? Seems you might be
> > using "developed" to mean "dissipated".
> >
> > > Pure Walt Maxwell as I understand him.
> >

> > Please provide the source or quote where Walt said that reflected
> > energy moving along a transmission line does not result in
> > reflected power. Perhaps Walt will jump in here.
> >
> > Again, moving energy past a point equals power at that point, by
> > definition.
> >
> > How many megawatts does a power generation plant produce? How many
> > megawatts does a power transmission line handle? These questions
> > are meaningless if moving energy past a point doesn't result in
> > power at that point.
> > --
> > http://www.mindspring.com/~w6rca
>
>

2011. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 03:12:32 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3aea0e9c.278991727@news.aepnet.com>
Source record: 164960

On 27 Apr 2001 15:09:41 GMT, Dick Carroll <dixie@townsqr.com> wrote:

[snip]
>
> And from my viewpoint any reflected energy from an unmatched antenna
>that finds no termination back at the line input will be re-reflected
>back to the antenna for radiation. That's what seems to happen with the
>use of an antenna tuner, less line losses as always.
> Wes Stewart says he has used reflected power to heat thermocouples etc.
>Right, they are the termination that is missing in a ham
>antenna/feedline system using a tuner. If no termination is found by the
>reflected energy, there is no reflected power developed, again save line
>losses, and it will be re-reflected back down the feedline toward the
>antenna.

Wrong.

Let's take two of my waveguide dual-directional couplers (reflectormeters) and connect them thus:

The input port of coupler #1 attaches directly to the output of a well-matched source, as before. On the ouput port of coupler #1 we attach a waveguide E- H tuner (the waveguide equivalent of your antenna tuner). On the output of the tuner we attach the input port of coupler #2.

On the output of coupler #2 we attach a 3 dB attenuator followed by a short circuit.

So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho = 0.5

If I temporarily remove the tuner, as expected, both reflectometers measure a 6 dB power ratio between the forward and reflected coupled ports.

We assume that maximum available power out of the source is 1.0 W. Because we have a non-reflective source, there is a mismatch loss given as:

-10 * log(1 - rho^2) = 1.25 dB

or leaving off the 10 log, a power ratio of 0.75.

So of the available power, 0.75 W makes it into the input port of coupler #1.

If our couplers are 30 dB, as in my previous example, then we read the following: (give or take coupling loss)

1. Coupler #1 forward port = 0.75 mW.
2. Coupler #1 reflected port = 0.1875 mW.
3. Coupler #2 forward port = 0.75 mW.

4. Coupler #2 reflected port = 0.1875 mW.

Okay, now we put the tuner back in between the two couplers. If we fiddle fart around with the tuner, the power reading at the reflected port of coupler #1 can be reduced to zero, or nearly so. We have "re-reflected" the nasty reflected (dare I say) power back toward the load.

The mismatch loss now goes away and the forward port of coupler #1 reads 1.0 mW.

Let's examine the readings on the thermistor power sensors on the coupled ports of coupler #2. Since we tweaked the tuner, we now have 1.0 W migrating around in the second coupler so the forward coupler reads 1.0 mW. (1.25 dB higher than before and no surprise)

With 1.0 W incident on a 6 dB return loss load, the reflected power is 0.25 W. The coupling factor is 30 dB so the power appearing at the reflected port of coupler #2 is 0.25 mW. The ratio of the reflected power to the forward power readings is .25 / 1.0 = - 6dB, just as before and (to me anyway) again no surprise.

But wait! We just tuned (conjugately matched) this system to "remove the termination" and that pesky reflected power still showing up on the coupled port!!!

No voltmeter, no ammeter, no hanky panky, just real reflected power heating up the thermistor. Funny how this works.

>
> Some engineers here seem to say that as long as both voltage and
>current are present, power is developed. No argument, but I submit that
>the only reason that current flows in the reflected wave is that it is
>being terminated *somewhere*, (again neglecting losses) - that
>somewhere, in the case of reflections that find no termination at the
>line input, is back at the antenna where they wind up after being
>re-reflected by the tuner. There is no reflected power developed as
>result of the reflection at line input.
> Pure Walt Maxwell as I understand him.

I believe you misunderstand.

Wes Stewart, N7WS

2012. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 03:40:22 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cde36$3oi$0@208.207.71.166>
Source record: 164961

W6RCecilA wrote:
>
> Dick Carroll wrote:
> > If no termination is found by the
> > reflected energy, there is no reflected power developed, again save line
> > losses, and it will be re-reflected back down the feedline toward the
> > antenna.
>
> Dick, energy moving past a point is a *definition* of power. What
> definition of power are you using?

I understand your (IEEE) definition of power, but I was trained to consider power as developed across or within a load where it is dissipated. That is the more practical interpretation for most non-engineering users. We all understand that since there is no such thing as a lossless conductor that I^2R losses cause some amount of power to be dissipated wherever current flows, but dwelling on that fact can get in the way of circuit analysis when one isn't doing engineering but rather troubleshooting. From my viewpoint Power exists in the (a)load, and elsewhere it is just voltage and current.

>
> > Some engineers here seem to say that as long as both voltage and
> > current are present, power is developed.
>
> If V*I*cos(theta) is not zero, power exists at the point where V and
> I are measured. What do you mean by "developed"? Seems you might be
> using "developed" to mean "dissipated".
>
> > Pure Walt Maxwell as I understand him.
>
> Please provide the source or quote where Walt said that reflected
> energy moving along a transmission line does not result in
> reflected power. Perhaps Walt will jump in here.
>

Well, I don't *think* that's what I said. I understand from "Reflections", both the book and the 70's QST articles by Walt, that in an antenna system incorporating matching at the line input, that whatever energy that is reflected at the antenna feedpoint returns to the tuner at line input, where it is re-reflected back to the antenna and radiated, an ongoing process that continues until the transmitter is turned off. (losses ignored)

> Again, moving energy past a point equals power at that point, by
> definition.

That wasn't the Signal Corps definition back in the early 60's, but as
I said, I understand it, but just wasn't trained to use it that way.

>
> How many megawatts does a power generation plant produce? How many
> megawatts does a power transmission line handle? These questions
> are meaningless if moving energy past a point doesn't result in
> power at that point.

I dunno what the current viewpoint is, but when I went to school
power=work, and that happens at the point where the energy is consumed,
not enroute.

Dick

2013. Re: Jeep Antennas, propagation and wavelength question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 03:47:10 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <74fket4n48hiusrffitspl1212m86rq39h@4ax.com>
Source record: 164962

On Fri, 27 Apr 2001 20:16:45 -0500, 'Doc <w5lz@oio.net> wrote:

>Mounting any antenna for any band at one 'corner' of a
>vehicle will distort the radiation pattern. How much
>distortion is really anyone's guess. At any rate, it will
>probably ~not~ be noticable.

In general, the lower the frequency, the less directional. My experience is 7 MHz and lower is essentially non-directional. 14 MHz is almost non-directional, 21 MHz is directional if you're watching the s-meter and 28 MHz is noticeably directional, but not really enough to make much difference.

VHF, can't help there. GL.

73, Bill W7TI

2014. Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 03:59:10 UTC
From: jsimpson <jsimpsonfam@earthlink.net>
Message-ID: <ierG6.497$dH5.56539@newsread2.prod.itd.earthlink.net>
Source record: 164963

I am looking for a good model of the DDRR antenna for 40 meters. I am interested in using an octagon instead of a circle and would like to verify that keeping the same average radius and total radiator length (sum of the sides versus the circle circumference) does not dramatically impact the feedpoint location and more importantly the tuning capacitor range.

I have a Santa Fe style house (flat topped) in a heavily restricted subdivision and need an invisible antenna for HF work. If the 40 meter one works out, I plan to scale the antenna for other HF bands.

Any help would be greatly appreciated.

Jerry
WJ7T

2015. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 04:09:06 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cdfp2$7is$0@208.207.71.166>
Source record: 164964

VE9SRB wrote:
>
> "Dick Carroll" <dixie@townsqr.com> wrote in message
> news:9cc23l$s4s$0@208.206.142.111...
> >
> >
> > Roy Lewallen wrote:
> > >
> > > Dunno what kind of meter you have, but that electric meter we all have
> > > outside our houses is measuring energy, in watt-hours.
> >
> >
> > Right. And if there is no load - the main disconnect is off- there will
> > be no power used in termination, nor any measured. It will all be
> > reflected back to the pole transformer. That was the point I was
> > attempting.
> >
> > And from my viewpoint any reflected energy from an unmatched antenna
> > that finds no termination back at the line input will be re-reflected
> > back to the antenna for radiation. That's what seems to happen with the
> > use of an antenna tuner, less line losses as always.
>
> Not all of the energy reflected from the antenna is re-reflected back to the
> antenna for radiation. Unfortunately, this incorrect concept is widely
> accepted in the amateur community.
>
> A total re-reflection of energy will only occur at a short circuit, open
> circuit or a pure reactance termination.
>

I understand, but would you care to explain what determines the amount
that is NOT re-reflected, neglecting losses? I realize that some
impedence is seen at the tuner by the reflected wave, but evidently it
is so high -so much of a mismatch- that it has little effect on the
wave, and most of it is re-reflected. Is that not basically correct?

Dick Wï¿½EX

2016. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 04:11:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEA42FB.1F25E6CC@IEEE.org>
Source record: 164965

Dick Carroll wrote:
>
> W6RCecilA wrote:
> > Dick, energy moving past a point is a *definition* of power. What
> > definition of power are you using?
>
> I understand your (IEEE) definition of power, but I was trained to
> consider power as developed across or within a load where it is
> dissipated.

Well, if you understand the IEEE definition of power, you understand
what we are saying about reflected power. After all, the dimensions
of the reflected stuff is joules/second and it exists as dynamic energy
flowing in a transmission line.

> I dunno what the current viewpoint is, but when I went to school
> power=work, and that happens at the point where the energy is consumed,
> not enroute.

Then you think power generation plants and power distribution networks
are misnamed? The field of electrical engineering simply has a broader
definition of power than the field of physics. That definition is:
"power - the rate of generating, transferring, or using energy" ...
"usually expressed in watts or in joules per second."
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2017. Re: Jeep Antennas, propagation and wavelength question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 04:23:32 UTC
From: dputnick@alumni.caltech.edu
Message-ID: <3aea445f.20598609@207.217.77.25>
Source record: 164967

On Fri, 27 Apr 2001 13:37:42 -0700, Don Putnick
<dputnick@alumni.caltech.edu> wrote:

>
>KC0IDB wrote:
>[snip]
>> Also, since the antenna will be about 5 feet behind me and pretty much level
>> with the seats, how much concern should I have for RF safety?
>
>You can start with http://www.arrl.org/news/rfsafety/
>
>Or you can check out Gordon West's study guides. Questions similar to
>yours are now part of the exams
>
>In short, it depends on frequency, antenna, distance, and power.

Or, if you just want a quick answer,

For 2M, 1/4 wave. 50 watts => keep antenna at least 3.7 feet from
anyone in your Jeep

2018. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 04:25:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AEA4626.A51E89C3@eznec.com>
Source record: 164966

Ground plane antennas can suffer considerable pattern distortion by coupling to the feedline. The four radials don't provide as much isolation as you might think. I don't know for sure, but wouldn't be surprised if the coupling would be different and have different effects on antennas of different lengths. For sure, the amount of coupling and pattern distortion depends on the feedline length and orientation. So this can be another confounding factor when trying to make on-the-air comparisons between antennas. Again done with modeling and not confirmed with measurements, it looks like it would take at least two current baluns to insure minimal feedline current in the worst cases -- one at the feedpoint and the second about a quarter wavelength away.

Roy Lewallen, W7L

Tom W8JI wrote:
>
> On Fri, 27 Apr 2001 18:59:33 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >Tom W8JI wrote:
> >> Except they don't work very well at VHF Cecil. A 1/4 wl groundplane
> >> with sloped radials works as well or better.
> >>
> >I ran S-meter tests in AZ, Tom. With a mag mount on a tin roof,
> >the 5/8WL Larson beat the 19" MFJ-1724 on 2m.
> >--
> >http://www.mindspring.com/~w6rca
>
> I modeled the antennas in freespace with 4 1/4 wl radials and the
> model agrees with you Cecil.
>
> The 5/8th wl does have gain over the 1/4 wl antenna (with flat
> radials). The 5/8th wl antenna with four flat 1/4 wl radials is 0.2 dB
> better at zero degrees than a 1/4 wl antenna with four flat 1/4 wl
> radials.
>
> When I sloped the radials at 45 degrees, the 1/4 wl was 2.77 dB
> STRONGER than the 5/8th at zero degrees.
>
> When the 5/8th antenna had flat radials and the 1/4 wl had sloped
> radials, the 1/4 wl was only 0.5dB over the 5/8th antenna.
>
> The gain depends on the ground system and how flat and extensive the
> ground system is, but then everyone said that all along.
>

> If it were my choice, I'd use a 1/4 wl GP with sloped radials for an
> elevated antenna.
>
> 73 Tom

2019. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 04:31:45 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cdh2v$1f2$1@slb0.atl.mindspring.net>
Source record: 164968

Steve:

I say it because it is true... In almost all practical cases the "reflected power" indicated on a so-called power meter, is "ficticious"!

In most applications of this "theory" the development starts out with an assumed "incident power" (Pi)! Pi is not an actual power that appears or occurs anywhere in the mismatched situation. i.e Pi is a ficticious power that would be sent to the load if the load were a conjugate match for the transmitter, which it is not, unless it is perfectly matched !

Then the development of the "theory" usually ends up computing a reflected power Pr = Pi - Pt by subtracting the "delivered power", i.e. the power actually dissipated in the real load, a very real power, from the "assumed" incident power which would have been sourced had their been a conjugate match. Surely then the reflected power Pr is not a real power,. it is a quantity derived by subtracting a real power from a ficticious power...

If you wish to refute this claim, then please examine my "numerical" examples, and refute those! Words are cheap, numbers tell all!

Or perhaps for simplicity examine the case of a DC source with finite non-zero internal resistance delivering power to a mismatched load. The equations and dynamics are all the same for DC mismatch as for AC mismatches. In the DC case it can be seen plainly by using only the theory of DC circuits with no elaborate wave mechanics and AC theory, that the so-called reflected power is a fiction.

I challenge anyone to find where the so-called reflected power is "dissipated", i.e. what load causes the reflected current to be drawn from which source.

The whole theory of "insertion loss design" of filters and equalizers is also based around this premise, i.e. first assume that you have a resistive generator delivering power to a perfectly matched load, then "insert" the system to be designed in between the source and the load and "optimize" something in the parameters of the system under design e.g. meet an insertion loss filter template or whatever.

Now when the system being designed, or adjusted if it is a "tuner", is "inserted" between the source and the load, the whole system is changed by this "insertion"... the original "incident power" no longer exists, some other power is now sourced by the generator.

Yet, for apparently good reasons, the assumption, or fiction, that the original perfectly matched incident power is still applied, even with a load different to a perfect match, is continued through the analysis. Ending up

with the situation when not perfectly matched, that both the incident and reflected powers are fictions, that is they are assumed and not real.

Of course if you adjust the "inserted" system to obtain a perfect match, i.e.if a jf axis reflection coefficient zero is created and exists and one is "tuned" right on that zero, then Pr = 0 and Pi = Pt. But wherever their is a mismatch, i.e. between reflection zeros, the reflection coefficient is not zero, and at those points then that is an assumption and Pr is ficticious. And... in most practical applications that is usually the case. In fact for any such system the only time that Pr is not ficticious for a lumped or distributed system would be at a countable number of reflection zeros in the "passband". Over the rest of the band, Pr is ficticious, and non-zero.

It's really very simple.

There is a power generated in the transmitter, and there is a power dissipated in the load, two powers... nothing more, nothing less. Why consider any more powers?

IMHO... it is silly to speak of four powers in such a system, i.e. why do we have to have the following four powers when only two are present and acounted for:

The "generated power", and the "delivered power", are the only two of consequence. The "incident power" and the "reflected power" are ficticious. Only two of these powers are relevant to an actual operating systems, the other two are fictions which help with "visualizations", etc.

The "generated power" and the "delivered power" are all that are really interesting.

The generated power is dissipated in the sum of the internal generator resistance and the load resistance, and the delivered power is dissipated in the load resistance. The delivered power is always less than the generated power, it is a part of the generated power. Thevin or Norton would be proud to know that still works!

Period, end of story.

The other two "powers", the "incident" and "reflected" powers are mere "intermediate" results useful to help us to design or adjust an "inserted" system but they are not generated or dissipated anywhere!

For those who assert differently, I challenge them to make a numerical calculation, as I have done, to show the size of these "powers" and correlate them with either the generator or the load resistances where they are dissipated.

Seems plain and simple enough, why make it more complicated by trying to ascribe reality to something that is not.

-Peter K1PO

In theory, theory and practice are the same, in practice they are not.

It is only in the case of a perfect conjugate match that the so-called
reflected power is real and not fictional, and then ONLY because it is zero!

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message
news:OUpG6.38818$RF1.3236212@bgtnsc06-news.ops.worldnet.att.net...
>
> Peter:
>
> In all seriousness, why do you disseminate this absolutely false technical
> information regarding reflected power?
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> Steve VE9SRB
>
>
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> news:9cci3mhnk1@nntp9.atl.mindspring.net...
> > Cecil
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> > Agreed... if current and voltage exist at a point on a line then one can
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> > that a certain power is passing that point. But what if the "power"
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> >
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> IR"
> > is used, this reflelcted voltage b is not an actual voltage on the line,
b
> > is a linear combination of V and I.
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> > The fictional reflected voltage b which is not present on the line is
then

> > used to "create" a "fictional" reflected power to be displayed on a
meter
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> >
> > Since there is no voltage b present on the line, there simply is no Pr!
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> > Hey if you wanted to you could always "say" that any voltage V is the
sum
> of
> > any number of other voltages, say V = V1 + V2 + V3 + ad infinitum... but
> > that does not make them "real". And computing power which involves
> > multiplication and or squaring of quantities leads to many possible
> misuses
> > or errors in "visualization".
> >
> > For instance we can arbitrarily say that, paraphrasing Reg, a certain
> number
> > is really the sum of two others, say. 5 = 3 + 2. Into hom many
different
> > sums can we resolve "5", heh, heh.
> >
> > But then we can't begin squaring and mulitplying "3" and "2" and
expecting
> > "nice" things to happen, for instance... is 3*3 = 9 plus 2*2 = 4 which
> > equals 13 equal to 5*5 = 25?
> >
> > That's the "danger" of "reflected power" even as an intermediate
> quantitiy.
> >
> > I maintain that we are all much better off without "reflected power".
> >
> > Reflected voltage is a fiction but still I feel that it is useful and
> nicely
> > behaved, and the same with reflected current, but start multiplying
> fictions
> > together and who knows what craziness can result.
> >
> > -Peter K1PO
> >
> >
> >
> >
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > news:3AE98F0D.1654081D@IEEE.org...
> > > Dick Carroll wrote:
> > > > If no termination is found by the
> > > > reflected energy, there is no reflected power developed, again save
> line
> > > > losses, and it will be re-reflected back down the feedline toward

the
> > > > antenna.
> > >
> > > Dick, energy moving past a point is a *definition* of power. What
> > > definition of power are you using?
> > >
> > > > Some engineers here seem to say that as long as both voltage and
> > > > current are present, power is developed.
> > >
> > > If V*I*cos(theta) is not zero, power exists at the point where V and
> > > I are measured. What do you mean by "developed"? Seems you might be
> > > using "developed" to mean "dissipated".
> > >
> > > > Pure Walt Maxwell as I understand him.
> > >
> > > Please provide the source or quote where Walt said that reflected
> > > energy moving along a transmission line does not result in
> > > reflected power. Perhaps Walt will jump in here.
> > >
> > > Again, moving energy past a point equals power at that point, by
> > > definition.
> > >
> > > How many megawatts does a power generation plant produce? How many
> > > megawatts does a power transmission line handle? These questions
> > > are meaningless if moving energy past a point doesn't result in
> > > power at that point.
> > > --
> > > http://www.mindspring.com/~w6rca
> >
> >
>
>

2020. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 04:36:54 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEA48E6.5C9515F4@IEEE.org>
Source record: 164869

Dick Carroll wrote:
>
> VE9SRB wrote:
> > Not all of the energy reflected from the antenna is re-reflected back to the
> > antenna for radiation. Unfortunately, this incorrect concept is widely
> > accepted in the amateur community.
> >
> > A total re-reflection of energy will only occur at a short circuit, open
> > circuit or a pure reactance termination.
> >
>
> I understand, but would you care to explain what determines the amount
> that is NOT re-reflected, neglecting losses? I realize that some
> impedence is seen at the tuner by the reflected wave, but evidently it
> is so high -so much of a mismatch- that it has little effect on the
> wave, and most of it is re-reflected. Is that not basically correct?

Steve may be objecting to the word "re-reflected". In the following example:

100w XMTR---51.5 ohm coax---X---1/2WL 300 ohm twinlead---51.5 ohm load

Something happens at point 'X', the Z0-match point, that causes no reflected
energy to exist on the coax. What actually happens is a destructive
interference pattern between the reflections at the 51.5/300 ohm junction
and the reflections from the 300/51.5 ohm load junction. These two sets
of reflections cancel to zero and the associated reflected joules/sec joins
the generated joules/sec in phase so they add together because the reflected
joules/sec have no other place to go except back toward the load. In the
above case, the 100 joules/sec of reflected power joins the 100 joules/sec
of generated power to equal 200 joules/sec of forward power. It seems
fairly descriptive to call that re-reflected power.

Incidentally, I just ran into the semantic problem of trying to avoid calling
joules/sec power. Joules/sec has the dimensions of power. Joules/sec does
not have the dimensions of energy.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2021. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 04:39:21 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cdhh6$ve2$1@nntp9.atl.mindspring.net>
Source record: 164870

Dick:

FWIW... I agree with your interpertation. It is the common sense one. And, as usual with common sense, the correct one.

Power once generated, must be consumed somewhere else by being converted into another form, i.e. "dissipated" as phonons or photons, if I may use those words.

If you can't point to a resistorm or the equivalent of a resistorm where a power is dissipated, why then it is a ficticious power.

I challenge anyone who asserts that "reflected power" is not a fiction, to denote the resistance, or equivalent, where that power is dissipated, and to make a numerical calculation using current and voltage across and through that resistance to prove it's existence.

Dick... you are correct in assuming that without a load to draw it no power can flow. So without a "reflected resistor" to draw it, there can be no reflected power. [Unless it is zero!]

-Peter K1PO

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9cde36$3oi$0@208.207.71.166...
>
>
> W6RCecilA wrote:
> >
> > Dick Carroll wrote:
> > > If no termination is found by the
> > > reflected energy, there is no reflected power developed, again save
line
> > > losses, and it will be re-reflected back down the feedline toward the
> > > antenna.
> >
> > Dick, energy moving past a point is a *definition* of power. What
> > definition of power are you using?
>
>
> I understand your (IEEE) definition of power, but I was trained to
> consider power as developed across or within a load where it is
> dissipated. That is the more practical interpretation for most
> non-engineering users. We all understand that since there is no such
> thing as a lossless conductor that I^2R losses cause some amount of
> power to be dissipated wherever current flows, but dwelling on that fact

> can get in the way of circuit analysis when one isn't doing engineering
> but rather troubleshooting. From my viewpoint Power exists in the
> (a)load, and elsewhere it is just voltage and current.
>
>
> >
> > > Some engineers here seem to say that as long as both voltage and
> > > current are present, power is developed.
> >
> > If V*I*cos(theta) is not zero, power exists at the point where V and
> > I are measured. What do you mean by "developed"? Seems you might be
> > using "developed" to mean "dissipated".
> >
> > > Pure Walt Maxwell as I understand him.
> >
> > Please provide the source or quote where Walt said that reflected
> > energy moving along a transmission line does not result in
> > reflected power. Perhaps Walt will jump in here.
> >
>
> Well, I don't *think* that's what I said. I understand from
> "Reflections", both the book and the 70's QST articles by Walt, that in
> an antenna system incorporating matching at the line input, that
> whatever energy that is reflected at the antenna feedpoint returns to
> the tuner at line input, where it is re-reflected back to the antenna
> and radiated, an ongoing process that continues until the transmitter is
> turned off. (losses ignored)
>
>
>
> > Again, moving energy past a point equals power at that point, by
> > definition.
>
>
> That wasn't the Signal Corps definition back in the early 60's, but as
> I said, I understand it, but just wasn't trained to use it that way.
>
> >
> > How many megawatts does a power generation plant produce? How many
> > megawatts does a power transmission line handle? These questions
> > are meaningless if moving energy past a point doesn't result in
> > power at that point.
>
>
> I dunno what the current viewpoint is, but when I went to school
> power=work, and that happens at the point where the energy is consumed,
> not enroute.
>
> Dick

2022. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 04:40:57 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cdhkjrlj1@slb4.atl.mindspring.net>
Source record: 164871

Reg:

How about, IEE, or ETSI, or maybe ITU, or maybe URSI?

Do any of those august organizations transcend IEEE?

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9cd51u$34l$1@uranium.btinternet.com...
>
> W6RCecilA wrote -
> How about if, from no on, I preface all my postings with:
> > "Given the IEEE Dictionary definition of power, ..." :-)
> ==========
>
> Isn't there an international telecoms organisation whose defining
> authority exceeds that of the mere IEEE ?
> ---
> Reg
>
>

2023. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 04:47:07 UTC
From: richardharrison@webtv.net
Message-ID: <21750-3AEA4B4B-105@storefull-116.iap.bryant.webtv.net>
Source record: 164875

John O`Flaherty wrote:
"What`s a rat-race?"

A rat-race is a common name for a multi-port hybrid combiner. It`s a circular transmission line path (most often waveguide because it is most used at microwave frequencies) which is an integral number of quarter waves long. Taps are made at strategic quarter wave points. If the circle is the right length and the taps are made at the right places for the right functions it allows two devices access to the antenna but isolates them from each other.

In our case we had taps for each of two transmitters, a tap for the antenna, and a tap for a dissipation resistance for imbalance between the two transmitters. Our dissipation resistance was a two-wire transmission line very close to the ground and spaced for a Zo of 600 ohms at that low altitude, which matched the other 600-ohm lines in the system. We didn`t have any 200-KW 600-ohm resistors, but the low transmission line worked well for any imbalance, and this proved rare. The two transmitters feed the antenna very well, but they are invisible to each other.
In some microwave applications, a receiver and transmitter are coupled to the same antenna through a rat-race, but more often a magnetic circulator is used. It`s smaller and has other advantages.

Anyway, we hooked our gear up at HF, fed carefully-balanced program to both transmitters which were phased locked by feed from the same exciter and we were on the air, broadcasting with twice the normal power and everything worked fine. I think that had we added another couple of rat-races to get 400KW, we would have had to revise our transmission lines and erect a new antenna to handle so much power, That is one reason why the experiment ended with the paralleling of two transmitters. But, we could have paralleled four 50KW transmitters to prove the possibility. The problem was we had a regular program schedule to maintain to keep our audience and we would have put a hole in our broadcast coverage if we had tied up so many transmitters in experimentation. The listeners tuned to the 400KW broadcast would have gotten an earfull. But some listeners in some language group would have found their program missing and that`s not good.

Best regards, Richard Harrison, KB5WZI

2024. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 04:47:59 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEA4B7F.729499A5@IEEE.org>
Source record: 164872

"Peter O. Brackett" wrote:
> There is a power generated in the transmitter, and there is a power
> dissipated in the load, two powers... nothing more, nothing less. Why
> consider any more powers?

There is energy generated in the transmitter, and there is energy
dissipated in the load, two energies ... nothing more, nothing less?
Why consider any more energies?

Because the additional energy contributes additional losses in the
transmission lines by increasing the maximum voltage and maximum
current above the matched line case.
--
http://www.mindspring.com/~w6rca

2025. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 04:52:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEA4C88.973491B7@IEEE.org>
Source record: 164873

"Peter O. Brackett" wrote:
> Dick... you are correct in assuming that without a load to draw it no power
> can flow.

Peter, are you saying that power can flow?
--
http://www.mindspring.com/~w6rca

2026. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 05:11:47 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cdjejieg0@208.207.71.166>
Source record: 164874

'Doc wrote:
>
> KEV200BHM,
> Absolute, complete waste of time and money. Spending money
> on that thing would be like sending the $$ to me. Ain't gonna
> do you any good at all...
> 'Doc

Now, Doc... Uncle Sam has used hundreds of the things all over the world very successfully, despite their shortcomings. At one time, at work, I met a daily National Guard HF net on 8 mhz where a couple dozen stations scattered over the state at distances up to 300 miles all used them with 100 watts, and no one could detect that normal halfwave dipoles weren't being used. No doubt everyone lost a half S-unit or so of signal strength.
I once knew a ham who had been a radioman for the Alaska State Troopers, who used HF extensively. He said they all used T2FD's that they made up themselves, and strangely, they found that a wirewound terminating resistor worked better than a noninducdtive. I don't know the details.

Dick Wï¿½EX

2027. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 05:19:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEA52DC.3C81053@IEEE.org>
Source record: 164876

Dick Carroll wrote:
> ... strangely, they found that a wirewound
> terminating resistor worked better than a noninducdtive. I don't know
> the details.

That's like installing a coil and a resistor - inductive *and*
resistive loading.
--
http://www.mindspring.com/~w6rca

2028. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 05:40:35 UTC
From: richardharrison@webtv.net
Message-ID: <25396-3AEA57D3-73@storefull-118.iap.bryant.webtv.net>
Source record: 164879

Bill, W4ZV wrote:
"Apparently the radiation of the 5/8 wl vertical had a hole around 30-35 degrees (between the predominant lower lobe and the secondary higher lobe) that was being filled by the 1/4 wl vertical."

Yes, that exactly fits the vertical radiation patterns supplied by the FCC.

Medium-wave broadcasters use 5/8-wave verticals to get the most low-angle radiation possible because advertisers will pay for an audience that is reached day and night. Also, the absence of radiation between 30 and 45 degrees of elevation angle greatly extends the distance from the transmitter where the groundwave is relatively free of skywave interference at night and the fading it produces.

For shortwave, you want the areas reached by vertical radiation angles between 30 and 45 degrees, in many cases. But if you want longer distances reached in a single hop with elevation angles below 15 degrees, the 5/8-wave vertical over a good ground system may still be a good choice. But, the 5/8-wave vertical isn`t a general purpose HF antenna.

The 1/2-wave vertical has more radiation at angles above 15 degrees than a 5/8-wave vertical. And, the 1/4-wave vertical beats them both at vertical elevations above 22 degrees.

This information is from the FCC graphs used to determine skywave interference between stations.

Best regards, Richard Harrison, KB5WZI

2029. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 05:44:25 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cdlb7atb1@slb6.atl.mindspring.net>
Source record: 164877

Cecil:

Only when you have lossy transmission lines does that happen...

And in practice that is "all the time".

And so now you have the "generated power", the power lost in the internal resistance of the generator, the power lost in the lossy transmission line, and the power delivered to the load.

The power lost in the internal generator resistance, plus the power lost in the transmission line plus the power delivered to the load must add up to the generated power.

The power lost in the transmission line can be calculated directly from the current, or voltage, for example as I*I*R losses, by utiliziing the actual current I that is flowing in the line at whatever points are of interest. In the DC case this is simple since I does not vary down the line, but in the AC case one must take into account the "standing waves" to get the right current I and integrate the I*I*R losses along the line.

All of this can be done, without ever invoking eitherm the concept of, or the numerical value of, the so-called "reflected power".

All of this sophisticated reflected and incident power hocus pocus is completely unecessary.

All you really need is I and V.... (Sounds like the name of a song.)

Don't need no stinking ficticious reflected power!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEA4B7F.729499A5@IEEE.org...
> "Peter O. Brackett" wrote:
> > There is a power generated in the transmitter, and there is a power
> > dissipated in the load, two powers... nothing more, nothing less. Why
> > consider any more powers?
>
> There is energy generated in the transmitter, and there is energy
> dissipated in the load, two energies ... nothing more, nothing less?
> Why consider any more energies?
>
> Because the additional energy contributes additional losses in the
> transmission lines by increasing the maximum voltage and maximum
> current above the matched line case.
> --

> http://www.mindspring.com/~w6rca

2030. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 05:50:19 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cdlm9ear1@slb7.atl.mindspring.net>
Source record: 164878

Cecil:

Picky, picky, picky.... I know...you know... power doesn't flow, charge flow... power is a derived unit obtained by dividing Energy units by Time units.

All you really need is I and V...

all the rest is just mumbo jumbo for the High Priests... Cardinals in the Vatican arguing about the number of angels that can sit on the head of a pin, and other such important, stuff... don't drink their Koolaid...

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AEA4C88.973491B7@IEEE.org...
> "Peter O. Brackett" wrote:
> > Dick... you are correct in assuming that without a load to draw it no power
> > can flow.
>
> Peter, are you saying that power can flow?
> --
> http://www.mindspring.com/~w6rca

2031. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 06:27:23 UTC
From: richardharrison@webtv.net
Message-ID: <25396-3AEA62CB-76@storefull-118.iap.bryant.webtv.net>
Source record: 164880

Mark, NM5K wrote:
"The only other thing I could think of here is the actual whip is taller and clear of the ground clutter."

Mark`s observations make sense if the vertical radiation patterns published by the ARRL in my 1970 edition of the Antenna Book are right. On page 48 are a 1/2-wave vertical, ground-mounted and elevated at 5 additional heights up to 1.5 wavelengths. The ground-mounted vertical has a nice pattern with a null at the zenith. The patterns of the other elevations are not optimum at all. They are crazy.

Of course, if you have the antenna far removed from the earth, it`s not in free space, but the pattern will not produce many problems. Roy may interject an opinion here that I`m crazy, too. But that doesn`t bother me because I`ve had the experience of many 150-MHz vertical antennas (maybe a hundred or more) mounted at great heights over ground with no particular anomalous performance. I`ll guarantee the patterns were nothing like the antennas ARRL presented within a wavelength and a half of ground. I`d say my antennas were free of the clutter.

The New Antenna Book may have similar elevation angle patterns for a vertical heights above ground. My copy is new to me and I`m not familiar with its contents yet. But, the charts in the old book were revealing to me.

Best regards, Richard Harrison, KB5WZI

2032. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 06:48:25 UTC
From: n6buu@aol.com
Message-ID: <20010428024825.15352.00000961@ng-xc1.aol.com>
Source record: 164881

i use one (a windom) it's really an off-center fed dipole. one leg is 90 feet
the other is 44 feet it's fed with 50 feet of 300 ohm twinlead into a 4:1
current balun (REMOTE BALUN) made by "radio works" then into 26 feet
of coax cable to the rig. it seems to work ok on all bands except 15 mtrs (
high swr) max swr is on 80 mtrs approx 4:1 most of the time i use a tuner to
get a "perfect match". with this setup the twinlead does not seem to radiate
much.
good luck 73 hank n6buu

2033. Re: feeding several dipoles into one downlead

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 06:58:43 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AEA6A23.37C1@wt.net>
Source record: 164883

Paul Logan wrote:
>
> Hi all, I am something of a newbie when it comes to antenna experimentation
> so:
>
> anyone got any ideas on if it is ok to feed several dipoles with coax then
> join all the leads into one and feed it to my scanner. The dipoles would be
> at various points around my loft and cut for different VHF/ UHF frequencies,
>
> any help here would be very welcome,
>
> also how do i match a dipole to 50 0hms simply, is there an equation that
> will let me work out coax matching sections- or do I really need to worry
> about this since the antennas will be receive only
>
> regards,
>
> Paul L,
> Ireland.

You don't really want to use dipoles on VHF/UHF. Most of what your
listening to is vertically polarized. You would be better off with the
discone, or run two 1/4 wl ground planes for each band with seperate
coax to each one. You can make these from thick wire and hang from the
ceiling. I have one above my head for storm use when I'm unhooked
outside. It hangs from a thumbtack in the ceiling, and rg-58 hangs from
it down to the side of my table. You can actually use a single VHF
ground plane, and use it for both bands, but seperate antennas would be
better for UHF probably. But I use my 2m GP for listening to 440 and
it's ok for listening. MK
--
http://web.wt.net/~nm5k

2034. RE: HELP!! Need info on TAGRA antenna! (sigma IV lookalike)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 07:11:32 UTC
From: Igor <novalid@novalid.com>
Message-ID: <9cdq3h$me6$1@diana.bcn.ttd.net>
Source record: 164882

Giff:
TAGRA was an TV and radio communications builder here in Spain. They crafted ham radio antennas for HF,CB , VHF and VHF. Their products were well-built, but their main bussiness was in MATV and SMATV products, and they close their factory years ago. Here in Spain there are a lot of antennas still working well. I think probably can be a base of CB antenna.

Best regards

2035. Re: W4RNL 2m Half Square question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 11:07:19 UTC
From: kg4fet@aol.combadspam
Message-ID: <20010428070719.10186.00000002@ng-mf1.aol.com>
Source record: 164884

>Hi all,
>said antenna can be found via this link
>
>http://www.cebik.com/hs.html
>
>how do I construct one of these for 164.2 mhz?. How do I change the
>measurements for 2m to other frequencies,
>
>any help would be gratefully received,
>
>regards from Ireland,
>
>Paul L.
>
>
>
Paul,
If you look at the antenna you will see that the verticle stubs are 1/4 wave and the hori section is about a 1/2 wave basically giving you a full wave loop. So to change this to what ever you want Freq wise take your formula for a full wave loop (1005/FREQ) and then divide it by 4. you will then have the 2 verticle sections lengths and the hori is whats left. I built one of these a year or so ago based on the plans on that site and have built one since for 6 mtrs as well and they worked out FB here for me.
73 and all the best de KG4FET Sandor

2036. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 11:46:38 UTC
From: "M.J.Powell" <mike@pickmere.demon.co.uk>
Message-ID: <FvhjRjAe2q66Ewjf@pickmere.demon.co.uk>
Source record: 164903

In article <3ae9fd1e.207282870@news.accessunited.com>, Tom W8JI
<2w8ji@akorn.net> writes
>On Fri, 27 Apr 2001 23:02:26 +0100, "M.J.Powell"
><mike@pickmere.demon.co.uk> wrote:
>
>>There was some difficulty in telling the 'Luxembourg Effect' from the
>>'rusty-nail' effect but the LE did exist and is known now by cross-mod
>>on amateur VLF reception.
>>
>
>It turned out the Radio Luxenbourg effect was mixing in the
>transmitters, not in the ionosphere.

Well, if you subscribe to one of the VLF ngs you will find that it is
still in existence and causes some trouble to the 136 kHz boys with
their transatlantic work.

snip 'examples'.

Mike
--
M.J.Powell

2037. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 12:19:41 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AEAB55D.412C9617@mwci.net>
Source record: 164885

Roy Lewallen wrote:

> Ground plane antennas can suffer considerable pattern distortion by
> coupling to the feedline. The four radials don't provide as much
> isolation as you might think.

One goal is to assure that the return path to the transmitter for the E and H near-fields of the radiator is via the inner surface of the coax braid, and not via the outside of the braid or via some extraneous and lossy "earth" path. The balun at the feed point establishes a high, balanced impedance at the braid connection that encourages the correct path.

This would be in addition to the feedline coupling mentioned.

Bill W0IYH

2038. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 12:43:42 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEABAFE.94F7D34E@IEEE.org>
Source record: 164886

"Peter O. Brackett" wrote:
> The power lost in the transmission line can be calculated directly from the
> current, or voltage, for example as I*I*R losses, by utiliziing the actual
> current I that is flowing in the line at whatever points are of interest.
> In the DC case this is simple since I does not vary down the line, but in
> the AC case one must take into account the "standing waves" to get the right
> current I and integrate the I*I*R losses along the line.

You seem to be contradicting yourself. If reflected energy is not to be
taken into account, how can you take into account the standing waves?
If you take reflected energy into account, it is convenient to take it
into account during one second. Joules/second are the dimensions of
power.

> All you really need is I and V.... (Sounds like the name of a song.)

All you need is contained in V*I*cos(theta) in joules/second plus the
characteristics of a transmission line.

You said in another thread that power flows. Did you really mean that?
--
http://www.mindspring.com/~w6rca

2039. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 12:48:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEABC0B.386E059E@IEEE.org>
Source record: 164888

"Peter O. Brackett" wrote:
> All you really need is I and V...

You've already got you so all you need is V. :-)

You've got forward joules and reflected joules. Right?

You cannot get rid of time so you have forward joules/second and
reflected joules/second. Wonder what the dimensions of joules/second
represent?
--
http://www.mindspring.com/~w6rca

2040. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 12:48:21 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AEABC15.2B0B9641@mwci.net>
Source record: 164887

Peter O. Brackett wrote:

> In almost all practical cases the "reflected
> power" indicated on a so-called power meter, is "fictitious"!

Not all that fictitious, actually.

Imagine a 50+j0 ohm coax. The forward *real* power is (V+)^2/50 or (I+)^2*50, where V+ and I+ are the forward waves. Reflected *real* power is (V-)^2/50 or (I-)^2*50.

In a linear system where superposition applies, each of these can be considered and measured independently. That is what the 50 ohm directional coupler is all about. Reflected power at the reflected port of a directional coupler can "cook" a resistor, so it isn't fictitious at all. The 50 ohm directional coupler does actually "separate" the two.

But if we connect a *lumped element* LCR load that has the same impedance as the input impedance of the coax, then the forward/reflected power "wave" concept is somewhat artificial. All we can say in that case is that the lumped load behaves "as if" it were an actual transmission line.

Bill W0IYH

2041. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 13:36:43 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AEAC76B.10118BCA@mwci.net>
Source record: 164889

VE9SRB wrote:

> Not all of the energy reflected from the antenna is re-reflected back to the
> antenna for radiation. Unfortunately, this incorrect concept is widely
> accepted in the amateur community.

The amateur radio fascination with PA output impedance is related to the amateur radio fascination with re-reflection. There are very few amateur radio applications where re-reflection is even worth thinking about. And if it is, for some reason, there are ways to absorb small reflections from the load so that re-reflection, therefore PA output impedance, is immaterial.

If the PA, operating into a 50+j0 ohm coax, sees 50+j0 ohms, there is no reflection into the PA, therefore no re-reflection from the PA. The antenna tuner provides the 50+j0 ohms. The PA can then be a pure current source or a pure voltage source or anything in between.

Bill W0IYH

2042. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 14:16:43 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <fhAG6.39456$RF1.3327960@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164890

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9cdh2v$1f2$1@slb0.atl.mindspring.net...
> Steve:
>
> I say it because it is true... In almost all practical cases the
"reflected
> power" indicated on a so-called power meter, is "ficticious"!
>
> In most applications of this "theory" the development starts out with an
> assumed "incident power" (Pi)! Pi is not an actual power that appears or
> occurs anywhere in the mismatched situation. i.e Pi is a ficticious
power
> that would be sent to the load if the load were a conjugate match for the
> transmitter, which it is not, unless it is perfectly matched !
>
> Then the development of the "theory" usually ends up computing a reflected
> power Pr = Pi - Pt by subtracting the "delivered power", i.e. the power
> actually dissipated in the real load, a very real power, from the
"assumed"
> incident power which would have been sourced had their been a conjugate
> match. Surely then the reflected power Pr is not a real power,. it is a
> quantity derived by subtracting a real power from a ficticious power...
>
> If you wish to refute this claim, then please examine my "numerical"
> examples, and refute those! Words are cheap, numbers tell all!
>
> Or perhaps for simplicity examine the case of a DC source with finite
> non-zero internal resistance delivering power to a mismatched load. The
> equations and dynamics are all the same for DC mismatch as for AC
> mismatches. In the DC case it can be seen plainly by using only the
theory
> of DC circuits with no elaborate wave mechanics and AC theory, that the
> so-called reflected power is a fiction.
>
> I challenge anyone to find where the so-called reflected power is
> "dissipated", i.e. what load causes the reflected current to be drawn from
> which source.
>

Here are the numbers discussing where reflected power is dissipated.

Lets assume that you have a transmitter, a matched antenna and a coaxial
cable with a total matched loss of 3 dB. You set the *forward* power at the
transmitter output to be 1000 watts. The power arriving at the antenna is
500 Watts. 500 watts of power is delivered to the antenna and 500 watts of

power is lost as the forward wave travels from the transmitter to the antenna.

Now you replace the matched antenna with a 500 ohm antenna (10:1 SWR - rhoA is approx. 0.82). You then again set the *forward* power at the transmitter output to 1000 Watts. The forward power arriving at the antenna is 500 Watts because 500 watts of forward power was lost as the forward wave traveled from the transmitter to the antenna. The amount of power reflected at the antenna is approx equal to 335 Watts. The power delivered to the antenna is 165 Watts. 167.5 watts of rearward traveling power is lost as the 335 Watts of reflected power travels from the antenna to the transmitter. The forward power measured at the transmitter output is 1000 Watts. The rearward power measured at the transmitter output is 167.5 Watts. 832.5 Watts of total power is delivered to the system. 165 Watts of power is delivered to the antenna. 667.5 Watts of power is lost in the transmission line because of the 500 Watts of forward power loss and the 167.5 Watts of reflected power loss.

Reflected power is not an imaginary or "made up" concept.

> The whole theory of "insertion loss design" of filters and equalizers is
> also based around this premise, i.e. first assume that you have a resistive
> generator delivering power to a perfectly matched load, then "insert" the
> system to be designed in between the source and the load and "optimize"
> something in the parameters of the system under design e.g. meet an
> insertion loss filter template or whatever.
>
> Now when the system being designed, or adjusted if it is a "tuner", is
> "inserted" between the source and the load, the whole system is changed by
> this "insertion"... the original "incident power" no longer exists, some
> other power is now sourced by the generator.
>
> Yet, for apparently good reasons, the assumption, or fiction, that the
> original perfectly matched incident power is still applied, even with a load
> different to a perfect match, is continued through the analysis. Ending up
> with the situation when not perfectly matched, that both the incident and
> reflected powers are fictions, that is they are assumed and not real.
>
> Of course if you adjust the "inserted" system to obtain a perfect match,
> i.e.if a jf axis reflection coefficient zero is created and exists and one
> is "tuned" right on that zero, then Pr = 0 and Pi = Pt. But wherever their
> is a mismatch, i.e. between reflection zeros, the reflection coefficient is
> not zero, and at those points then that is an assumption and Pr is
> ficticious. And... in most practical applications that is usually the case.
> In fact for any such system the only time that Pr is not ficticious for a

> lumped or distributed system would be at a countable number of reflection
> zeros in the "passband". Over the rest of the band, Pr is ficticious, and
> non-zero.
>
> It's really very simple.
>
> There is a power generated in the transmitter, and there is a power
> dissipated in the load, two powers... nothing more, nothing less. Why
> consider any more powers?
>
> IMHO... it is silly to speak of four powers in such a system, i.e. why do
we
> have to have the following four powers when only two are present and
> acounted for:
>
> The "generated power", and the "delivered power", are the only two of
> consequence. The "incident power" and the "reflected power" are
ficticious.
> Only two of these powers are relevant to an actual operating systems, the
> other two are fictions which help with "visualizations", etc.
>
> The "generated power" and the "delivered power" are all that are really
> interesting.
>
> The generated power is dissipated in the sum of the internal generator
> resistance and the load resistance, and the delivered power is dissipated
in
> the load resistance. The delivered power is always less than the
generated
> power, it is a part of the generated power. Thevin or Norton would be
proud
> to know that still works!
>
> Period, end of story.
>
> The other two "powers", the "incident" and "reflected" powers are mere
> "intermediate" results useful to help us to design or adjust an "inserted"
> system but they are not generated or dissipated anywhere!
>
> For those who assert differently, I challenge them to make a numerical
> calculation, as I have done, to show the size of these "powers" and
> correlate them with either the generator or the load resistances where
they
> are dissipated.
>
> Seems plain and simple enough, why make it more complicated by trying to
> ascribe reality to something that is not.
>
> -Peter K1PO
>

>
>
>
> In theory, theory and practice are the same, in practice they are not.
>
> It is only in the case of a perfect conjugate match that the so-called
> reflected power is real and not fictional, and then ONLY because it is
zero!
>
> -Peter K1PO
>
>
>
> "VE9SRB" <srbest@att.net> wrote in message
> news:OUpG6.38818$RF1.3236212@bgtnsc06-news.ops.worldnet.att.net...
> >
> > Peter:
> >
> > In all seriousness, why do you disseminate this absolutely false
technical
> > information regarding reflected power?
> >
> > Steve VE9SRB
> >
> >
> > "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> > news:9cci3mhnk1@nntp9.atl.mindspring.net...
> > > Cecil
> > >
> > > Agreed... if current and voltage exist at a point on a line then one
can
> > say
> > > that a certain power is passing that point. But what if the "power"
> > > passing a point never gets dissipated or generated anywhere? And what
> if
> > > one does not use the voltage V and current I at that point but uses
> > > fictional currents and or voltages. Is that a real power?
> > >
> > > What is usually being done with reflected power in most common amateur
> > radio
> > > situations is the following:
> > >
> > > There exists a real current I and a real voltage V on a line at a
> > particular
> > > point. "The real power" passing there would then be perfectly valid
and
> > > could be calculated by P = V * I * cos(theta). Or... (if one was sure
> the
> > > surge resistance of the line was R), by either of P = V*V/R or P =
> I*I*R.

> > >
> > > However, what happens with "reflected power" is that V and I passing
> that
> > > point are not used... instead the "fictional" reflected voltage "b =
V -
> > IR"
> > > is used, this reflelcted voltage b is not an actual voltage on the
line,
> b
> > > is a linear combination of V and I.
> > >
> > > The fictional reflected voltage b which is not present on the line is
> then
> > > used to "create" a "fictional" reflected power to be displayed on a
> meter
> > > face or digital display as Pr = b*b/R.
> > >
> > > Since there is no voltage b present on the line, there simply is no
Pr!
> > >
> > > Hey if you wanted to you could always "say" that any voltage V is the
> sum
> > of
> > > any number of other voltages, say V = V1 + V2 + V3 + ad infinitum...
but
> > > that does not make them "real". And computing power which involves
> > > multiplication and or squaring of quantities leads to many possible
> > misuses
> > > or errors in "visualization".
> > >
> > > For instance we can arbitrarily say that, paraphrasing Reg, a certain
> > number
> > > is really the sum of two others, say. 5 = 3 + 2. Into hom many
> different
> > > sums can we resolve "5", heh, heh.
> > >
> > > But then we can't begin squaring and mulitplying "3" and "2" and
> expecting
> > > "nice" things to happen, for instance... is 3*3 = 9 plus 2*2 = 4 which
> > > equals 13 equal to 5*5 = 25?
> > >
> > > That's the "danger" of "reflected power" even as an intermediate
> > quantitiy.
> > >
> > > I maintain that we are all much better off without "reflected power".
> > >
> > > Reflected voltage is a fiction but still I feel that it is useful and
> > nicely
> > > behaved, and the same with reflected current, but start multiplying
> > fictions

> > > together and who knows what craziness can result.
> > >
> > > -Peter K1PO
> > >
> > >
> > >
> > >
> > >
> > > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > > news:3AE98F0D.1654081D@IEEE.org...
> > > > Dick Carroll wrote:
> > > > > If no termination is found by the
> > > > > reflected energy, there is no reflected power developed, again
save
> > line
> > > > > losses, and it will be re-reflected back down the feedline toward
> the
> > > > > antenna.
> > > >
> > > > Dick, energy moving past a point is a *definition* of power. What
> > > > definition of power are you using?
> > > >
> > > > > Some engineers here seem to say that as long as both voltage and
> > > > > current are present, power is developed.
> > > >
> > > > If V*I*cos(theta) is not zero, power exists at the point where V and
> > > > I are measured. What do you mean by "developed"? Seems you might be
> > > > using "developed" to mean "dissipated".
> > > >
> > > > > Pure Walt Maxwell as I understand him.
> > > >
> > > > Please provide the source or quote where Walt said that reflected
> > > > energy moving along a transmission line does not result in
> > > > reflected power. Perhaps Walt will jump in here.
> > > >
> > > > Again, moving energy past a point equals power at that point, by
> > > > definition.
> > > >
> > > > How many megawatts does a power generation plant produce? How many
> > > > megawatts does a power transmission line handle? These questions
> > > > are meaningless if moving energy past a point doesn't result in
> > > > power at that point.
> > > > --
> > > > http://www.mindspring.com/~w6rca
> > >
> > >
> >
> >
>
>

2043. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 14:23:15 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <nnAG6.39461$RF1.3329826@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164891

"William E. Sabin" <sabinw@mwci.net> wrote in message
news:3AEAC76B.10118BCA@mwci.net...
>
>
> VE9SRB wrote:
>
> > Not all of the energy reflected from the antenna is re-reflected back to
the
> > antenna for radiation. Unfortunately, this incorrect concept is widely
> > accepted in the amateur community.
>
> The amateur radio fascination with PA output impedance is related to the
amateur
> radio fascination with re-reflection. There are very few amateur radio
> applications where re-reflection is even worth thinking about. And if it
is, for
> some reason, there are ways to absorb small reflections from the load so
that
> re-reflection, therefore PA output impedance, is immaterial.
>
> If the PA, operating into a 50+j0 ohm coax, sees 50+j0 ohms, there is no
> reflection into the PA, therefore no re-reflection from the PA. The
antenna
> tuner provides the 50+j0 ohms. The PA can then be a pure current source or
a
> pure voltage source or anything in between.
>
> Bill W0IYH
>

If the PA is operating into a matched transmission line system, then there
are no reflections, so the discussion of re-reflections is mute.

If the PA is operating into an unmathed transmission line system, then there
are reflections, so the discussion of re-refelctions has validity. If the
PA output impedance is Zo, then it is obvious that re-reflections will not
exist.

Steve VE9SRB

2044. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 14:35:30 UTC
From: richardharrison@webtv.net
Message-ID: <22679-3AEAD532-19@storefull-111.iap.bryant.webtv.net>
Source record: 164893

Tom, W8JI wrote:
"It turned out the Radio Luxembourg effect was mixing in the
transmitters, not the ionosphere."

That`s a real possibility. 50 years ago, I worked at a station on 790 KHz. Another station about 15 miles away broadcast on 740 KHz. Some mornings, they signed on before we did, and our carrier would be on but unmodulated. If you were tuned to the unmodullated carrier and cranked up your volume control, the 740 KHz modulation was audible on the 790KHz carrier. The unwanted modulation was more than 50 db down, so it was within the rules. It was just a curiosity. Now, both stations have the same owner, so it`s an in-house situation.

In the SWBC plant where I worked, cross-modulation never seemed to appear. But, we never operated with carriers separated by only 50 KHz, nor 500 KHz in any instance that I remember.

Best regards, Richard Harrison, KB5WZI

2045. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 14:42:15 UTC
From: k1bqt@aol.com
Message-ID: <20010428104215.15876.00001232@ng-mb1.aol.com>
Source record: 164892

>...would you care to explain what determines the amount that is NOT re-reflected, neglecting losses?<

Why would anyone even consider the concept of neglecting loss? If a transmission line contributes a mere 1-dB of padding in the forward direction, this (small) amount of attenuation compounds with every subsequent reflection to make mismatched loads appear much better than they really are back at the source.

To "neglect loss" means to conduct an argument based on a flawed premise. This is not a good practice, if you want to win a debate.

Rick K1BQT

2046. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 15:01:36 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cem0gnhk0@208.206.142.67>
Source record: 164894

Wes Stewart wrote:
>
> On 27 Apr 2001 15:09:41 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>
> [snip]
> >
> > And from my viewpoint any reflected energy from an unmatched antenna
> >that finds no termination back at the line input will be re-reflected
> >back to the antenna for radiation. That's what seems to happen with the
> >use of an antenna tuner, less line losses as always.
> > Wes Stewart says he has used reflected power to heat thermocouples etc.
> >Right, they are the termination that is missing in a ham
> >antenna/feedline system using a tuner. If no termination is found by the
> >reflected energy, there is no reflected power developed, again save line
> >losses, and it will be re-reflected back down the feedline toward the
> >antenna.
>
> Wrong.
>
> Let's take two of my waveguide dual-directional couplers (reflectormeters) and
> connect them thus:
>
> The input port of coupler #1 attaches directly to the output of a well-matched
> source, as before. On the ouput port of coupler #1 we attach a waveguide E- H
> tuner (the waveguide equivalent of your antenna tuner). On the output of the
> tuner we attach the input port of coupler #2.
>
> On the output of coupler #2 we attach a 3 dB attenuator followed by a short
> circuit.
>
> So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho = 0.5
>
> If I temporarily remove the tuner, as expected, both reflectometers measure a
> 6 dB power ratio between the forward and reflected coupled ports.
>
> We assume that maximum available power out of the source is 1.0 W. Because we
> have a non-reflective source, there is a mismatch loss given as:
>
> -10 * log(1 - rho^2) = 1.25 dB
>
> or leaving off the 10 log, a power ratio of 0.75.
>
> So of the available power, 0.75 W makes it into the input port of coupler #1.
>

> If our couplers are 30 dB, as in my previous example, then we read the
> following: (give or take coupling loss)
>
> 1. Coupler #1 forward port = 0.75 mW.
> 2. Coupler #1 reflected port = 0.1875 mW.
> 3. Coupler #2 forward port = 0.75 mW.
> 4. Coupler #2 reflected port = 0.1875 mW.
>
> Okay, now we put the tuner back in between the two couplers. If we fiddle fart
> around with the tuner, the power reading at the reflected port of coupler #1 can
> be reduced to zero, or nearly so. We have "re-reflected" the nasty reflected
> (dare I say) power back toward the load.
>
> The mismatch loss now goes away and the forward port of coupler #1 reads 1.0 mW.
>
> Let's examine the readings on the thermistor power sensors on the coupled ports
> of coupler #2. Since we tweaked the tuner, we now have 1.0 W migrating around
> in the second coupler so the forward coupler reads 1.0 mW. (1.25 dB higher than
> before and no surprise)
>
> With 1.0 W incident on a 6 dB return loss load, the reflected power is 0.25 W.
> The coupling factor is 30 dB so the power appearing at the reflected port of
> coupler #2 is 0.25 mW. The ratio of the reflected power to the forward power
> readings is .25 / 1.0 = - 6dB, just as before and (to me anyway) again no
> surprise.
>
> But wait! We just tuned (conjugately matched) this system to "remove the
> termination" and that pesky reflected power still showing up on the coupled
> port!!!
>
> No voltmeter, no ammeter, no hanky panky, just real reflected power heating up
> the thermistor. Funny how this works.
>
> >
> > Some engineers here seem to say that as long as both voltage and
> >current are present, power is developed. No argument, but I submit that
> >the only reason that current flows in the reflected wave is that it is
> >being terminated *somewhere*, (again neglecting losses) - that
> >somewhere, in the case of reflections that find no termination at the
> >line input, is back at the antenna where they wind up after being
> >re-reflected by the tuner. There is no reflected power developed as
> >result of the reflection at line input.
> > Pure Walt Maxwell as I understand him.
>
> I believe you misunderstand.

Always a good possibility. But - if current flows, does not that
require a path in the form of a load or "termination"? No current can
flow without a closed circuit. So where is the termination for reflected
currents that arrive back at the tuner and find the impedance mismatch

so great as to be totally unattractive? If they aren't then re-reflected back to the antenna, what DOES happen to them?

When I key my IC756 before pushing the autotune button, I see reflected power appear on the internal SWR meter (before the tuner). I push the "tune" button, the rig's tuner does it's routine, and I key again. Nada. No hint of reflected energy coming back through the tuner. So all of it is staying on the line side. There is nothing between the autotuner and the antenna except 150ft of coax. No other couplers nor ports.
If it finds no other load or termination, where else *can* it go exept back to the antenna? Doesn't the fact that your sampling coupler #2 indicate the presence of reflected energy just confirm it's presence on the line while it is enroute back to the antenna/load? (and it's sampling circuitry present a minor termination constructed to load the line just enough to provide the designed load sufficient for metering)?

If that isn't what happens I do need to read Walt's literature again.

Dick Wï¿½EX

2047. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 15:15:09 UTC
From: Greg Blair <gblair@sympatico.ca>
Message-ID: <3AEADE7C.F62C3B14@sympatico.ca>
Source record: 164895

The definitive ham radio reference to DDRR antennas appeared in a two part article:

"Surprising Miniature Low Band Antenna - The DDRR Low Noise Antenna", Joseph M Boyer, 73 Magazine Part One August 1976 pg 28-36, Part Two: September 1976, pg 34-45.

The article references patents 3,680,135 and 3,588,905, which are long past the 20 year patent protedction period (or was it 17 years back in 1976???)

The 73 articles contains a ton of antenna theory one how the thing works and how to design a multiband DDRR.

Cheers, Greg
ve0acr

jsimpson wrote:

> I am looking for a good model of the DDRR antenna for 40 meters. I am
> interested in using an octagon instead of a circle and would like to verify
> that keeping the same average radius and total radiator length (sum of the
> sides versus the circle circumference) does not dramatically impact the
> feedpoint location and more importantly the tuning capacitor range.
>
> I have a Santa Fe style house (flat topped) in a heavily restricted
> subdivision and need an invisible antenna for HF work. If the 40 meter one
> works out, I plan to scale the antenna for other HF bands.
>
> Any help would be greatly appreciated.
>
> Jerry
> WJ7T

2048. Re: W4RNL 2m Half Square question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 15:26:59 UTC
From: richardharrison@webtv.net
Message-ID: <22677-3AEAE143-126@storefull-111.iap.bryant.webtv.net>
Source record: 164896

Paul Logan wrote:
"How do I construct one of these for 164.2 mhz?"

Reduce the lengths and spacing of the antenna elements by a factor of about 146 / 164.2 =.889

Cebik gives the patterns and performance on 2-meters. If scaled down in size by the 0.889 factor, identical results should be obtained on 164.2 MHz.

Best regards, Richard Harrison, KB5WZI

2049. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 15:47:14 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3aeadb41.331388712@news.aepnet.com>
Source record: 164862

On 28 Apr 2001 15:01:36 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>
>
>Wes Stewart wrote:
>>
>> On 27 Apr 2001 15:09:41 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>>
>> [snip]
>> >
>> > And from my viewpoint any reflected energy from an unmatched antenna
>> >that finds no termination back at the line input will be re-reflected
>> >back to the antenna for radiation. That's what seems to happen with the
>> >use of an antenna tuner, less line losses as always.
>> > Wes Stewart says he has used reflected power to heat thermocouples etc.
>> >Right, they are the termination that is missing in a ham
>> >antenna/feedline system using a tuner. If no termination is found by the
>> >reflected energy, there is no reflected power developed, again save line
>> >losses, and it will be re-reflected back down the feedline toward the
>> >antenna.
>>
>> Wrong.
>>
>> Let's take two of my waveguide dual-directional couplers (reflectormeters) and
>> connect them thus:
>>
>> The input port of coupler #1 attaches directly to the output of a well-matched
>> source, as before. On the ouput port of coupler #1 we attach a waveguide E- H
>> tuner (the waveguide equivalent of your antenna tuner). On the output of the
>> tuner we attach the input port of coupler #2.
>>
>> On the output of coupler #2 we attach a 3 dB attenuator followed by a short
>> circuit.
>>
>> So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho = 0.5
>>
>> If I temporarily remove the tuner, as expected, both reflectometers measure a
>> 6 dB power ratio between the forward and reflected coupled ports.
>>
>> We assume that maximum available power out of the source is 1.0 W. Because we
>> have a non-reflective source, there is a mismatch loss given as:
>>
>> -10 * log(1 - rho^2) = 1.25 dB
>>

>> or leaving off the 10 log, a power ratio of 0.75.
>>
>> So of the available power, 0.75 W makes it into the input port of coupler #1.
>>
>> If our couplers are 30 dB, as in my previous example, then we read the
>> following: (give or take coupling loss)
>>
>> 1. Coupler #1 forward port = 0.75 mW.
>> 2. Coupler #1 reflected port = 0.1875 mW.
>> 3. Coupler #2 forward port = 0.75 mW.
>> 4. Coupler #2 reflected port = 0.1875 mW.
>>
>> Okay, now we put the tuner back in between the two couplers. If we fiddle fart
>> around with the tuner, the power reading at the reflected port of coupler #1 can
>> be reduced to zero, or nearly so. We have "re-reflected" the nasty reflected
>> (dare I say) power back toward the load.
>>
>> The mismatch loss now goes away and the forward port of coupler #1 reads 1.0 mW.
>>
>> Let's examine the readings on the thermistor power sensors on the coupled ports
>> of coupler #2. Since we tweaked the tuner, we now have 1.0 W migrating around
>> in the second coupler so the forward coupler reads 1.0 mW. (1.25 dB higher than
>> before and no surprise)
>>
>> With 1.0 W incident on a 6 dB return loss load, the reflected power is 0.25 W.
>> The coupling factor is 30 dB so the power appearing at the reflected port of
>> coupler #2 is 0.25 mW. The ratio of the reflected power to the forward power
>> readings is .25 / 1.0 = - 6dB, just as before and (to me anyway) again no
>> surprise.
>>
>> But wait! We just tuned (conjugately matched) this system to "remove the
>> termination" and that pesky reflected power still showing up on the coupled
>> port!!!
>>
>> No voltmeter, no ammeter, no hanky panky, just real reflected power heating up
>> the thermistor. Funny how this works.
>>
>> >
>> > Some engineers here seem to say that as long as both voltage and
>> >current are present, power is developed. No argument, but I submit that
>> >the only reason that current flows in the reflected wave is that it is
>> >being terminated *somewhere*, (again neglecting losses) - that
>> >somewhere, in the case of reflections that find no termination at the
>> >line input, is back at the antenna where they wind up after being
>> >re-reflected by the tuner. There is no reflected power developed as
>> >result of the reflection at line input.
>> > Pure Walt Maxwell as I understand him.
>>
>> I believe you misunderstand.

In the words of Congressman Blotto, "I would like to revise and extend my remarks."

I believe that I misread your last sentence above. I took it to mean that you felt that the tuner eliminated completely any reflected power. A more careful reading proves that is not what you were saying.
>
>
> Always a good possibility. But - if current flows, does not that
>require a path in the form of a load or "termination"? No current can
>flow without a closed circuit. So where is the termination for reflected
>currents that arrive back at the tuner and find the impedance mismatch
>so great as to be totally unattractive? If they aren't then re-reflected
>back to the antenna, what DOES happen to them?
>
> When I key my IC756 before pushing the autotune button, I see reflected
>power appear on the internal SWR meter (before the tuner). I push the
>"tune" button, the rig's tuner does it's routine, and I key again. Nada.
>No hint of reflected energy coming back through the tuner. So all of it
>is staying on the line side. There is nothing between the autotuner and
>the antenna except 150ft of coax. No other couplers nor ports.
> If it finds no other load or termination, where else *can* it go exept
>back to the antenna? Doesn't the fact that your sampling coupler #2
>indicate the presence of reflected energy just confirm it's presence on
>the line while it is enroute back to the antenna/load? (and it's
>sampling circuitry present a minor termination constructed to load the
>line just enough to provide the designed load sufficient for metering)?
>
> If that isn't what happens I do need to read Walt's literature again.

My coupler #2 doesn't know anything about how or why the reflected power is generated. It simply proves that it exists. And my example proves that it exists (in the same ratio) whether the load is driven by a matched (non-reflecting) source or by a reflecting source (i.e. source plus tuner).

The initial claim was that my first example using a matched source was invalid as a "real-world" ham situation, because it included the "termination" to reflected power built into the source that doesn't exist with our tuned sources.

The claimant(s) stated that it was the terminations that I used at the input and at the power measurement ports that upset the apple-cart and turned fictious reflected, energy, power, joules, volts, amps, or whatever you favorite term is, into *real* heat. If I would just remove the terminations, the reflected power would disappear and turn into a figment of my imagination.

One of (the) most notable proponents of the fictitious reflected power concept has been particularly and uncharacteristically silent about responding to my examples, except to ask me how the weather is in Tucson.

Perhaps I'm in his "kill filter." <g>

73,

Wes Stewart, N7WS

>
>Dick W&#65533;EX

2050. UHF Yagi antenna plans needed

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 15:49:07 UTC
From: DeXXSter <dexxster@coolmail.net>
Message-ID: <TDBG6.14087$sb5.1533233@news.infostrada.it>
Source record: 164897

I would like to build a reasonably-performant-but-quite-compact 10 elements Yagi for the 70 cm band (432 MHz) using preferably a squared boom, but didn't find anything suitable yet. Any help ?

Thanks a lot in advance,

:-) DeXXSter

2051. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 15:51:00 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <6tnlet4kssks3rp9uc333m334q1tqfqgfj@4ax.com>
Source record: 164898

On 28 Apr 2001 15:01:36 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>
>
>Wes Stewart wrote:
>>
>> On 27 Apr 2001 15:09:41 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>>
>> [snip]
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>> >that finds no termination back at the line input will be re-reflected
>> >back to the antenna for radiation. That's what seems to happen with the
>> >use of an antenna tuner, less line losses as always.
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>> >Right, they are the termination that is missing in a ham
>> >antenna/feedline system using a tuner. If no termination is found by the
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>> >antenna.
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>> Wrong.
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>> connect them thus:
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>> source, as before. On the ouput port of coupler #1 we attach a waveguide E- H
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>> On the output of coupler #2 we attach a 3 dB attenuator followed by a short
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>> or leaving off the 10 log, a power ratio of 0.75.
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>> the thermistor. Funny how this works.
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> Always a good possibility. But - if current flows, does not that
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>the line while it is enroute back to the antenna/load? (and it's
>sampling circuitry present a minor termination constructed to load the
>line just enough to provide the designed load sufficient for metering)?
>
> If that isn't what happens I do need to read Walt's literature again.
>
>Dick Wï¿½EX

Hi Dick,

I must concur with Wes's treatment of the subject. The methods employed are classic and he has demonstrated how to remove many of the variables to cut down on those details that derail an argument. You should note how difficult it was for Peter to respond to Wes's conclusive proof of Power in a reflection once the distracting and irrelevant details were stripped away.

You should re-read Wes's work too. You offer problems of where these loads and ports and couplers are for your configuration. Not having access to the metrologist's tools does not mean you are without them. Every one of the functions offered by these components already reside within your automatic tuner and are "hardwired" in (in software we use this term to denote that such characteristics are built in and generally unavailable, casually). If you care to crack the case of your rig and probe with a 'scope or meter, you too could confirm everyone of Wes's steps above at HF.

We love to call the academic solution a myth, and some use that too freely here. I've seen the description of the common SWR meter as a bridge, and it qualifies in every respect to that design paradigm. However, this common device can be viewed from other perspectives that are technically equal and yet are attacked as... myth (or ignored - I don't know which is worse). That other perspective of this common circuit is that its operation can be described in terms of couplers

and ports which conforms to every usage of these terms and satisfy
every requirement for technical accuracy.

73's
Richard Clark, KB7QHC

2052. Re: UHF Yagi antenna plans needed

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 16:00:14 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <iOBG6.32773$Ce4.2444513@news1.rdc1.ct.home.com>
Source record: 164899

A source for the plans or boom?

Brian, W6STI sells the Yagi Optimizer program
that I understand is easy to use for making beam
antennas. This is important, since it allows you to
compensate for various boom and element diameters.

Square alumimum tube is sold at most decent sized
hardware stores and home centers. I bought some at
the local Rocky's Hardware store last Fall. You don't
need aircraft grade for a compact 70-cm yagi.

Pete

"DeXXSter" <dexxster@coolmail.net> wrote in message
news:TDBG6.14087$sb5.1533233@news.infostrada.it...
> I would like to build a reasonably-performant-but-quite-compact 10
elements
> Yagi for the 70 cm band (432 MHz) using preferably a squared boom, but
> didn't find anything suitable yet. Any help ?
>
> Thanks a lot in advance,
>
> :-) DeXXSter
>
>
>

2053. 80 plus 2 di-pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 16:00:24 UTC
From: pws <p.grace@ntlworld.com>
Message-ID: <pQBG6.2247$wO6.387446@news2-win.server.ntlworld.com>
Source record: 164900

hi,
is anyone using the 80 plus 2 di pole from w+s in the uk ?
if so what sort of results are you getting and what have you used before and
how does it compare?
cheers
paul mw0dct

2054. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 16:20:19 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <60qlet49pe741nt03357al0ra5suuuife2@4ax.com>
Source record: 164901

On Sat, 28 Apr 2001 03:59:10 GMT, "jsimpson"
<jsimpsonfam@earthlink.net> wrote:

>I am looking for a good model of the DDRR antenna for 40 meters. I am
>interested in using an octagon instead of a circle and would like to verify
>that keeping the same average radius and total radiator length (sum of the
>sides versus the circle circumference) does not dramatically impact the
>feedpoint location and more importantly the tuning capacitor range.
>
>I have a Santa Fe style house (flat topped) in a heavily restricted
>subdivision and need an invisible antenna for HF work. If the 40 meter one
>works out, I plan to scale the antenna for other HF bands.
>
>Any help would be greatly appreciated.
>
>Jerry
>WJ7T
>

Hi Jerry,

Your search for a stealth antenna is motivated I see. Your choice of
the DDRR is a natural consequence. The site of your antenna is fixed,
that is clear. Now, of these observations, two of the three do not
necessarily lead to the third. In other words, the DDRR is not your
only available choice, and certainly not the best (nor the worst for
that matter in spite of the barrage of negative comments that are sure
to follow). More to the matter, it is not the simplest design you
could consider.

If you are stuck with a loop configuration, use the entire area of
your roof to its advantage. If you follow this forum long enough, you
will come to find that you should seek to maximize length, area or
volume for optimization. At the no doubt low height of your roof in
terms of wavelength (for 40M), you don't want to compound near earth
losses with a radiator that demands hi current driving through a small
radiation resistance (small in relation to possible copper/aluminum
losses). That is, a 1 Ohm DDRR radiation resistance with 1 Ohm
resistive losses and 5 Ohms earth loss is a terrible way to start when
you could build, say, a reactive, but tuneable 20 Ohm radiation
resistance antenna with similar earth and resistive losses instead.

The one positive of this is that if you built your DDRR first, then
you wouldn't be as disappointed with it as if you built it to replace
one of these quick and dirty vulgar options instead.

73's
Richard Clark, KB7QHC

2055. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 16:20:38 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3aeae7b1.334573229@news.aepnet.com>
Source record: 164863

On Fri, 27 Apr 2001 23:21:30 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:

>On Fri, 27 Apr 2001 23:02:26 +0100, "M.J.Powell"
><mike@pickmere.demon.co.uk> wrote:
>
>>There was some difficulty in telling the 'Luxembourg Effect' from the
>>'rusty-nail' effect but the LE did exist and is known now by cross-mod
>>on amateur VLF reception.
>>
>
>It turned out the Radio Luxenbourg effect was mixing in the
>transmitters, not in the ionosphere.

Reminds me of the time I was living in the city on a postage stamp sized lot and running the legal limit on 2m.

Some fool ham from California moved in right behind me and decided that what Tucson needed was another 2m repeater so he put this claptrap boat anchor on the air.

One day I'm on the air and the next door neighbor lady calls me and says I'm wiping out her TV. This had never happened before but I figured something broke and started looking for a problem at my end. Couldn't find anything wrong, so I turned on the automatic keyer and walked next door to look at the TeeVee. Clean as a whistle.

So I say, "Marlene have you been smoking those funny cigarettes again?" She says no, I really was messing with her toob. So I say to myself, "Self, I wonder if it's that repeater that's doing it?"

So I head back home and remove the brick from the key. I figure I need to watch the TV while the repeater is up. Of course no self-respecting weak signal man would get caught dead using a repeater so I didn't own an FM rig. So I grabbed the Millen grid dip meter and dialed the receiver up to the repeater output frequency and swished the dipper frequency across the input. Bingo, up she pops.

Head back to Marlene's. I'm going to show her it's the other guy, not me. Looking at the toob I swish the dipper. Nada. Hmmm, now what do I do.

Back to the shack. Rotate the EME antenna right at the repeater antenna and place brick on key. Walk back to Marlene's and swish-swish. Bingo. Wipeout time. Only time TV is trashed is when both transmitters are on.

I tell Marlene it's the other guy's fault. She should call him. He soon moved out. Back to CA I hope.

2056. Re: Hardline connectors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 16:28:09 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3aeaef50_4@news3.prserv.net>
Source record: 164902
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.antenna

An outfit called Gilbert sells most of them to the CATV industry. They are expensive, usually. There have been numerous articles in the ham and scanner magazines on fabricating adapters to use standard connectors, usually PL-259s. Andrew, Comm/Scope, RFS Cablewave and many others sell 50 ohm hardline connectors which might be modified to fit 75 ohm cable.
--
Crazy George

Rudy Marcelletti <rudym@net-link.net> wrote in message news:3ae9806c$0$88183$bbae4d71@news.net-link.net...
> I have several spools of what looks to be either 3/4" or 7/8" CATV hardline.
> It has a fairly heavy vinyl jacket and center conductor looks to be copper
> clad steel about ï¿½" diameter.
>
> I I have plenty of splices. I need end connectors with either sex N
> connector or SO-230 or PL-259. I found some with PL-259 ends for ï¿½"
> hardline but I can't read the name. Where are sources for these connectors?
> Any one know?
>
>

2057. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 16:53:35 UTC
From: richardharrison@webtv.net
Message-ID: <22678-3AEAF58F-47@storefull-111.iap.bryant.webtv.net>
Source record: 164904

J. Simpson wrote:
"I am looking for a good model of the DDRR antenna for 40 meters."

The May 2001 issue of "73" magazine has a 2-meter version of the DDRR on page 20. The loop is about 1/2-ft in diameter, so multiplied by 20.6, a 40-meter version would scale up to about 10.3 feet in diameter. The article refers readers to the ARRL Antenna Book for details.

I don`t know that the DDRR is in the new 19th edition of the Antenna Book, but I seem to recall seeing it in previous editions. The DDRR has been often bad-mouthed in this news group, but that by no means says that it may not be a good choice for some applications. Many good antennas get trashed here. I have no experience with the DDRR, and no opinion. The DDRR obviously has advocates in addition to its detractors.

Best regards, Richard Harrison, KB5WZI

2058. Antennas are too hard to understand

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 17:12:57 UTC
From: kiki <lolo@pis.com>
Message-ID: <3AEAFA19.EE8F9208@pis.com>
Source record: 164905

[No readable article body recovered]

2059. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 17:21:18 UTC
From: fractenna@aol.com
Message-ID: <20010428132118.28269.00002799@ng-ch1.aol.com>
Source record: 164906

>
><!doctype html public "-//w3c//dtd html 4.0 transitional//en">
>
>And for all the Fractal antenna fans in this news group, there is
>even a 20 meter 3D fractal antenna article: "Making The Best of a
>Bad Bargain", on page 56 of the September 1976 issue. So there you
>go. The fractal antenna was in the public domain 25 years before the USPTO
>issued the fractal patent. If anyone cares enough to spend the big
>$$$'s, you could petition the USPTO to overturn the fractal patents.
>
>:o)
>
>Greg Blair wrote:

It is important to notice that this is an assertion and not a speculation. In courts of law this amounts to either a statement that is defensible or one that is malicious in intent. So, Greg, tell us exactly what is "anticipated in this prior art" and exactly what "patents at the USPTO" this article "overturns".

Also what does any of this possibly have top do with the DDRR?

73,
Phil
de N1ZKT

2060. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 17:32:06 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9ceuqmpfl0@208.207.71.134>
Source record: 164907

Richard Clark wrote:
>
> On 28 Apr 2001 15:01:36 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>
> >
> >
> >Wes Stewart wrote:
> >>
> >> On 27 Apr 2001 15:09:41 GMT, Dick Carroll <dixie@townsqr.com> wrote:
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> >> [snip]
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> >> >back to the antenna for radiation. That's what seems to happen with the
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> >> > Wes Stewart says he has used reflected power to heat thermocouples etc.
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> >> Wrong.
> >>
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> >> connect them thus:
> >>
> >> The input port of coupler #1 attaches directly to the output of a well-matched
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> >> circuit.
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> >> So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho = 0.5
> >>
> >> If I temporarily remove the tuner, as expected, both reflectometers measure a
> >> 6 dB power ratio between the forward and reflected coupled ports.
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> >> We assume that maximum available power out of the source is 1.0 W. Because we
> >> have a non-reflective source, there is a mismatch loss given as:
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> >> -10 * log(1 - rho^2) = 1.25 dB
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> >> 3. Coupler #2 forward port = 0.75 mW.
> >> 4. Coupler #2 reflected port = 0.1875 mW.
> >>
> >> Okay, now we put the tuner back in between the two couplers. If we fiddle fart
> >> around with the tuner, the power reading at the reflected port of coupler #1 can
> >> be reduced to zero, or nearly so. We have "re-reflected" the nasty reflected
> >> (dare I say) power back toward the load.
> >>
> >> The mismatch loss now goes away and the forward port of coupler #1 reads 1.0 mW.
> >>
> >> Let's examine the readings on the thermistor power sensors on the coupled ports
> >> of coupler #2. Since we tweaked the tuner, we now have 1.0 W migrating around
> >> in the second coupler so the forward coupler reads 1.0 mW. (1.25 dB higher than
> >> before and no surprise)
> >>
> >> With 1.0 W incident on a 6 dB return loss load, the reflected power is 0.25 W.
> >> The coupling factor is 30 dB so the power appearing at the reflected port of
> >> coupler #2 is 0.25 mW. The ratio of the reflected power to the forward power
> >> readings is .25 / 1.0 = - 6dB, just as before and (to me anyway) again no
> >> surprise.
> >>
> >> But wait! We just tuned (conjugately matched) this system to "remove the
> >> termination" and that pesky reflected power still showing up on the coupled
> >> port!!!
> >>
> >> No voltmeter, no ammeter, no hanky panky, just real reflected power heating up
> >> the thermistor. Funny how this works.
> >>
> >> >
> >> > Some engineers here seem to say that as long as both voltage and
> >> >current are present, power is developed. No argument, but I submit that
> >> >the only reason that current flows in the reflected wave is that it is
> >> >being terminated *somewhere*, (again neglecting losses) - that
> >> >somewhere, in the case of reflections that find no termination at the
> >> >line input, is back at the antenna where they wind up after being
> >> >re-reflected by the tuner. There is no reflected power developed as
> >> >result of the reflection at line input.
> >> > Pure Walt Maxwell as I understand him.
> >>

> >> I believe you misunderstand.
> >
> >
> > Always a good possibility. But - if current flows, does not that
> >require a path in the form of a load or "termination"? No current can
> >flow without a closed circuit. So where is the termination for reflected
> >currents that arrive back at the tuner and find the impedance mismatch
> >so great as to be totally unattractive? If they aren't then re-reflected
> >back to the antenna, what DOES happen to them?
> >
> > When I key my IC756 before pushing the autotune button, I see reflected
> >power appear on the internal SWR meter (before the tuner). I push the
> >"tune" button, the rig's tuner does it's routine, and I key again. Nada.
> >No hint of reflected energy coming back through the tuner. So all of it
> >is staying on the line side. There is nothing between the autotuner and
> >the antenna except 150ft of coax. No other couplers nor ports.
> > If it finds no other load or termination, where else *can* it go exept
> >back to the antenna? Doesn't the fact that your sampling coupler #2
> >indicate the presence of reflected energy just confirm it's presence on
> >the line while it is enroute back to the antenna/load? (and it's
> >sampling circuitry present a minor termination constructed to load the
> >line just enough to provide the designed load sufficient for metering)?
> >
> > If that isn't what happens I do need to read Walt's literature again.
> >
> >Dick Wï¿½EX
>
> Hi Dick,
>
> I must concur with Wes's treatment of the subject. The methods
> employed are classic and he has demonstrated how to remove many of the
> variables to cut down on those details that derail an argument. You
> should note how difficult it was for Peter to respond to Wes's
> conclusive proof of Power in a reflection once the distracting and
> irrelevant details were stripped away.
>
> You should re-read Wes's work too. You offer problems of where these
> loads and ports and couplers are for your configuration. Not having
> access to the metrologist's tools does not mean you are without them.
> Every one of the functions offered by these components already reside
> within your automatic tuner and are "hardwired" in (in software we use
> this term to denote that such characteristics are built in and
> generally unavailable, casually). If you care to crack the case of
> your rig and probe with a 'scope or meter, you too could confirm
> everyone of Wes's steps above at HF.
>
> We love to call the academic solution a myth, and some use that too
> freely here. I've seen the description of the common SWR meter as a
> bridge, and it qualifies in every respect to that design paradigm.
> However, this common device can be viewed from other perspectives that

> are technically equal and yet are attacked as... myth (or ignored - I
> don't know which is worse). That other perspective of this common
> circuit is that its operation can be described in terms of couplers
> and ports which conforms to every usage of these terms and satisfy
> every requirement for technical accuracy.

But Rich, where does the reflected wave go to meet a termination/load if not back to the antenna, less whatever line loss and coupling load loss is presented?

I get the impression that we all are not on the same page here. There has been made much of "reflected power is a myth" when we all know that 'power' of any type is merely voltage looking for a path to a load or termination to complete a circuit which will allow current to flow and nature to achieve an equilibrium. I don't think that anyone seriously suggests that no "power" is present, just that most of it does not terminate anywhere except as radiation at the antenna in this type of xmtr-tuner-feedline-antenna system, the amount of loss depending mostly on I^2R and dielectric losses. And that, I thought, was Walt's point. Even to the extent that he designed and built spacecraft antennae thusly. Of course the system should be designed for minimal loss to acheive maximum antenna radiation.

The statement "Reflected power is a myth" merely means that if your SWR device says that you have 100 watts forward and 20 watts reflected, that DOES NOT mean that you are wasting that 20 watts, as is so often stated, implied, or misunderstood. Most of it is going back to the antenna to be radiated, in this type of system. That was Carl Drumeller W5JJ's point in the June '73 'CQ' article. I'll leave it to you engineers to dissect his "proof", but I believe his conclusion has to be valid.

Systems without the antenna tuner behave somewhat differently, of course. Some hams believe that the only true path is to achieve a resonant antenna, cut to "the' frequency. But the use of a tuner to resonant the antenna/feedline *system* it allows one to work an entire band without losing much of it to the fact that a fixed antenna goes out of resonance with frequency excursions. As you know Walt made this point strongly in his writings.

If we add one more coupler to Wes' test setup, (#3), set to measure incident power, located on the antenna side of his (#2), I believe, from experience and study, that it (#3) would have to indicate the full original incident power, plus all the re-reflected power that is now headed back to the antenna, LESS the small amount that is consumed by his coupler (#1) -work- in its task of showing the presence of the reflected wave, and of course all other normal feedline and other incidental losses that it would normally show. The fact that his (#2) shows the presense of reflected power doesn't keep that power from returning to the antenna in the absence of any reason to do otherwise. If he simultaneously introduces a load that is the reason.

This is not, of course anything remotely resembling an engineering analysis, as you know. I don't do those since I'm not an engineer. But I've spent a good bit of time studying for an amateur level understanding of the basic mechanics of how this comes together and this is what I find to be believable and consistant with what can be observed with amateur level equipment, and it is also what I took from Walt's "Reflections" among other sources. If it is really that far off base then I really did misunderstand, and usually when it happens that way I realize there is something that I missed. And I believe I have a lot of company.

Understand that I'm not arguing with Wes's method nor conclusion. I'm putting an Amateur Radio face on it. Not many non-engineers will understand it otherwise.

73, Dick Wï¿½EX

2061. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 17:53:40 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cf034$10d$0@208.207.71.134>
Source record: 164908

VE9SRB wrote:
>
> Here are the numbers discussing where reflected power is dissipated.
>
> Lets assume that you have a transmitter, a matched antenna and a coaxial
> cable with a total matched loss of 3 dB. You set the *forward* power at the
> transmitter output to be 1000 watts. The power arriving at the antenna is
> 500 Watts. 500 watts of power is delivered to the antenna and 500 watts of
> power is lost as the forward wave travels from the transmitter to the
> antenna.
>
> Now you replace the matched antenna with a 500 ohm antenna (10:1 SWR - rhoA
> is approx. 0.82). You then again set the *forward* power at the transmitter
> output to 1000 Watts. The forward power arriving at the antenna is 500
> Watts because 500 watts of forward power was lost as the forward wave
> traveled from the transmitter to the antenna. The amount of power reflected
> at the antenna is approx equal to 335 Watts. The power delivered to the
> antenna is 165 Watts. 167.5 watts of rearward traveling power is lost as
> the 335 Watts of reflected power travels from the antenna to the
> transmitter. The forward power measured at the transmitter output is 1000
> Watts. The rearward power measured at the transmitter output is 167.5
> Watts. 832.5 Watts of total power is delivered to the system. 165 Watts of
> power is delivered to the antenna. 667.5 Watts of power is lost in the
> transmission line because of the 500 Watts of forward power loss and the
> 167.5 Watts of reflected power loss.

Steve, you don't have to be an engineer to recognize that as a lousy HF
antenna system! :-) (Though probably a lot more common that we like to
think).

When one uses low loss feedline, at HF, the numbers improve, of course.

I don't think there is a basic disagreement here at all. The problem is
that so many hams read their SWR device that says "100 watts" forward,
and "20 watts" reflected, and believe they are actually losing 20 watts
since it is being reflected at the antenna (and that reading cannot be
true because of unknown feedline loss that attenuates the reflected wave
as it returns).
I think that most of us know that the actual loss depends almost
entirely on system losses (I^R and dielectric loss) instead of what that
meter says. That is the source of the statement "Reflected power is a
myth". You might as well say
"Your SWR meter is lying to you". It is. Or at least misleading you,
and MIGHT be lying. It has no way to know what you're losing. It can't
measure downstream feedline loss.

> Reflected power is not an imaginary or "made up" concept.

Very true.

73, Dick Wï¿½EX

2062. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 17:58:40 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AEB04D0.BB9D23C@hiwaay.net>
Source record: 164917

I told you, the Fractenna group (Phil-Chip-et al) can't read with comprehension. Of course it was an assertion- he said that a petition could be made. The fact that anyone can make a petition is true, therefore defensible. Also- no claim was made that this article overturns anything.

The Fractal group should learn to understand the English language, then think, before braying.

Bill-W4BSG

Fractenna wrote:

> >Greg Blair wrote:
>
> It is important to notice that this is an assertion and not a speculation. In
> courts of law this amounts to either a statement that is defensible or one that
> is malicious in intent. So, Greg, tell us exactly what is "anticipated in this
> prior art" and exactly what "patents at the USPTO" this article "overturns".
>
> Also what does any of this possibly have top do with the DDRR?
>
> 73,
> Phil
> de N1ZKT

2063. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 18:01:49 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cf0id$2k4$0@208.207.71.134>
Source record: 164909

W6RCecilA wrote:
>
> Dick Carroll wrote:
> >
> > W6RCecilA wrote:
> > > Dick, energy moving past a point is a *definition* of power. What
> > > definition of power are you using?
> > >
> > > I understand your (IEEE) definition of power, but I was trained to
> > > consider power as developed across or within a load where it is
> > > dissipated.
>
> Well, if you understand the IEEE definition of power, you understand
> what we are saying about reflected power. After all, the dimensions
> of the reflected stuff is joules/second and it exists as dynamic energy
> flowing in a transmission line.
>
> > I dunno what the current viewpoint is, but when I went to school
> > power=work, and that happens at the point where the energy is consumed,
> > not enroute.
>
> Then you think power generation plants and power distribution networks
> are misnamed? The field of electrical engineering simply has a broader
> definition of power than the field of physics. That definition is:
> "power - the rate of generating, transferring, or using energy" ...
> "usually expressed in watts or in joules per second."
>

Since there is no such thing as lossless conductors some amount of
power is dissapated everywhere that current flows. But that fact is
significant only to you engineers. Most of the rest of us view it being
dissapated at the point(s) of intended consumption (load)(s). Of course
it does play into such activities as designing voltage dropping networks
etc, in which series resistances are loads themselves.

Dick

2064. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 18:14:17 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3aeb081c.310617@news.aepnet.com>
Source record: 164864

I sent this earlier but did not see it show up in the group. If it is redundant
please excuse.

On 28 Apr 2001 15:01:36 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>
>
>Wes Stewart wrote:
>>
>> On 27 Apr 2001 15:09:41 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>>
>> [snip]
>> >
>> > And from my viewpoint any reflected energy from an unmatched antenna
>> >that finds no termination back at the line input will be re-reflected
>> >back to the antenna for radiation. That's what seems to happen with the
>> >use of an antenna tuner, less line losses as always.
>> > Wes Stewart says he has used reflected power to heat thermocouples etc.
>> >Right, they are the termination that is missing in a ham
>> >antenna/feedline system using a tuner. If no termination is found by the
>> >reflected energy, there is no reflected power developed, again save line
>> >losses, and it will be re-reflected back down the feedline toward the
>> >antenna.
>>
>> Wrong.
>>
>> Let's take two of my waveguide dual-directional couplers (reflectormeters) and
>> connect them thus:
>>
>> The input port of coupler #1 attaches directly to the output of a well-matched
>> source, as before. On the ouput port of coupler #1 we attach a waveguide E- H
>> tuner (the waveguide equivalent of your antenna tuner). On the output of the
>> tuner we attach the input port of coupler #2.
>>
>> On the output of coupler #2 we attach a 3 dB attenuator followed by a short
>> circuit.
>>
>> So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho = 0.5
>>
>> If I temporarily remove the tuner, as expected, both reflectometers measure a
>> 6 dB power ratio between the forward and reflected coupled ports.
>>
>> We assume that maximum available power out of the source is 1.0 W. Because we
>> have a non-reflective source, there is a mismatch loss given as:
>>

>> -10 * log(1 - rho^2) = 1.25 dB
>>
>> or leaving off the 10 log, a power ratio of 0.75.
>>
>> So of the available power, 0.75 W makes it into the input port of coupler #1.
>>
>> If our couplers are 30 dB, as in my previous example, then we read the
>> following: (give or take coupling loss)
>>
>> 1. Coupler #1 forward port = 0.75 mW.
>> 2. Coupler #1 reflected port = 0.1875 mW.
>> 3. Coupler #2 forward port = 0.75 mW.
>> 4. Coupler #2 reflected port = 0.1875 mW.
>>
>> Okay, now we put the tuner back in between the two couplers. If we fiddle fart
>> around with the tuner, the power reading at the reflected port of coupler #1 can
>> be reduced to zero, or nearly so. We have "re-reflected" the nasty reflected
>> (dare I say) power back toward the load.
>>
>> The mismatch loss now goes away and the forward port of coupler #1 reads 1.0 mW.
>>
>> Let's examine the readings on the thermistor power sensors on the coupled ports
>> of coupler #2. Since we tweaked the tuner, we now have 1.0 W migrating around
>> in the second coupler so the forward coupler reads 1.0 mW. (1.25 dB higher than
>> before and no surprise)
>>
>> With 1.0 W incident on a 6 dB return loss load, the reflected power is 0.25 W.
>> The coupling factor is 30 dB so the power appearing at the reflected port of
>> coupler #2 is 0.25 mW. The ratio of the reflected power to the forward power
>> readings is .25 / 1.0 = - 6dB, just as before and (to me anyway) again no
>> surprise.
>>
>> But wait! We just tuned (conjugately matched) this system to "remove the
>> termination" and that pesky reflected power still showing up on the coupled
>> port!!!
>>
>> No voltmeter, no ammeter, no hanky panky, just real reflected power heating up
>> the thermistor. Funny how this works.
>>
>> >
>> > Some engineers here seem to say that as long as both voltage and
>> >current are present, power is developed. No argument, but I submit that
>> >the only reason that current flows in the reflected wave is that it is
>> >being terminated *somewhere*, (again neglecting losses) - that
>> >somewhere, in the case of reflections that find no termination at the
>> >line input, is back at the antenna where they wind up after being
>> >re-reflected by the tuner. There is no reflected power developed as
>> >result of the reflection at line input.
>> > Pure Walt Maxwell as I understand him.
>>

>> I believe you misunderstand.

In the words of Congressman Blotto, "I would like to revise and extend my remarks."

I believe that I misread your second to last sentence above. I took it to mean that you felt that the tuner eliminated completely any reflected power. A more careful reading proves that is not what you were saying.
>
>
> Always a good possibility. But - if current flows, does not that
>require a path in the form of a load or "termination"? No current can
>flow without a closed circuit. So where is the termination for reflected
>currents that arrive back at the tuner and find the impedance mismatch
>so great as to be totally unattractive? If they aren't then re-reflected
>back to the antenna, what DOES happen to them?
>
> When I key my IC756 before pushing the autotune button, I see reflected
>power appear on the internal SWR meter (before the tuner). I push the
>"tune" button, the rig's tuner does it's routine, and I key again. Nada.
>No hint of reflected energy coming back through the tuner. So all of it
>is staying on the line side. There is nothing between the autotuner and
>the antenna except 150ft of coax. No other couplers nor ports.
> If it finds no other load or termination, where else *can* it go exept
>back to the antenna? Doesn't the fact that your sampling coupler #2
>indicate the presence of reflected energy just confirm it's presence on
>the line while it is enroute back to the antenna/load? (and it's
>sampling circuitry present a minor termination constructed to load the
>line just enough to provide the designed load sufficient for metering)?
>
> If that isn't what happens I do need to read Walt's literature again.

My coupler #2 doesn't know anything about how or why the reflected power is generated. It simply proves that it exists. And my example proves that it exists (in the same ratio) whether the load is driven by a matched (non-reflecting) source or by a reflecting source (i.e. source plus tuner).

The initial claim was that my first example using a matched source was invalid as a "real-world" ham situation, because it included the "termination" to reflected power built into the source that doesn't exist with our tuned sources.

The claimant(s) stated that it was the terminations that I used at the input and at the power measurement ports that upset the apple-cart and turned fictious reflected, energy, power, joules, volts, amps, or whatever you favorite term is, into *real* heat. If I would just remove the terminations, the reflected power would disappear and turn into a figment of my imagination.

One of (the) most notable proponents of the fictitious reflected power concept has been particularly and uncharacteristically silent about responding to my examples, except to ask me how the weather is in Tucson.

Perhaps I'm in his "kill filter." <g>

73,

Wes Stewart, N7WS

>
>Dick W&#65533;EX

2065. new ham 80 meter antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 18:14:32 UTC
From: Mark Langberg <mlangberg@mediaone.net>
Message-ID: <cMDG6.12729$qD1.290727@typhoon.mw.mediaone.net>
Source record: 164910

I am putting up my first HF antenna. I have an "all bander" antenna kit
with 135 feet of antenna wire, insulators, 450 ohm ladder line for feed line
and a Vectronics 300M antenna tuner. For 80-10 meters it specifies to use
the full 135 feet (1/2 wavelength) to be able to use it on 80 meters.
Hovever, the most length I can get on my property is ~100+ feet. My
question is am I better of cutting the wire to 66 feet total (1/2 wavelength
for 40 meters) and just take what I can get on 80 meters or should I make
the wire as long as I can "fit"?
If I go longer than 66 feet, should I use a specific multiple length, i.e.,
99 feet (1/2 the difference between 40 meter length and 80 meter length?)
Should I just make the wire as long as will fit (random length) or use a
formula to determine length (i.e., 3/8 wavelength of 80 meters) or just
measure it for 40 meters and live with whatever 80 meter performance I get?
If the antenna is shorter than 165 feet should I use traps?

2066. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 18:21:45 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AEB0A39.105@wt.net>
Source record: 164912

'Doc wrote:
>
> Tom,
> Sounds like someone has too much free time!
> 'Doc

He might make a good earthquale listener. MK

http://www.eham.net/articles/887?ehamsid=569d20b6ea131c3f2bdf570c7720f199
--
http://web.wt.net/~nm5k

2067. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 18:30:15 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cf27n$8o7$0@208.207.71.134>
Source record: 164911

"Peter O. Brackett" wrote:

> I challenge anyone who asserts that "reflected power" is not a fiction, to
> denote the resistance, or equivalent, where that power is dissipated, and to
> make a numerical calculation using current and voltage across and through
> that resistance to prove it's existence.
>

Pete, in my humble opinion that would be the device which is measuring the reflected power itself, since it must constitute a load of some value. If it wasn't there, that small amount of "power"it dissipates would join the rest to be re-reflected back to the antenna.

As I see it, the reflected energy is looking for any and all available loads and the meter coupler is just another one, of some impedence which dissapates only a small portion of it, following Ohm's law for parallel impedances. Most of the reflected energy must go back to the antenna (losing whatever the feedline loss demands enroute) because the antenna presents the best impedance match. If the impedance of the coupler measuring the reflected power was a better match it would dissipate more of it - Just as thermocouples or resistors of proper value placed there do.
So what that coupler does in fact is indicates the *presence* of some value of reflected voltage (power if you prefer), based on its design. It doesn't say *where* that reflected power is being dissapated, other than the small amount that it itself consumes. If there was no reflected present, it could not present its load to it, thus it would not show it to be present.

If it says X watts are lost, it is almost certainly incorrect.

Hey, guys, if I'm way off base here I expect to hear about it. I don't design or build any of these things,(though I used to fix 'ex) just use 'em and try to understand them as best I can. And I have a fairly thick hide, or you wouldn't be hearing from me. :-)

All that "theory" without a single math problem!

73, Dick Wï¿½EX

2068. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 18:37:28 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cf2l8afu0@208.207.71.134>
Source record: 164913

Rick Littlefield wrote:
>
> >...would you care to explain what determines the amount that is NOT
> re-reflected, neglecting losses?<
>
> Why would anyone even consider the concept of neglecting loss?

To keep from overcompliating the solution of a problem, of course.

If a
> transmission line contributes a mere 1-dB of padding in the forward direction,
> this (small) amount of attenuation compounds with every subsequent reflection
> to make mismatched loads appear much better than they really are back at the
> source.

We know that, and therefore there is no reason to muddy the water by
injecting them into the computation to determine that which we do not
know. Of course those known losses will be a part of the final answer.

> To "neglect loss" means to conduct an argument based on a flawed premise. This
> is not a good practice, if you want to win a debate.
>

I wish there were more debates here that resulted in some valid,
sensible conclusions. Seems it is more fun to just argue about things.
And hunt for nits.

Dick Wï¿½EX

2069. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 18:37:58 UTC
From: k3bu@aol.com
Message-ID: <20010428143758.15519.00002768@ng-fc1.aol.com>
Source record: 164914
Body handling: HTML body converted to readable text

>Tom,
>>You made fun of me and ridiculed me (about 5th time) on Contest Reflector,
>my
>>rebuttal was confiscated by reflector Gestapo, once is enough. I simply
>>reported observation, possible explanation and belief in it, others had
>similar
>>experiences (on VHF), but if you say it doesn't exist, than I am happy with
>>explanation. Even if it doesn't exist, I will use it anyway. See you in the
>>contest, I will be preheating my frequency!

>
>Hi Yuri,
>
>There really isn't anything to support claims the ionosphere heats up
>and propagation gets better during contests. As a matter of fact, the
>evidence is very much to the contrary.
>

WHAT EVIDENCE???

>I'm glad you are happy with my explaination. I hope it was helpful to
>you.
>
>73 Tom
>

yea, I am "happy" with your "explaination", it "explainats" everything :-)

Just some clarification,
I have mentioned on the Contest Reflector that there might be a possibility of "conditioning" (heating, sensitizing, who knows what to call it) the media (Atmosphere, ionosphere, layers or whatever propagates the radio waves) by transmitting on particular frequency with certain power level for period of time. As one of the effects that I have noticed in multiple QSOs with OK2RZ right after the contests that our signals were enhanced for about 20 - 30 minutes after the end of the contest, then dropped by 10 - 20 dB. We used to have skeds around the same time outside of contests and we never saw similar behavior. Knowing that gas particles can get excited by energy, we speculated that increased activity of multi kW stations with directional antennas (high ERP) during the contests could cause the effect of enhancing the propagation.

Tom's "explanation" was "it can't be" and ridicule followed.
We received email from DF3KV as follows:

<<>>

I guess according to Tom's gospel, this didn't happen either. Interesting that durations and signal levels were comparable in our case on HF and DF3KV on VHF. I don't know what exactly is the mechanism of the effect, it might require beaming in the general direction, it might be frequency selective/limited. Suspecting that there is something to it, in contests, I would call CQs even on seemingly "dead" band and was able to hear stuff that others couldn't (yea, yea, different antennas, terrain, S-meters, ground, moon phase, noise, insert your own "reason" here :-)

So this is what it is all about. It might be something to it, or?

Yuri, K3BU, VE3BMV, VE1BY
Tesla RC, N2EE, NT1E

2070. Re: new ham 80 meter antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 18:40:47 UTC
From: sbt5@yahoo.com
Message-ID: <3s2met8pe6iunqb2bpehatn3asofvss92t@4ax.com>
Source record: 164915

I dont have that much experience with wire antennas, but my advise
would be to bend the ends if you could rather then cut off any wire.
This way you would get a dipole and also vertical polarization from
the the ends.
I just bought a MFJ tuner and the manual says "Never try to load a
G5RV or center fed dipole on a band below the half-wave design
frequency. If you want to operate an 80 meter antenna on 160 meters,
feed either or both conductors as a longwire against the station
ground"
My lot is only 75 x 120, my solution was to but a traped vertical
antenna. The Hustler 5-BTV antenna can be gotten at a resonable cost,
not much more than some wire antennas.

ka2zdx

On Sat, 28 Apr 2001 18:14:32 GMT, "Mark Langberg"
<mlangberg@mediaone.net> wrote:

>I am putting up my first HF antenna. I have an "all bander" antenna kit
>with 135 feet of antenna wire, insulators, 450 ohm ladder line for feed line
>and a Vectronics 300M antenna tuner. For 80-10 meters it specifies to use
>the full 135 feet (1/2 wavelength) to be able to use it on 80 meters.
>Hovever, the most length I can get on my property is ~100+ feet. My
>question is am I better of cutting the wire to 66 feet total (1/2 wavelength
>for 40 meters) and just take what I can get on 80 meters or should I make
>the wire as long as I can "fit"?
>If I go longer than 66 feet, should I use a specific multiple length, i.e.,
>99 feet (1/2 the difference between 40 meter length and 80 meter length?)
>Should I just make the wire as long as will fit (random length) or use a
>formula to determine length (i.e., 3/8 wavelength of 80 meters) or just
>measure it for 40 meters and live with whatever 80 meter performance I get?
>If the antenna is shorter than 165 feet should I use traps?
>

2071. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 18:45:58 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cf356brr0@208.207.71.134>
Source record: 164916

VE9SRB wrote:
>

> If the PA is operating into a matched transmission line system, then there
> are no reflections, so the discussion of re-reflections is mute.
>
> If the PA is operating into an unmathed transmission line system, then there
> are reflections, so the discussion of re-refelctions has validity. If the
> PA output impedance is Zo, then it is obvious that re-reflections will not
> exist.

Steve, how do you then explain the forward wattmeter reading that
equals both the incident and reflected powers?

Dick Wï¿½EX

2072. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:07:30 UTC
From: fractenna@aol.com
Message-ID: <20010428150730.27723.00001023@ng-cd1.aol.com>
Source record: 164918

>t>
>
>I told you, the Fractenna group (Phil-Chip-et al) can't read with
>comprehension. Of course it was an assertion- he said that a petition
>could be made. The fact that anyone can make a petition is true,
>therefore defensible. Also- no claim was made that this article
>overturns anything.
>
>The Fractal group should learn to understand the English language, then
>think, before braying.
>
>Bill-W4BSG
>
>Fractenna wrote:
>
>> >Greg Blair wrote:
>>
>> It is important to notice that this is an assertion and not a speculation.
>In
>> courts of law this amounts to either a statement that is defensible or one
>that
>> is malicious in intent. So, Greg, tell us exactly what is "anticipated in
>this
>> prior art" and exactly what "patents at the USPTO" this article
>"overturns".
>>
>> Also what does any of this possibly have top do with the DDRR?
>>
>> 73,
>> Phil
>> de N1ZKT
>
>

Bill,

You need your medicine again. It's u who can't read.

Have a happy day!

73
Phil
de N1ZKT

2073. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:09:09 UTC
From: fractenna@aol.com
Message-ID: <20010428150909.27723.00001024@ng-cd1.aol.com>
Source record: 164819

>
>Fractenna wrote:<blockquote TYPE=CITE>Also what does any of this possibly
>have top do withthe DDRR?</blockquote>The fractal antenna article was in the
>same 73 magazine issue as part twoof the DDRR article. (September 1976).
>Check it out.
>

Why don't you take some small quotes from it under 'fair use' and present them here? Use the best ones that make your 'case' that fractal antennas were prior art against patents issued "25 years later".

Or just shut up.

Very 73,
Phil
de N1ZKT

2074. WTB Rohn BXHC36 Base Package

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:10:51 UTC
From: wrhood@exis.net
Message-ID: <3aeb1554.707845@news.exis.net>
Source record: 164820

I am looking for the Rohn Hinged Concrete base kit for the Rohn BX 3-6 tower sections. The people at Rohn say that the BX towers went out of

production this January and may only be available from some warehouse, if any. The Rohn part number is P/N BXHC36 for the hardware package. Please contact me by e-mail at <wrhood@exis.net> , would like price shipped, to zip code 23323. K4WYS

2075. Re: Jeep Antennas, propagation and wavelength question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:23:01 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cf5al$ie7$0@208.207.71.134>
Source record: 164821

Bill Turner wrote:
>
> On Fri, 27 Apr 2001 20:16:45 -0500, 'Doc <w5lz@oio.net> wrote:
>
> >Mounting any antenna for any band at one 'corner' of a
> >vehicle will distort the radiation pattern. How much
> >distortion is really anyone's guess. At any rate, it will
> >probably ~not~ be noticable.
>
> ----------
>
> In general, the lower the frequency, the less directional. My experience is 7
> MHz and lower is essentially non-directional. 14 MHz is almost non-directional,
> 21 MHz is directional if you're watching the s-meter and 28 MHz is noticeably
> directional, but not really enough to make much difference.
>
> VHF, can't help there. GL.
>

We used to experience noticable improvement at 42 MhZ. The maximum lobe
was acroxx the carlengthwise to the opposite corner from which the whip
was mounted.

Dick Wï¿½EX

2076. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:33:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB1AF2.2AE117F2@IEEE.org>
Source record: 164822

Dick Carroll wrote:
> So where is the termination for reflected
> currents that arrive back at the tuner and find the impedance mismatch
> so great as to be totally unattractive? If they aren't then re-reflected
> back to the antenna, what DOES happen to them?

A picture would be worth a thousand words but let's give it a go. Consider the following lossless antenna system (lossless except for the load):

100w XMTR---51.45 ohm coax---X---1/2WL 300 ohm twinlead---51.45 ohm load

There is an impedance change at the 51.45/300 ohm junction at 'X' which is the Z0-match point. There is an impedance change at the 300/51.45 ohm junction at the load. Note that these impedance changes are complimentary. Let's look at the steady-state conditions. The 100w from the transmitter sees the 51.45/300 ohm impedance change and 50 joules/sec starts to be reflected.

However, there is 100w of reflected joules/sec arriving back at the Z0-match point after being reflected from the load. The reflected energy is 180 degrees out of phase with the aforementioned reflections trying to occur on the coax. Half the reflected power (50w) is re-reflected outright at the Z0-match point. The other half (50w) is used to destructively interfere with the 50w of reflections trying to go back down the coax. Thus, the 50w of reflections that were not re-reflected outright are used to neutralize the 50w of reflections trying to occur in the coax and the result is that the generated power sees an impedance of 51.45 ohms.

Since there is nothing to dissipate the energy at the Z0-match point, that 50+50 joules/sec has to go somewhere. We know it doesn't go back down the coax so the only other "choice" is for it to join the forward wave and head back toward the load. The final outcome is *as if* all the reflected energy had been re-reflected back toward the antenna. Unless one is a purist, *as if* would seem to be good enough. This *as if* happening is what Walter Maxwell called a "virtual short" in _Reflections_. Although not technically perfect, it does give a conceptual feel for what is happening in reality and it was designed to be an over-simplification for the uninitiated.

Even this explanation that I have just given is an over-simplification. Quantum physics gives as close to a perfect explanation as is possible. Steve, VE9SRB, once gave a detailed explanation of how transient conditions build up to steady-state. You might refer to his posting.
--
http://www.mindspring.com/~w6rca

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2077. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:34:35 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB1B4B.C13FD6F6@IEEE.org>
Source record: 164824

Dick Carroll wrote:
> Since there is no such thing as lossless conductors some amount of
> power is dissapated everywhere that current flows. But that fact is
> significant only to you engineers. Most of the rest of us view it being
> dissapated at the point(s) of intended consumption (load)(s). Of course
> it does play into such activities as designing voltage dropping networks
> etc, in which series resistances are loads themselves.

I^2*R losses can be considered negligible unless they're not. :-)
--
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2078. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:35:33 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cf625$k3r$0@208.207.71.134>
Source record: 164823

Greg Blair wrote:
>
> And for all the Fractal antenna fans in this news group, there is
> even a 20 meter 3D fractal antenna article: "Making The Best of a Bad
> Bargain", on page 56 of the September 1976 issue. So there you go.
> The fractal antenna was in the public domain 25 years before the USPTO
> issued the fractal patent. If anyone cares enough to spend the big
> $$$'s, you could petition the USPTO to overturn the fractal patents.
>

Better yet, what better defense to one of his "lawsuits" could you
want?

2079. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:41:09 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AEB1CD5.E9D2B4A2@hiwaay.net>
Source record: 164865

Phil/Chip
I can read very well- even the places where you put things in quotes as if they were in Gregs post, when they were not. Not even close.

FWIW the only meds my Doc says I need are for Triglycerides, because I am about 10 pounds over, and like sugar in my coffee. I havent tried the stuff Chip is on.

Have a full day.

Bill-W4BSG (This call was issued to me at the FCC office in the Customs building in Boston in 1954. Before Chip was born.) I await Chips assertion that a 4 call could not have been issued that year at that place.

Fractenna wrote:

> Bill,
>
> You need your medicine again. It's u who can't read.
>
> Have a happy day!
>
> 73
> Phil
> de N1ZKT

2080. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:41:28 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <vs3met47da75kffphm7taagchg3gogc988@4ax.com>
Source record: 164825

On 28 Apr 2001 17:32:06 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>
>
> But Rich, where does the reflected wave go to meet a termination/load
>if not back to the antenna, less whatever line loss and coupling load
>loss is presented?

Wes has offered two loads of this reflected energy depending on the state of the match. The one with the solution to the problem is the tuner reflects the reflection back to the Antenna. Remember that the antenna presents "some" reflection, not total reflection (the tuner, on the other hand, does present a total reflection - by definition, by design, by necessity, and finally by choice). Any reflected power we return to the antenna must undergo some portion of it passed on to the aether, and some portion yet again reflected. This is disastrous to digital data (the ringing causes indeterminate states), but at HF and the small geometries with respect to wavelength mean that this ringing creates very little problem and is generally swamped by losses.

However, your question already reveals this is your expectation and it is met handily.

>
> I get the impression that we all are not on the same page here. There
>has been made much of "reflected power is a myth" when we all know that
>'power' of any type is merely voltage looking for a path to a load or
>termination to complete a circuit which will allow current to flow and
>nature to achieve an equilibrium. I don't think that anyone seriously
>suggests that no "power" is present, just that most of it does not
>terminate anywhere except as radiation at the antenna in this type of
>xmtr-tuner-feedline-antenna system, the amount of loss depending mostly
>on I^2R and dielectric losses. And that, I thought, was Walt's point.
>Even to the extent that he designed and built spacecraft antennae
>thusly. Of course the system should be designed for minimal loss to
>acheive maximum antenna radiation.

Your page is largely right on.

>
> The statement "Reflected power is a myth" merely means that if your
>SWR device says that you have 100 watts forward and 20 watts reflected,
>that DOES NOT mean that you are wasting that 20 watts, as is so often
>stated, implied, or misunderstood. Most of it is going back to the
>antenna to be radiated, in this type of system. That was Carl Drumeller
>W5JJ's point in the June '73 'CQ' article. I'll leave it to you

>engineers to dissect his "proof", but I believe his conclusion has to be
>valid.

Ah! But this last is not complete disclosure. If you are measuring
SWR (and I presume you have only one meter to read it in the
conventional way - that is, it is part of a tuner, or it is looking
into a tuner) you have a problem (by degrees of course).

If you measure SWR at the output of your rig, your rig is the load to
the antenna's reflected power (yes, it is power and it dissipates
itself in the traditional form of heat). That is plain and simple.
Our resident troll, Punchinello, likes to harp on about this as a myth
with his edition of new Wive's tales. Him and others like him, steer
clear of the obvious when it is pointed out that SWR is destructive
and never contributive when it enters the output port of the
transmitter.

You can recognize this with that "glazed over look" of reams of math
to prove it - or simple denial. I have yet to observe any of these
SWR Mythites load their rig into a short or open and then lock the key
down. In other words - "oh ye of little faith."

Reminds me of the John Ford movie, "How Green was My Valley" where the
hero must confront his antagonist, and a friend offers "I am a coward,
but I will hold your coat for you."
>
> Systems without the antenna tuner behave somewhat differently, of
>course. Some hams believe that the only true path is to achieve a
>resonant antenna, cut to "the' frequency. But the use of a tuner to
>resonant the antenna/feedline *system* it allows one to work an entire
>band without losing much of it to the fact that a fixed antenna goes out
>of resonance with frequency excursions. As you know Walt made this point
>strongly in his writings.
>
His stronger point was that in the long run it hardly matters to the
practical Ham. The manufacturer has provided a power foldback circuit
that generally kicks in above 2:1 and serves as a brute force matching
system (more a caloric match than a power match - it merely attends to
the basic requirement for the rig's ability to dissipate heat).

> If we add one more coupler to Wes' test setup, (#3), set to measure
>incident power, located on the antenna side of his (#2), I believe, from
>experience and study, that it (#3) would have to indicate the full
>original incident power, plus all the re-reflected power that is now
>headed back to the antenna, LESS the small amount that is consumed by
>his coupler (#1) -work- in its task of showing the presence of the
>reflected wave, and of course all other normal feedline and other
>incidental losses that it would normally show. The fact that his (#2)
>shows the presense of reflected power doesn't keep that power from
>returning to the antenna in the absence of any reason to do otherwise.
>If he simultaneously introduces a load that is the reason.
>

Well, now you've gone off the deep end. The addition of a third coupler duplicates everything the second already does. You have missed his point that both of you agree in this regard of the reflections do escape the system (and are not mysteriously lost to some hidden load off an undisclosed port). His second coupler reveals reflections just as you anticipate the third one would - as I said this is a duplication.

> This is not, of course anything remotely resembling an engineering
>analysis, as you know. I don't do those since I'm not an engineer. But
>I've spent a good bit of time studying for an amateur level
>understanding of the basic mechanics of how this comes together and this
>is what I find to be believable and consistant with what can be observed
>with amateur level equipment, and it is also what I took from Walt's
>"Reflections" among other sources. If it is really that far off base
>then I really did misunderstand, and usually when it happens that way I
>realize there is something that I missed. And I believe I have a lot of
>company.
>
> Understand that I'm not arguing with Wes's method nor conclusion. I'm
>putting an Amateur Radio face on it. Not many non-engineers will
>understand it otherwise.
>
> 73, Dick Wï¿½EX

Hi Dick,

You need not have any worry with your understanding of Walt's work as far as I can tell. You and Wes (and myself) are probably all on the same page, and perhaps the same paragraph.

The simple Ham approach to handling SWR is already covered both eloquently and conclusively by Walt. He correctly identifies the true myths and the real reasons for concern or disdain. Don't let the harpy Mythites that post here cajole you with their advanced physics and convoluted proofs of the impossibility of the source containing a dissipative load to this process (or the fact that it may be mis-matched in its own right).

As I pointed out before. Look at Wes's treatment again. It is classic work that is a practical proof; if you choose to crack open your rig, then you can confirm for yourself. THIS is the amateur way. It is hands on, cheap, and simple.

73's
Richard Clark, KB7QHC

2081. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:43:15 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB1D53.48DAEE45@IEEE.org>
Source record: 164826

Dick Carroll wrote:
> If it says X watts are lost, it is almost certainly incorrect.

It means X watts are lost from the system somewhere, just not at the
meter. Remember the SWR meter is assuming some boundary conditions and
is reporting joules/sec *flowing* past the meter, not joules/sec dissipated
at the meter. And if the assumed boundary conditions do not exist, e.g.
a 50 ohm SWR meter used in a 300 ohm feedline, the meter joules/sec
readings are invalid.
--
http://www.mindspring.com/~w6rca

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2082. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:45:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB1DEA.50CCB0FF@IEEE.org>
Source record: 164827

Rick Littlefield wrote:
> To "neglect loss" means to conduct an argument based on a flawed premise. This
> is not a good practice, if you want to win a debate.

But Rick, discussing lossless systems is a good way to get the concepts
down. In reality, there is no such thing as an SWR circle, i.e. there
are only SWR spirals, but the SWR circle is useful as a concept.
--
http://www.mindspring.com/~w6rca

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2083. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:48:47 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB1E9F.7593D8E9@IEEE.org>
Source record: 164829

Dick Carroll wrote:
> I wish there were more debates here that resulted in some valid,
> sensible conclusions. Seems it is more fun to just argue about things.
> And hunt for nits.

Unfortunately, there are some wanabee clowns here (I'm as guilty as any).
Please give us a narrow topic that you would like sensibly discussed. I
think we all pretty much agree on everything except definitions of words.
--
http://www.mindspring.com/~w6rca

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2084. Re: new ham 80 meter antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:52:05 UTC
From: John Buck <KH7T@arrl.net>
Message-ID: <3AEB1F65.13C35392@arrl.net>
Source record: 164828

Mark Langberg wrote:
>
> I am putting up my first HF antenna. I have an "all bander" antenna kit
> with 135 feet of antenna wire, insulators, 450 ohm ladder line for feed line
> and a Vectronics 300M antenna tuner. For 80-10 meters it specifies to use
> the full 135 feet (1/2 wavelength) to be able to use it on 80 meters.
> Hovever, the most length I can get on my property is ~100+ feet. My
> question is am I better of cutting the wire to 66 feet total (1/2 wavelength
> for 40 meters) and just take what I can get on 80 meters or should I make
> the wire as long as I can "fit"?
> If I go longer than 66 feet, should I use a specific multiple length, i.e.,
> 99 feet (1/2 the difference between 40 meter length and 80 meter length?)
> Should I just make the wire as long as will fit (random length) or use a
> formula to determine length (i.e., 3/8 wavelength of 80 meters) or just
> measure it for 40 meters and live with whatever 80 meter performance I get?
> If the antenna is shorter than 165 feet should I use traps?
Excellent questions.

Forget using traps. The tuner and open wire feed line are much more
efficient.
Do not cut off the wire yet.

Put the wire up as high as possible. At least 33 ft if possible. If
you go inverted V with single center support try to keep the V angle as
large as possible.
Greater than 135 degrees works for me. 90 degrees is not good.
I have had good luck with bending the antenna at the middle at an angle
of about 130 to 145 degrees (in the plane parallel to the ground). I
worked a lot more DX than with the same wire straight inverted V. This
may allow longer wire to fit in your space.
Try using all the wire with the last few feet of the ends drooping.
The 80 meter dipole tends not to work well on 40 meters. So the shorter
length 100 ft or 102 ft could work better as an 'all' band antenna.
Look at information on the G5RV antenna for lengths. Just keep the twin
lead all the way to the tuner. Do not worry about magic lengths except
that if you use the 135 ft, an odd multiple of 1/4 wavelengths on 40M
may help you match on 40.
Put up the longest wire your can, up as high as you can, run the twin
lead in the clear to the tuner and enjoy. Keep the twin lead away from
metal gutters and window frames by a few inches. Gentle twists in the
twin lead may help balance (1 per 3 or 4 feet). You can experiment with
the dropped ends vs cut shorter by folding the ends back to the dipole
wire before you cut it off.

Having said all this, I would first try the 135 foot with dropped ends. Get the middle and ends as high as possible. Put the insulators at the 102 foot mark and drop the ends straight down. As long as they are high enough to clear people and swinging children. Oh by the way, the middle should be at least as high as the end supports.
The TV rabbit ear v does not seem to work nearly as well as the inverted V. But flat is best.

If the above is not practical fold back or cut off the wire ends so you have at least 100 or 102 ft. With the 450 ohm line to the tuner you will work many stations. You can get away with a short (4 or 5 ft) piece of RG8 type coax from the tuner through the wall to the 450 ohm. I often use a longer length of coax from the tuner to the attic with a 10 turn 8" coil of coax just before the connection to the 450 ohm line. The 1 to 1 air core balun provides good balance for the system and I do not have to worry about using the internal balun in the tuner. The coil is wound neatly around an empty Chlorox bottle. A scramble wound coil will not do the job. But if you can run the balanced wire all the way to the tuner, do it.

Remember that Higher above the neighbors houses provides less TVI than right next to the houses. You might want to be prepared to try offering out a few KayPro phone line interference filters if needed. They really work and are cheaper than the Radio Shack version which also works. Many of the commercially available phones cannot take any local RF. Also you may want to put up the antenna for a month or so before transmitting. Then the TVI complaints that WILL HAPPEN can be truthfully answered with "No I am not on the air yet but please let me know exactly when you notice problems so I can check my log to see if it could possibly be my system.
You should not have any problem if TV is a good cable system.
Keep an accurate long of frequencies and times of transmission. You may be able to eliminate problems by avoiding 1 band etc. A good short ground to the tuner box will help keep harmonics and out of band noise from being radiated. Short is less than 1/8 wave length on the band in use. 1/4 wave counter poises along the base board will help if necessary.

Keep the power low until you really get the hang of it. I have a KW but it is off 99% of the time. Most of my contacts are made with 5 or 50 watts. Only if there is a problem, do I crank up the power. A better antenna is much more valuable than higher power. Too many signals on the air cannot be understood because the operator has not learned that maximum power is not the same a clean clear signal. Ask for critical signal reports, turn the processor off, and figure out why if the responses are less than flattering.

Hams are good neighbors, offer emergency communications capability, and help educate the public. Find the local ARES group and participate in the simulated emergency tests. Your equipment may be legal and the consumer's phone may be at fault but he had no problem until you started up. Therefore a cooperative "lets solve our problem" approach has

always worked for me. My neighbors helped me put up my Tower and Beams. I cannot speak for CCR cops however.

Good Luck and let me know when you need a schedule with Hawaii on 40 or higher.
John KH7T

2085. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 19:57:33 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB20AD.64EA4935@IEEE.org>
Source record: 164830

VE9SRB wrote:
> If the PA is operating into an unmathed transmission line system, then there
> are reflections, so the discussion of re-refelctions has validity. If the
> PA output impedance is Zo, then it is obvious that re-reflections will not
> exist.

Some people even believe that some reflected power can make its way
back to the 12vdc battery and reduce the DC current.
--
http://www.mindspring.com/~w6rca

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2086. Re: Antennas are too hard to understand

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:01:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB219C.8E3C2E44@IEEE.org>
Source record: 164831

kiki wrote:

What's the first thing you don't understand about them?
--
http://www.mindspring.com/~w6rca

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2087. Re: new ham 80 meter antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:06:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB22B5.BBE8D5F2@IEEE.org>
Source record: 164832

Mark Langberg wrote:
> I am putting up my first HF antenna. I have an "all bander" antenna kit
> with 135 feet of antenna wire, insulators, 450 ohm ladder line for feed line
> and a Vectronics 300M antenna tuner. For 80-10 meters it specifies to use
> the full 135 feet (1/2 wavelength) to be able to use it on 80 meters.
> Hovever, the most length I can get on my property is ~100+ feet. My
> question is am I better of cutting the wire to 66 feet total (1/2 wavelength
> for 40 meters) and just take what I can get on 80 meters or should I make
> the wire as long as I can "fit"?

My advice is to make your dipole 102ft, the same length as a G5RV. There
is tons of information on dipoles of that length and it satisfies the
rule of thumb that a dipole should be at least 3/8WL on its lowest
frequency of operation (80m). There is a lot of information on my web
page on a 102ft dipole. Just follow the link to the G5RV web page.
--
http://www.mindspring.com/~w6rca

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2088. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:12:33 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <pk7metkl0rb21jhg45llf38e6bbbidponh@4ax.com>
Source record: 164833

On 28 Apr 2001 17:53:40 GMT, Dick Carroll <dixie@townsqr.com> wrote:

> I don't think there is a basic disagreement here at all. The problem is
>that so many hams read their SWR device that says "100 watts" forward,
>and "20 watts" reflected, and believe they are actually losing 20 watts
>since it is being reflected at the antenna (and that reading cannot be
>true because of unknown feedline loss that attenuates the reflected wave
>as it returns).

Hi Dick,

You are talking about two conditions here. I am sure you speak of SWR in terms of it having been tuned out (and yet it remains in the system AFTER the tuner).

In this sense, yes, the 20 watts finds its way (largely) to the aether and little is lost (or maybe more than a little). HOWEVER, if you are measuring a SWR at the output port of your rig, you ARE losing that power to heat WITHIN your rig.

Both states present SWR, one is accommodating (through the grace of a tuner), the other is simply accepting the stress (until nature self limits by failure).

Now, I can anticipate the sophomoric responses from my critics that your rig does not present a 50 Ohm load to the reflections, and as such could not absorb the reflection, and would simple re-reflect it.

This is trash by the barrel. It begs the question, why have a tuner whose purpose is already being served by this fable? It not only denies the fact of the design, it ignores the consequence of the non-50 Ohm source facing a 50 Ohm load. Mismatch is mismatch irrespective of connector labeling. It also reveals a direct contradiction of their own philosophy. The Source not accepting to load the reflection (through the mechanics of reflecting this power itself) necessarily admits that the source couldn't source toward a load of 50 Ohms in the first place!

I posed a question some time ago about conjugate reflections. It was offered to those who so lightly approach RF Photons and then flitter away.

There is a device known as the Conjugate Mirror (the direct, visual analog of the tuner) that returns ALL light that impinges upon it. What would you see if you looked into such a mirror?

I must warn there are two DIFFERENT answers: what the antenna would see, and what you would see. I will answer for that antenna, it would see all the energy the antenna reflected toward the tuner. Let's see how many experts of conjugation can answer the second application. NONE have so far.

73's
Richard Clark, KB7QHC

2089. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:15:31 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <n59metk5cmqg4sqavuvcdovujjuk1j8jvu@4ax.com>
Source record: 164834

On 28 Apr 2001 18:45:58 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>
>
>VE9SRB wrote:
>>
>
>> If the PA is operating into a matched transmission line system, then there
>> are no reflections, so the discussion of re-reflections is mute.
>>
>> If the PA is operating into an unmathed transmission line system, then there
>> are reflections, so the discussion of re-refelctions has validity. If the
>> PA output impedance is Zo, then it is obvious that re-reflections will not
>> exist.
>
>
> Steve, how do you then explain the forward wattmeter reading that
>equals both the incident and reflected powers?
>
>Dick Wï¿½EX

Hi Dick,

Would an Open or Short be suggestive?

73's
Richard Clark, KB7QHC

2090. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:20:01 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <s89mets68ho29q8mb134a43odmu1nl3i7g@4ax.com>
Source record: 164835

On Sat, 28 Apr 2001 14:57:33 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>VE9SRB wrote:
>> If the PA is operating into an unmathed transmission line system, then there
>> are reflections, so the discussion of re-refelctions has validity. If the
>> PA output impedance is Zo, then it is obvious that re-reflections will not
>> exist.
>
>Some people even believe that some reflected power can make its way
>back to the 12vdc battery and reduce the DC current.

Hi Cecil,

Or it could elevate it. Or do you hold with the Pollyannas that
figure if they don't look there, it a'in't there? These are the same
folk who call SWR a myth, and religiously (knock wood) avoid it.

73's
Richard Clark, KB7QHC

2091. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:36:42 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cf9kq$2te$0@208.207.71.134>
Source record: 164836

W6RCecilA wrote:
>
> Dick Carroll wrote:
> > ... strangely, they found that a wirewound
> > terminating resistor worked better than a noninducdtive. I don't know
> > the details.
>
> That's like installing a coil and a resistor - inductive *and*
> resistive loading.

I suspect that small wirewounds such as those found at Radio Shack have
too little inductance to be a problem at the low HF involved.

2092. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:39:43 UTC
From: jsimpson <jsimpsonfam@earthlink.net>
Message-ID: <jUFG6.1538$6u6.246989@newsread1.prod.itd.earthlink.net>
Source record: 164837

Richard,

Thanks for the input. Living in the desert, the roof of my stucko house is the highest terrain around at about 16 ft. This limits distance from the antenna radiator to the ground plane to around 12 inches to keep the radiator below the parapits and out of sight. The stucko construction (wire mesh in all the external walls) make it nearly impossible to get a good ground plane off of the garage floor. I hadn't given much thought to increasing the area of the loop, but will look into how that might affect the efficiency.

Jerry - WJ7T

"Richard Clark" <kb7qhc@home.com> wrote in message
news:60qlet49pe741nt03357al0ra5suuuife2@4ax.com...
> On Sat, 28 Apr 2001 03:59:10 GMT, "jsimpson"
> <jsimpsonfam@earthlink.net> wrote:
>
> >I am looking for a good model of the DDRR antenna for 40 meters. I am
> >interested in using an octagon instead of a circle and would like to
verify
> >that keeping the same average radius and total radiator length (sum of
the
> >sides versus the circle circumference) does not dramatically impact the
> >feedpoint location and more importantly the tuning capacitor range.
> >
> >I have a Santa Fe style house (flat topped) in a heavily restricted
> >subdivision and need an invisible antenna for HF work. If the 40 meter
one
> >works out, I plan to scale the antenna for other HF bands.
> >
> >Any help would be greatly appreciated.
> >
> >Jerry
> >WJ7T
> >
>
> Hi Jerry,
>
> Your search for a stealth antenna is motivated I see. Your choice of
> the DDRR is a natural consequence. The site of your antenna is fixed,
> that is clear. Now, of these observations, two of the three do not
> necessarily lead to the third. In other words, the DDRR is not your
> only available choice, and certainly not the best (nor the worst for
> that matter in spite of the barrage of negative comments that are sure

> to follow). More to the matter, it is not the simplest design you
> could consider.
>
> If you are stuck with a loop configuration, use the entire area of
> your roof to its advantage. If you follow this forum long enough, you
> will come to find that you should seek to maximize length, area or
> volume for optimization. At the no doubt low height of your roof in
> terms of wavelength (for 40M), you don't want to compound near earth
> losses with a radiator that demands hi current driving through a small
> radiation resistance (small in relation to possible copper/aluminum
> losses). That is, a 1 Ohm DDRR radiation resistance with 1 Ohm
> resistive losses and 5 Ohms earth loss is a terrible way to start when
> you could build, say, a reactive, but tuneable 20 Ohm radiation
> resistance antenna with similar earth and resistive losses instead.
>
> The one positive of this is that if you built your DDRR first, then
> you wouldn't be as disappointed with it as if you built it to replace
> one of these quick and dirty vulgar options instead.
>
> 73's
> Richard Clark, KB7QHC
>

2093. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:41:04 UTC
From: jsimpson <jsimpsonfam@earthlink.net>
Message-ID: <AVFG6.1539$6u6.247389@newsread1.prod.itd.earthlink.net>
Source record: 164838

Thanks Greg,

Sounds exactly like what I am looking for.

Jerry - WJ7T

"Greg Blair" <gblair@sympatico.ca> wrote in message
news:3AEADE7C.F62C3B14@sympatico.ca...
> The definitive ham radio reference to DDRR antennas appeared in a two part
> article:
>
> "Surprising Miniature Low Band Antenna - The DDRR Low Noise Antenna",
Joseph M
> Boyer, 73 Magazine Part One August 1976 pg 28-36, Part Two: September
1976, pg
> 34-45.
>
> The article references patents 3,680,135 and 3,588,905, which are long
past the
> 20 year patent protedction period (or was it 17 years back in 1976???)
>
> The 73 articles contains a ton of antenna theory one how the thing works
and
> how to design a multiband DDRR.
>
> Cheers, Greg
> ve0acr
>
> jsimpson wrote:
>
> > I am looking for a good model of the DDRR antenna for 40 meters. I am
> > interested in using an octagon instead of a circle and would like to
verify
> > that keeping the same average radius and total radiator length (sum of
the
> > sides versus the circle circumference) does not dramatically impact the
> > feedpoint location and more importantly the tuning capacitor range.
> >
> > I have a Santa Fe style house (flat topped) in a heavily restricted
> > subdivision and need an invisible antenna for HF work. If the 40 meter
one
> > works out, I plan to scale the antenna for other HF bands.
> >
> > Any help would be greatly appreciated.
> >

> > Jerry
> > WJ7T
>
>

2094. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:44:28 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB2BAC.87BFD103@IEEE.org>
Source record: 164839

```
Dick Carroll wrote:
>
> VE9SRB wrote:
> >
>
> > If the PA is operating into a matched transmission line system, then there
> > are no reflections, so the discussion of re-reflections is mute.
> >
> > If the PA is operating into an unmatched transmission line system, then there
> > are reflections, so the discussion of re-refelctions has validity. If the
> > PA output impedance is Zo, then it is obvious that re-reflections will not
> > exist.
>
> Steve, how do you then explain the forward wattmeter reading that
> equals both the incident and reflected powers?

Steve forgot to state explicitly that there is *NO* antenna tuner.
--
http://www.mindspring.com/~w6rca

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```

2095. test

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:46:04 UTC
From: nospam@aol.com
Message-ID: <3af02c08.108730668@news.vnet.net>
Source record: 164840

[No readable article body recovered]

2096. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:47:18 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cfa8m$6sj$0@208.207.71.134>
Source record: 164841

W6RCecilA wrote:
>
> Dick Carroll wrote:
> > If it says X watts are lost, it is almost certainly incorrect.
>
> It means X watts are lost from the system somewhere, just not at the
> meter.

If you include 'radiated at the antenna', certainly.
To me it means that the 20 watts is being measured on its return trip from the antenna (it will later add to incident power and can be measured thus on the forward scale). It isn't actually lost, other than the part lost to feedline losses. But lots of hams think it is, since it is "reflected".
Of course the use of the tuner to get the Zo at line input is primary to all this.

2097. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:48:40 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB2CA8.8F5FE732@IEEE.org>
Source record: 164843

Richard Clark wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >Some people even believe that some reflected power can make its way
> >back to the 12vdc battery and reduce the DC current.
>
> Or it could elevate it. Or do you hold with the Pollyannas that
> figure if they don't look there, it a'in't there?

My Pollyannaism requires that I do something, e.g. Z0-match, to keep
reflections from reaching the transmitter and make my antenna system
as near lossless as possible. :-)
--
http://www.mindspring.com/~w6rca

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2098. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:48:50 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cfabi$6sj$1@208.207.71.134>
Source record: 164842

W6RCecilA wrote:
>
> Dick Carroll wrote:
> > I wish there were more debates here that resulted in some valid,
> > sensible conclusions. Seems it is more fun to just argue about things.
> > And hunt for nits.
>
> Unfortunately, there are some wanabee clowns here (I'm as guilty as any).
> Please give us a narrow topic that you would like sensibly discussed. I
> think we all pretty much agree on everything except definitions of words.

All in good fun and the promotion of better understanding, no problem.
It can be a little daunting to sort out sometimes, though.

2099. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 20:50:21 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cfaed$6sj$2@208.207.71.134>
Source record: 164844

Richard Clark wrote:
>
> On 28 Apr 2001 18:45:58 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>
> >
> >
> >VE9SRB wrote:
> >>
> >
> >> If the PA is operating into a matched transmission line system, then there
> >> are no reflections, so the discussion of re-reflections is mute.
> >>
> >> If the PA is operating into an unmathed transmission line system, then there
> >> are reflections, so the discussion of re-refelctions has validity. If the
> >> PA output impedance is Zo, then it is obvious that re-reflections will not
> >> exist.
> >
> >
> > Steve, how do you then explain the forward wattmeter reading that
> >equals both the incident and reflected powers?
> >
> >Dick Wï¿½EX
>
> Hi Dick,
>
> Would an Open or Short be suggestive?

Yup. Walt Maxwell's "virtual short" at the line input which reflects
the reflected.

2100. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 21:00:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB2F68.E92C7D6A@IEEE.org>
Source record: 164846

Richard Clark wrote:
> HOWEVER, if you are measuring a SWR at the output port of your rig,
> you ARE losing that power to heat WITHIN your rig.

This is the reverse of the mistake that Walt made in _Reflections_.
Your statement is not true if one is using a Heath SB-101, for
instance. All the "rigs" that have an adjustable Pi-net matching
system prove your statement above to be false. :-)

> Now, I can anticipate the sophomoric responses from my critics that
> your rig does not present a 50 Ohm load to the reflections, and as
> such could not absorb the reflection, and would simple re-reflect it.

Exactly true for an SB-101. I don't consider it to be sophmoric either,
just slightly devilish.

> It begs the question, why have a tuner
> whose purpose is already being served by this fable?

Uhhhhh Richard, with an SB-101, the tuner is *inside* the "rig".
(The devil made me do it.)
--
http://www.mindspring.com/~w6rca

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2101. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 21:01:22 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cfb32$96e$0@208.207.71.134>
Source record: 164845

Richard Clark wrote:
>
The addition of a third
> coupler duplicates everything the second already does. You have
> missed his point that both of you agree in this regard of the
> reflections do escape the system (and are not mysteriously lost to
> some hidden load off an undisclosed port). His second coupler reveals
> reflections just as you anticipate the third one would - as I said
> this is a duplication.

I was trying to make the point that the 3rd coupler would measure the
amount of load caused by the 2nd (if sensitive enough). Maybe not.

Dick

2102. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 21:23:28 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <ez84HmAQTz66EAhx@ifwtech.com>
Source record: 164847

Yuri Blanarovich wrote:
>I guess according to Tom's gospel, this didn't happen either.
>Interesting that durations and signal levels were comparable in our case
>on HF and DF3KV on VHF.

Since the propagation mechanisms are totally different, "interesting" is
as far as it gets.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

2103. Re: new ham 80 meter antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 21:25:25 UTC
From: W4WNT <w4wnt@carolina.rr.com>
Message-ID: <9zGG6.28456$eV5.6984885@typhoon.southeast.rr.com>
Source record: 164851

Two word answer....Bend it!! The most current and the most RF is found at the center of the antenna. There is a dropoff towards the ends, so bend them around to fit the lot. The total length will work better on the higher bands with a tuner. Remember that a half wavelength decreases as you go up in Frequency, so soon you are past the bends.

Good luck.

Bill, W4WNT

Mark Langberg <mlangberg@mediaone.net> wrote in message news:cMDG6.12729$qD1.290727@typhoon.mw.mediaone.net...
> I am putting up my first HF antenna. I have an "all bander" antenna kit
> with 135 feet of antenna wire, insulators, 450 ohm ladder line for feed line
> and a Vectronics 300M antenna tuner. For 80-10 meters it specifies to use
> the full 135 feet (1/2 wavelength) to be able to use it on 80 meters.
> Hovever, the most length I can get on my property is ~100+ feet. My
> question is am I better of cutting the wire to 66 feet total (1/2 wavelength
> for 40 meters) and just take what I can get on 80 meters or should I make
> the wire as long as I can "fit"?
> If I go longer than 66 feet, should I use a specific multiple length, i.e.,
> 99 feet (1/2 the difference between 40 meter length and 80 meter length?)
> Should I just make the wire as long as will fit (random length) or use a
> formula to determine length (i.e., 3/8 wavelength of 80 meters) or just
> measure it for 40 meters and live with whatever 80 meter performance I get?
> If the antenna is shorter than 165 feet should I use traps?
>
>

2104. Re: Antennas are too hard to understand

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 21:27:05 UTC
From: W4WNT <w4wnt@carolina.rr.com>
Message-ID: <JAGG6.28457$eV5.6986630@typhoon.southeast.rr.com>
Source record: 164853

Kiki:

You have found the place to get your antenna question answered. Lots of folks here can help with antenna queries.

Good luck,

Bill, W4WNT

kiki <lolo@pis.com> wrote in message news:3AEAFA19.EE8F9208@pis.com...
>
>

2105. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 21:28:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB35F6.26D37565@IEEE.org>
Source record: 164848

Dick Carroll wrote:
>
> W6RCecilA wrote:
> >
> > Dick Carroll wrote:
> > > If it says X watts are lost, it is almost certainly incorrect.
> >
> > It means X watts are lost from the system somewhere, just not at the
> > meter.
>
> If you include 'radiated at the antenna', certainly.

Yep, the antenna is certainly part of the "system".

> To me it means that the 20 watts is being measured on its return trip
> from the antenna (it will later add to incident power and can be
> measured thus on the forward scale). It isn't actually lost, other than
> the part lost to feedline losses. But lots of hams think it is, since it
> is "reflected".

It is lost if it sees a load of 50 ohms at the transmitter. If it sees
a Z0-match, it can be considered by the uninitiated to be 100% re-reflected.
If one draws the box (sphere) through the Z0-match around the system and
includes the antenna inside the system, then the system is NOT mismatched
at all.
--
http://www.mindspring.com/~w6rca

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2106. Re: B&W Folded Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 21:33:05 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB3711.977FEA7B@IEEE.org>
Source record: 164850

Dick Carroll wrote:
>
> W6RCecilA wrote:
> >
> > Dick Carroll wrote:
> > > ... strangely, they found that a wirewound
> > > terminating resistor worked better than a noninducdtive. I don't know
> > > the details.
> >
> > That's like installing a coil and a resistor - inductive *and*
> > resistive loading.
>
> I suspect that small wirewounds such as those found at Radio Shack have
> too little inductance to be a problem at the low HF involved.

Seems to me inductance would be an enhancement to a T2FD, not a problem. :-)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2107. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 21:33:43 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AEB3737.200FF666@eznec.com>
Source record: 164849

This is a repeat of information I've posted several times here before, but it seems to need repeating from time to time.

There's no such thing as a single "fractal patent". There could be hundreds of patents involving fractal antennas -- different and specific ways of folding them, testing them, constructing them, fixtures to bend them, ways to feed or match them, and so forth. Each patent contains claims which describe specifically and exactly just what combination of items is patented. A patent applies only to the specific combinations stated in the claims. Simply building, using, or selling a fractal antenna doesn't in itself violate any patents, unless it contains all the elements in a patent's claims (or variations "obvious to one skilled in the art"). I suggest spending a little time at http://uspto.gov. You'll find good, accurate information there, and can read the claims of some real patents to see what I mean.

I don't believe that the USPTO can or will overturn patents once they're issued. The common process is for someone to make, use, or sell a patented device, get sued by the patent holder, then countersue to declare the patent void. Often, if the party using the device has a credible case, the patentee will issue a low cost or no cost license to use the device, ending both suits. That way, it saves a bundle of money and leaves the patent intact so that other competitors will have to go through the same process if they want to try and use the device. This is beneficial to both parties, since both save a lot of money and both have some level of protection from potential competitors. It's a particularly effective technique when the parties are large corporations, because it effectively locks out small competitors who can't afford the protracted litigation of a suit and countersuit.

DISCLAIMER: I'm not a lawyer, and the above might not be entirely correct. In any case it's not intended as legal advice; if you need legal advice you should see a qualified attorney. But I'd appreciate corrections from any knowledgeable person, if anything I posted is in error.

Roy Lewallen, W7EL

Greg Blair wrote:
>
> And for all the Fractal antenna fans in this news group, there is
> even a 20 meter 3D fractal antenna article: "Making The Best of a Bad
> Bargain", on page 56 of the September 1976 issue. So there you go.
> The fractal antenna was in the public domain 25 years before the USPTO
> issued the fractal patent. If anyone cares enough to spend the big
> $$$'s, you could petition the USPTO to overturn the fractal patents.

>
> :o)

2108. Re: Antennas are too hard to understand

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 21:44:58 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AEB39DA.82C21188@eznec.com>
Source record: 164852

Ah, but you don't need to understand them to use them. Go to your local library, radio store, or the ARRL web site, and you'll find a number of books with simple directions for building antennas. You'll be able to build and put up a serviceable antenna for most applications in an hour or two.

Only if you want to make the antenna work better will you have to learn more about them -- or be willing to do lots of random experiments. A lot of people -- the vast majority, I believe -- never learn more than the very fundamentals and are perfectly content.

You should drop by some other newsgroups, say ones devoted to beer making or photography. You'll find lots of complex, technical discussions on those groups. But anyone can make up a batch of quite drinkable beer or take a snapshot without knowing the first thing about organic chemistry or photometry. Antennas are no different.

Roy Lewallen, W7EL

2109. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 22:01:08 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AEB3DA4.8A347B00@hiwaay.net>
Source record: 164856

Phil/Chip
I can read very well- even the places where you put things in quotes as if they were in Gregs post, when they were not. Not even close.

FWIW the only meds my Doc says I need are for Triglycerides, because I am about 10 pounds over, and like sugar in my coffee. I havent tried the stuff Chip is on.

Have a full day.

Bill-W4BSG (This call was issued to me at the FCC office in the Customs building in Boston in 1954. Before Chip was born.) I await Chips assertion that a 4 call could not have been issued that year at that place.

Fractenna wrote:

> Bill,
>
> You need your medicine again. It's u who can't read.
>
> Have a happy day!
>
> 73
> Phil
> de N1ZKT

2110. Am I nuts? Maybe....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 22:17:32 UTC
From: Ken Bessler <kg0wx@yahoo.com>
Message-ID: <3AEB417C.B0A@yahoo.com>
Source record: 164855

I'm planning on building an indoor hf antenna. The
antenna will be attached to an "A" frame that looks
like this:

```
********
* *
* *
********
* *
* *
* *
```

It will be made from 3" PVC piping and be about 4'x6'.
What I can't decide is how to mount my antenna - a
200' loop of insulated 18ga wire. Do I helically
wind the wire around the "A" like this:

```
////////
/ /
/ /
////////
* *
* *
* *
```

or lineraly wind it like this:

```
========
|| ||
|| || (14 trips around the "A")
========
* *
* *
* *
```

With the first method I get lots of turns (est 254)
but with the second I get much more area per turn.
The antenna will be fed with an SGC 237 antenna
coupler and used on 160-6 meters.

Any ideas (besides those that question my sanity)?
Which version would put out a better signal? I think
the second would but I'd like to hear other opinions.

P.S. Sorry for the crude ascii graphics - it's a slow
saturday and I've got nothing better to do....
--

Ken Bessler, Ham Callsign KGï¿½WX
Design Services Company
http://kg0wx.users.50megs.com/
Smoke free since 9/30/96!
ICQ# 63379650ï¿½

2111. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 22:24:29 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AEB431C.E83403F5@eznec.com>
Source record: 164854

"William E. Sabin" wrote:
>
> Roy Lewallen wrote:
>
> > Ground plane antennas can suffer considerable pattern distortion by
> > coupling to the feedline. The four radials don't provide as much
> > isolation as you might think.
>
> One goal is to assure that the return path to the transmitter for the E and H
> near-fields of the radiator is via the inner surface of the coax braid, and
> not via the outside of the braid or via some extraneous and lossy "earth"
> path. The balun at the feed point establishes a high, balanced impedance at
> the braid connection that encourages the correct path.
>
> This would be in addition to the feedline coupling mentioned.
>
> Bill W0IYH

I regard the reaction between the antenna's E and H fields and the outside of the coax as "coupling", but that might not be precisely correct. I'd say that the feedpoint balun prevents current from flowing from the inside of the coax over the end and onto the outside, but know you don't agree that this happens. Nevertheless, it's interesting to look at just what effect a feedpoint balun has.

Modeling shows that, with no balun at all, current on the outside of the feedline is maximum at the feedpoint, and drops to a minimum a quarter wave below, as would be expected. When a balun is inserted at the feedpoint as you suggest (and I suggested in my original posting), it reduces the current at the feedpoint to a low value, again as we'd expect. But the current on the outside of the feedline still has about the same peak value. The maximum simply moves a quarter wavelength down the line. It takes a second balun about a quarter wavelength below, at the new current maximum, to reduce the current on the outside of the feedline to a low value.

A center fed dipole where the feedline is placed at a right angle to the antenna behaves differently. Again, without a balun there's current on the outside of the feedline. This current gets there primarily by flowing over the edge from the inside. (I've measured this current. The results are included in "Baluns: What They Do and How They Do It" in the _ARRL Antenna Compendium_, vol. 1.) The current on the outside of the feedline is maximum at the feedpoint, like it is with the ground plane. But placing a single balun at the feedpoint reduces the current to a low value; no second balun is required. This is because, once currents are

balanced in the dipole halves, there's no net coupling from the dipole to the outside of the feedline. (The coupling from one half of the dipole is cancelled by the coupling from the other half.) So the requirements for reducing the current on the outside of the feedline are different for a ground plane than for a dipole, because of the coupling.

Roy Lewallen, W7EL

2112. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 22:37:40 UTC
From: "M.J.Powell" <mike@pickmere.demon.co.uk>
Message-ID: <jRLK+BA0Y066EwFF@pickmere.demon.co.uk>
Source record: 164857

In article <ez84HmAQTz66EAhx@ifwtech.com>, Ian White, G3SEK
<G3SEK@ifwtech.com> writes
>Yuri Blanarovich wrote:
>>I guess according to Tom's gospel, this didn't happen either.
>>Interesting that durations and signal levels were comparable in our case
>>on HF and DF3KV on VHF.
>
>Since the propagation mechanisms are totally different, "interesting" is
>as far as it gets.

And since the ionosphere is continually bombarded with umpteen megawatts
of commercial traffic what difference will a few piddling amateur watts
make?

Mike
--
M.J.Powell

2113. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-28 23:55:26 UTC
From: richardharrison@webtv.net
Message-ID: <21750-3AEB586E-236@storefull-116.iap.bryant.webtv.net>
Source record: 164859

Roy, W7EL wrote:
"I regard the reaction between the antenna`s E and H fields as
"coupling", but that might not be precisely correct."

They have an intimate relationship until forcefully separated and can hardly wait to be reconciled.

If we all use the same dictionary we might have more agreement. I believe "coupling" includes all modes of linkage. We have transformer coupled circuits, resistance coupled circuits, coupling capacitors, and we have mutual impedances between antenna or circuit elements to provide coupling.

Roy`s exposition of what happens when the feedline connects with the antenna was very succinct and clear. Since my dictionary must be similar to Roy`s in this case, I liked Roy`s posting.

Best regards, Richard Harrison, KB5WZI

2114. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 00:08:06 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <n8mmetkk8rai3sr5tk293imfpcgm985dnu@4ax.com>
Source record: 164858

On Sat, 28 Apr 2001 16:00:24 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> HOWEVER, if you are measuring a SWR at the output port of your rig,
>> you ARE losing that power to heat WITHIN your rig.
>
>This is the reverse of the mistake that Walt made in _Reflections_.
>Your statement is not true if one is using a Heath SB-101, for
>instance. All the "rigs" that have an adjustable Pi-net matching
>system prove your statement above to be false. :-)
>
>> Now, I can anticipate the sophomoric responses from my critics that
>> your rig does not present a 50 Ohm load to the reflections, and as
>> such could not absorb the reflection, and would simple re-reflect it.
>
>Exactly true for an SB-101. I don't consider it to be sophmoric either,
>just slightly devilish.
>
>> It begs the question, why have a tuner
>> whose purpose is already being served by this fable?
>
>Uhhhhh Richard, with an SB-101, the tuner is *inside* the "rig".
>(The devil made me do it.)

Hi Cecil,

I see the devil turned you away from the challenge:
>
>I posed a question some time ago about conjugate reflections. It was
>offered to those who so lightly approach RF Photons and then flitter
>away.
>
>There is a device known as the Conjugate Mirror (the direct, visual
>analog of the tuner) that returns ALL light that impinges upon it.
sotto voce: I forgot to keenly specify "to the source"
>What would you see if you looked into such a mirror?
>
>I must warn there are two DIFFERENT answers: what the antenna would
>see, and what you would see. I will answer for that antenna, it would
>see all the energy the antenna reflected toward the tuner. Let's see
>how many experts of conjugation can answer the second application.
>NONE have so far.
so you must consider yourself as a conjugate expert.

I would offer you to drop that pretense and approach the problem afresh. Believe me, it won't cost so much as your soul to respond. ;-)

Besides, its a delicious example of the obvious that the devil would fully appreciate.

73's
Richard Clark, KB7QHC

2115. Re: Antennas are too hard to understand

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 00:16:47 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cfmd1lbp1@neptunium.btinternet.com>
Source record: 164860

"Shall I refuse to eat my dinner because I do not understand the
process of digestion ? "

Said Oliver Heaviside. Then he sulked for the next 50 years or so.

2116. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 00:17:08 UTC
From: fractenna@aol.com
Message-ID: <20010428201708.12845.00001452@ng-cs1.aol.com>
Source record: 164861

>Simply building, using, or selling a fractal
>antenna doesn't in itself violate any patents, unless it contains all
>the elements in a patent's claims

Utter fantasy.

YOU sure need someone who has a law degree to fill YOU in on intellectual property...but then I've let on more than what I am allowed to say;-)

73
Phil
de N1ZKT

2117. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 00:42:17 UTC
From: k1bqt@aol.com
Message-ID: <20010428204217.11983.00001284@ng-cr1.aol.com>
Source record: 164866

>But Rick, discussing lossless systems is a good way to get the concepts down.<

If you deal in lossless systems to understand a concept, don't you run the risk of being like the unfortunate recording-studio technician who farted in the echo chamber and never heard the end of it? :)

Rick K1BQT

2118. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 01:03:45 UTC
From: 2w8ji@akorn.net
Message-ID: <3aeb6666.299784720@news.accessunited.com>
Source record: 164868

On Sat, 28 Apr 2001 23:37:40 +0100, "M.J.Powell"
<mike@pickmere.demon.co.uk> wrote:

>In article <ez84HmAQTz66EAhx@ifwtech.com>, Ian White, G3SEK
><G3SEK@ifwtech.com> writes
>>Yuri Blanarovich wrote:
>>>I guess according to Tom's gospel, this didn't happen either.
>>>Interesting that durations and signal levels were comparable in our case
>>>on HF and DF3KV on VHF.
>>
>>Since the propagation mechanisms are totally different, "interesting" is
>>as far as it gets.
>
>And since the ionosphere is continually bombarded with umpteen megawatts
>of commercial traffic what difference will a few piddling amateur watts
>make?
>
>Mike

Of course the few microwatts hitting the whatever (it certainly isn't
the ionosphere on a 2 meter scatter path) won't make a difference.

The DF3 always had a sked near in the evening, and as evening wore on
the signal picked up. Of course most of us who have worked VHF have
noticed that effect, as the warm earth maintains temperature and the
sky abruptly cools.

Naturally this doesn't have anything to do with heating from the
transmitter (SSB none the less) and certainly does not involve the
ionosphere.

If we look at the energy from other sources, it is obvious amateur
transmitters have no effect of any of this stuff.

73 Tom

2119. Re: Am I nuts? Maybe....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 01:04:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AEB6896.1177C1D7@eznec.com>
Source record: 164867

Ken Bessler wrote:
>
> I'm planning on building an indoor hf antenna. The
> antenna will be attached to an "A" frame that looks
> like this:
>
> ********
> * *
> * *
> ********
> * *
> * *
> * *
>
> It will be made from 3" PVC piping and be about 4'x6'.
> What I can't decide is how to mount my antenna - a
> 200' loop of insulated 18ga wire. Do I helically
> wind the wire around the "A" like this:
>
> ////////
> / /
> / /
> ////////
> * *
> * *
> * *
>
> or lineraly wind it like this:
>
> ========
> || ||
> || || (14 trips around the "A")
> ========
> * *
> * *
> * *
>
> With the first method I get lots of turns (est 254)
> but with the second I get much more area per turn.
> The antenna will be fed with an SGC 237 antenna
> coupler and used on 160-6 meters.
>
> Any ideas (besides those that question my sanity)?
> Which version would put out a better signal? I think

> the second would but I'd like to hear other opinions.
>
> P.S. Sorry for the crude ascii graphics - it's a slow
> saturday and I've got nothing better to do....

Sure you do! You could be winding wire. Another good afternoon project
is building a step attenuator so you can compare antennas.

Roy Lewallen, W7EL

2120. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 01:09:08 UTC
From: 2w8ji@akorn.net
Message-ID: <3aeb68b4.300375428@news.accessunited.com>
Source record: 164719

On Sat, 28 Apr 2001 15:15:09 GMT, Greg Blair <gblair@sympatico.ca>
wrote:

>The definitive ham radio reference to DDRR antennas appeared in a two part
>article:
>
>"Surprising Miniature Low Band Antenna - The DDRR Low Noise Antenna", Joseph M
>Boyer, 73 Magazine Part One August 1976 pg 28-36, Part Two: September 1976, pg
>34-45.
>
>The article references patents 3,680,135 and 3,588,905, which are long past the
>20 year patent protedction period (or was it 17 years back in 1976???)

The articles may have been "definitive", but they were also incorrect.

The DDDR is a very inefficient antenna....and has no better S/N ratio
than any other antenna the same physical size and polarization.

The DDRR is really just a vert short vertical, and the "ring"
electrically loads the short vertical to resonance.

They certainly have an application in a case where you can't have much
height, but they are not "good" antennas.

73 Tom

2121. Re: Ionosphere Heating

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 01:18:02 UTC
From: richardharrison@webtv.net
Message-ID: <22366-3AEB6BCA-203@storefull-117.iap.bryant.webtv.net>
Source record: 164720

John O`Flaherty wrote:
"What`s a rat-race?"

I answered, it is a multiport hybrid combiner. Not much to go on if you wanted to build your own. I`ve found only one hybrid loop application to give as an example from my literature. This hybrid is used as an element in a diplexer for a 2-meter repeater in Ken session`s "Radio Amateur F-M Repeater Handbook". It is found on page 138.

Our connections were different but the principle of the combiner was similar.

Best regards, Richard Harrison, KB5WZI

2122. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 01:48:41 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <pgqmetc884bifeg2c32i7kjkhsgkoo9rk2@4ax.com>
Source record: 164721

On 29 Apr 2001 00:17:08 GMT, fractenna@aol.com (Fractenna) wrote:

>>Simply building, using, or selling a fractal
>>antenna doesn't in itself violate any patents, unless it contains all
>>the elements in a patent's claims
>
>
>Utter fantasy.
>
>YOU sure need someone who has a law degree to fill YOU in on intellectual
>property...but then I've let on more than what I am allowed to say;-)
>
>73
>Phil
>de N1ZKT

Ah yes herr doktor, a condition no doubt of your possible legal problem? Or is it problems? Well the good conduct of the past few months should sway the judge. (Couldn't your physician offer a suitable case of extenuating circumstances?) Have you considered the fractal applications that could be put into making your possible electronic cuff more comfortable?

As for intellectual property, we've no illusions to where the fantasies emerge in that respect. And for protecting same? You are shooting blanks, which neatly dovetails into both the sterility of the aforementioned intellectual property and the flaccid attempts to erect a defense that does not appear to be impotent. Remember, appearance is a good part of the battle, but having someone at the podium helping you wave your - uh - antenna seems to go against a successful outcome. Who would've thought that the new millennium would've brought such a turn around?

Oh fractals, we barely knew ye.

Been taking your aspirin? We note the declining boasts of the upcoming event as it draws near. The death watch of your lists must also be very depressing. You may of course be in need of some brush up on the subject. I would offer that you visit my pages on fractals where you will find far more material that you ever imagined. You can also download all the particulars, if you wish, like the EZNEC files for some of those ground warmers so that you can observe how the in-efficiencies of these designs use an optimized loss.
http://www.qsl.net/kb7qhc
or
http://members.home.net/kb7qhc/

I am sure you will recognize some of these air cooled resistors. ;-)
Feel free to download or copy any of them as I have a long-standing
offer to the amateur community for their free use. However, please
observe that there is a prohibition against their commercial use
without permission.

Anyway, thanx for keeping us posted, these rare opportunities for
humor have been few these same several months too. No response is
necessary, the pathos undoubtedly would only aggravate your problems.
Be thankful you still have a day job (?).

73's
Richard Clark, KB7QHC

2123. Re: Antennas are too hard to understand

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 01:50:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cfs03$9ko$1@slb6.atl.mindspring.net>
Source record: 164722

Roy is right.

You don't have to understand the whole digestive system to enjoy a good meal.

Learn about antennas as you use them.

Enjoy,

-Peter K1PO

"Roy Lewallen" <w7el@eznec.com> wrote in message news:3AEB39DA.82C21188@eznec.com...
> Ah, but you don't need to understand them to use them. Go to your local
> library, radio store, or the ARRL web site, and you'll find a number of
> books with simple directions for building antennas. You'll be able to
> build and put up a serviceable antenna for most applications in an hour
> or two.
>
> Only if you want to make the antenna work better will you have to learn
> more about them -- or be willing to do lots of random experiments. A lot
> of people -- the vast majority, I believe -- never learn more than the
> very fundamentals and are perfectly content.
>
> You should drop by some other newsgroups, say ones devoted to beer
> making or photography. You'll find lots of complex, technical
> discussions on those groups. But anyone can make up a batch of quite
> drinkable beer or take a snapshot without knowing the first thing about
> organic chemistry or photometry. Antennas are no different.
>
> Roy Lewallen, W7EL

2124. Re: Am I nuts? Maybe....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 02:33:32 UTC
From: richardharrison@webtv.net
Message-ID: <21750-3AEB7D7C-265@storefull-116.iap.bryant.webtv.net>
Source record: 164723

Ken, KG0WX is planning a loop antenna to be used on bands including 160 and 6 meters.

His initial resources seem to be a 4 by 6 foot frame as a coil form and 200 feet of 18-ga wire.

For the most effective loop in general it is best to maximize loop area and minimize the number of turns. For a given coil form, a certain number of turns will be required to obtain resonance with the available tuning capacitance. Capacitors are usually more efficient than coils, so minimum inductance (the fewest turns) is an advantage if the largest possible coil is being used. Area is needed within the coil form. A high capacitance, low inductance tuned circuit tends to have high-Q which means small bandwidth. There are a number of considerations.

Reg Edwards, who you will find in various threads in this newsgroup, has a free program on loops and coils and things like that and is a resource you can use.

Roy Lewallen had a good suggestion to do some experimentation.

Another idea may be to consult the "Lowfers" sites as these guys often use loop antennas for receiving whistlers and other noises and signals in and around the earth.

Best regards, Richard Harrison, KB5WZI

2125. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 02:50:44 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cfvi2cbd1@slb4.atl.mindspring.net>
Source record: 164724

Steve:

Thank you for your numerical example, but it does not really address my point.

Many on the thread here are completely missing my point. It's simple... All you really need is I and V....

In your excellent example, is that the "forward power" or the actual "generated power" you are "adjusting", or is it yet another "artifice".

In point of fact one cannot adjust a power directly, one has either voltage or current generators, not power generators, when you adjust a power level somewhere you do that because you are actually adjusting either a voltage or current level. The power changes result from those changes in voltage or current. All you really need is I and V...

Generators or transmitters may be viewed as either a voltage source behind a series connected internal impedance (Thevenin) or as a current source behind a parallel connected internal impedance (Noirton).

In the limit either type of "generator" may be either a pure voltage source or a pure current source without internal impedance. And in practice they often are.

What happens when I drive a line and load directly with a pure voltages source, or a pure current source. What is the incident power or forward power in that case. In fact if I drive a mismatched system with a pure voltage source, where could there possibly be a resistance that would dissipated that reflected power? There is none! The cases you are discussing are simply not general enough to cover those cases... but V and I covers them all.

For instance if I drive a line from the output (Very close to zero Ohms) of a high power Operational Amplifier. Now the generator has no internal impedance, it's zero. What power am I adjusting when I adjust the voltage level out of that generator, i.e.what is the "name" the reflection mechanics will give to that power? What?

What you are adjusting when you "adjust" power from a source, is you are adjusting either the voltage or the current level in the source. The actual power generated and delivered depends upon the total impedance, including any "internal impedances" connected to the source.

In the "Scattering Formalism" and that is what it is... simply a "formalism", the "incident wave" a = V + IR from which one often computes the so-called "forward power" is actually a voltage calculated as a linear

combination of an actual voltage V and an acutal current I scaled by a "perhaps" ficticious reference impedance R. "a" can be interperted as the voltage level of the Thevinin's voltage source in the generator. Similarily the reflected voltage wave b = V - IR is nothing more nor less than a different linear combination of V and I. In fact, in such a "formalism", one may view "a" and "b" as the components of a wave vector in a vector space and "I" and "V" as the components of a "port immitance" vector, the two are related by a linear transformation or projection in the underlying vector spaces. Enough of "formalisms", and "fictions" back to I and V...

Back to reality...

What is the "forward" power when the load has zero internal impedance?

All you really need is V and I... those two independent parameters, measureable with common garden variety instruements, cover all cases, not just those cases of a generator with an internal impedance equal to the line impedance! Messing with power rather than voltage and current often leads to misconceptions...

In fact all of the "theory" of reflections must still hold for the case of DC generators and circuits, where there are essentially no "reflections" in the steady state, but there still is a "reflected power" if there is a mismatch.... see my "Direct Reflections" thread on this NG.

The whole theory of narrow band (i.e. single frequency) steady state impedance matching and transmission lines including line losses due to mismatches can be developed using little more than the theory of DC circuits, with the execption that one has to allow the existence of positive and negative imaginary resistors, which map into capacitive and inductive reactance at the operating frequency. (Some would say line losses are due to SWR deviations from unity, but I say that's not general enough since the same mismatch transmission line losses occurs at DC, or at power line frequencies, where clearly there are no "standing waves" yet line losses due to missmatches still exist. In those cases folks calculate them by simply using V and I...)

In the narrow band, i.e. single frequency, case there is no need for complicated explanations of wave mechanics utilizing the "Scattering Formalism", rather all you really need is V and I... (For Ham applications, any signals which are no more than a few voice channels wide at HF can be considered narrow band.) It's only in the case of "broadband" matching, i.e. problems wherein a transmission line cannot be characterized as having a single simple characteristic impedance, but whose characteristic impedance probably varies over several decades within the band of interest, where complex "reflection" dynamics needs to be invoked for design and analysis.

IMHO... most of today's "explanations" of reflection dynamics is confusing to beginners in amateur radio, it uses ficticious intermediate powers, and other such such artifices from the "Scattering Formalism" when it can all be explained, analyzed, and designs created much more simply using only V and I and simple laws basically from DC circuit analysis.

If a generator is mismatched to it's load at DC, then it will be also mismatched to the same degree at AC. Nothing is different.

I don't mean to be difficult about all of this, but I happen to believe that all of this fuss about reflected and forward power is much ado about nothing... in fact it is downright complicated and confusing for beginners. The fact that folks like Walter and others have to write whole books to explain a few simple concepts is indicative of the unecessary complication in that approach. As Einsteins said... things should only be made as complicated as they need to be and no more. A much simpler approach ito impedance matching an transmission line dynamics is warranted, especially in the narrow band case for amateur radio operators...

Now "broad band matching" is another kettle of fish, and would not be so accessible to amateurs as is a simple theory of narrow band matching.

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message
news:fhAG6.39456$RF1.3327960@bgtnsc06-news.ops.worldnet.att.net...
>
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> news:9cdh2v$1f2$1@slb0.atl.mindspring.net...
> > Steve:
> >
> > I say it because it is true... In almost all practical cases the
> "reflected
> > power" indicated on a so-called power meter, is "ficticious"!
> >
> > In most applications of this "theory" the development starts out with an
> > assumed "incident power" (Pi)! Pi is not an actual power that appears
or
> > occurs anywhere in the mismatched situation. i.e Pi is a ficticious
> power
> > that would be sent to the load if the load were a conjugate match for
the
> > transmitter, which it is not, unless it is perfectly matched !
> >
> > Then the development of the "theory" usually ends up computing a
reflected
> > power Pr = Pi - Pt by subtracting the "delivered power", i.e. the power
> > actually dissipated in the real load, a very real power, from the
> "assumed"
> > incident power which would have been sourced had their been a conjugate
> > match. Surely then the reflected power Pr is not a real power,. it is a
> > quantity derived by subtracting a real power from a ficticious power...
> >
> > If you wish to refute this claim, then please examine my "numerical"
> > examples, and refute those! Words are cheap, numbers tell all!
> >
> > Or perhaps for simplicity examine the case of a DC source with finite
> > non-zero internal resistance delivering power to a mismatched load. The

> > equations and dynamics are all the same for DC mismatch as for AC
> > mismatches. In the DC case it can be seen plainly by using only the
> theory
> > of DC circuits with no elaborate wave mechanics and AC theory, that the
> > so-called reflected power is a fiction.
> >
> > I challenge anyone to find where the so-called reflected power is
> > "dissipated", i.e. what load causes the reflected current to be drawn
from
> > which source.
> >
>
> Here are the numbers discussing where reflected power is dissipated.
>
> Lets assume that you have a transmitter, a matched antenna and a coaxial
> cable with a total matched loss of 3 dB. You set the *forward* power at
the
> transmitter output to be 1000 watts. The power arriving at the antenna is
> 500 Watts. 500 watts of power is delivered to the antenna and 500 watts
of
> power is lost as the forward wave travels from the transmitter to the
> antenna.
>
> Now you replace the matched antenna with a 500 ohm antenna (10:1 SWR -
rhoA
> is approx. 0.82). You then again set the *forward* power at the
transmitter
> output to 1000 Watts. The forward power arriving at the antenna is 500
> Watts because 500 watts of forward power was lost as the forward wave
> traveled from the transmitter to the antenna. The amount of power
reflected
> at the antenna is approx equal to 335 Watts. The power delivered to the
> antenna is 165 Watts. 167.5 watts of rearward traveling power is lost as
> the 335 Watts of reflected power travels from the antenna to the
> transmitter. The forward power measured at the transmitter output is 1000
> Watts. The rearward power measured at the transmitter output is 167.5
> Watts. 832.5 Watts of total power is delivered to the system. 165 Watts
of
> power is delivered to the antenna. 667.5 Watts of power is lost in the
> transmission line because of the 500 Watts of forward power loss and the
> 167.5 Watts of reflected power loss.
>
> Reflected power is not an imaginary or "made up" concept.
>
> > The whole theory of "insertion loss design" of filters and equalizers is
> > also based around this premise, i.e. first assume that you have a
> resistive
> > generator delivering power to a perfectly matched load, then "insert"
the
> > system to be designed in between the source and the load and "optimize"

> > something in the parameters of the system under design e.g. meet an
> > insertion loss filter template or whatever.
> >
> > Now when the system being designed, or adjusted if it is a "tuner", is
> > "inserted" between the source and the load, the whole system is changed
by
> > this "insertion"... the original "incident power" no longer exists, some
> > other power is now sourced by the generator.
> >
> > Yet, for apparently good reasons, the assumption, or fiction, that the
> > original perfectly matched incident power is still applied, even with a
> load
> > different to a perfect match, is continued through the analysis. Ending
> up
> > with the situation when not perfectly matched, that both the incident
and
> > reflected powers are fictions, that is they are assumed and not real.
> >
> > Of course if you adjust the "inserted" system to obtain a perfect match,
> > i.e.if a jf axis reflection coefficient zero is created and exists and
one
> > is "tuned" right on that zero, then Pr = 0 and Pi = Pt. But wherever
> their
> > is a mismatch, i.e. between reflection zeros, the reflection coefficient
> is
> > not zero, and at those points then that is an assumption and Pr is
> > ficticious. And... in most practical applications that is usually the
> case.
> > In fact for any such system the only time that Pr is not ficticious for
a
> > lumped or distributed system would be at a countable number of
reflection
> > zeros in the "passband". Over the rest of the band, Pr is ficticious,
and
> > non-zero.
> >
> > It's really very simple.
> >
> > There is a power generated in the transmitter, and there is a power
> > dissipated in the load, two powers... nothing more, nothing less. Why
> > consider any more powers?
> >
> > IMHO... it is silly to speak of four powers in such a system, i.e. why
do
> we
> > have to have the following four powers when only two are present and
> > acounted for:
> >
> > The "generated power", and the "delivered power", are the only two of
> > consequence. The "incident power" and the "reflected power" are

> ficticious.
> > Only two of these powers are relevant to an actual operating systems,
the
> > other two are fictions which help with "visualizations", etc.
> >
> > The "generated power" and the "delivered power" are all that are really
> > interesting.
> >
> > The generated power is dissipated in the sum of the internal generator
> > resistance and the load resistance, and the delivered power is
dissipated
> in
> > the load resistance. The delivered power is always less than the
> generated
> > power, it is a part of the generated power. Thevin or Norton would be
> proud
> > to know that still works!
> >
> > Period, end of story.
> >
> > The other two "powers", the "incident" and "reflected" powers are mere
> > "intermediate" results useful to help us to design or adjust an
"inserted"
> > system but they are not generated or dissipated anywhere!
> >
> > For those who assert differently, I challenge them to make a numerical
> > calculation, as I have done, to show the size of these "powers" and
> > correlate them with either the generator or the load resistances where
> they
> > are dissipated.
> >
> > Seems plain and simple enough, why make it more complicated by trying to
> > ascribe reality to something that is not.
> >
> > -Peter K1PO
> >
> >
> >
> >
> > In theory, theory and practice are the same, in practice they are not.
> >
> > It is only in the case of a perfect conjugate match that the so-called
> > reflected power is real and not fictional, and then ONLY because it is
> zero!
> >
> > -Peter K1PO
> >
> >
> >
> > "VE9SRB" <srbest@att.net> wrote in message

> > news:OUpG6.38818$RF1.3236212@bgtnsc06-news.ops.worldnet.att.net...
> > >
> > > Peter:
> > >
> > > In all seriousness, why do you disseminate this absolutely false
> technical
> > > information regarding reflected power?
> > >
> > > Steve VE9SRB
> > >
> > >
> > > "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> > > news:9cci3mhnk1@nntp9.atl.mindspring.net...
> > > > Cecil
> > > >
> > > > Agreed... if current and voltage exist at a point on a line then one
> can
> > > say
> > > > that a certain power is passing that point. But what if the
"power"
> > > > passing a point never gets dissipated or generated anywhere? And
what
> > if
> > > > one does not use the voltage V and current I at that point but uses
> > > > fictional currents and or voltages. Is that a real power?
> > > >
> > > > What is usually being done with reflected power in most common
amateur
> > > radio
> > > > situations is the following:
> > > >
> > > > There exists a real current I and a real voltage V on a line at a
> > > particular
> > > > point. "The real power" passing there would then be perfectly valid
> and
> > > > could be calculated by P = V * I * cos(theta). Or... (if one was
sure
> > the
> > > > surge resistance of the line was R), by either of P = V*V/R or P =
> > I*I*R.
> > > >
> > > > However, what happens with "reflected power" is that V and I passing
> > that
> > > > point are not used... instead the "fictional" reflected voltage "b =
> V -
> > > IR"
> > > > is used, this reflelcted voltage b is not an actual voltage on the
> line,
> > b
> > > > is a linear combination of V and I.

> > > >
> > > > The fictional reflected voltage b which is not present on the line
is
> > then
> > > > used to "create" a "fictional" reflected power to be displayed on a
> > meter
> > > > face or digital display as Pr = b*b/R.
> > > >
> > > > Since there is no voltage b present on the line, there simply is no
> Pr!
> > > >
> > > > Hey if you wanted to you could always "say" that any voltage V is
the
> > sum
> > > of
> > > > any number of other voltages, say V = V1 + V2 + V3 + ad infinitum...
> but
> > > > that does not make them "real". And computing power which involves
> > > > multiplication and or squaring of quantities leads to many possible
> > > misuses
> > > > or errors in "visualization".
> > > >
> > > > For instance we can arbitrarily say that, paraphrasing Reg, a
certain
> > > number
> > > > is really the sum of two others, say. 5 = 3 + 2. Into hom many
> > different
> > > > sums can we resolve "5", heh, heh.
> > > >
> > > > But then we can't begin squaring and mulitplying "3" and "2" and
> > expecting
> > > > "nice" things to happen, for instance... is 3*3 = 9 plus 2*2 = 4
which
> > > > equals 13 equal to 5*5 = 25?
> > > >
> > > > That's the "danger" of "reflected power" even as an intermediate
> > > quantitiy.
> > > >
> > > > I maintain that we are all much better off without "reflected
power".
> > > >
> > > > Reflected voltage is a fiction but still I feel that it is useful
and
> > > nicely
> > > > behaved, and the same with reflected current, but start multiplying
> > > fictions
> > > > together and who knows what craziness can result.
> > > >
> > > > -Peter K1PO
> > > >

> > > >
> > > >
> > > >
> > > >
> > > > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > > > news:3AE98F0D.1654081D@IEEE.org...
> > > > > Dick Carroll wrote:
> > > > > > If no termination is found by the
> > > > > > reflected energy, there is no reflected power developed, again
> save
> > > line
> > > > > > losses, and it will be re-reflected back down the feedline
toward
> > the
> > > > > > antenna.
> > > > >
> > > > > Dick, energy moving past a point is a *definition* of power. What
> > > > > definition of power are you using?
> > > > >
> > > > > > Some engineers here seem to say that as long as both voltage
and
> > > > > > current are present, power is developed.
> > > > >
> > > > > If V*I*cos(theta) is not zero, power exists at the point where V
and
> > > > > I are measured. What do you mean by "developed"? Seems you might
be
> > > > > using "developed" to mean "dissipated".
> > > > >
> > > > > > Pure Walt Maxwell as I understand him.
> > > > >
> > > > > Please provide the source or quote where Walt said that reflected
> > > > > energy moving along a transmission line does not result in
> > > > > reflected power. Perhaps Walt will jump in here.
> > > > >
> > > > > Again, moving energy past a point equals power at that point, by
> > > > > definition.
> > > > >
> > > > > How many megawatts does a power generation plant produce? How many
> > > > > megawatts does a power transmission line handle? These questions
> > > > > are meaningless if moving energy past a point doesn't result in
> > > > > power at that point.
> > > > > --
> > > > > http://www.mindspring.com/~w6rca
> > > >
> > > >
> > >
> > >
> >
> >

>
>

2126. Re: feeding several dipoles into one downlead

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 02:53:14 UTC
From: richardharrison@webtv.net
Message-ID: <21750-3AEB821A-266@storefull-116.iap.bryant.webtv.net>
Source record: 164731

Paul Logan wrote:
"Anyone got any ideas on if it is ok to feed several dipoles with coax then join all the leads into one and feed it to my scanner?"

Interaction is likely bad. Better to get some cheap oriental broadband amplifiers (such as Radio Shack TV boosters making sure they cover your intended reception frequencies) one booster for each antenna, then parallel all their outputs to your scanner. You can use resistance pads to rid yourself of excess gain if necessary. You have constructed a real combiner when this lash-up is complete.

Best regards, Richard Harrison, KB5WZI

2127. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 02:54:40 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cfvos$fs8$1@nntp9.atl.mindspring.net>
Source record: 164726

Cecil:

They are unless they are not! What?

Are you related to Yogi Bera?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEB1B4B.C13FD6F6@IEEE.org...
> Dick Carroll wrote:
> > Since there is no such thing as lossless conductors some amount of
> > power is dissapated everywhere that current flows. But that fact is
> > significant only to you engineers. Most of the rest of us view it being
> > dissapated at the point(s) of intended consumption (load)(s). Of course
> > it does play into such activities as designing voltage dropping networks
> > etc, in which series resistances are loads themselves.
>
> I^2*R losses can be considered negligible unless they're not. :-)
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2128. Attic mounted 6m antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 02:59:30 UTC
From: Frizz <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com>
Message-ID: <9cfvnekma1@bob.news.rcn.net>
Source record: 164725

I realize that this might be a stretch although I do have a few 6m repeaters to fool around with in my area. I live in an antenna restricted area and can't put anything outside so I usually mount antennas in my attic. I thought about buidling a 6 meter ground plane (which I believe is about 4.5 feet high or about there if I remember my old Now You're Talking book) but would like to check here to see if that is a good idea or if you guys have any suggestions for me. I only have about 6 feet of height to play with and maybe the same for width so it needs to be able to fit in that amount of space. I already tried a dipole and that didn't work well at all, my scanner discone worked better. Buying an antenna and buidling (to an extent) are things I have no problems with so any suggestions are welcome. Thanks and 73!

2129. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 03:00:57 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cg04teis1@slb5.atl.mindspring.net>
Source record: 164727

Rick:

Next, instead of reflected power we'll have the fiction of reflected farts.

Just a comment from and old fart.

-Peter K1PO

"Rick Littlefield" <k1bqt@aol.com> wrote in message
news:20010428204217.11983.00001284@ng-cr1.aol.com...
> >But Rick, discussing lossless systems is a good way to get the concepts
> down.<
>
> If you deal in lossless systems to understand a concept, don't you run the
risk
> of being like the unfortunate recording-studio technician who farted in
the
> echo chamber and never heard the end of it? :)
>
> Rick K1BQT

2130. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 03:02:30 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cg07i$v25$1@nntp9.atl.mindspring.net>
Source record: 164728

Bill:

Excellent points.

I love those pure voltage and pure current sources, because... well just
because they are so pure!

-Peter K1PO

"William E. Sabin" <sabinw@mwci.net> wrote in message
news:3AEAC76B.10118BCA@mwci.net...
>
>
> VE9SRB wrote:
>
> > Not all of the energy reflected from the antenna is re-reflected back to
the
> > antenna for radiation. Unfortunately, this incorrect concept is widely
> > accepted in the amateur community.
>
> The amateur radio fascination with PA output impedance is related to the
amateur
> radio fascination with re-reflection. There are very few amateur radio
> applications where re-reflection is even worth thinking about. And if it
is, for
> some reason, there are ways to absorb small reflections from the load so
that
> re-reflection, therefore PA output impedance, is immaterial.
>
> If the PA, operating into a 50+j0 ohm coax, sees 50+j0 ohms, there is no
> reflection into the PA, therefore no re-reflection from the PA. The
antenna
> tuner provides the 50+j0 ohms. The PA can then be a pure current source or
a
> pure voltage source or anything in between.
>
> Bill W0IYH
>

2131. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 03:03:46 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cg09vpop1@nntp9.atl.mindspring.net>
Source record: 164729

Steve:

What if the PA output impedance, aka internal impedance, is zero?

Then what happens?

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message
news:nnAG6.39461$RF1.3329826@bgtnsc06-news.ops.worldnet.att.net...
>
> "William E. Sabin" <sabinw@mwci.net> wrote in message
> news:3AEAC76B.10118BCA@mwci.net...
> > >
> > >
> > > VE9SRB wrote:
> > >
> > > > Not all of the energy reflected from the antenna is re-reflected back
to
> the
> > > > antenna for radiation. Unfortunately, this incorrect concept is
widely
> > > > accepted in the amateur community.
> > >
> > > The amateur radio fascination with PA output impedance is related to the
> amateur
> > > radio fascination with re-reflection. There are very few amateur radio
> > > applications where re-reflection is even worth thinking about. And if it
> is, for
> > > some reason, there are ways to absorb small reflections from the load so
> that
> > > re-reflection, therefore PA output impedance, is immaterial.
> > >
> > > If the PA, operating into a 50+j0 ohm coax, sees 50+j0 ohms, there is no
> > > reflection into the PA, therefore no re-reflection from the PA. The
> antenna
> > > tuner provides the 50+j0 ohms. The PA can then be a pure current source
or
> a
> > > pure voltage source or anything in between.
> > >
> > > Bill W0IYH
> > >
>
> If the PA is operating into a matched transmission line system, then there

> are no reflections, so the discussion of re-reflections is mute.
>
> If the PA is operating into an unmathed transmission line system, then
there
> are reflections, so the discussion of re-refelctions has validity. If the
> PA output impedance is Zo, then it is obvious that re-reflections will not
> exist.
>
> Steve VE9SRB
>
>

2132. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 03:14:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cg0ucgib1@nntp9.atl.mindspring.net>
Source record: 164730

Wes:

No you'r not in my kill filter...

I've just been ignoring you for the time being...your said example being far too complicated for my feeble mind to absorb during my Margarita filled sojurn to the Caribbean.

All I am trying to say is the V and I (Or E and H) are all you really need, all of those ficticious "powers" are superflous.

There is only the generated power at the source, the power lost in the internal resistance of the source, if present, the power lost in the transmission media, if not lossless, and the power lost in the load. Those other powers bouncing back and forth... well... Humpty Dumpty would like them I suppose....

How is the wx in Tucson?

-Peter K1PO

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
news:3aeadb41.331388712@news.aepnet.com...
> On 28 Apr 2001 15:01:36 GMT, Dick Carroll <dixie@townsqr.com> wrote:
>
> > >
> > >Wes Stewart wrote:
> > >>
> > >> On 27 Apr 2001 15:09:41 GMT, Dick Carroll <dixie@townsqr.com> wrote:
> > >>
> > >> [snip]
> > >> >
> > >> > And from my viewpoint any reflected energy from an unmatched antenna
> > >> >that finds no termination back at the line input will be re-reflected
> > >> >back to the antenna for radiation. That's what seems to happen with
the
> > >> >use of an antenna tuner, less line losses as always.
> > >> > Wes Stewart says he has used reflected power to heat thermocouples
etc.
> > >> >Right, they are the termination that is missing in a ham
> > >> >antenna/feedline system using a tuner. If no termination is found by
the
> > >> >reflected energy, there is no reflected power developed, again save
line
> > >> >losses, and it will be re-reflected back down the feedline toward the

> >> >antenna.
> >>
> >> Wrong.
> >>
> >> Let's take two of my waveguide dual-directional couplers
(reflectormeters) and
> >> connect them thus:
> >>
> >> The input port of coupler #1 attaches directly to the output of a
well-matched
> >> source, as before. On the ouput port of coupler #1 we attach a
waveguide E- H
> >> tuner (the waveguide equivalent of your antenna tuner). On the output
of the
> >> tuner we attach the input port of coupler #2.
> >>
> >> On the output of coupler #2 we attach a 3 dB attenuator followed by a
short
> >> circuit.
> >>
> >> So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho = 0.5
> >>
> >> If I temporarily remove the tuner, as expected, both reflectometers
measure a
> >> 6 dB power ratio between the forward and reflected coupled ports.
> >>
> >> We assume that maximum available power out of the source is 1.0 W.
Because we
> >> have a non-reflective source, there is a mismatch loss given as:
> >>
> >> -10 * log(1 - rho^2) = 1.25 dB
> >>
> >> or leaving off the 10 log, a power ratio of 0.75.
> >>
> >> So of the available power, 0.75 W makes it into the input port of
coupler #1.
> >>
> >> If our couplers are 30 dB, as in my previous example, then we read the
> >> following: (give or take coupling loss)
> >>
> >> 1. Coupler #1 forward port = 0.75 mW.
> >> 2. Coupler #1 reflected port = 0.1875 mW.
> >> 3. Coupler #2 forward port = 0.75 mW.
> >> 4. Coupler #2 reflected port = 0.1875 mW.
> >>
> >> Okay, now we put the tuner back in between the two couplers. If we
fiddle fart
> >> around with the tuner, the power reading at the reflected port of
coupler #1 can

> >> be reduced to zero, or nearly so. We have "re-reflected" the nasty reflected
> >> (dare I say) power back toward the load.
> >>
> >> The mismatch loss now goes away and the forward port of coupler #1 reads 1.0 mW.
> >>
> >> Let's examine the readings on the thermistor power sensors on the coupled ports
> >> of coupler #2. Since we tweaked the tuner, we now have 1.0 W migrating around
> >> in the second coupler so the forward coupler reads 1.0 mW. (1.25 dB higher than
> >> before and no surprise)
> >>
> >> With 1.0 W incident on a 6 dB return loss load, the reflected power is 0.25 W.
> >> The coupling factor is 30 dB so the power appearing at the reflected port of
> >> coupler #2 is 0.25 mW. The ratio of the reflected power to the forward power
> >> readings is .25 / 1.0 = - 6dB, just as before and (to me anyway) again no
> >> surprise.
> >>
> >> But wait! We just tuned (conjugately matched) this system to "remove the
> >> termination" and that pesky reflected power still showing up on the coupled
> >> port!!!
> >>
> >> No voltmeter, no ammeter, no hanky panky, just real reflected power heating up
> >> the thermistor. Funny how this works.
> >>
> >> >
> >> > Some engineers here seem to say that as long as both voltage and
> >> >current are present, power is developed. No argument, but I submit that
> >> >the only reason that current flows in the reflected wave is that it is
> >> >being terminated *somewhere*, (again neglecting losses) - that
> >> >somewhere, in the case of reflections that find no termination at the
> >> >line input, is back at the antenna where they wind up after being
> >> >re-reflected by the tuner. There is no reflected power developed as
> >> >result of the reflection at line input.
> >> > Pure Walt Maxwell as I understand him.
> >>
> >> I believe you misunderstand.
>

> In the words of Congressman Blotto, "I would like to revise and extend my
> remarks."
>
> I believe that I misread your last sentence above. I took it to mean that
you
> felt that the tuner eliminated completely any reflected power. A more
careful
> reading proves that is not what you were saying.
> >
> >
> > Always a good possibility. But - if current flows, does not that
> >require a path in the form of a load or "termination"? No current can
> >flow without a closed circuit. So where is the termination for reflected
> >currents that arrive back at the tuner and find the impedance mismatch
> >so great as to be totally unattractive? If they aren't then re-reflected
> >back to the antenna, what DOES happen to them?
> >
> > When I key my IC756 before pushing the autotune button, I see reflected
> >power appear on the internal SWR meter (before the tuner). I push the
> >"tune" button, the rig's tuner does it's routine, and I key again. Nada.
> >No hint of reflected energy coming back through the tuner. So all of it
> >is staying on the line side. There is nothing between the autotuner and
> >the antenna except 150ft of coax. No other couplers nor ports.
> > If it finds no other load or termination, where else *can* it go exept
> >back to the antenna? Doesn't the fact that your sampling coupler #2
> >indicate the presence of reflected energy just confirm it's presence on
> >the line while it is enroute back to the antenna/load? (and it's
> >sampling circuitry present a minor termination constructed to load the
> >line just enough to provide the designed load sufficient for metering)?
> >
> > If that isn't what happens I do need to read Walt's literature again.
>
> My coupler #2 doesn't know anything about how or why the reflected power
is
> generated. It simply proves that it exists. And my example proves that
it
> exists (in the same ratio) whether the load is driven by a matched
> (non-reflecting) source or by a reflecting source (i.e. source plus
tuner).
>
> The initial claim was that my first example using a matched source was
invalid
> as a "real-world" ham situation, because it included the "termination" to
> reflected power built into the source that doesn't exist with our tuned
sources.
>
> The claimant(s) stated that it was the terminations that I used at the
input and
> at the power measurement ports that upset the apple-cart and turned

fictious
> reflected, energy, power, joules, volts, amps, or whatever you favorite
term is,
> into *real* heat. If I would just remove the terminations, the reflected
power
> would disappear and turn into a figment of my imagination.
>
> One of (the) most notable proponents of the fictitious reflected power
concept
> has been particularly and uncharacteristically silent about responding to
my
> examples, except to ask me how the weather is in Tucson.
>
> Perhaps I'm in his "kill filter." <g>
>
> 73,
>
> Wes Stewart, N7WS
>
> >
> >Dick W&#65533;EX
>
>

2133. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 03:25:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB89A7.4071FF50@IEEE.org>
Source record: 164732

"Peter O. Brackett" wrote:
> They are unless they are not! What?
> Are you related to Yogi Bera?

Note the smiley face, Peter.

> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > I^2*R losses can be considered negligible unless they're not. :-)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2134. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 03:28:19 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEB8A53.A78220FB@IEEE.org>
Source record: 164733

"Peter O. Brackett" wrote:
> What if the PA output impedance, aka internal impedance, is zero?

I've got a Norton equivalent amp like that.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2135. Going back on air, need advice

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 03:40:19 UTC
From: Ken Jacobs <kjacobs@tekwrite.com>
Message-ID: <3AEB8D40.61729D4E@tekwrite.com>
Source record: 164734

After eight years off the air I would like to get back on. I am interested in HF and DXing. I've worked 177 countries in the past on a G5RV. I live on two acres and have woods in the back. Would the trees knock down the signal a lot? We have covenants and not sure I can get a tower approved. HOWEVER, a friend gave me 30 feet of a Rohn type tower.

So should I try the G5RV again , or maybe an antenna on the tower; maybe a vertical?

Thanks for any advice.

Ken

2136. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 03:54:28 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cg39kmdh0@208.207.71.133>
Source record: 164735

Richard Clark wrote:
>

> Oh fractals, we barely knew ye.

Better yet, "Alas, poor Fractenna. We hardly knew ye - but all too
well".

2137. Re: Jeep Antennas, propagation and wavelength question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 04:01:40 UTC
From: Al <ke4nu@hotmail.com>
Message-ID: <qkMG6.2001$st.7571@newsfeed.slurp.net>
Source record: 164736

Guess I'm the one that started this thread a few days ago. Yes, got a Jeep Wrangler 98 model. I finally made a mount a flat piece of steel and torch and drill. Mounted to rear bumper, with NMO Comet 2m antenna it work really well and can't tell anything about a favorable direction. I'm using Alinco610 main unit under the seat and remote head above windshield in center, works well, although I'm concerned about security...73...Alan
Dick Carroll <dixie@townsqr.com> wrote in message news:9cf5al$ie7$0@208.207.71.134...
>
>
> Bill Turner wrote:
> >
> > On Fri, 27 Apr 2001 20:16:45 -0500, 'Doc <w5lz@oio.net> wrote:
> >
> > >Mounting any antenna for any band at one 'corner' of a
> > >vehicle will distort the radiation pattern. How much
> > >distortion is really anyone's guess. At any rate, it will
> > >probably ~not~ be noticable.
> >
> > _____
> >
> > In general, the lower the frequency, the less directional. My experience is 7
> > MHz and lower is essentially non-directional. 14 MHz is almost non-directional,
> > 21 MHz is directional if you're watching the s-meter and 28 MHz is noticeably
> > directional, but not really enough to make much difference.
> >
> > VHF, can't help there. GL.
> >
>
>
> We used to experience noticable improvement at 42 MhZ. The maximum lobe
> was acroxx the carlengthwise to the opposite corner from which the whip
> was mounted.
>
> Dick W&#65533;EX

2138. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 04:37:58 UTC
From: n2ey@aol.com
Message-ID: <20010429003758.12553.00000862@nso-ck.aol.com>
Source record: 164737

In article <3AE296F0.BF5DAF9A@spam.me.not>, Sideband <sideband@spam.me.not>
writes:

>Jim:
>
>A bit tight... How best to describe it. Basically, at my job, I take
>home a little under $300 a week, USD. After bills, car maintenance, et
>al, there's not a whole lot left over...

Yup - it ain't just what you make that matters, it's what you get to use. Sorry
to take so long to reply, btw.
>
>As for "bells and whistles," I was looking at the Kenwood site, and
>really got to drooling over the TS-B2000. It'll be some time before I'll
>be able to afford one, I'm sure, but I do have the computer equipment to
>control it, and I really don't need the control face to use the radio if
>a computer is nearby...

true - but then you need the computer in order to use it at all. Some like
this, while others want a stand-alone rig.
>
However, note that buying new is usually the most expensive route, just like
with cars. The rage right now is rigs that cover MF/HF/VHF/UHF (160 meters
through 440 in one box! unthinkable a few years ago). But you pay for that
convenience in dollars and in reduced performance.

>At a minimum, for starters, I guess I need a 2/440 set, and an HF set
>for when I get my General/Extra ticket. I don't need the bells and
>whistles, like DSP, digital readouts, and the like... I just need a
>couple of good, solid, inexpensive sets.

Then you want older, used sets. I'm not much of an authority on VHF/UHF stuff,
but I do know that around here the need for a dual bander isn't very great,
because most of the repeaters are crosslinked. Some are even linked to 220
machines, so that many QSOs involve hams on all three bands. All I have is a 2
meter rig, and I've never felt the need for more.

> Tubes or Solid State? Either
>or. I know how both work, somewhat, and like I said before, I'm not
>afraid of a soldering iron. Given a set of schematics and a DVOM (which
>I have), I think I can fix most minor glitches.

The real problems with working on many sets today are parts availability and
the use of SMT. Surface mount is doable with the right tools, but finding
proprietary parts that the mfr. no longer supports can be a bear. Best bet is
to get familiar with what's out there on the used market that you can afford.

For HF use, the Kenwood TS-450S and TS-850S are good solid boxes that were made in great quantity and are not too old. The Ten Tec Corsair, Paragon and Omni 5 can be found at relatively low prices. Some folks swear by the Icom IC-735. Remember that a 10 year old ham rig that has had reasonable care has lots of life left in it.

eBay can be a good resource for information. I'm not saying it's a good place to buy a rig, but you can get an idea of what the sets look like, their features, how common they are, and the demand for them by looking at the auctions. eBay prices tend to be top level, though. Sometimes things get REALLY out of hand there, too!
>
>Maybe someone out there has an old set that isn't working quite up to
>snuff they'd be willing to let go?

LOTS of those out there!

If you like tube sets, the Heathkit SB-301/401 pair, or other SB rigs, can be found quite inexpensively, are easy to work on, and do a good job. They don't have the 160. 30, 17 or 12 meter bands, and some of the tubes can be a little hard to find, but they will do a decent job. Heathkits have extensive manuals and most of the parts are pretty standard. Plus you can often get a parts set for cheap to keep the good one alive.
>
>I can hope anyway...
>
Also check out

http://www.elecraft.com

How's the code study coming? Didja check out those links?

73 de Jim, N2EY

2139. Re: Attic mounted 6m antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 04:54:17 UTC
From: Steve Lyon <Steve_Lyon@prodigy.net>
Message-ID: <9cg6rl$2c6q$1@newssvr06-en0.news.prodigy.com>
Source record: 164739

Repeaters are almost always vertically polarized, and so, a ground plane would probably be your best bet. I have had good luck using an antenna inside an attic. Of course this assumes that the roof is made of a non-metalic material.

Another consideration is that you must comply with the new rules that limit the amount of RF that you can expose people to.

I hope this helps.

Steve
WB6RIB

"Frizz" <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com> wrote in message news:9cfvnekma1@bob.news.rcn.net...
> I realize that this might be a stretch although I do have a few 6m repeaters
> to fool around with in my area. I live in an antenna restricted area and
> can't put anything outside so I usually mount antennas in my attic. I
> thought about buidling a 6 meter ground plane (which I believe is about 4.5
> feet high or about there if I remember my old Now You're Talking book) but
> would like to check here to see if that is a good idea or if you guys have
> any suggestions for me. I only have about 6 feet of height to play with and
> maybe the same for width so it needs to be able to fit in that amount of
> space. I already tried a dipole and that didn't work well at all, my
> scanner discone worked better. Buying an antenna and buidling (to an
> extent) are things I have no problems with so any suggestions are welcome.
> Thanks and 73!
>
>

2140. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 04:54:48 UTC
From: rsmits@home.com
Message-ID: <3aeb9e95$1$efzvgf$mr2ice@news>
Source record: 164738

In <22678-3AEAF58F-47@storefull-111.iap.bryant.webtv.net>, on 04/28/2001
at 11:53 AM, richardharrison@webtv.net (Richard Harrison) said:

>J. Simpson wrote:
>"I am looking for a good model of the DDRR antenna for 40 meters."

>The May 2001 issue of "73" magazine has a 2-meter version of the DDRR on
>page 20. The loop is about 1/2-ft in diameter, so multiplied by 20.6, a
>40-meter version would scale up to about 10.3 feet in diameter. The
>article refers readers to the ARRL Antenna Book for details.

>I don`t know that the DDRR is in the new 19th edition of the Antenna
>Book, but I seem to recall seeing it in previous editions. The DDRR has
>been often bad-mouthed in this news group, but that by no means says that
>it may not be a good choice for some applications. Many good antennas get
>trashed here. I have no experience with the DDRR, and no opinion. The
>DDRR obviously has advocates in addition to its detractors.

>Best regards, Richard Harrison, KB5WZI

The 17th edition of the ARRL Antenna Book has drawings and dimensions for
a 7 MHz DDR on page 6-9.

From what I recall, the tuning is quite critical, and the bandwidth only
about 50 KHz. You probably want to include a remotely operated tuning
capacitor to resonate the antenna.

Good Luck,

Bob, VE7HS
--
---
rsmits@home.com

2141. Re: Attic mounted 6m antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 05:08:20 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010429010820.25938.00000061@ng-fw1.aol.com>
Source record: 164740

You may want to try an MFJ-1750 antenna. It's a 5/8 GP on 2m and 1/4 GP on 6m... check out their homepage http://www.mfjenterprises.com.
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
http://vhfradiobuff.tripod.com
http://egroups.com/group/2mallmode
http://egroups.com/group/6mallmode

2142. Re: butternut antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 05:15:51 UTC
From: "J. Mc Laughlin" <n8tt@tir.com>
Message-ID: <3AEBA387.601128AD@tir.com>
Source record: 164741

Dear Robert: If you wish to know how the Butternut antennas work, go
to the US Patent Office site and do a patent search with the words
"Butternut" and "antenna." You will not find all of their patents
this way, but you will find most of them. USPTO.gov
It might be that your question is not about how their antennas work,
but about whether their antennas will work with few or no radials.
Ground mounted vertical antennas need radials in order to radiate most
of the power presented to them. The Butternut web site has
information about the need for radials.
73 Mac N8TT

iz1dxg wrote:
>
> hi everybody someone knows how the hfv6-x works?
> I've got a lot of rescrictions and therefore i don't know if i can put
> buried radials around it
> may be a couple but not to long.
> thanks in advance
> Robert IZ1DXG

--
J. Mc Laughlin n8tt@tir.com Michigan ~

2143. Re: UHF Yagi antenna plans needed

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 06:21:00 UTC
From: #hmnospamkarse#@earthlink.net
Message-ID: <chbnetos1v8q7k6ou0h8d1toir83ar7fi6@4ax.com>
Source record: 164742

There is a "Quagi" in the ARRL Antenna Book that would fit your bill.
The article on it is by Wayne Overbeck and it uses a wood boom and #12
wire to form a quad driven element and reflecter and 1/8-inch rod (you
can use the 'aluminum ground wire' that Rat-shack sells or any
reasonable substitute). This is an 8 element beam, not 10 - but it is
worth considering. Built one a few years ago, it was easy to build,
light, inexpensive and only about 5 feet long. It worked very well,
with it I took second place in a club contest by hitting our repeater
from a distance of 106 miles using 5 watts. Wayne gives the
dimensions for 432 as you desire, though if you would want one for FM
use it is easy enough to recalculate element length.

Hope this helps,
Howard
On Sat, 28 Apr 2001 15:49:07 GMT, "DeXXSter" <dexxster@coolmail.net>
wrote:

>I would like to build a reasonably-performant-but-quite-compact 10 elements
>Yagi for the 70 cm band (432 MHz) using preferably a squared boom, but
>didn't find anything suitable yet. Any help ?
>
>Thanks a lot in advance,
>
>:-) DeXXSter
>
>

2144. Re: Attic mounted 6m antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 06:42:15 UTC
From: #hmnospamkarse#@earthlink.net
Message-ID: <5ncnetokq35a1p8t6lon99iblcm39tllvc@4ax.com>
Source record: 164743

Being that the antenna will be indoors, so to speak, you could use
some #12 wire and an SO-239 to make a ground plane. The elements
would be 4' 5-1/2 inches long. If you are really limited to the 6'
width you could bend the radials to fit the space available.

At one time, I built a 6 meter ground plane using an old Rat-shack
scanner antenna. Saving the long story, I did not have enough
aluminum tubing from the original incarnation for full length radials
and it just didn't play well. Used some hose clamps and good ole #12
wire to get the right length and it did the trick, brought the VSWR
down from about 1.7:1 to the 1.2:1 range which made the rig happier.
It worked just fine on the [few] repeaters in my area. While I have
not made one completely from wire - at least it's inexpensive enough
that if it doesn't work you're not out a lot of $$.

My best suggestion for buying a 6 meter grounplane is Arrow Antenna.
A friend has one of their antenna's and the quality is quite good, the
pricing is very reasonable also. I do believe that you will be much
happier with the Arrow groundplane for about $40 than and MFJ that
could cost less. Arrow uses solid aluminum rod, 3/8 inch for the
radiator and 1/4 inch for the radials.
http://hometown.aol.com/Arrow146/index.html

Good luck,
Howard KE6MAK
On Sat, 28 Apr 2001 21:54:17 -0700, "Steve Lyon"
<Steve_Lyon@prodigy.net> wrote:

>Repeaters are almost always vertically polarized, and so, a ground plane
>would probably be your best bet. I have had good luck using an antenna
>inside an attic. Of course this assumes that the roof is made of a
>non-metalic material.
>
>Another consideration is that you must comply with the new rules that limit
>the amount of RF that you can expose people to.
>
>I hope this helps.
>
>Steve
>WB6RIB
>
>"Frizz" <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com> wrote in message
>news:9cfvnekma1@bob.news.rcn.net...
>> I realize that this might be a stretch although I do have a few 6m
>repeaters

>> to fool around with in my area. I live in an antenna restricted area and
>> can't put anything outside so I usually mount antennas in my attic. I
>> thought about buidling a 6 meter ground plane (which I believe is about
>4.5
>> feet high or about there if I remember my old Now You're Talking book) but
>> would like to check here to see if that is a good idea or if you guys have
>> any suggestions for me. I only have about 6 feet of height to play with
>and
>> maybe the same for width so it needs to be able to fit in that amount of
>> space. I already tried a dipole and that didn't work well at all, my
>> scanner discone worked better. Buying an antenna and buidling (to an
>> extent) are things I have no problems with so any suggestions are welcome.
>> Thanks and 73!
>>
>>
>

2145. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 06:56:32 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AEBBB20.28A3684B@spam.me.not>
Source record: 164744

Jim:

I wasn't worried. I had a feeling you'd reply if you had something to offer. I find most people in this NG to be helpful, worthwhile individuals.

The code study is coming slow. I've got a problem (some call it an excuse), in that I'm dyslexic. I hear a dit and it's really a dah, or vice versa. I've tried the "tricks", etc, such as turning each letter into a cute phrase, etc, but for some reason it doesn't want to work for me. I've been going at it steady for the last two years or so, and the best I've been able to manage is about 2 words/minute, and that's after correcting the "text" post-send. Honestly, I'm wondering if it would be any easier to learn on the air. The local club here in Livingston County does code study up on 2M weekly, and I've finally found an Elmer who said he'd help me out on the air with it, as well. Honestly, I think the only way I'm going to get it down is to do it on the air.

I'll check out the sets you mentioned for HF, and I'll give serious thought to a 2M only set as well. If there's no use for 440 here in the area, or if repeaters out here bridge across the bands, I'll probably go with just a 2M set and be done with it.

As for the HF, I'm really looking forward to the DX.

73's, and thanks again.

-SSB

N2EY wrote:
>
> In article <3AE296F0.BF5DAF9A@spam.me.not>, Sideband <sideband@spam.me.not>
> writes:
>
> >Jim:
> >
> >A bit tight... How best to describe it. Basically, at my job, I take
> >home a little under $300 a week, USD. After bills, car maintenance, et
> >al, there's not a whole lot left over...
>
> Yup - it ain't just what you make that matters, it's what you get to use. Sorry
> to take so long to reply, btw.
> >
> >As for "bells and whistles," I was looking at the Kenwood site, and
> >really got to drooling over the TS-B2000. It'll be some time before I'll
> >be able to afford one, I'm sure, but I do have the computer equipment to

> >control it, and I really don't need the control face to use the radio if
> >a computer is nearby...
>
> true - but then you need the computer in order to use it at all. Some like
> this, while others want a stand-alone rig.
> >
> However, note that buying new is usually the most expensive route, just like
> with cars. The rage right now is rigs that cover MF/HF/VHF/UHF (160 meters
> through 440 in one box! unthinkable a few years ago). But you pay for that
> convenience in dollars and in reduced performance.
>
> >At a minimum, for starters, I guess I need a 2/440 set, and an HF set
> >for when I get my General/Extra ticket. I don't need the bells and
> >whistles, like DSP, digital readouts, and the like... I just need a
> >couple of good, solid, inexpensive sets.
>
> Then you want older, used sets. I'm not much of an authority on VHF/UHF stuff,
> but I do know that around here the need for a dual bander isn't very great,
> because most of the repeaters are crosslinked. Some are even linked to 220
> machines, so that many QSOs involve hams on all three bands. All I have is a 2
> meter rig, and I've never felt the need for more.
>
> > Tubes or Solid State? Either
> >or. I know how both work, somewhat, and like I said before, I'm not
> >afraid of a soldering iron. Given a set of schematics and a DVOM (which
> >I have), I think I can fix most minor glitches.
>
> The real problems with working on many sets today are parts availability and
> the use of SMT. Surface mount is doable with the right tools, but finding
> proprietary parts that the mfr. no longer supports can be a bear. Best bet is
> to get familiar with what's out there on the used market that you can afford.
>
> For HF use, the Kenwood TS-450S and TS-850S are good solid boxes that were made
> in great quantity and are not too old. The Ten Tec Corsair, Paragon and Omni 5
> can be found at relatively low prices. Some folks swear by the Icom IC-735.
> Remember that a 10 year old ham rig that has had reasonable care has lots of
> life left in it.
>
> eBay can be a good resource for information. I'm not saying it's a good place
> to buy a rig, but you can get an idea of what the sets look like, their
> features, how common they are, and the demand for them by looking at the
> auctions. eBay prices tend to be top level, though. Sometimes things get REALLY
> out of hand there, too!
> >
> >Maybe someone out there has an old set that isn't working quite up to
> >snuff they'd be willing to let go?
>
> LOTS of those out there!
>
> If you like tube sets, the Heathkit SB-301/401 pair, or other SB rigs, can be

> found quite inexpensively, are easy to work on, and do a good job. They don't
> have the 160. 30, 17 or 12 meter bands, and some of the tubes can be a little
> hard to find, but they will do a decent job. Heathkits have extensive manuals
> and most of the parts are pretty standard. Plus you can often get a parts set
> for cheap to keep the good one alive.
> >
> >I can hope anyway...
> >
> Also check out
>
> http://www.elecraft.com
>
> How's the code study coming? Didja check out those links?
>
> 73 de Jim, N2EY

2146. Re: Maldol antennas for Yaesu FT-817

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 09:20:29 UTC
From: David Harvey <gedanate@yahoo.com>
Message-ID: <x1RG6.23478$ff.169967@news-server.bigpond.net.au>
Source record: 164745

There's an FT-817 discussion group in yahoo.groups.com -- take a looksee and
ask in there. There's a heap of specific info for the FT817 but I've never
seen anything anywhere about a Maldol antenna.
73 de vk2dmh
--
David Harvey (in Sydney, Australia)
gedanate@yahoo.com
http://www.gedanate.com/aikido.html
"Rudy Marcelletti" <rudym@net-link.net> wrote in message
news:3ae980f9$0$88186$bbae4d71@news.net-link.net...
> Anybody using these? How do they work?
>
>

2147. Re: Am I nuts? Maybe....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 10:43:11 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cgr7n$n9r$1@neptunium.btinternet.com>
Source record: 164746

There's only ONE reason why more than one turn should be used for a small loop antenna, either for receiving or transmitting. And that's because the loop-maker cannot beg, borrow, steal or otherwise obtain a variable tuning capacitor of sufficiently high value or working voltage.

Sensitivity on receive and efficiency on transmit are functions only of the area enclosed by the loop. Both parameters seriously suffer when there's more than one turn.

Loss resistance increases fast with more turns of thinner conductor. In addition to simple skin effect, proximity effect of turns bunched together comes into play.

If the narrow bandwidth causes lost sleep then connect a 5K-ohms resistor across the tuning capacitor. This has exactly the same effect on bandwidth as increasing the number of turns.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

2148. QST QST QST --INVITATION TO 3 ANTENNA REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 12:16:46 UTC
From: fractenna@aol.com
Message-ID: <20010429081646.13630.00001585@ng-cu1.aol.com>
Source record: 164747

QST--

You are invited to join one or all of the following lists on yahoo groups (formerly e-groups). All these reflectors are e-mail based, friendly, objective, and moderated ,so that no spam, porn, off-topic, or personal-offensive posts are sent out. Membership is screened against those with a history of disruption/trolling. You will receive no off-list e-mails by subscribing:again; no spam.

Occasionally free offers of antenna files and other info are presented, along with photos of relevant antennas (unlike most NG's you CAN do attachments).

These lists (with some recent subscriber sizes) are:
ANTENNAS@YAHOOROUPS.COM 230 members
CROSSFIELDANTENNA@YAHOOGROUPS.COM 70 members
FRACTALANTENNA@YAHOOGROUPS.COM 320 members

Please review the descriptions at:

http://www.yahoogroups.com

Note the CFA list specifically deals with this antenna in an objectively critical fashion and no posts will be allowed that make grandiose claims without supporting data presented. To date, no data has been presented which requires the extraordinary claims made by some pundits: there is no evidence for better performance than any other small vertical antenna (and that performance is poor).

Fractal antenna posts should go the the fractal antenna reflector; not the antennas reflector. Note that Dr. Cohen, N1IR, the founder of fractal element antenna technology, uses this forum to answer questions on the web--exclusively. If you have a web-based question for him, kindly post it on the FAR assuming it is of general interest.

To subscribe to any list, either go through the process at egroups, or to skip the process (and some say 'annoying questions') just do:

---------- -subscribe@yahoogroups.com
where the ---------- is the name of a given list (such as 'fractalantenna')

Kindly do not query this e-mail address; the info here is complete for your information pleasure.

73,
Phil de
N1ZKT

2149. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 12:22:09 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC0771.7C618FF5@IEEE.org>
Source record: 164748

Richard Clark wrote:
> There is a device known as the Conjugate Mirror (the direct, visual
> analog of the tuner) that returns ALL light that impinges upon it.
> What would you see if you looked into such a mirror?
>
> I must warn there are two DIFFERENT answers: what the antenna would
> see, and what you would see. I will answer for that antenna, it would
> see all the energy the antenna reflected toward the tuner. Let's see
> how many experts of conjugation can answer the second application.
> NONE have so far.

I would say if the visual Conjugate Mirror acts like a Z0-match, then
from the transmitter end, one would see black, i.e. no reflections.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2150. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 12:50:00 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <Y5UG6.4141$kA1.101652@bgtnsc04-news.ops.worldnet.att.net>
Source record: 164749

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9cf034$10d$0@208.207.71.134...
>
>
> VE9SRB wrote:
> >
> > Here are the numbers discussing where reflected power is dissipated.
> >
> > Lets assume that you have a transmitter, a matched antenna and a coaxial
> > cable with a total matched loss of 3 dB. You set the *forward* power at
the
> > transmitter output to be 1000 watts. The power arriving at the antenna
is
> > 500 Watts. 500 watts of power is delivered to the antenna and 500 watts
of
> > power is lost as the forward wave travels from the transmitter to the
> > antenna.
> >
> > Now you replace the matched antenna with a 500 ohm antenna (10:1 SWR -
rhoA
> > is approx. 0.82). You then again set the *forward* power at the
transmitter
> > output to 1000 Watts. The forward power arriving at the antenna is 500
> > Watts because 500 watts of forward power was lost as the forward wave
> > traveled from the transmitter to the antenna. The amount of power
reflected
> > at the antenna is approx equal to 335 Watts. The power delivered to the
> > antenna is 165 Watts. 167.5 watts of rearward traveling power is lost
as
> > the 335 Watts of reflected power travels from the antenna to the
> > transmitter. The forward power measured at the transmitter output is
1000
> > Watts. The rearward power measured at the transmitter output is 167.5
> > Watts. 832.5 Watts of total power is delivered to the system. 165
Watts of
> > power is delivered to the antenna. 667.5 Watts of power is lost in the
> > transmission line because of the 500 Watts of forward power loss and the
> > 167.5 Watts of reflected power loss.
>
>
> Steve, you don't have to be an engineer to recognize that as a lousy HF
> antenna system! :-) (Though probably a lot more common that we like to
> think).
>

> When one uses low loss feedline, at HF, the numbers improve, of course.
>
> I don't think there is a basic disagreement here at all. The problem is
> that so many hams read their SWR device that says "100 watts" forward,
> and "20 watts" reflected, and believe they are actually losing 20 watts
> since it is being reflected at the antenna (and that reading cannot be
> true because of unknown feedline loss that attenuates the reflected wave
> as it returns).

I would look at this as losing 20 watts. What is tells you is that you are delivering 80 watts of power to the system. At least we all can agree on that.

Steve

> I think that most of us know that the actual loss depends almost
> entirely on system losses (I^R and dielectric loss) instead of what that
> meter says. That is the source of the statement "Reflected power is a
> myth". You might as well say
> "Your SWR meter is lying to you". It is. Or at least misleading you,
> and MIGHT be lying. It has no way to know what you're losing. It can't
> measure downstream feedline loss.
>
>
> > Reflected power is not an imaginary or "made up" concept.
>
> Very true.
>
> 73, Dick W&#65533;EX

2151. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 12:56:47 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <jcUG6.4152$kA1.102298@bgtnsc04-news.ops.worldnet.att.net>
Source record: 164750

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9cfaed$6sj$2@208.207.71.134...
>
>
> Richard Clark wrote:
> >
> > On 28 Apr 2001 18:45:58 GMT, Dick Carroll <dixie@townsqr.com> wrote:
> >
> > > >
> > > >
> > > >VE9SRB wrote:
> > > >>
> > > >
> > > >> If the PA is operating into a matched transmission line system, then
there
> > > >> are no reflections, so the discussion of re-reflections is mute.
> > > >>
> > > >> If the PA is operating into an unmathed transmission line system,
then there
> > > >> are reflections, so the discussion of re-refelctions has validity.
If the
> > > >> PA output impedance is Zo, then it is obvious that re-reflections
will not
> > > >> exist.
> > > >
> > > >
> > > > Steve, how do you then explain the forward wattmeter reading that
> > > >equals both the incident and reflected powers?
> > > >
> > > >Dick W�EX
> > >
> > Hi Dick,
> >
> > Would an Open or Short be suggestive?
>
>
> Yup. Walt Maxwell's "virtual short" at the line input which reflects
> the reflected.

There is no such thing as a totally reflecting "virtual short". This
concept should never have been introduced to the amateur community. It is
technically incorrect.

Steve VE9SRB

2152. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 13:01:19 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <zgUG6.4159$kA1.102669@bgtnsc04-news.ops.worldnet.att.net>
Source record: 164751

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9cf356brr0@208.207.71.134...
>
>
> VE9SRB wrote:
> >
>
> > If the PA is operating into a matched transmission line system, then
there
> > are no reflections, so the discussion of re-reflections is mute.
> >
> > If the PA is operating into an unmathed transmission line system, then
there
> > are reflections, so the discussion of re-refelctions has validity. If
the
> > PA output impedance is Zo, then it is obvious that re-reflections will
not
> > exist.
>
>
> Steve, how do you then explain the forward wattmeter reading that
> equals both the incident and reflected powers?
>
> Dick W&#65533;EX

I don't understand the point. A line with a physical short or open circuit termination will indicate the same forward and reflected power (in a lossless line). This is totally independent of what happens at the transmitter or tuner output.

Steve

2153. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 13:07:41 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <xmUG6.4166$kA1.102966@bgtnsc04-news.ops.worldnet.att.net>
Source record: 164752

"VE9SRB" <srbest@att.net> wrote in message
news:jcUG6.4152$kA1.102298@bgtnsc04-news.ops.worldnet.att.net...
>
> "Dick Carroll" <dixie@townsqr.com> wrote in message
> news:9cfaed$6sj$2@208.207.71.134...
> >
> >
> > Richard Clark wrote:
> > >
> > > On 28 Apr 2001 18:45:58 GMT, Dick Carroll <dixie@townsqr.com> wrote:
> > >
> > > >
> > > > >
> > > > >VE9SRB wrote:
> > > > >>
> > > > >
> > > > >> If the PA is operating into a matched transmission line system,
then
> there
> > > > >> are no reflections, so the discussion of re-reflections is mute.
> > > > >>
> > > > >> If the PA is operating into an unmathed transmission line system,
> then there
> > > > >> are reflections, so the discussion of re-refelctions has validity.
> If the
> > > > >> PA output impedance is Zo, then it is obvious that re-reflections
> will not
> > > > >> exist.
> > > > >
> > > > >
> > > > > Steve, how do you then explain the forward wattmeter reading that
> > > > >equals both the incident and reflected powers?
> > > > >
> > > > >Dick WEX
> > > >
> > > > Hi Dick,
> > > >
> > > > Would an Open or Short be suggestive?
> > >
> > >
> > > Yup. Walt Maxwell's "virtual short" at the line input which reflects
> > > the reflected.
>

> There is no such thing as a totally reflecting "virtual short". This
> concept should never have been introduced to the amateur community. It is
> technically incorrect.
>
> Steve VE9SRB
>
>

This sounded too harsh. My apologizes to Walt. I do believe the concept to be technically incorrect but it has helped a great number of hams in understanding a lot of other concepts associated with the topic, and it does not at all diminish the great number of valuable contributions that Walt has made to this community. Sorry for my flip answer Walt.

Steve, VE9SRB

2154. Info on W9INN Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 13:09:59 UTC
From: GaryH <garyhendricks@hotmail.com>
Message-ID: <FmUG6.20$_n4.2139@news2.atl>
Source record: 164753

Any of you guys used the W9INN multiband antennas? I
have moved into a location that a one feed line antenna and
no tuner would be an advantage. Do these antennas perform
or is it another B&W type design?

--
Web Publishing and PC Specialist
www.tentec.com

Remember 1950
www.its1950again.com

2155. Re: Attic mounted 6m antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 13:22:55 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <fhTsOtKY4I=+NvZ0Ya0DiiaUm=jz@4ax.com>
Source record: 164754

"Frizz" <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com> wrote:

>I realize that this might be a stretch although I do have a few 6m repeaters
>to fool around with in my area. I live in an antenna restricted area and
>can't put anything outside so I usually mount antennas in my attic. I
>thought about buidling a 6 meter ground plane (which I believe is about 4.5
>feet high or about there if I remember my old Now You're Talking book) but
>would like to check here to see if that is a good idea or if you guys have
>any suggestions for me. I only have about 6 feet of height to play with and
>maybe the same for width so it needs to be able to fit in that amount of
>space. I already tried a dipole and that didn't work well at all, my
>scanner discone worked better. Buying an antenna and buidling (to an
>extent) are things I have no problems with so any suggestions are welcome.
>Thanks and 73!
>

When I was a kid I built a 6-meter ground plane with aluminum tubing, attached
to a few pieces of wood for the base, mounted on the roof, about 15 feet up.
Worked great with 5 watts of AM out, both locally and for dx whenever that came
rolling in.

Bob
k5qwg

2156. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 13:26:45 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <pEUG6.45869$IJ1.3541699@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164755

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9cdfp2$7is$0@208.207.71.166...
>
>
> VE9SRB wrote:
> >
> > "Dick Carroll" <dixie@townsqr.com> wrote in message
> > news:9cc23l$s4s$0@208.206.142.111...
> > >
> > >
> > > Roy Lewallen wrote:
> > > >
> > > > Dunno what kind of meter you have, but that electric meter we all
have
> > > > outside our houses is measuring energy, in watt-hours.
> > >
> > >
> > > Right. And if there is no load - the main disconnect is off- there
will
> > > be no power used in termination, nor any measured. It will all be
> > > reflected back to the pole transformer. That was the point I was
> > > attempting.
> > >
> > > And from my viewpoint any reflected energy from an unmatched antenna
> > > that finds no termination back at the line input will be re-reflected
> > > back to the antenna for radiation. That's what seems to happen with
the
> > > use of an antenna tuner, less line losses as always.
> >
> > Not all of the energy reflected from the antenna is re-reflected back to
the
> > antenna for radiation. Unfortunately, this incorrect concept is widely
> > accepted in the amateur community.
> >
> > A total re-reflection of energy will only occur at a short circuit, open
> > circuit or a pure reactance termination.
> >
>
> I understand, but would you care to explain what determines the amount
> that is NOT re-reflected, neglecting losses? I realize that some
> impedence is seen at the tuner by the reflected wave, but evidently it
> is so high -so much of a mismatch- that it has little effect on the
> wave, and most of it is re-reflected. Is that not basically correct?

>
> Dick W&#65533;EX

I will discuss this with an example. Warning: this is long.

First, several key concepts must be reviewed.

1) Forward power in a transmission line is determined from the following relationship: Pfwd = |Vfwd|^2 / Zo. Reflected (Rearward) power in a transmission line is determined from the following relationship: Pref = |Vref|^2/Zo. This assumes that Zo is a pure resistance.

2) The only impedance that a forward or rearward traveling wave *ever* sees as it travels in a transmission line is Zo.

3) The total voltage at any point in a transmission line is Vtot = Vfwd + Vref. The total current at any point in a transmission line is Itot = Ifwd - Iref. Some people prefer Itot = Ifwd + Iref, this is just a math preference.

3) Steady state line impedance is not a physical impedance. It is only the ratio of Vtot/Itot.

4) Steady state line impedance is never a physical mechanism for wave transmission or wave reflection. A forward or rearward traveling wave never "sees" the line impedance. As an example, consider a 1/2 WL line terminated in a short circuit. Reflections do not occur at the line input even though the line impedance at that point is a short circuit. Reflections only occur at the physical short circuit load.

5) The total forward voltage in a transmission line is the vector sum of all forward traveling voltage components. The total forward power is determined from the total forward traveling voltage, NOT the sum of the forward traveling power components. (This concept is very important).

Now, an example

Consider a lossless system. An antenna with an impedance of 150 ohms is connected to a tuner through a 1 WL long 50 ohm transmission line. The tuner is adjusted to provide a steady state line impedance of 50 ohms at its input. 100 Watts of forward power and 0 Watts of reflected power is measured in the line connected at the tuner input. 133.33 Watts of forward power and 33.33 Watts of reflected power is measured in the line connecting the tuner and the antenna.

Looking at the tuner input we see 100 watts of forward power and 100 watts of delivered power. At the tuner output, we see 133.33 watts of forward power and 33.33 watts of reflected power. There is 100 watts of delivered power. Looking at only the steady state most people *incorrectly* assume that the 33.33 Watts of reflected power is totally re-reflected combining with the 100 watts of delivered power (power does not add this way).

With a lossless matched tuner, the SWR looking into the tuner output is equal to the steady state SWR seen looking towards the antenna. In this

case, this SWR is equal to 3:1. With 33.33 watts of reflected power arriving at a 3:1 load, the re-reflected power is equal to 8.33 Watts. There is only 8.33 Watts of reflected power at the tuner output. At the same time there is 25 watts of power delivered rearward into the tuner (without this rearward power delivery into the tuner, the steady state match could not occur).

In order to make sense of this, we must first accept that line impedance is not a mechanism of wave reflection. At the tuner input, the forward wave never really "sees" an impedance match. (The impedance match is a *net* steady state condition ans is the result of net rearward wave cancellation). In this example, the *forward* wave always sees a 3:1 SWR at the tuner input. At the tuner input there is 25 watts of reflected power and 75 watts of forward power.

In the steady state, at the tuner input, the 25 watts of power delivered rearward into the tuner is "180 degrees out of phase" with the 25 watts of power reflected at the tuner input (it is really the voltages and currents that are 180 degrees out of phase). This causes the NET steady state rearward wave at the tuner input to be zero. No *net* rearward power flow, hence the steady state match.

At the tuner output, the 75 watts of forward power delivered through the tuner combines with the 8.33 watts of re-reflected power to become 133.33 Watts of total forward power. In-phase forward power in a transmission line adds as Ptot = P1 + P2 + 2 sqrt(P1 * P2).

We've in back and forth with this discussion several times on this NG. I will answer a few direct questions, but will defer from "arguing" the concepts anymore. Thanks.

Steve VE9SRB

2157. QST QST QST -- Fraudtenna Still At It

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 13:41:30 UTC
From: Lumpy <lumpy@digitalcartography.com>
Message-ID: <eSUG6.129420$J%5.45039364@news2.rdc2.tx.home.com>
Source record: 164756

Fractenna wrote:

More of his/their typical, crap.

Man, you go away for a few months and
come back only to find this poor excuse
for a ham is still blabbering bullshit.

Still waiting for my lawsuit...lumpy n0eq

2158. Receiving Loops on 20M & up

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 13:45:21 UTC
From: AC6V <ac6v@ix.netcom.com>
Message-ID: <3AEC1AF0.C86991C7@ix.netcom.com>
Source record: 164757

HK3JJH is on Mapelo Island now and is shielded from the Western USA by the rock he is on. For my station and several others here, his signal is non-exsistent in So Calif on all bands except 20M and only at 0300Z +/- an hour or so and then just above the noise and at best only a few nights in 3 weeks.

Qustion is would a receiving loop for that band or bands up to 10M be effective, any one built one and how well does it work????

Although noise levels here are low, I have an R-7000 vertical and can not use any other antenna (HOA).

Am aware of the effectiveness on 160M and 80M

--
73 From Rod AC6V In San Diego
700 Ham Topics & 6,000 Links
http://ac6v.com/
I Doubt, Therefore I Might Be!!!

2159. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 13:51:13 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9ch68hrpo0@208.206.142.108>
Source record: 164758

W6RCecilA wrote:
>
> Dick Carroll wrote:
> > Since there is no such thing as lossless conductors some amount of
> > power is dissapated everywhere that current flows. But that fact is
> > significant only to you engineers. Most of the rest of us view it being
> > dissapated at the point(s) of intended consumption (load)(s). Of course
> > it does play into such activities as designing voltage dropping networks
> > etc, in which series resistances are loads themselves.
>
> I^2*R losses can be considered negligible unless they're not. :-)

Right! And that's why even hams should be sufficiently technically
learned to determine when that is the case.

Dick

2160. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 14:14:04 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9ch7jc$2fp$0@208.206.142.108>
Source record: 164759

```
VE9SRB wrote:
>
> "VE9SRB" <srbest@att.net> wrote in message
> news:jcUG6.4152$kA1.102298@bgtnsc04-news.ops.worldnet.att.net...
> >
> > "Dick Carroll" <dixie@townsqr.com> wrote in message
> > news:9cfaed$6sj$2@208.207.71.134...
> > >
> > >
> > > Richard Clark wrote:
> > > >
> > > > On 28 Apr 2001 18:45:58 GMT, Dick Carroll <dixie@townsqr.com> wrote:
> > > >
> > > > >
> > > > >
> > > > > >VE9SRB wrote:
> > > > > >>
> > > > > >
> > > > > >> If the PA is operating into a matched transmission line system,
> then
> > there
> > > > > >> are no reflections, so the discussion of re-reflections is mute.
> > > > > >>
> > > > > >> If the PA is operating into an unmathed transmission line system,
> > then there
> > > > > >> are reflections, so the discussion of re-refelctions has validity.
> > If the
> > > > > >> PA output impedance is Zo, then it is obvious that re-reflections
> > will not
> > > > > >> exist.
> > > > > >
> > > > > >
> > > > > > Steve, how do you then explain the forward wattmeter reading that
> > > > > >equals both the incident and reflected powers?
> > > > > >
> > > > > >Dick Wï¿½EX
> > > > >
> > > > > Hi Dick,
> > > > >
> > > > > Would an Open or Short be suggestive?
> > > >
> > > >
> > > > Yup. Walt Maxwell's "virtual short" at the line input which reflects
> > > the reflected.
```

> >
> > There is no such thing as a totally reflecting "virtual short". This
> > concept should never have been introduced to the amateur community. It is
> > technically incorrect.
> >
> > Steve VE9SRB
> >
> >
>
> This sounded too harsh. My apologizes to Walt. I do believe the concept to
> be technically incorrect but it has helped a great number of hams in
> understanding a lot of other concepts associated with the topic, and it does
> not at all diminish the great number of valuable contributions that Walt has
> made to this community. Sorry for my flip answer Walt.

Steve, no doubt the full technical explanation for the fact that my
Icom autotuner (and other properly adjusted tuners) allow no reflected
waves to return past it, is complex beyond the understanding of most
hams, and probably many other persons of considerable higher level of
technial understanding. Whatever the mechanism, it does in fact equate
to a virtual short circuit, in its function.
I believe Walt because I can easily see at my own ham radio station
that what he says will happen, does happen.

73, Dick

2161. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 14:16:48 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9ch7og$2fp$1@208.206.142.108>
Source record: 164760

VE9SRB wrote:
>
> "Dick Carroll" <dixie@townsqr.com> wrote in message
> news:9cf356brr0@208.207.71.134...
> >
> >
> > VE9SRB wrote:
> > >
> >
> > > If the PA is operating into a matched transmission line system, then
> there
> > > are no reflections, so the discussion of re-reflections is mute.
> > >
> > > If the PA is operating into an unmathed transmission line system, then
> there
> > > are reflections, so the discussion of re-refelctions has validity. If
> the
> > > PA output impedance is Zo, then it is obvious that re-reflections will
> not
> > > exist.
> >
> >
> > Steve, how do you then explain the forward wattmeter reading that
> > equals both the incident and reflected powers?
> >
> > Dick Wï¿½EX
>
> I don't understand the point. A line with a physical short or open circuit
> termination will indicate the same forward and reflected power (in a
> lossless line). This is totally independent of what happens at the
> transmitter or tuner output.
>
> Steve

Cecil evidently has it right. The use of the tuner changes things
completely.

Dick

2162. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 14:41:16 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9ch96c$6cf$0@208.206.142.108>
Source record: 164761

Wes Stewart wrote:
>
Doesn't the fact that your sampling coupler #2
> >indicate the presence of reflected energy just confirm it's presence on
> >the line while it is enroute back to the antenna/load? (and it's
> >sampling circuitry present a minor termination constructed to load the
> >line just enough to provide the designed load sufficient for metering)?
> >
> > If that isn't what happens I do need to read Walt's literature again.
>
> My coupler #2 doesn't know anything about how or why the reflected power is
> generated. It simply proves that it exists.

Yes, that was the point I was trying for. It merely proves the
existance of circulating reflected currents that are being terminated
somewhere within the system. It knows not the source nor the
termination.

And my example proves that it
> exists (in the same ratio) whether the load is driven by a matched
> (non-reflecting) source or by a reflecting source (i.e. source plus tuner).

Right. Goes back to the above - it knows not the source not
termination, just that the circulating reflected currents are prsent at
it's point in the line.

>
> The initial claim was that my first example using a matched source was invalid
> as a "real-world" ham situation, because it included the "termination" to
> reflected power built into the source that doesn't exist with our tuned sources.
>
> The claimant(s) stated that it was the terminations that I used at the input and
> at the power measurement ports that upset the apple-cart and turned fictious
> reflected, energy, power, joules, volts, amps, or whatever you favorite term is,
> into *real* heat. If I would just remove the terminations, the reflected power
> would disappear and turn into a figment of my imagination.

In my view this is all a semantics problem. Does the existance of
voltage and current at a certain point indicate power at that point?
Only if it is congruent with a termination. As mentioned earlier, my
training was that power exists where it does work, or is dissipated,
"terminated". I know that is not presently congruent with IEEE etc.
definitions(though I think it used to be), but it works better for me.

73, Dick Wï¿½EX

2163. Re: Attic mounted 6m antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 14:59:36 UTC
From: Frizz <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com>
Message-ID: <9ch9tkifb1@bob.news.rcn.net>
Source record: 164762

Wow, thanks all for the replies. What I was thinking was that I could get some thin pieces of some sort of metal rod and build a ground plane like that. The only problem is that I am not sure where I can get such rod. Any suggestions? Also, how large is the arrow antenna? It looks like a nice item and the price isn't bad at all. Thanks again!!

"Frizz" <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com> wrote in message news:9cfvnekma1@bob.news.rcn.net...
> I realize that this might be a stretch although I do have a few 6m repeaters
> to fool around with in my area. I live in an antenna restricted area and
> can't put anything outside so I usually mount antennas in my attic. I
> thought about buidling a 6 meter ground plane (which I believe is about 4.5
> feet high or about there if I remember my old Now You're Talking book) but
> would like to check here to see if that is a good idea or if you guys have
> any suggestions for me. I only have about 6 feet of height to play with and
> maybe the same for width so it needs to be able to fit in that amount of
> space. I already tried a dipole and that didn't work well at all, my
> scanner discone worked better. Buying an antenna and buidling (to an
> extent) are things I have no problems with so any suggestions are welcome.
> Thanks and 73!
>
>

2164. Re: Receiving Loops on 20M & up

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 15:03:54 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3aec2920.74309771@news.aepnet.com>
Source record: 164763

On Sun, 29 Apr 2001 06:45:21 -0700, AC6V <ac6v@ix.netcom.com> wrote:

>HK3JJH is on Mapelo Island now and is shielded from the Western USA by
>the rock he is on. For my station and several others here, his signal is
>non-exsistent in So Calif on all bands except 20M and only at 0300Z +/-
>an hour or so and then just above the noise and at best only a few
>nights in 3 weeks.
>
>Qustion is would a receiving loop for that band or bands up to 10M be
>effective, any one built one and how well does it work????
>
>Although noise levels here are low, I have an R-7000 vertical and can
>not use any other antenna (HOA).
>
>Am aware of the effectiveness on 160M and 80M

Rod,

Either you or he has to move <g>. I don't think a loop is going to do you any
good.

I worked him on 20m just before 0:00 GMT from So. AZ. You are correct, he is
weak even on my trusty HB 3 el. Yagi.

He was even weaker on 10m when I worked him using my parallel dipole for 40 and
80<g>.

Wes Stewart, N7WS

>
>--
>73 From Rod AC6V In San Diego
>700 Ham Topics & 6,000 Links
>http://ac6v.com/
>I Doubt, Therefore I Might Be!!!
>
>

2165. AnTech or AvTech Mobile Antennas???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 15:15:45 UTC
From: ggadwa@ruralnetwork.net
Message-ID: <3aec2c41.3712929@news.ruralnetwork.net>
Source record: 164764

It has been suggested to me that I look into AvTech of Montana or
All AnTech or Cal AnTech of Arizona

I have been told these are outstanding Mobile HF Antennas'
I just can't seem to find Web Sites or E-mail Address or any other
info about either antenna

Sure would appreciate info or comments from users or anyone that knows
of these Mobile Antennas.

Best of 73,
Gary
W7FSI / NNN0ISD
ggadwa @ruralnetwork.net

2166. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 15:21:09 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AEC3165.459A3413@mwci.net>
Source record: 164765

Roy Lewallen wrote:

> I'd say that the feedpoint balun prevents current from flowing
> from the inside of the coax over the end and onto the outside, but know
> you don't agree that this happens.

There is one basic principle that we have been ignoring. For a thin coax braid, at any specific location, there is basically zero voltage difference between the inner and outer surfaces.

Another basic principle is that there is a strong electromagnetic coupling between braid current, on both the inner and outer surfaces, and the center wire. Common mode voltage and impedance are efficiently transferred back and forth.

I am now looking at page 26-16, Fig 24, ARRL Antenna Book, 19th edition.

The first thing that I see is an inside current I2, part of which is looping around the edge and flowing down the outside as I3. Consider a short segment near the dipole and freeze the action at some particular instant. The I2 inside must correspond to a voltage drop along the inside surface. The I3 on the outside must correspond to a voltage drop along the outside. I now perceive a voltage difference between the inner and outer surfaces at the bottom end of the segment. This is not allowed. Right away this braid-loop concept appears to have a problem which we must analyze.

Page 26-16, column one text, assumes perfect symmetry of the dipole, so that inductions from the two sides cancel on the braid. The dipole impedance is, say 50 ohms, as measured between the two terminals.

Assume for a moment a 50 ohm resistor (no dipole) at the top of the coax. There would be no common mode current. All current would return via the inner surface, just as the books all say it is supposed to. The braid longitudinal impedance would be irrelevant (it could be zero). The perfectly balanced dipole is also 50 ohms, just like the resistor. In order to get common mode current, something else is needed. The antenna supplies something that the resistor does not. It supplies a path to ground that does not include the coax. It is in the free space coupling between dipole and ground. An additional requirement is that there must be an unbalance to ground for the two sides. If the balance were perfect there would be no common mode path from ground to coax to antenna to ground to coax, and the situation would be identical to the resistor. This path, plus the coax braid, provides a complete common mode loop. The differential desired signal is the generator that "excites" this common mode path current.

We have seen this in previous discussions, where the common mode path is complete from coax ground point, up the outside of the coax, through the antenna, through the space from antenna to ground and back to coax. This loop does not include the loop that is the inner and outer surfaces of the coax braid. The 50 ohm resistor,

all by itself, ignores that loop, exactly as it is supposed to.

To summarize: The common mode closed loop path must include the free space path from antenna to ground. The loop consisting of inner and outer braid surfaces is not a legitimate common mode loop; Fig 24 is in error on this issue. Common mode effects on the coax are caused by a difference between center wire current and braid current, which results in radiation from the coax due to incomplete cancellation of external fields. The balun does two things 1) it provides very tight coupling between braid and center wire 2) it provides large and equal common mode impedances on both the center wire and the braid. Finally, an imbalance in the antenna can produce unsymmetrical near field coupling to the braid, which is an additional source of common mode current.

I agree with your other comments about balun placement, but I must distinguish between coupling from radiator to coax-outside and the other thing that I mentioned previously, which is the failure of *all available* differential mode return current to find its way into the inner surface of the coax (in the correct phase) where it must be in order to minimize coax radiation leakage. This includes extraneous paths such as dirt, buried pipes etc. This must surely be a problem that the baluns improve also. It must be true that broadcast stations try to gather up all of the return current into the inner surface of the coax (in the correct phase) and return it to the transmitter, to keep from setting fire to the neighborhood. I have read that they sometimes "tune" the ground radials.

Bill W0IYH

2167. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 15:22:34 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC31BA.7CBC2D1A@IEEE.org>
Source record: 164766

VE9SRB wrote:
> There is no such thing as a totally reflecting "virtual short". This
> concept should never have been introduced to the amateur community. It is
> technically incorrect.

Yes, there is such a thing as a totally reflecting "virtual short". It is a *concept* introduced by Walter Maxwell. The *concept* describes what happens to *scalar* reflected power (not what happens to the associated phasors). A virtual short, like thousands of other concepts, exists only in human minds.

A lot of other useful concepts are technically incorrect. Your assumption that Z0 is purely resistive is technically incorrect. Should a resistive Z0 never have been introduced to the amateur community? The assumption that the conditions on an SWR circle ever exist is technically incorrect. Should SWR circles not have been introduced to the amateur community? The assumption that there is such a thing as an infinite series is technically incorrect. Should infinite series not have been introduced. The assumption that any number of actual digits can represent the number pi is technically incorrect. Should pi not have been introduced as a digital number? I could go on forever.

Remember this diagram from older ham publications? (In fixed font)

```
---->---->---->---->--- Forward Power ---->---->---->---->---->----> Load
---->---->---->---->---->-->---->---->---->---->---
/ \
\ Reflected Power /
<----<----<----<----<----<----<----<---<----<----<-
```

Is this diagram technically correct? Nope, but it is a useful graphic of what happens to *scalar* power in a system with reflections. If you want everything perfectly technically correct, you will lose 99.9999% of hams. I seriously doubt if you really know what is 100% technically correct.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2168. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 15:24:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC323C.16103395@IEEE.org>
Source record: 164767

VE9SRB wrote:
> This sounded too harsh. My apologizes to Walt. I do believe the concept to
> be technically incorrect but it has helped a great number of hams in
> understanding a lot of other concepts associated with the topic, and it does
> not at all diminish the great number of valuable contributions that Walt has
> made to this community. Sorry for my flip answer Walt.

I took you to task for it in another posting and then read this one and
said essentially what you said above. Sorry.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2169. Re: QST QST QST --INVITATION TO 3 ANTENNA REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 15:36:44 UTC
From: k3bu@aol.com
Message-ID: <20010429113644.19412.00001851@ng-cg1.aol.com>
Source record: 164768

Saw the good quotation on for sale email:

The difference between Genius and Stupidity is Genius has its limits.
Albert Einstein

2170. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 15:44:18 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <smdoet006bi75ci8r28idg3obd6agfh9gc@4ax.com>
Source record: 164769

On Sun, 29 Apr 2001 07:22:09 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> There is a device known as the Conjugate Mirror (the direct, visual
>> analog of the tuner) that returns ALL light that impinges upon it.
>> What would you see if you looked into such a mirror?
>>
>> I must warn there are two DIFFERENT answers: what the antenna would
>> see, and what you would see. I will answer for that antenna, it would
>> see all the energy the antenna reflected toward the tuner. Let's see
>> how many experts of conjugation can answer the second application.
>> NONE have so far.
>
>I would say if the visual Conjugate Mirror acts like a Z0-match, then
>from the transmitter end, one would see black, i.e. no reflections.

BINGO!

2171. HELP!! FT Yaesu list????

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 15:46:44 UTC
From: nannycam@iwvisp.com
Message-ID: <3aec372c.3660562@news.iwvisp.com>
Source record: 164770

Is there an FT list for yaesu radios?
Where do I subscribe??

Thanx

73 de WB6GKI

2172. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 15:50:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9chd75$d7t$1@slb0.atl.mindspring.net>
Source record: 164771

Steve:

80 Watts... Yup, we can all agree to that.

Now that I'm through my short Caribbean vacation, perhaps I'll open another thread up the NG called, say "More Direct Reflections", where I could pose some more food for thought on this subject.

I'll introduce direct current lossless transformers, direct current directional couplers, etc... and other such, mind bending thoughts, using imaginary resistors, with imaginary resistor transmission line models, etc...

Apparently the "younger" generation are unaware of the usefulness of the concepts of imaginary resistance in the analysis of narrow band transmission systems.

I'm back to work tomorrow, but in a couple of days I'll set up a couple of examples and post em... for the younger crowd...

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message
news:Y5UG6.4141$kA1.101652@bgtnsc04-news.ops.worldnet.att.net...
>
> "Dick Carroll" <dixie@townsqr.com> wrote in message
> news:9cf034$10d$0@208.207.71.134...
> >
> >
> > VE9SRB wrote:
> > >
> > > Here are the numbers discussing where reflected power is dissipated.
> > >
> > > Lets assume that you have a transmitter, a matched antenna and a
coaxial
> > > cable with a total matched loss of 3 dB. You set the *forward* power
at
> the
> > > transmitter output to be 1000 watts. The power arriving at the
antenna
> is
> > > 500 Watts. 500 watts of power is delivered to the antenna and 500
watts
> of
> > > power is lost as the forward wave travels from the transmitter to the
> > > antenna.

> > >
> > > Now you replace the matched antenna with a 500 ohm antenna (10:1 SWR -
> rhoA
> > > is approx. 0.82). You then again set the *forward* power at the
> transmitter
> > > output to 1000 Watts. The forward power arriving at the antenna is
500
> > > Watts because 500 watts of forward power was lost as the forward wave
> > > traveled from the transmitter to the antenna. The amount of power
> reflected
> > > at the antenna is approx equal to 335 Watts. The power delivered to
the
> > > antenna is 165 Watts. 167.5 watts of rearward traveling power is lost
> as
> > > the 335 Watts of reflected power travels from the antenna to the
> > > transmitter. The forward power measured at the transmitter output is
> 1000
> > > Watts. The rearward power measured at the transmitter output is 167.5
> > > Watts. 832.5 Watts of total power is delivered to the system. 165
> Watts of
> > > power is delivered to the antenna. 667.5 Watts of power is lost in
the
> > > transmission line because of the 500 Watts of forward power loss and
the
> > > 167.5 Watts of reflected power loss.
> >
> >
> > Steve, you don't have to be an engineer to recognize that as a lousy HF
> > antenna system! :-) (Though probably a lot more common that we like to
> > think).
> >
> > When one uses low loss feedline, at HF, the numbers improve, of course.
> >
> > I don't think there is a basic disagreement here at all. The problem is
> > that so many hams read their SWR device that says "100 watts" forward,
> > and "20 watts" reflected, and believe they are actually losing 20 watts
> > since it is being reflected at the antenna (and that reading cannot be
> > true because of unknown feedline loss that attenuates the reflected wave
> > as it returns).
>
> I would look at this as losing 20 watts. What is tells you is that you
are
> delivering 80 watts of power to the system. At least we all can agree on
> that.
>
> Steve
>
>
> > I think that most of us know that the actual loss depends almost

> > entirely on system losses (I^R and dielectric loss) instead of what that
> > meter says. That is the source of the statement "Reflected power is a
> > myth". You might as well say
> > "Your SWR meter is lying to you". It is. Or at least misleading you,
> > and MIGHT be lying. It has no way to know what you're losing. It can't
> > measure downstream feedline loss.
> >
> >
> > > Reflected power is not an imaginary or "made up" concept.
> >
> > Very true.
> >
> > 73, Dick W�EX
>
>

2173. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 15:56:47 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <btdoetgag1649nb3k7eqb3f4ftd0l5i31r@4ax.com>
Source record: 164772

On Sun, 29 Apr 2001 10:22:34 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>VE9SRB wrote:
>> There is no such thing as a totally reflecting "virtual short". This
>> concept should never have been introduced to the amateur community. It is
>> technically incorrect.
>
>Yes, there is such a thing as a totally reflecting "virtual short". It
>is a *concept* introduced by Walter Maxwell. The *concept* describes what
>happens to *scalar* reflected power (not what happens to the associated
>phasors). A virtual short, like thousands of other concepts, exists only
>in human minds.

Hi Cecil,

Sorry, but I doubt seriously if your version of Walt's "virtual short"
and Walt's version of Walt's "virtual short" are the same thing. THIS
is the fundamental problem with it in the first place.

As this topic hasn't been visited in a long time, and I having seen no
new discussion that has changed the conditions of its description from
back then, I would suggest that it is a concept that does not serve
any purpose that a simpler, more easily understood description could.

In short, it is an incorrect and unnecessary elaboration that both
confuses and leads a novice down the wrong path. I would also put it
to you, or Walt, that proof of its utility is defeated in proportion
to the number of postings spent to explain it. Back then, it pushed
the utility to 1/600th or so. These few additions only depress it
further.

73's
Richard Clark, KB7QHC

2174. Re: Internet Dish? What to get?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 15:57:03 UTC
From: "David Michael Kelly"
Message-ID: <naeoetg12sra5cnmdsq3o4q622g0kl11mk@4ax.com>
Source record: 164773

On Wed, 25 Apr 2001 14:42:21 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Unfortunately, I would have to buy a new computer because mine
>doesn't meet their minimum standards.

Build one don't buy one, it's easy. With memory and cpu prices falling
through the floor there couldn't be a better time. I recommend first
timers use esctechnologies.com to purchase some/all of the components.
Whatever you purchase from them they will actually put together. Don't
know if they still do it but they even used to install the operating
system if you bought an OEM OS from them. There are all kinds of web
pages for newbie builders and in fact ESC has and extensive set of
pages on building. OBTW, home built computers are WAY better than
store bought. Better components, more easily upgradable and not loaded
up with all kinds of worthless software. JMHO
--
david
AC7LY

2175. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 16:11:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cheff$ad7$1@slb5.atl.mindspring.net>
Source record: 164774

Thread:

Ahem.... Walt is right.

The concept of a virtual short circuit has been around for a long time...

It is widely used in the analysis of ideal operational amplifier circuits.

In that "theory" one assumes that with forward gain approaching infinity, say 100dB or more, under negative feedback the (-) and (+) inputs to the operational amplifier may be considered to be a "virtual short circuit".

A "virtual short circuit" has the property that the voltage across it will always be zero, even though it does not allow current to flow through it. Although not found in nature in it's ideal state, one may approach the conditions of a virtual short circuit as closely as one wishes for most practical purposes. I believe, but I could be corrected by Bob Pease, heh, heh... that Dave Philbrick originated the concept of virtual short circuit.

Of course as anyone familiar with modern analog circuitry is aware, there are billions of IC operational amplifiers in use today, and so there must really be billions of "virtual short circuits" operating out there.

A complementary analog to the virtual short circuit is the so called "current conveyor", which conveys current from one node to another but at different impedance levels. The "current conveyer" was "invented" by Adel S. Sedra, now the Provost of the University of Toronto, back in the late 60's, at least one analog IC manufacturer has marketed the current conveyor.

Another couple of related concepts are the concepts of "nullor" and "norator"... not widely spoken of today, but quite popular back in the 60's and 70's.

But... all of these concepts and fictions aside, I still believe that "All you really need is I and V". Heh, heh...

And reflection mechanics is made more complicated than it needs to be!

What about those "imaginary resistors"?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AEC31BA.7CBC2D1A@IEEE.org...
> VE9SRB wrote:
> > There is no such thing as a totally reflecting "virtual short". This
> > concept should never have been introduced to the amateur community. It is

> > technically incorrect.
>
> Yes, there is such a thing as a totally reflecting "virtual short". It
> is a *concept* introduced by Walter Maxwell. The *concept* describes what
> happens to *scalar* reflected power (not what happens to the associated
> phasors). A virtual short, like thousands of other concepts, exists only
> in human minds.
>
> A lot of other useful concepts are technically incorrect. Your assumption
> that Z0 is purely resistive is technically incorrect. Should a resistive
Z0
> never have been introduced to the amateur community? The assumption that
the
> conditions on an SWR circle ever exist is technically incorrect. Should
SWR
> circles not have been introduced to the amateur community? The assumption
> that there is such a thing as an infinite series is technically incorrect.
> Should infinite series not have been introduced. The assumption that any
> number of actual digits can represent the number pi is technically
incorrect.
> Should pi not have been introduced as a digital number? I could go on
forever.
>
> Remember this diagram from older ham publications? (In fixed font)
>
> ---->---->---->---->--- Forward Power ---->---->---->---->---->----> Load
> ---->---->---->---->---->-->---->---->---->---->---
> / \
> \ Reflected Power /
> <----<----<----<----<----<----<----<---<----<----<-
>
> Is this diagram technically correct? Nope, but it is a useful graphic
> of what happens to *scalar* power in a system with reflections. If you
> want everything perfectly technically correct, you will lose 99.9999%
> of hams. I seriously doubt if you really know what is 100% technically
> correct.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2176. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 16:15:34 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <1ieoet4oejqu9btigtj76uv4c42osn17md@4ax.com>
Source record: 164775

On Sat, 28 Apr 2001 23:03:46 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Steve:
>
>What if the PA output impedance, aka internal impedance, is zero?
>
>Then what happens?
>
>-Peter K1PO
>

Hi Peter,

This is a question Pollyanna wouldn't ask. For one, it admits to a massive mismatch at the output connector that most would just as soon ignore.

I suspect there is a touch of Pollyanna in your question though, because you are probably thinking of this Z=0 in terms of a reflection coming from the mismatch further down the road. If such were the case and you asserted that this Z=0 would fully reflect that reflection back to the mismatch, then this is equally applicable WITHIN the source such that it could NEVER deliver the available power in the first place!

Such are the foibles of thought experiments that migrate into arguments of real applications disguised as veritï¿½s. There is no such thing as a Z=0 source (not even an approximation that isn't heavily conditioned to the point of uselessness or extreme and exotic specialization). The single best example I've encountered is John Fakan's Homopolar Generator, and even it didn't exhibit Z=0. The cost to maintain it? The design would've consumed 10 times the total US Helium production to improve over Z=100 uOhms.

Mismatch and reflection must be treated the same irrespective of the label of the connection through which it passes.

73's
Richard Clark, KB7QHC

2177. Re: Attic mounted 6m antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 16:21:58 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <Xj7sOmWolKJHs3yV4PkoM2SiEOWt@4ax.com>
Source record: 164777

"Frizz" <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com> wrote:

>Wow, thanks all for the replies. What I was thinking was that I could get
>some thin pieces of some sort of metal rod and build a ground plane like
>that. The only problem is that I am not sure where I can get such rod.

Aluminum angle stock should be available cheaply at most any hardware/Home Depot type place, or, for the ultimate, you could always get smaller-diameter copper pipe from a plumbing supply place.

Another good place to look might be your local metal scrap yard.

Bob
k5qwg

2178. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 16:21:59 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <mifoetk9jcckond43p504uksru4r1725ko@4ax.com>
Source record: 164776

On Sat, 28 Apr 2001 22:28:19 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>"Peter O. Brackett" wrote:
>> What if the PA output impedance, aka internal impedance, is zero?
>
>I've got a Norton equivalent amp like that.

Hi Cecil,

As there is no smiley face, then I can lay into you for this remark.
(Contrariwise I would have admonished you to wipe that smile off your
face.)

You have a source of infinite current that feeds a perfect short?

Yeah, sure.

The Norton equivalent is the worst analogy to use in an argument that
is efficiency based. Why? Because, by definition, it is ALWAYS
loaded and dissipating heat irrespective of the external circuit.

73's
Richard Clark, KB7QHC

2179. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 16:22:05 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9chf2r$330$1@slb6.atl.mindspring.net>
Source record: 164778

Dick:

[snip]
> In my view this is all a semantics problem. Does the existance of
> voltage and current at a certain point indicate power at that point?
> Only if it is congruent with a termination. As mentioned earlier, my
> training was that power exists where it does work, or is dissipated,
> "terminated". I know that is not presently congruent with IEEE etc.
> definitions(though I think it used to be), but it works better for me.
>
> 73, Dick W�EX
[snip]

Stick with it, you are absolutely correct.

Any "power" that clearly does not have both a source and a sink, is a pure fiction!

Let them call it a "power" if thery wish, that doesn't make it so. If there were "sematic policemen" to enforce correct usage of terminology they would be forced to call it a "ficticious power".

I believe that all references to "reflected power" in documents should be subjected to a document wide "find and replace" operations, i.e. FIND "reflected power" REPLACE with "ficticious reflected power", heh, heh...

If we all don't object to such usage then we let the "rabble" ruin our language and change the meaning of our words.

Hang in there your common sense and your earlier, pre IEEE Dictionary, training are correct.

I always thought that one of the roles of the lexicographer in producing a Dictionary was to create a force to "stabilize" a language and thus make it more useful.

However, today it seems that modern lexicography, like our modern political establishments, is more interested in "pandering" to special interests than in language leadership!

-Peter K1PO

2180. Re: Antennas are too hard to understand

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 16:22:49 UTC
From: kiki <df@kdk.net>
Message-ID: <3AEC3FD9.16660ED3@kdk.net>
Source record: 164779

Far Field, Near Field
1/2 wave is easy to understand. But, 1/4 wave the other 1/4
wave is the ground... why.
And whats up with 5/8 wave antennas.
Why the impedances of antennas are what they are.
Characteristic Z is it real?
Loading

The list goes on and on.

W6RCecilA wrote:

> kiki wrote:
>
> What's the first thing you don't understand about them?
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2181. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 16:33:04 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <01goetg4cju206rsshi31qd5n3i43kn2og@4ax.com>
Source record: 164780

On Sat, 28 Apr 2001 23:14:37 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Wes:
>
>No you'r not in my kill filter...
>
>I've just been ignoring you for the time being...your said example being far
>too complicated for my feeble mind to absorb during my Margarita filled
>sojurn to the Caribbean.
>
>All I am trying to say is the V and I (Or E and H) are all you really need,
>all of those ficticious "powers" are superflous.
>
>There is only the generated power at the source, the power lost in the
>internal resistance of the source, if present, the power lost in the
>transmission media, if not lossless, and the power lost in the load. Those
>other powers bouncing back and forth... well... Humpty Dumpty would like
>them I suppose....
>
>How is the wx in Tucson?
>
>-Peter K1PO
>
Hi Peter,

Presumably you are up to speed to respond to Wes's evidence:
>No voltmeter, no ammeter, no hanky panky, just real reflected power heating up
>the thermistor.

Instead of spinning your speculative fictions, why don't you respond
to the realities? Wes has offered a real example that deflates your
argument totally.

Sorry Peter, there's no egg in your omelet recipe. Want to try again?

73's
Richard Clark, KB7QHC

2182. new ham first HF Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 16:39:02 UTC
From: Mark Langberg <mlangberg@mediaone.net>
Message-ID: <GsXG6.15617$qD1.343340@typhoon.mw.mediaone.net>
Source record: 164781

I'm agonizing over my first HF antenna. My choices are a balanced dipole (135' wire center fed with ladder line and an antenna tuner) vs. an all band verical, like the cushcraft R6000 or R8 or Gap Titan DX. Which will give better gain, the dipole or the vertical? Which vertical is better of the above choices?
Has anyone had any experience with the RadioShack 36' telecoping antenna mast (ground mounted with guy wires)? I would use it to support one end of the dipole on the corner of my property where I have no trees.
If I use a dipole where one end is supported by a tree, should I use a spring (what type?) to allow for swaying of the tree? (it's a tall spruce).

2183. Re: Receiving Loops on 20M & up

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 16:46:02 UTC
From: AC6V <ac6v@ix.netcom.com>
Message-ID: <3AEC4549.635219AF@ix.netcom.com>
Source record: 164782

Hi Wes -- thanks for the response. Well DSP NR on my Kenwood doesn't help nor does a Timewave DSP unit. The situation here is so marginal that just a smidgeon of signal to noise reduction (atmospheric) would give the edge. On Thursday at 0325Z his signal came up just above the noise and I did work him. But any edge would have allowed me to work him much earlier I suspect.

Wes Stewart wrote:

> On Sun, 29 Apr 2001 06:45:21 -0700, AC6V <ac6v@ix.netcom.com> wrote:
>
> >HK3JJH is on Mapelo Island now and is shielded from the Western USA by
> >the rock he is on. For my station and several others here, his signal is
> >non-exsistent in So Calif on all bands except 20M and only at 0300Z +/-
> >an hour or so and then just above the noise and at best only a few
> >nights in 3 weeks.
> >
> >Qustion is would a receiving loop for that band or bands up to 10M be
> >effective, any one built one and how well does it work????
> >
> >Although noise levels here are low, I have an R-7000 vertical and can
> >not use any other antenna (HOA).
> >
> >Am aware of the effectiveness on 160M and 80M
>
> Rod,
>
> Either you or he has to move <g>. I don't think a loop is going to do you any
> good.
>
> I worked him on 20m just before 0:00 GMT from So. AZ. You are correct, he is
> weak even on my trusty HB 3 el. Yagi.
>
> He was even weaker on 10m when I worked him using my parallel dipole for 40 and
> 80<g>.
>
> Wes Stewart, N7WS
>
> >
> >--
> >73 From Rod AC6V In San Diego
> >700 Ham Topics & 6,000 Links
> >http://ac6v.com/
> >I Doubt, Therefore I Might Be!!!
> >
> >

--
73 From Rod AC6V In San Diego
700 Ham Topics & 6,000 Links
http://ac6v.com/
I Doubt, Therefore I Might Be!!!

2184. Re: Am I nuts? Maybe....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 16:53:43 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <argoetodsieph6m2p2hbj40a5b9lmpsm90@4ax.com>
Source record: 164783

On Sun, 29 Apr 2001 11:43:11 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>There's only ONE reason why more than one turn should be used for a
>small loop antenna, either for receiving or transmitting. And
>that's because the loop-maker cannot beg, borrow, steal or
>otherwise obtain a variable tuning capacitor of sufficiently high
>value or working voltage.
>
>Sensitivity on receive and efficiency on transmit are functions
>only of the area enclosed by the loop. Both parameters seriously
>suffer when there's more than one turn.
>
>Loss resistance increases fast with more turns of thinner
>conductor. In addition to simple skin effect, proximity effect of
>turns bunched together comes into play.
>
>If the narrow bandwidth causes lost sleep then connect a 5K-ohms
>resistor across the tuning capacitor. This has exactly the same
>effect on bandwidth as increasing the number of turns.

Hi Ken,

Forgive me for responding through Punchinello here.

Too often his negative comments are deliberately crafted for his
trollish delight:
>In addition to simple skin effect, proximity effect of
>turns bunched together comes into play.

It doesn't require that much effort to simply state that your turns
should be separated by at least 3 times the diameter of the wire you
are using. In fact for this proximity effect, there is no practical
point in separating them any further.

73's
Richard Clark, KB7QHC

2185. Re: QST QST QST --INVITATION TO 3 ANTENNA REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 17:08:50 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <s0ioet0i7090cl99le9qasssg41083s5ql@4ax.com>
Source record: 164784

On 29 Apr 2001 12:16:46 GMT, fractenna@aol.com (Fractenna) wrote:

>
>These lists (with some recent subscriber sizes) are:
>ANTENNAS@YAHOOROUPS.COM 230 members
>CROSSFIELDANTENNA@YAHOOGROUPS.COM 70 members
>FRACTALANTENNA@YAHOOGROUPS.COM 320 members

herr doktor,

The lines above appear to be tombstone epithets. (ah yes, Zombie
love rises to the occasion.)

The traditional form is Requiescat In Pace.

You should really visit a site that provides information such as:
http://www.qsl.net/kb7qhc
or
http://members.home.net/kb7qhc/
where there is no need to harbor and ration out snippets of
uncorrelated fantasies in the form of heavily censored and
editorialized mailing lists.

I am sure you will recognize some of these air cooled resistors. ;-)
Feel free to download or copy any of them as I have a long-standing
offer to the amateur community for their free use. However, please
observe that there is a prohibition against their commercial use
without permission.

73's
Richard Clark, KB7QHC

2186. New to Shortwave

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 17:42:49 UTC
From: wmcga66339@aol.com
Message-ID: <20010429134249.02922.00001378@ng-mo1.aol.com>
Source record: 164785

I have come by a Yaesu FR7 radio and no little to nothing about it or shortwave. The radio has several antenna connections on the back, one of with is an coaxial type connection..I live in an area where roof mounted antenas are frowned upon, Is there a type of antena that will work under the eaves of the house? I have about a 70 foot run on each side. Also can anyone recomend any books for a pure beginner in sw listing, is there a place that I can get the instruction mannuals for the frg7? Thank You in advance really need some help

wnm

2187. Home brew 430 mhz base ant-problems.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 17:49:39 UTC
From: Keith <kwatkins@tr15.freeserve.co.uk>
Message-ID: <9chk5jrnl1@newsg2.svr.pol.co.uk>
Source record: 164786

Using mobile aerial fitted to ground plane ,unable to get the vswr down,4x 8 inch radials.VSWR ok on vehicle roof.
As far as I know the aerial is half wave + 5/8 ths.
Any ideas please.Keith.G8IXN

2188. Re: new ham first HF Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 17:52:11 UTC
From: Gary McAdams <g.m.mcadams@worldnet.att.net>
Message-ID: <fxYG6.46153$IJ1.3567196@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164787

Mark,

I was in your shoes not too long ago. I decided to try the
130 ft center fed dipole. I feed it with 450 ohm ladder line
and a 4:1 balun in the basement. Of course, I need a
tuner but this has been up for almost a year and the
results have been very satisfying, It cannot hear as
well as a directive antenna, but is hears better than
a verticle, most of the time.

Mark Langberg <mlangberg@mediaone.net> wrote in message
news:GsXG6.15617$qD1.343340@typhoon.mw.mediaone.net...
> I'm agonizing over my first HF antenna.

I use a Radio Shack 40 ft telescoping mast to support
one end of the antenna mentioned above. I did not
use guy wires. I took a 4"X8" pressure treated lumber
about 12 ft long and used it to support the mast. I used
a post hole digger to dig a nice deep hole and buried
about six feet of the timber straight into the ground. Then I
bolted the mast to the timber. This arrangement works well
and there is no sway to the mast.

The other thing that you mentioned was some kind
of spring to tension the wire. There are many ways to
do this, ranging from springs to bungie cords, you
name it... There is a real need for some kind of method
to allow the wire to flex or sway. My wire was too tight
and the first good wind storm popped the wire off of
the center insulator. I re-attached it and just slacked
off on the ropes tensioning the antenna. This gave
the wires enough slack so that they could move
a bit in the wind. That was enough to cure my problem.

The good news is that it takes only minutes to take
down and repair a wire antenna!

CUL es 73

Gary, WG7X

> Has anyone had any experience with the RadioShack 36' telecoping antenna
> mast (ground mounted with guy wires

2189. vertical ant question?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 17:55:31 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9chkiv$8mp$1@bob.news.rcn.net>
Source record: 164788

i acquired a hustler 4-btv vertical ant minus all the traps except the 80 mtr coil... would it be feasable to use this ant as a combination 80-10 mtr vertical/dipole using ladder line as feed line & a 63 ft piece of horizontal wire as the other half of the radiator? i also have scrap aluminum tubing to add extensions to the vertical portion if necessary..i have seen a similar ant in various ant books but never one with a top mounted 80 mtr coil....any comments???

2190. Re: Info on W9INN Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 17:57:54 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <CCYG6.175$LO6.17797@newsread1.prod.itd.earthlink.net>
Source record: 164789

Bill - W9INN has authorized me to publish a web page for his line of great performing wire antennas on the site listed below. Lots of facts and measured 2:1 bandwidth for the most popular MPD-5C multi-band dipole.

I have used the W9INN - MPD-5C antenna since the early part of 1996 most of the time with 100W. I am now at DXCC #291 worked! Not bad for a dipole....

The page also has contact info and a diagram of this particular antenna..... 73 / DX

--

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

2191. Re: butternut antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 18:12:09 UTC
From: Bill Ogden <wogden@attglobal.net>
Message-ID: <3aec5b48_3@news1.prserv.net>
Source record: 164790

FWIW, I have used the 6-band Butternut for quite a few years, along with other antennas. I have moved several times and have used it with the minimal counterpoise made by Butternut, with a few of my own radials not well done, and with better radials in my current location. The radials matter! A really minimal radial setup will work--meaning you can hear lots of stations and make lots of contacts. Better radials work better, meaning you can work weaker stations and perhaps compete a little in pileups.

At the moment I have 12 radials (4 at about 65 feet, 4 at about 32 feet, and 4 at about 16 feet), each about 2 inches under the grass. This seems to work quite well, giving the narrow bandwidth on 80m that would be expected with an acceptable ground. More radials would be better, I accept, but I think I am at the point of dimishing returns. It is not great (and, perhaps, not even very good) on 80m, but it is very acceptable on other bands. I switch between the vertical, a 30m dipole, and a 20m loop (the last two through a tuner). Sometimes one is better, and sometimes another one is better.

Except for 80m, it covers the CW sections of the bands; being able to switch bands without messing with the antenna tuner is certainly convenient.

If you must live with a ground-mounted antenna, I can recommend the Butternut. If you have a way to get a dipole at least 40 feet in the air, you might do as well with that (plus a tuner). I suggest that you not spend too much time looking for the best antenna. No matter what you have, there will always be a better antenna. Put up something reasonable, and start using it.

Bill Ogden
W2WO

2192. Re: New to Shortwave

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 18:21:15 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <gtloetomkgs7e1le36ond38bpgc79bjgdb@4ax.com>
Source record: 164791

On 29 Apr 2001 17:42:49 GMT, wmcga66339@aol.com (WMcga66339) wrote:

>I have come by a Yaesu FR7 radio and no little to nothing about it or
>shortwave. The radio has several antenna connections on the back, one of with
>is an coaxial type connection..I live in an area where roof mounted antenas are
>frowned upon, Is there a type of antena that will work under the eaves of the
>house? I have about a 70 foot run on each side. Also can anyone recomend any
>books for a pure beginner in sw listing, is there a place that I can get the
>instruction mannuals for the frg7? Thank You in advance really need some help
>
>wnm

Hello OM,

Welcome to SWL!

You seem to have a handle on the situation already.

Stretch two wires, each 35 feet long across this 70 foot space. This, of course, means that these two wires meet in the middle. Instead of connecting them together one should connect to a coax line's outer shield, and the other should connect to a coax line's inner wire. This coax should then connect to the connection you've already identified.

Don't worry about anything else (don't even answer the clerk asking which coax: 75 Ohm or 50 Ohm, just shrug and take what is offered). Adding a connector would be par for the course, but even here, bare connections (if you can fake this) will do. With this little attention to details, you should find a world of radio filling your receiver with very good signals.

You can certainly improve on the situation after this, but very little gain will be had until you spend a LOT more money. Your decision to spend more can be gaged against how much you enjoy what you do find on the air. Really, you will find a lot to listen to without forking out another dime.

Following these simple steps (and presuming you want to go one better), read the postings here, or ask more questions. There are a world of subtle issues that relate to your new activity, and if you simply follow this group for a month or so, then you should get a feel for both their practicality and need in regard to your situation.

As a last suggestion, find "The World Radio TV Handbook" in a good bookstore (or dare I suggest Amazon?). This will give you a listing of EVERY commercial AM/SW/FM/TV station in the world, and their

published schedules (by language). This is the bible of SWL.

73's
Richard Clark, KB7QHC, WPE0EPH

2193. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 18:42:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC60AD.668ED71B@IEEE.org>
Source record: 164792

VE9SRB wrote:
> At the tuner output, the 75 watts of forward power delivered through the
> tuner combines with the 8.33 watts of re-reflected power to become 133.33
> Watts of total forward power. In-phase forward power in a transmission line
> adds as Ptot = P1 + P2 + 2 sqrt(P1 * P2).

So if, for each second, we add 75 joules to 8.33 joules, we get 133.3 joules?
Couldn't we then pipe 83.33 joules of that 133.3 joules back to the input
each second and have perpetual motion?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2194. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 18:48:30 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC61FE.ACF9CCE3@IEEE.org>
Source record: 164793

Dick Carroll wrote:
> I believe Walt because I can easily see at my own ham radio station
> that what he says will happen, does happen.

And that was the beauty of Walt's invention of a conceptual virtual
short circuit. It allowed relatively non-technical hams to visualize
what was happening in their antenna systems. Not many of our everyday
math models are technically perfect. Even the model we call a "sunrise"
is far from perfect.
--
http://www.mindspring.com/~w6rca

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2195. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 18:55:47 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC63B3.688206C7@IEEE.org>
Source record: 164794

Richard Clark wrote:
> As this topic hasn't been visited in a long time, and I having seen no
> new discussion that has changed the conditions of its description from
> back then, I would suggest that it is a concept that does not serve
> any purpose that a simpler, more easily understood description could.

I have stopped using the concept of a "virtual short" myself. And the concept that I can add power from my power meter and power from my neighbor's power meter and get more power than the sum of those two powers should leave me enough power to sell some back to the power company and make a profit.
--
http://www.mindspring.com/~w6rca

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2196. Re: New to Shortwave

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 18:56:05 UTC
From: CW <cmagers@sprynet.com>
Message-ID: <9choh0$a5k$1@slb2.atl.mindspring.net>
Source record: 164796

Having a receiving antenna that close to the house can be a problem. Electrical devices (computers, TV, light dimmers, ect.) can cause interference. This may be a problem and then again maybe not. Only way to know for sure is to try. That said, go to Radio Shack, buy a shortwave antenna kit, stock number 278-758. Install it under the eves using standoff insulators (RS 15-853) to support it and connect it to the terminal lug on the back of your radio marked antenna. A ground wire is optional. Be sure to disconnect the antenna when you are not using it and never listen during storms. To make disconnecting easier, install a knife switch in the leadin wire just before the radio. Radio Shack also carries these, stock number 275-1537. I have no affiliation with Radio Shack and only recommend their products because they are readily available and they work. For further information and more antenna designs, see my web site. If you have any further questions that I might help with, send me an email. BTW, a better newsgroup for this kind of thing would be rec. radio shortwave. That is a fine radio you have and should serve you well.
--
CW
KC7NOD
www.kc7nod.20m.com

"WMcga66339" <wmcga66339@aol.com> wrote in message
news:20010429134249.02922.00001378@ng-mo1.aol.com...
> I have come by a Yaesu FR7 radio and no little to nothing about it or
> shortwave. The radio has several antenna connections on the back, one of
with
> is an coaxial type connection..I live in an area where roof mounted
antenas are
> frowned upon, Is there a type of antena that will work under the eaves of
the
> house? I have about a 70 foot run on each side. Also can anyone recomend
any
> books for a pure beginner in sw listing, is there a place that I can get
the
> instruction mannuals for the frg7? Thank You in advance really need some
help
>
> wnm

2197. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 19:00:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC64BB.591118CC@IEEE.org>
Source record: 164795

"Peter O. Brackett" wrote:
> But... all of these concepts and fictions aside, I still believe that "All
> you really need is I and V". Heh, heh...

Peter, I've found the quickest way to calculate the I and V is to
know the forward and reflected powers. If I know impedance and
power, I can quickly calculate I and V. Impedance and power are
easier to measure (with the instruments I have) than are RF I
and V.
--
http://www.mindspring.com/~w6rca

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2198. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 19:06:38 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC663E.FA92486D@IEEE.org>
Source record: 164797

Dick Carroll wrote:
> Cecil evidently has it right. The use of the tuner changes things
> completely.

Nothing could be simpler to understand. Antenna tuners can change antenna systems from unmatched antenna systems to matched antenna systems. That's what antenna tuners do. "My Transmatch really does tune my antenna (system)".

Draw the system box (sphere) through the Z0-match including the antenna, and *system* mismatch disappears. System internal losses may or may not be a problem that needs attention.
--
http://www.mindspring.com/~w6rca

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2199. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 19:11:09 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC674D.4C068006@IEEE.org>
Source record: 164798

Richard Clark wrote:
> As there is no smiley face, then I can lay into you for this remark.
> (Contrariwise I would have admonished you to wipe that smile off your
> face.)

Richard, I didn't think that one needed a smiley face.

> You have a source of infinite current that feeds a perfect short?

Close - I have an amp with a shorted output that blows circuit breakers.
I'm willing to supply infinite current but Entergy won't let me.
--
http://www.mindspring.com/~w6rca

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2200. Re: new ham first HF Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 19:18:20 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC68FC.17E892E3@IEEE.org>
Source record: 164799

Mark Langberg wrote:
> If I use a dipole where one end is supported by a tree, should I use a
> spring (what type?) to allow for swaying of the tree? (it's a tall spruce).

What I do is use a pully with a weight on it. Tie a knot above the weight
so the whole antenna doesn't fall if the weight drops off.
--
http://www.mindspring.com/~w6rca

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2201. My Trip To Fraudtenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 19:27:17 UTC
From: tweedyyork@aol.com
Message-ID: <20010429152717.12760.00001575@ng-mj1.aol.com>
Source record: 164800

I get up to bean town once every few weeks so I dropped by this fraudtenna place to see if it was legitimate.

The first thing that hits you is this place is located in Maltown. Get it? Mal-Town? It was pretty bad alright! Right on the tracks and on the wrong side as we used to say. Place is next to a dirt factory and 'telefon city' should be called 'telefon shanty'. I tell you. The 21 century sure hasn't hit this place yet.

Anyway I found out that fraudtenna is in this hovel with a lotta other 'incubator' companies. Looks like most of'em are dot coms taking turns to see who will go belly up next!

Somehow I got into fraudtenna's hole. It's tiny and dim. No light toucheth it. A flustered Fill drinkin his fill of ' some strange blue licker named napenthe tried to usher me out but I was already inside. Two giant corpulent loser types told Fill to settle down. The one named Burt said hello in a sort of hollow, slurred style.

The other one named Skip didn't say anything except 'candy'? There he had a large bowl of m and m's and things that looked like, well, chocolate grasshoppers! I recognized all the m and m colors but they had white ones too. It took me a second to see these were aspirin! The Skip guy said 'try it the aspirin thins your blood so you can eat more of the goodies and be healthy'.

Judging by the looks' of em, they had eatin thousands of goodies. Burt looked like the fat troll that hides under the bridge and Skip looked like, well, someone's 'gifted' cousin. It was a revealing and troubling site.

The thing that got me is that this is supposed to be the new direction antennas are going. What I saw was an ancient oscilliscope hooked up to some pretty lame looking wire antennas. I guess one would be called ' farctail' instead of 'pigtail'. There was no anechoic stuff. I asked about it and the Skip guy said ' we use egg cartoons spray painted blue'. They had a patent applied for on it! For a turntable in their 'chamber' (a broken john with the toilet as a 'pedestil') they had a record player set at 16 rpm. Burt laughed and said they sure had to take measurments fast!

YIKES!

Just as I tried to leave I realized that these guys had well, no business. They didn't need any. All around the place were these thingies that look like they stick on cell phones. Burt said that they had someone sell them on TV and have made millions! I told 'em they don't work and Fill said they didn't care only 1% complained and they got their money back.

It sure was an eye opening visit!

Tweedy

2202. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 19:42:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9chqq9$2th$1@slb1.atl.mindspring.net>
Source record: 164801

Cecil:

Heh, heh... you fool, those instruments that you use are already measuring I and V and only have their scales marked with "power". That stupidity on the part of the meter manufacturers is what makes you have to do a manual conversion back to I and V.

I'll bet you feel cheated now!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AEC64BB.591118CC@IEEE.org...
> "Peter O. Brackett" wrote:
> > But... all of these concepts and fictions aside, I still believe that "All
> > you really need is I and V". Heh, heh...
>
> Peter, I've found the quickest way to calculate the I and V is to
> know the forward and reflected powers. If I know impedance and
> power, I can quickly calculate I and V. Impedance and power are
> easier to measure (with the instruments I have) than are RF I
> and V.
> --
> http://www.mindspring.com/~w6rca
>
>
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2203. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 19:44:04 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9chquh$d1g$1@slb4.atl.mindspring.net>
Source record: 164802

Cecil:

And... as the stauchest supporter on the NG of transmission line manufacturers, I am sure you will say the same things about an appropriately chosen "hank" of transmission line as you have about antenna tuners.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AEC663E.FA92486D@IEEE.org...
> Dick Carroll wrote:
> > Cecil evidently has it right. The use of the tuner changes things
> > completely.
>
> Nothing could be simpler to understand. Antenna tuners can change antenna
> systems from unmatched antenna systems to matched antenna systems. That's
> what antenna tuners do. "My Transmatch really does tune my antenna (system)".
>
> Draw the system box (sphere) through the Z0-match including the antenna,
> and *system* mismatch disappears. System internal losses may or may not
> be a problem that needs attention.
> --
> http://www.mindspring.com/~w6rca
>
>
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2204. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 19:46:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9chr24vrm1@nntp9.atl.mindspring.net>
Source record: 164803

Richard:

Yes, but the amount of loading of the "unloaded" Norton Source is
infinitesimal! Something to triffle with I guess.

I am sure the Californians could even afford to pay for an infinitesimal
amount of power.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:mifoetk9jcckond43p504uksru4r1725ko@4ax.com...
> On Sat, 28 Apr 2001 22:28:19 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >"Peter O. Brackett" wrote:
> >> What if the PA output impedance, aka internal impedance, is zero?
> >
> >I've got a Norton equivalent amp like that.
>
> Hi Cecil,
>
> As there is no smiley face, then I can lay into you for this remark.
> (Contrariwise I would have admonished you to wipe that smile off your
> face.)
>
> You have a source of infinite current that feeds a perfect short?
>
> Yeah, sure.
>
> The Norton equivalent is the worst analogy to use in an argument that
> is efficiency based. Why? Because, by definition, it is ALWAYS
> loaded and dissipating heat irrespective of the external circuit.
>
> 73's
> Richard Clark, KB7QHC

2205. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 19:49:36 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9chr8ddhg1@nntp9.atl.mindspring.net>
Source record: 164804

Richard:

Have you looked at the specs of some of the "modern" power operational amplifiers?

They are getting there in the "power" department [kW levels], and are improving yearly in the frequency response department... when it comes to approximating the pure Thevinin source, never say never!

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:1ieoet4oejqu9btigtj76uv4c42osn17md@4ax.com...
> On Sat, 28 Apr 2001 23:03:46 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Steve:
> >
> >What if the PA output impedance, aka internal impedance, is zero?
> >
> >Then what happens?
> >
> >-Peter K1PO
> >
>
> Hi Peter,
>
> This is a question Pollyanna wouldn't ask. For one, it admits to a
> massive mismatch at the output connector that most would just as soon
> ignore.
>
> I suspect there is a touch of Pollyanna in your question though,
> because you are probably thinking of this Z=0 in terms of a reflection
> coming from the mismatch further down the road. If such were the case
> and you asserted that this Z=0 would fully reflect that reflection
> back to the mismatch, then this is equally applicable WITHIN the
> source such that it could NEVER deliver the available power in the
> first place!
>
> Such are the foibles of thought experiments that migrate into
> arguments of real applications disguised as verit�s. There is no such
> thing as a Z=0 source (not even an approximation that isn't heavily
> conditioned to the point of uselessness or extreme and exotic
> specialization). The single best example I've encountered is John
> Fakan's Homopolar Generator, and even it didn't exhibit Z=0. The cost

> to maintain it? The design would've consumed 10 times the total US
> Helium production to improve over Z=100 uOhms.
>
> Mismatch and reflection must be treated the same irrespective of the
> label of the connection through which it passes.
>
> 73's
> Richard Clark, KB7QHC

2206. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 19:50:43 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9chrag$ad9$1@nntp9.atl.mindspring.net>
Source record: 164805

Richard:

OK, OK... but I just got home... gotta clear up a few things... later....

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:01goetg4cju206rsshi31qd5n3i43kn2og@4ax.com...
> On Sat, 28 Apr 2001 23:14:37 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Wes:
> >
> >No you'r not in my kill filter...
> >
> >I've just been ignoring you for the time being...your said example being
far
> >too complicated for my feeble mind to absorb during my Margarita filled
> >sojurn to the Caribbean.
> >
> >All I am trying to say is the V and I (Or E and H) are all you really
need,
> >all of those ficticious "powers" are superflous.
> >
> >There is only the generated power at the source, the power lost in the
> >internal resistance of the source, if present, the power lost in the
> >transmission media, if not lossless, and the power lost in the load.
Those
> >other powers bouncing back and forth... well... Humpty Dumpty would like
> >them I suppose....
> >
> >How is the wx in Tucson?
> >
> >-Peter K1PO
> >
> Hi Peter,
>
> Presumably you are up to speed to respond to Wes's evidence:
> >No voltmeter, no ammeter, no hanky panky, just real reflected power
heating up
> >the thermistor.
>
> Instead of spinning your speculative fictions, why don't you respond
> to the realities? Wes has offered a real example that deflates your
> argument totally.

>
> Sorry Peter, there's no egg in your omelet recipe. Want to try again?
>
> 73's
> Richard Clark, KB7QHC

2207. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 20:19:42 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC775E.9B88403B@IEEE.org>
Source record: 164806

"Peter O. Brackett" wrote:
> Heh, heh... you fool, those instruments that you use are already measuring I
> and V and only have their scales marked with "power". That stupidity on the
> part of the meter manufacturers is what makes you have to do a manual
> conversion back to I and V. I'll bet you feel cheated now!

I realize all the above and I don't mind. As a matter of fact, my
home-brewed SWR meter has a DC voltage output which is proportional
to the RF voltage, and a DC voltage output which is proportional
to the RF current.
--
http://www.mindspring.com/~w6rca

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2208. Re: Am I nuts? Maybe....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 20:20:08 UTC
From: Ken Bessler <kg0wx@yahoo.com>
Message-ID: <3AEC7778.7DE7@yahoo.com>
Source record: 164808

Richard Clark wrote:
> Hi Ken,
>
> Forgive me for responding through Punchinello here.
>
> Too often his negative comments are deliberately crafted for his
> trollish delight:
> >In addition to simple skin effect, proximity effect of
> >turns bunched together comes into play.
>
> It doesn't require that much effort to simply state that your turns
> should be separated by at least 3 times the diameter of the wire you
> are using. In fact for this proximity effect, there is no practical
> point in separating them any further.
>
> 73's
> Richard Clark, KB7QHC

Is that for helically wound turns (like a loading coil)? I was also thinking of this antenna setup:

Screw a small cup hook into each corner of my room and string a loop antenna around the perimeter. The question is this - do I only make one trip around the room or would it work better to make multiple turns? How about 2 loops - one for a radiator near the ceiling and one for the counterpoise along the baseboards?

--

Ken Bessler, Ham Callsign KGï¿½WX
Design Services Company
http://kg0wx.users.50megs.com/
Smoke free since 9/30/96!
ICQ# 63379650ï¿½

2209. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 20:29:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC79BA.69620206@IEEE.org>
Source record: 164809

"Peter O. Brackett" wrote:
> And... as the stauchest supporter on the NG of transmission line
> manufacturers, I am sure you will say the same things about an appropriately
> chosen "hank" of transmission line as you have about antenna tuners.

Personally, I recommend not using antenna tuners at all and I don't use
one. But alas, they are so ingrained into amateur radio that I have had
little effect. But in general, anything that can be done with an antenna tuner
can be done with one or two pieces of series/parallel transmission line.
Also, everyone who understands my idea of varying the length of transmission
line and has actually tried it, was suitably impressed with the results,
especially the hams who were having trouble matching with their transceiver
internal antenna tuner. Actually, making the internal antenna tuner happy
may be the biggest attraction for varying the length of the feedline.
--
http://www.mindspring.com/~w6rca

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2210. Re: new ham first HF Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 20:39:56 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEC7C1C.9BA6825@IEEE.org>
Source record: 164810

rb wrote:
> Use the 135'. That way you'll have your 80m capability. Just droop the
> ends down. You can do this with as much as 20' or so on each end without
> losing much performance. We do this frequently, and it works fine. That
> way, the antenna will load OK, and still fit your space available. Most of
> the soup goes out on the center part of the antenna, and the ends don't
> radiate much anyway. They are important for loading, though.

What you say is true for 80m. But on the higher bands, the current maximum points may occur in the drooping sections leading to an unexpected radiation pattern (unless one models it beforehand).
--
http://www.mindspring.com/~w6rca

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2211. Re: New to Shortwave

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 20:45:43 UTC
From: wmcga66339@aol.com
Message-ID: <20010429164543.03040.00001339@ng-mo1.aol.com>
Source record: 164811

Thank You all I really appricate the suggstions.

2212. Re: Receiving Loops on 20M & up

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 21:13:04 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9ci000$h9j$1@plutonium.btinternet.com>
Source record: 164812

How many miles ?

Reg, g4fgq

==========
AC6V <ac6v@ix.netcom.com> wrote in message
news:3AEC1AF0.C86991C7@ix.netcom.com...
> HK3JJH is on Mapelo Island now and is shielded from the Western
USA by
> the rock he is on. For my station and several others here, his
signal is
> non-exsistent in So Calif on all bands except 20M and only at
0300Z +/-
> an hour or so and then just above the noise and at best only a
few
> nights in 3 weeks.
>
> Qustion is would a receiving loop for that band or bands up to
10M be
> effective, any one built one and how well does it work????
>
> Although noise levels here are low, I have an R-7000 vertical and
can
> not use any other antenna (HOA).
>
> Am aware of the effectiveness on 160M and 80M
>
> --
> 73 From Rod AC6V In San Diego
> 700 Ham Topics & 6,000 Links
> http://ac6v.com/
> I Doubt, Therefore I Might Be!!!
>
>

2213. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 21:22:02 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <va1petg0dl8tcos1u59123rm30ua5l3656@4ax.com>
Source record: 164813

On Sun, 29 Apr 2001 15:46:15 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>Yes, but the amount of loading of the "unloaded" Norton Source is
>infinitesimal! Something to triffle with I guess.
>
>I am sure the Californians could even afford to pay for an infinitesimal
>amount of power.
>
>-Peter K1PO
>
Hi Peter,

Infinitesimal?

Boy, you have some reading to catch up on! You've would have to be a
Californian to buy that explanation. :-)

73's
Richard Clark, KB7QHC

>"Richard Clark" <kb7qhc@home.com> wrote in message
>news:mifoetk9jcckond43p504uksru4r1725ko@4ax.com...
>> On Sat, 28 Apr 2001 22:28:19 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
>> wrote:
>>
>> >"Peter O. Brackett" wrote:
>> >> What if the PA output impedance, aka internal impedance, is zero?
>> >
>> >I've got a Norton equivalent amp like that.
>>
>> Hi Cecil,
>>
>> As there is no smiley face, then I can lay into you for this remark.
>> (Contrariwise I would have admonished you to wipe that smile off your
>> face.)
>>
>> You have a source of infinite current that feeds a perfect short?
>>
>> Yeah, sure.
>>
>> The Norton equivalent is the worst analogy to use in an argument that
>> is efficiency based. Why? Because, by definition, it is ALWAYS
>> loaded and dissipating heat irrespective of the external circuit.

>>
>> 73's
>> Richard Clark, KB7QHC
>

2214. Logging software that support the Kansas City Tracker board ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 21:46:04 UTC
From: Geert Pirens <geert.pirens@pandora.be>
Message-ID: <wY%G6.33943$ii.4349361@afrodite.telenet-ops.be>
Source record: 164815
Cross-posted to: aus.radio.amateur.misc,in.ham-radio,japan.ham-radio,japan.ham-radio.dxcc,rec.radio.amateur.antenna

Hello,

Does someone knows a Logging software that supports the KCT (kansas city
tracker) rotor controller card ?

If you now something?

Please mail it here or send me a e-mail.
You may olso fill in the KCT form at the URL: http://users.pandora.be/on1dqd
so that other users can raed what software there is available for the KCT !

Thanks and kind regards

Geert - ON1DQD

2215. Re: new ham first HF Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 22:27:01 UTC
From: rb <rbigg@seii.net>
Message-ID: <9chtbemus1@news.chatlink.com>
Source record: 164807

Mark---just noticed your question on the rec radio antenna reflector.

Use the 135'. That way you'll have your 80m capability. Just droop the ends down. You can do this with as much as 20' or so on each end without losing much performance. We do this frequently, and it works fine. That way, the antenna will load OK, and still fit your space available. Most of the soup goes out on the center part of the antenna, and the ends don't radiate much anyway. They are important for loading, though.

73 de Ron, K5BDJ

2216. Re: new ham 80 meter antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 23:24:13 UTC
From: rb <rbigg@seii.net>
Message-ID: <9ci0mk$r9o$1@news.chatlink.com>
Source record: 164814

Mark---just noticed your question on the rec radio antenna reflector.

Use the 135'. That way you'll have your 80m capability. Just droop the ends down. You can do this with as much as 20' or so on each end without losing much performance. We do this frequently, and it works fine. That way, the antenna will load OK, and still fit your space available. Most of the soup goes out on the center part of the antenna, and the ends don't radiate much anyway. They are important for loading, though.

73 de Ron, K5BDJ

2217. Re: Attic mounted 6m antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 23:33:26 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3AECA4C6.6E183B6@netdoor.com>
Source record: 164816

Maybe the insulating material is backed with aluminum foil?

Butch KF5DE

Bob Miller wrote:

> "Frizz" <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com> wrote:
>
> >Wow, thanks all for the replies. What I was thinking was that I could get
> >some thin pieces of some sort of metal rod and build a ground plane like
> >that. The only problem is that I am not sure where I can get such rod.
>
> Aluminum angle stock should be available cheaply at most any hardware/Home Depot
> type place, or, for the ultimate, you could always get smaller-diameter copper
> pipe from a plumbing supply place.
>
> Another good place to look might be your local metal scrap yard.
>
> Bob
> k5qwg

2218. Re: Am I nuts? Maybe....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-29 23:38:14 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3AECA5E5.BB4B5D53@netdoor.com>
Source record: 164817

I am. Definitely.....!

2219. Re: new ham first HF Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 00:02:55 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9ci9v4$2g1$1@uranium.btinternet.com>
Source record: 164818

For your first antenna just throw out a temporary enamelled-copper wire in the form of an end-fed inverted-L. About 150 feet long with the vertical section as high as possible. It may only take an hour to put up. Very inexpensive. You will then have a standard against which to compare the many future experiments you will make in the years to come.

You will probably find the simple inverted-L has such a good multiband performance you will stay with it much longer than you might originally intend or expect. You will learn more from it than any other antenna.

--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

Mark Langberg <mlangberg@mediaone.net> wrote in message
news:GsXG6.15617$qD1.343340@typhoon.mw.mediaone.net...
> I'm agonizing over my first HF antenna. My choices are a balanced
dipole
> (135' wire center fed with ladder line and an antenna tuner) vs.
an all band
> verical, like the cushcraft R6000 or R8 or Gap Titan DX. Which
will give
> better gain, the dipole or the vertical? Which vertical is
better of the
> above choices?
> Has anyone had any experience with the RadioShack 36' telecoping
antenna
> mast (ground mounted with guy wires)? I would use it to support
one end of
> the dipole on the corner of my property where I have no trees.
> If I use a dipole where one end is supported by a tree, should I
use a
> spring (what type?) to allow for swaying of the tree? (it's a
tall spruce).
>
>

2220. Wow! GAP Super C

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 00:18:56 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3AECAF70.8F6CA24B@netdoor.com>
Source record: 164669

Take a peek at GAP'S new antenna. I'm told the technology has been around awhile, so why hasn't someone come up with a nearly 100 % efficiency antenna before now. I want one. I'm gonna put mine over the chimney. We don''t bake logs in our fireplace so no problem with heat/smoke/ashes. I love the new look of the thing.

Butch Magee KF5DE

2221. Re: Wow! GAP Super C

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 00:33:46 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AECB2EA.3E80810D@hiwaay.net>
Source record: 164670

can you spell 'CFA" ? this has been on their site for a LONG time- with
no further info.

Bill-W4BSG

Butch Magee wrote:
>
> Take a peek at GAP'S new antenna. I'm told the technology has been
> around awhile, so why hasn't someone come up with a nearly 100 %
> efficiency antenna before now. I want one. I'm gonna put mine over the
> chimney. We don''t bake logs in our fireplace so no problem with
> heat/smoke/ashes. I love the new look of the thing.
>
> Butch Magee KF5DE

2222. Re: new ham first HF Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 01:15:56 UTC
From: Tad Danley <taddanley@att.net>
Message-ID: <3AECBCBA.1D736607@att.net>
Source record: 164671

Mark Langberg wrote:

> I'm agonizing over my first HF antenna. My choices are a balanced dipole
> (135' wire center fed with ladder line and an antenna tuner) vs. an all band
> verical, like the cushcraft R6000 or R8 or Gap Titan DX. Which will give
> better gain, the dipole or the vertical? Which vertical is better of the
> above choices?

Lots of variables and unknowns, but here goes:

Start with the dipole fed with ladder line and a tuner. It will work on all HF bands 80 - 10. Then, build yourself single band vertical antennas. They are easy and inexpensive to make, and work better than the commercial multi-band verticals available.

You will lean a lot along the way, have fun building antennas, and be able to switch between the dipole and verticals to see which is favored by propagation to the station you are trying to hear/work.

Good luck and 73,

--
Tad Danley, K3TD
mailto:taddanley@att.net

2223. Re: anyone try a TGM multi-band quad?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 01:35:03 UTC
From: k4ia@aol.com
Message-ID: <20010429213503.19970.00001716@ng-mi1.aol.com>
Source record: 164672

I am very happy with mine. Check out the reviews on eHam. E mail me and I
will send you a picture of mine on the roof.
Radio K4IA
Buck
Fredericksburg, Virginia USA

REAL CHEAP Long Distance 4.9 cents/min Interstate and REAL CHEAP Intrastate,
International, Toll Free, Callback, Calling Cards, Pagers and more Tune to
http://www.ld.net/?bucksavers

2224. Re: new ham first HF Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 01:38:56 UTC
From: k4ia@aol.com
Message-ID: <20010429213856.19970.00001717@ng-mi1.aol.com>
Source record: 164673

I found the ladder line center fed antenna outperformed my Gap Titan almost all the time. And the Gap Titan was much better than my G5RV. Go with the ladder line and tuner to start. Add a directional antenna for 20 and above later.
Radio K4IA
Buck
Fredericksburg, Virginia USA

REAL CHEAP Long Distance 4.9 cents/min Interstate and REAL CHEAP Intrastate, International, Toll Free, Callback, Calling Cards, Pagers and more Tune to http://www.ld.net/?bucksavers

2225. Radio Shack 14 element two meter beam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 01:56:17 UTC
From: castles <castles@yestertronics.com>
Message-ID: <3AECC5B2.8D6D6649@yestertronics.com>
Source record: 164674

I have a Radio Shack 14 element beam. I need to make a balun so that I can feed it with 50 ohm coax. I am looking for someone that can tell me the specs on this beam in terms of feed impedance and what length coaxial balun I need to match it to 50 ohms.

73, Don W6QEY

2226. vhfantenna.com

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 02:06:34 UTC
From: Howard <news@boatantenna.com>
Message-ID: <fN3H6.4398$R2.3114370@newsrump.sjc.telocity.net>
Source record: 164675

www.vhfantenna.com

2227. Re: Antennas are too hard to understand

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 03:00:01 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AECD531.D440FB6F@IEEE.org>
Source record: 164676

kiki wrote:
> 1/2 wave is easy to understand. But, 1/4 wave the other 1/4
> wave is the ground... why.

1/4WL vertical monopoles are half as tall as 1/2WL vertical
dipoles and are easier to feed.

> And whats up with 5/8 wave antennas.

5/8WL is the length for maximum theoretical broadside gain for
a monopole. Double that length is the maximum theoretical
broadside gain for a dipole.

How about getting an ARRL Handbook?
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2228. Re: WANTED: 10-80m Vertical for Roof Top

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 03:06:16 UTC
From: richardharrison@webtv.net
Message-ID: <10170-3AECD6A8-143@storefull-115.iap.bryant.webtv.net>
Source record: 164677

Doc, W5LZ wrote:
"There`s no practical difference between being on the roof and on the ground."

That`s very likely true, but if your roof happened to be 1/2-wave above flat ground, you might have an unwanted null in the vertical pattern. See Fig 16 on page 3-13 on page 3-13 of the new edition 19 of the ARRL Antenna Book.

Best regards, Richard Harrison, KB5WZI

2229. Re: Am I nuts? Maybe....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 03:39:08 UTC
From: richardharrison@webtv.net
Message-ID: <28112-3AECDE5C-9@storefull-111.iap.bryant.webtv.net>
Source record: 164678

Ken, KG0WX wrote:
"How about 2 loops - one for a radiator and one for the counterpoise
along the baseboards?"

The loop is driven across an arc or across a break in the loop and needs
no counterpoise.

See Chapter 5 on "Loop Antennas" in the new ARRL Antenna Book. See Table
4 on page 5-13 for small loops made of 3/4-in copper pipe.
Smaller conductors will have more loss but may still be usable and they
don`t to be octagonal, either. What they need is enclosed area.

Best regards, Richard Harrison, KB5WZI

2230. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 04:57:45 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AECF0C9.FC916BBE@IEEE.org>
Source record: 164679

VE9SRB wrote:
> At the tuner output, the 75 watts of forward power delivered through the
> tuner combines with the 8.33 watts of re-reflected power to become 133.33
> Watts of total forward power. In-phase forward power in a transmission line
> adds as Ptot = P1 + P2 + 2 sqrt(P1 * P2).

Steve, I can't sleep thinking about this so let's take a close look at your equation. Pg=100w, generated power Pr=33.33w, reflected power Pf=133.33w, forward power. Pr/Pf = rho^2 = 0.25 rho is the reflection coefficient.

Your P1 equals Pg*(1-Pr/Pf) Your P2 equals Pr*Pr/Pf so rewriting your equation: Pf = Pg*(1-Pr/Pf) + Pr*Pr/Pf + 2 sqrt(Pg*(1-Pr/Pf)*Pr*Pr/Pf)

Rewriting: Pf = Pg*(1-Pr/Pf) + Pr*Pr/Pf + 2 sqrt((Pg*Pr/Pf)*(Pr*(1-Pr/Pf)))

Pg*Pr/Pf (25w) is the part of Pg that is involved in the destructive interference
Pr*(1-Pr/Pf) (25w) is the part of Pr that is involved in the destructive interference

So what we have is Pf equals 75w+8.33w+50w = 133.33w and that 50w term is the total of the two powers involved in the destructive interference, i.e. those powers join the forward power just like the re-reflected power does. Exactly why the powers involved in the destructive interference join the forward power is an interesting topic but the bottom line is that it acts like the re-reflected power and joins the forward power. One wonders, for the sake of simplicity, why terms that act the same cannot be just added together?

To summarize Pg = Pg*(1-Pr/Pf) + Pg*Pr/Pf = 75w + 25w = 100w
Pr = Pr*(1-Pr/Pf) + Pr*Pr/Pf = 25w + 8.33w = 33.33w
Pf = Pg + Pr = 100w + 33.33w = 133.33w (remains true)
--
http://www.mindspring.com/~w6rca

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2231. Re: Radio Shack 14 element two meter beam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 05:16:25 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <m6tpetsb9obdnosdgun5nn3bd90ibkjt11@4ax.com>
Source record: 164680

Don -

That Hi-Gain 214FM antenna should be 50 ohms at the feedpoint. You
don't need a balun.

73, Dick - W6CCD

On Mon, 30 Apr 2001 01:56:17 GMT, castles <castles@yestertronics.com>
wrote:

>I have a Radio Shack 14 element beam. I need to make a balun so that I
>can feed it with 50 ohm coax. I am looking for someone that can tell me
>the specs on this beam in terms of feed impedance and what length
>coaxial balun I need to match it to 50 ohms.
>
>73, Don W6QEY

2232. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 05:27:49 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cit5g$7u2$1@slb6.atl.mindspring.net>
Source record: 164681

Cecil:

Yep, I've built a few like that myself, and most of the "amateur" commercial power meters are built the same way.

They use a high impedance (very low capacitance) capacitice voltage divider to "tap" off a sample of the voltage V at a point, and very near that same point (In terms of wavelengths), a low impedance current transformer pulls off a sample of the current I.

Then the rest of the circuitry arranges to "calculate" and present on a meter face or digital display facsimilies of the "ficticious" incident voltage a = V + IR and the "ficticious" reflected voltage b = V - IR. One of the best ways to "compute" (in an analog sense) the difference "b" is with a bridge cirucuit. Usually the meter faces are calibrated according to the "square" of the voltages a and b to "Indictate" the two ficticious powers Pi and Pr. Pi = a*a/R and Pr = b*b/R where R is the "assumed" surge resistance of the line, usually in amateur practice R = 50 Ohms resistive or some facsimilie thereof. Some meters indicate both a and b simultaneously, with dual or cross needle meters, while others simply switch the circuitry.

I've actually built reflectometers that are/were considerably more sophisticated than the above, in that they allowed the reference impedance to be a very complex impedance Zr (Sometimes of "orders" up to N = 10), not just a pure resistance R. In these broadband reflectometers, the high impedance voltage tap and the low impedance current taps had to be significantly more complicated than the simple ones in amateur power meters. These reflected voltmeters that I designed/built and put into mass production, thousands were/are being shipped, were for use with very broadband signals which have support over frequency ranges where the surge impedance of the line is non-constant and varies over several decades of impedance.

There are as many different circuits for performing creating these "ficticious" functions as there are engineers to design them, but they all perform more or less the same functions as outlined above.

Useful, but dangerous in the wrong hands, those ficticious quantities, heh, heh.

-Peter K1PO

" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEC775E.9B88403B@IEEE.org...
> "Peter O. Brackett" wrote:
> > Heh, heh... you fool, those instruments that you use are already measuring I

> > and V and only have their scales marked with "power". That stupidity on
the
> > part of the meter manufacturers is what makes you have to do a manual
> > conversion back to I and V. I'll bet you feel cheated now!
>
> I realize all the above and I don't mind. As a matter of fact, my
> home-brewed SWR meter has a DC voltage output which is proportional
> to the RF voltage, and a DC voltage output which is proportional
> to the RF current.
> --
> http://www.mindspring.com/~w6rca
>
>
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2233. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 05:30:14 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cita1sin1@nntp9.atl.mindspring.net>
Source record: 164682

Cecil:

Yes, I usually have a couple of "hanks" of various lengths of 450 Ohm ladder line hanging around for just that purpose.

I either put them in line or hang them across as a stub, whenever I find that my "tuner" can't reach a match.

Real handy for field day...

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AEC79BA.69620206@IEEE.org...
> "Peter O. Brackett" wrote:
> > And... as the stauchest supporter on the NG of transmission line
> > manufacturers, I am sure you will say the same things about an appropriately
> > chosen "hank" of transmission line as you have about antenna tuners.
>
> Personally, I recommend not using antenna tuners at all and I don't use
> one. But alas, they are so ingrained into amateur radio that I have had
> little effect. But in general, anything that can be done with an antenna tuner
> can be done with one or two pieces of series/parallel transmission line.
> Also, everyone who understands my idea of varying the length of transmission
> line and has actually tried it, was suitably impressed with the results,
> especially the hams who were having trouble matching with their transceiver
> internal antenna tuner. Actually, making the internal antenna tuner happy
> may be the biggest attraction for varying the length of the feedline.
> --
> http://www.mindspring.com/~w6rca
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2234. Re: new ham first HF Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 07:44:34 UTC
From: Per Enocson <08.7676765@telia.com>
Message-ID: <CJ8H6.11227$4N4.2370347@newsc.telia.net>
Source record: 164683

Hi Mark,

There is no vertical which will beat a 135 cf dipole, if you get it up at a height of 40 feet or so. I have made the comparison here between an R5 and a couple of full size wire verticals on 14 Mhz and up.In particular, when you get above 18 Mhz, there is a noticeable gain difference in favour of the cf zepp. It will give you several low angle nodes on the higher bands, plus that it will be a good allround antenna on the lower bands. Mine work e.g. fine on 40 m, better than an ordinary 40 m dipole. And the price difference.... So if you have the space, and some height, don't hesitate!Another excellent, inexpensive mulitband antenna is a full siaze horizontal loop, see the ARRL Hanbook article "Loop the Skywire" for details.

73 s de Per/SM0WRA near Stockholm, Sweden
Mark Langberg <mlangberg@mediaone.net> wrote in message news:GsXG6.15617$qD1.343340@typhoon.mw.mediaone.net...
> I'm agonizing over my first HF antenna. My choices are a balanced dipole
> (135' wire center fed with ladder line and an antenna tuner) vs. an all band
> verical, like the cushcraft R6000 or R8 or Gap Titan DX. Which will give
> better gain, the dipole or the vertical? Which vertical is better of the
> above choices?
> Has anyone had any experience with the RadioShack 36' telecoping antenna
> mast (ground mounted with guy wires)? I would use it to support one end of
> the dipole on the corner of my property where I have no trees.
> If I use a dipole where one end is supported by a tree, should I use a
> spring (what type?) to allow for swaying of the tree? (it's a tall spruce).
>
>

2235. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 08:50:37 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9cj90tgg10@bashir.peak.org>
Source record: 164684

VE9SRB <srbest@att.net> wrote:

:> I don't think there is a basic disagreement here at all. The problem is
:> that so many hams read their SWR device that says "100 watts" forward,
:> and "20 watts" reflected, and believe they are actually losing 20 watts
:> since it is being reflected at the antenna (and that reading cannot be
:> true because of unknown feedline loss that attenuates the reflected wave
:> as it returns).

: I would look at this as losing 20 watts. What is tells you is that you are
: delivering 80 watts of power to the system. At least we all can agree on
: that.

Hm. I just put a wattmeter inline on a transmitter/antenna system where I know that the transmitter can only deliver 100 watts into a perfectly matched system - at least, that is what the wattmeter reads when the load is a dummy load.

Now, when I detuned an antenna to get 20 watts reflected, and rematched the transmitter, it showed approximately 120 watts (actually a bit less) forward power. Seems to me that most of that reflected power is being rereflected back towards the antenna.

Was this a coincidence or a problem with the meter? Was the transmitter delivering more than 100 watts into the mismatch? Am I missing something here?

The meter is at the transmitter, not the antenna.

--
Bill Nelson (billn@peak.org)

2236. Re: Home brew 430 mhz base ant-problems.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 10:46:32 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cjfl7$f2j$1@neptunium.btinternet.com>
Source record: 164686

The antenna has been designed to work above a large metal sheet of
indefinite extent. This is completely different from 4 1/4-wave
radials. It's not surprising the feedpoint impedance has changed.

To tune a 5/8-wave vertical against 1/4-wave radials requires a
bottom-end loading coil. The coil should have a reactance of
roughly 400 ohms.

You could also try increasing the length of the radials to
3/8-waves.

But does the antenna get out ? If so why worry about swr ?

--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

Keith <kwatkins@tr15.freeserve.co.uk> wrote in message
news:9chk5jrnl1@newsg2.svr.pol.co.uk...
> Using mobile aerial fitted to ground plane ,unable to get the
vswr down,4x 8
> inch radials.VSWR ok on vehicle roof.
> As far as I know the aerial is half wave + 5/8 ths.
> Any ideas please.Keith.G8IXN
>
>

2237. The Wireman question....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 10:55:01 UTC
From: Bill Russell <willy@global2000.net>
Message-ID: <5qgqeto3lcurutcfs99in730k7qf4nahuv@4ax.com>
Source record: 164685

Is the stuff sold by this company any good....coax for example. And
finally is the "Bury-Flex" RG-8 type coax any good. I plan to use it
for both direct-bury and as regular coax, not buryed.
Thanks

2238. Re: The Wireman question....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 11:02:14 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AED4636.964A08A7@hiwaay.net>
Source record: 164687

HIs stuff is good.

Press Jones, who is "the Wireman", is the first source for good wire and related stock. He has good stock, backs it up, and ships quick. Has good info, too.

Bill-W4BSG

Bill Russell wrote:
>
> Is the stuff sold by this company any good....coax for example. And
> finally is the "Bury-Flex" RG-8 type coax any good. I plan to use it
> for both direct-bury and as regular coax, not buryed.
> Thanks

2239. Re: Info on W9INN Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 11:03:44 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3aed4690_1@news.cybertours.com>
Source record: 164688

"GaryH" <garyhendricks@hotmail.com> wrote in message
news:FmUG6.20$_n4.2139@news2.atl...
> Any of you guys used the W9INN multiband antennas? I
> have moved into a location that a one feed line antenna and
> no tuner would be an advantage. Do these antennas perform
> or is it another B&W type design?
>
>
>
> --
> Web Publishing and PC Specialist
> www.tentec.com
>
> Remember 1950
> www.its1950again.com
>
>
Hi These Antennas are basic dipoles and would work as well as most any
dipole. they are not like the B&W broadband antennas and should preform well
given the constrants that you have listed.

73 Dave

2240. 30-88 MHz Log Periodic?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 12:26:32 UTC
From: John K Scoggin <aat3bf@conectiv.com>
Message-ID: <9cjlln0v5c@enews2.newsguy.com>
Source record: 164693

I am searching for a manufacturer of log periodics capable of covering 30-88 MHz.
The power requirement is low (50 watts or so). This is for a National Guard application using SINCGARS radios.

Any leads?

73's,
John
N3SKO/AAT3BF/AAM3O

2241. Re: The Wireman question....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 12:38:27 UTC
From: A Marzo <aerome@evl.net>
Message-ID: <3AED5CC3.702FA513@evl.net>
Source record: 164689

How about a website address? Does he maintain one?
Thanks

Bill Aycock wrote:

> HIs stuff is good.
>
> Press Jones, who is "the Wireman", is the first source for good wire and
> related stock. He has good stock, backs it up, and ships quick. Has good
> info, too.
>
> Bill-W4BSG
>
> Bill Russell wrote:
> >
> > Is the stuff sold by this company any good....coax for example. And
> > finally is the "Bury-Flex" RG-8 type coax any good. I plan to use it
> > for both direct-bury and as regular coax, not buryed.
> > Thanks

2242. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 12:50:35 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cjn2r$5qg$0@208.207.71.162>
Source record: 164690

W6RCecilA wrote:
>
> VE9SRB wrote:
> > There is no such thing as a totally reflecting "virtual short". This
> > concept should never have been introduced to the amateur community. It is
> > technically incorrect.
>
> Yes, there is such a thing as a totally reflecting "virtual short". It
> is a *concept* introduced by Walter Maxwell. The *concept* describes what
> happens to *scalar* reflected power (not what happens to the associated
> phasors). A virtual short, like thousands of other concepts, exists only
> in human minds.
>
> A lot of other useful concepts are technically incorrect. Your assumption
> that Z0 is purely resistive is technically incorrect. Should a resistive Z0
> never have been introduced to the amateur community? The assumption that the
> conditions on an SWR circle ever exist is technically incorrect. Should SWR
> circles not have been introduced to the amateur community? The assumption
> that there is such a thing as an infinite series is technically incorrect.
> Should infinite series not have been introduced. The assumption that any
> number of actual digits can represent the number pi is technically incorrect.
> Should pi not have been introduced as a digital number? I could go on forever.
>
> Remember this diagram from older ham publications? (In fixed font)
>
> ---->---->---->---->--- Forward Power ---->---->---->---->---->----> Load
> ---->---->---->---->---->-->---->---->---->---->---
> / \
> \ Reflected Power /
> <----<----<----<----<----<----<----<---<----<----<-
>
> Is this diagram technically correct? Nope, but it is a useful graphic
> of what happens to *scalar* power in a system with reflections. If you
> want everything perfectly technically correct, you will lose 99.9999%
> of hams. I seriously doubt if you really know what is 100% technically
> correct.

Cecil: Thank you for the insightful post. It certainly helps to put it
all into perspective.
Every concept that finds widespread usage must be concieved and
promoted by someone. The 'virtual short circuit' is no exception. When I
find zero reflected appearing at the input of my tuner and lots of it on
the antenna side, its the only practical explanation for complex
processes that have no other that is within the comprehension of the

vast majority of hams.
Walt's works have probably shed more light on amateur antenna and feedline systems that that of any other writer.

Thanks, Walt.

Dick

2243. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 12:53:03 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cjn7f$5qg$1@208.207.71.162>
Source record: 164691

Richard Clark wrote:
>
> On Sun, 29 Apr 2001 10:22:34 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >VE9SRB wrote:
> >> There is no such thing as a totally reflecting "virtual short". This
> >> concept should never have been introduced to the amateur community. It is
> >> technically incorrect.
> >>
> >Yes, there is such a thing as a totally reflecting "virtual short". It
> >is a *concept* introduced by Walter Maxwell. The *concept* describes what
> >happens to *scalar* reflected power (not what happens to the associated
> >phasors). A virtual short, like thousands of other concepts, exists only
> >in human minds.
>
> Hi Cecil,
>
> Sorry, but I doubt seriously if your version of Walt's "virtual short"
> and Walt's version of Walt's "virtual short" are the same thing. THIS
> is the fundamental problem with it in the first place.
>
> As this topic hasn't been visited in a long time, and I having seen no
> new discussion that has changed the conditions of its description from
> back then, I would suggest that it is a concept that does not serve
> any purpose that a simpler, more easily understood description could.
>
> In short, it is an incorrect and unnecessary elaboration that both
> confuses and leads a novice down the wrong path. I would also put it
> to you, or Walt, that proof of its utility is defeated in proportion
> to the number of postings spent to explain it. Back then, it pushed
> the utility to 1/600th or so. These few additions only depress it
> further.

Rich, from the perspective of a ham who doesn' have the advantage of
extensive higher math skills nor an engineering degree, I must
respectfully disagree.

73, Dick Wï¿½EX

2244. Re: The Wireman question....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 12:56:36 UTC
From: KMA Antennas <nospam@nospam.net>
Message-ID: <t7oqet8tspspgm2a2iko11hi0vetivql2f@4ax.com>
Source record: 164692

Anything you buy from this company is going to be good, that's the
kind of people they are. I have used their connectors, baluns and
coax. They are pleasant to talk with and seem to go the extra
distance to see you're satisfied.
Ed Griffin
KMA Antennas

On Mon, 30 Apr 2001 06:55:01 -0400, Bill Russell
<willy@global2000.net> wrote:

>Is the stuff sold by this company any good....coax for example. And
>finally is the "Bury-Flex" RG-8 type coax any good. I plan to use it
>for both direct-bury and as regular coax, not buryed.
>Thanks

KMA Antennas
VHF - UHF - HF log periodics
http://www.kmaantennas.com

Dayton fleamarket spaces 2828 - 2831

help support qsl.net with a donation
https://proxy.qsl.net/donation

2245. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 13:21:42 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <GFdH6.41904$RF1.3573301@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164694

"Bill Nelson" <billn@spock.peak.org> wrote in message
news:9cj90tgg10@bashir.peak.org...
> VE9SRB <srbest@att.net> wrote:
>
> :> I don't think there is a basic disagreement here at all. The problem
is
> :> that so many hams read their SWR device that says "100 watts" forward,
> :> and "20 watts" reflected, and believe they are actually losing 20 watts
> :> since it is being reflected at the antenna (and that reading cannot be
> :> true because of unknown feedline loss that attenuates the reflected
wave
> :> as it returns).
>
> : I would look at this as losing 20 watts. What is tells you is that you
are
> : delivering 80 watts of power to the system. At least we all can agree
on
> : that.
>
> Hm. I just put a wattmeter inline on a transmitter/antenna system where I
> know that the transmitter can only deliver 100 watts into a perfectly
matched
> system - at least, that is what the wattmeter reads when the load is a
dummy
> load.
>
> Now, when I detuned an antenna to get 20 watts reflected, and rematched
> the transmitter, it showed approximately 120 watts (actually a bit less)
> forward power. Seems to me that most of that reflected power is being
> rereflected back towards the antenna.
>
> Was this a coincidence or a problem with the meter? Was the transmitter
> delivering more than 100 watts into the mismatch? Am I missing something
> here?
>
> The meter is at the transmitter, not the antenna.
>
> --
> Bill Nelson (billn@peak.org)
>

Hi Bill:

Your statement "rematched the transmitter" answers the question. I assume
that you have an internal tuner in the transmitter. When the tuner is

adjusted to a matched input impedance, the transmitter will continue to deliver 100 watts of power to the system. On the surface, it appears that the full 20 watts of reflected power is re-reflected, but it is not. One of my posts yesterday briefly described the operation of a tuner.

Steve VE9SRB

2246. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 13:26:44 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <oKdH6.48298$IJ1.3667352@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164695

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEC323C.16103395@IEEE.org...
> VE9SRB wrote:
> > This sounded too harsh. My apologizes to Walt. I do believe the
concept to
> > be technically incorrect but it has helped a great number of hams in
> > understanding a lot of other concepts associated with the topic, and it
does
> > not at all diminish the great number of valuable contributions that Walt
has
> > made to this community. Sorry for my flip answer Walt.
>
> I took you to task for it in another posting and then read this one and
> said essentially what you said above. Sorry.

Please don't apologize for taking me to task - we all need it once in
awhile.

Anyway, my first response was too quick and unnecessary.

Steve

2247. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 13:29:00 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <wMdH6.48300$IJ1.3665780@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164696

What you describe below is not what Walt called a "virtual short circuit".

Steve

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9cheff$ad7$1@slb5.atl.mindspring.net...
> Thread:
>
> Ahem.... Walt is right.
>
> The concept of a virtual short circuit has been around for a long time...
>
> It is widely used in the analysis of ideal operational amplifier circuits.
>
> In that "theory" one assumes that with forward gain approaching infinity,
> say 100dB or more, under negative feedback the (-) and (+) inputs to the
> operational amplifier may be considered to be a "virtual short circuit".
>
> A "virtual short circuit" has the property that the voltage across it will
> always be zero, even though it does not allow current to flow through it.
> Although not found in nature in it's ideal state, one may approach the
> conditions of a virtual short circuit as closely as one wishes for most
> practical purposes. I believe, but I could be corrected by Bob Pease,
heh,
> heh... that Dave Philbrick originated the concept of virtual short
circuit.
>
> Of course as anyone familiar with modern analog circuitry is aware, there
> are billions of IC operational amplifiers in use today, and so there must
> really be billions of "virtual short circuits" operating out there.
>
> A complementary analog to the virtual short circuit is the so called
> "current conveyor", which conveys current from one node to another but at
> different impedance levels. The "current conveyer" was "invented" by Adel
> S. Sedra, now the Provost of the University of Toronto, back in the late
> 60's, at least one analog IC manufacturer has marketed the current
conveyor.
>
> Another couple of related concepts are the concepts of "nullor" and
> "norator"... not widely spoken of today, but quite popular back in the
60's
> and 70's.
>
> But... all of these concepts and fictions aside, I still believe that "All
> you really need is I and V". Heh, heh...

>
> And reflection mechanics is made more complicated than it needs to be!
>
> What about those "imaginary resistors"?
>
> -Peter K1PO
>
>
>
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3AEC31BA.7CBC2D1A@IEEE.org...
> > VE9SRB wrote:
> > > There is no such thing as a totally reflecting "virtual short". This
> > > concept should never have been introduced to the amateur community.
It
> is
> > > technically incorrect.
> >
> > Yes, there is such a thing as a totally reflecting "virtual short". It
> > is a *concept* introduced by Walter Maxwell. The *concept* describes
what
> > happens to *scalar* reflected power (not what happens to the associated
> > phasors). A virtual short, like thousands of other concepts, exists only
> > in human minds.
> >
> > A lot of other useful concepts are technically incorrect. Your
assumption
> > that Z0 is purely resistive is technically incorrect. Should a resistive
> Z0
> > never have been introduced to the amateur community? The assumption that
> the
> > conditions on an SWR circle ever exist is technically incorrect. Should
> SWR
> > circles not have been introduced to the amateur community? The
assumption
> > that there is such a thing as an infinite series is technically
incorrect.
> > Should infinite series not have been introduced. The assumption that any
> > number of actual digits can represent the number pi is technically
> incorrect.
> > Should pi not have been introduced as a digital number? I could go on
> forever.
> >
> > Remember this diagram from older ham publications? (In fixed font)
> >
> > ---->---->---->---->--- Forward Power ---->---->---->---->---->---->
Load
> > ---->---->---->---->---->-->---->---->---->---->---
> > / \

> > \ Reflected Power /
> > <----<----<----<----<----<----<----<---<----<----<-
> >
> > Is this diagram technically correct? Nope, but it is a useful graphic
> > of what happens to *scalar* power in a system with reflections. If you
> > want everything perfectly technically correct, you will lose 99.9999%
> > of hams. I seriously doubt if you really know what is 100% technically
> > correct.
> > --
> > http://www.mindspring.com/~w6rca
> >
> >
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----
>
>

2248. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 13:57:59 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AED6F67.FE938C16@IEEE.org>
Source record: 164697

Bill Nelson wrote:
> Now, when I detuned an antenna to get 20 watts reflected, and rematched
> the transmitter, it showed approximately 120 watts (actually a bit less)
> forward power. Seems to me that most of that reflected power is being
> rereflected back towards the antenna.

The argument is whether all of it is re-reflected or some of it simply re-routed. To some, this distinction is very, very important. To me, it is the end result that matters. The re-routed power suffers the same ultimate fate as the re-reflected power even if the re-routed power has not undergone the technicalities of re-reflection.

All this (IMO) much ado about nothing is because some of the reflected power goes through a destructive interference process instead of a reflection process. It is merely a technicality as the power from the destructive interference process and the power from the re-reflection process join the forward power and become indistinguishable from one another.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2249. Re: Attic mounted 6m antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 14:08:26 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010430100826.07317.00001569@ng-ce1.aol.com>
Source record: 164698

>Also, how large is the arrow antenna? It looks like a nice
>item and the price isn't bad at all. Thanks again!!
>

I had one of these. They are nice antennas, solidly built. The radial is 1/4
wave, if i remember correctly, but the radials go down at a 45 degree angle, so
I am not sure that would fit in the attic. The MFJ antenna I suggested has
radials that go straight out at 90 degrees.
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com
http://egroups.com/group/vhfallmode

2250. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 14:11:04 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <YneH6.5454$kA1.227786@bgtnsc04-news.ops.worldnet.att.net>
Source record: 164699

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AECF0C9.FC916BBE@IEEE.org...
> VE9SRB wrote:
> > At the tuner output, the 75 watts of forward power delivered through the
> > tuner combines with the 8.33 watts of re-reflected power to become
133.33
> > Watts of total forward power. In-phase forward power in a transmission
line
> > adds as Ptot = P1 + P2 + 2 sqrt(P1 * P2).
>
> Steve, I can't sleep thinking about this so let's take a close look at
> your equation. Pg=100w, generated power Pr=33.33w, reflected power
> Pf=133.33w, forward power. Pr/Pf = rho^2 = 0.25 rho is the reflection
> coefficient.
>
> Your P1 equals Pg*(1-Pr/Pf) Your P2 equals Pr*Pr/Pf so rewriting your
> equation: Pf = Pg*(1-Pr/Pf) + Pr*Pr/Pf + 2 sqrt(Pg*(1-Pr/Pf)*Pr*Pr/Pf)
>
> Rewriting: Pf = Pg*(1-Pr/Pf) + Pr*Pr/Pf + 2
sqrt((Pg*Pr/Pf)*(Pr*(1-Pr/Pf)))
>
> Pg*Pr/Pf (25w) is the part of Pg that is involved in the destructive
interference
> Pr*(1-Pr/Pf) (25w) is the part of Pr that is involved in the destructive
> interference
>
> So what we have is Pf equals 75w+8.33w+50w = 133.33w and that 50w term is
> the total of the two powers involved in the destructive interference, i.e.
> those powers join the forward power just like the re-reflected power does.
> Exactly why the powers involved in the destructive interference join the
> forward power is an interesting topic but the bottom line is that it acts
> like the re-reflected power and joins the forward power. One wonders, for
> the sake of simplicity, why terms that act the same cannot be just added
> together?
>
> To summarize Pg = Pg*(1-Pr/Pf) + Pg*Pr/Pf = 75w + 25w = 100w
> Pr = Pr*(1-Pr/Pf) + Pr*Pr/Pf = 25w + 8.33w = 33.33w
> Pf = Pg + Pr = 100w + 33.33w = 133.33w (remains true)
> --

Cecil, I'll lose sleep trying to keep up with this discussion.

Pg is the power delivered to the system. Pf is the forward power in the
line. Pr is the reflected power in the line.

The fundamental relationship between these powers is Pg = Pf - Pr. Conceptually, this means that the power delivered to a system is equal to the total net forward power minus the total net reflected power. No other conceptual relationships are implied by the mathematical relationship.

One could mathematically rewrite the relationship as Pf = Pg + Pr. Mathematically, this means that the total forward power is equal to the delivered power plus the reflected power. It is also mathematically true that the total reflected power is equal to the forward power minus the delivered power: Pr = Pf - Pg. This does not conceptually mean that the reflected power is a result of any physical (or virtual) mechanism that causes the delivered power to be subtracted from the forward power. At the same time, there is no physical (or virtual) mechanism that causes the reflected power to add to the delivered power. Delivered power is a steady state result of how the forward and reflected powers (to be correct, I should be saying voltage and current) develop in the system. Delivered power is not a forward power and it is not a component of the total forward power.

At a tuner output, the total forward power is a direct result of how the forward driving voltage and current from the transmitter add to the re-reflected voltage and current developed at the tuner output. The level of forward driving voltage and current developed in the transmission line by the transmitter is always a direct function of Zo. The level of re-reflected voltage and current developed at the tuner output are always a function of the impedance seen looking rearward into the tuner.

Steve VE9SRB

2251. Re: The Wireman question....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 14:14:38 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AED734E.39E256E8@hiwaay.net>
Source record: 164700

His URL is:

www.thewireman.com

73- Bill-W4BSG

A Marzo wrote:
>
> How about a website address? Does he maintain one?
> Thanks
>
> Bill Aycock wrote:
>
> > HIs stuff is good.
> >
> > Press Jones, who is "the Wireman", is the first source for good wire and
> > related stock. He has good stock, backs it up, and ships quick. Has good
> > info, too.
> >
> > Bill-W4BSG
> >
> > Bill Russell wrote:
> > >
> > > Is the stuff sold by this company any good....coax for example. And
> > > finally is the "Bury-Flex" RG-8 type coax any good. I plan to use it
> > > for both direct-bury and as regular coax, not buryed.
> > > Thanks

2252. near field directivity?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 14:28:33 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AED7691.88BC67AB@hiwaay.net>
Source record: 164701

I have an interference problem on 6M. there is a noise source that seems to be due north from my beam. The noise is about 800 Hz wide, and is, at different times, anywhere from 50.125 to 50.131 MHz. (Right- right on the calling frequency) Strength is about s9.

The problem is that my shack is due north of the beam, and I am wondering if the source could be in the house. The tower is 60 ft north of the shack, and the beam is at about 53 ft, just above an ATB34 tri-bander. THe 6M beam is an MFJ 3el Yagi. THe booms are aligned.

The geometry puts the receiver (and my computer) directly in line, but at a very depressed angle, to the beam. THe question is- is there a chance that the pattern is directive enough to "see" anything from my equipmqnt. or is it more probable that the souce is at a greater distance, and the line-up is coincidental?

opinions solicited. I dont have a portable 6M Rx to walk around with. I may need to get one.

Bill-W4BSG

2253. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 14:48:14 UTC
From: richardharrison@webtv.net
Message-ID: <29327-3AED7B2E-37@storefull-112.iap.bryant.webtv.net>
Source record: 164704

Steve, VE9SRB wrote:
"What you describe below is not what Walt called a "virtual short
circuit".

The virtual short circuit predates Walter Maxwell.

My dictionary says that "virtual" means almost having the power, force,
or effect of the real thing, though not actually or expressly such.

"Almost" gives room for endless argument.

Engineers must accept "close enough for practical purposes" to produce
effective designs. There may be no perfect reflection or lossless
transmission line, etc. but there are plenty of compromises "good enough
for practical purposes".

Best regards, Richard Harrison, KB5WZI

2254. EZNEC and wireframe mobile

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 14:50:38 UTC
From: Larry Benko <benko@aztek-eng.com>
Message-ID: <3AED7BBE.6D755727@aztek-eng.com>
Source record: 164702

I was fooling around with EZNEC3 to try to see some of the effects of antenna placement on the pattern in a mobile setup. I understand the basic pattern distortions and would like to use EZNEC to show them. I built a wireframe model of the vehicle and wonder what to do next. I assume the wireframe model should be placed the same height above ground as the actual vehicle but should I connect the wireframe model to actual ground via some capacitance? Approximately how much? My vehicle is a Toyota 4 Runner.

Thanks and 73,
Larry Benko, W0QE

2255. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 15:12:12 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AED80CC.C50D001@IEEE.org>
Source record: 164703

VE9SRB wrote:
> The fundamental relationship between these powers is Pg = Pf - Pr.
> Conceptually, this means that the power delivered to a system is equal to
> the total net forward power minus the total net reflected power. No other
> conceptual relationships are implied by the mathematical relationship.

I don't know what that means. It doesn't take a rocket scientist to
figure out that Pg = Pf - Pr and Pf = Pg + Pr are different forms of
the same equation. If I equals E/R doesn't R equal E/I?

> This does not conceptually mean that the
> reflected power is a result of any physical (or virtual) mechanism that
> causes the delivered power to be subtracted from the forward power.

Who said it did? With a Z0-match in the system, the forward energy is
the *result* of the addition of the generated energy and the reflected
energy. Otherwise, the conservation of energy principle would be violated.

> At the
> same time, there is no physical (or virtual) mechanism that causes the
> reflected power to add to the delivered power.

Of course there is, Steve. It's called the conservation of energy principle.
In a system with a Z0-match, if the reflected energy didn't add to the
generated energy to yield the forward energy, the conservation of energy
principle would be violated.

> At a tuner output, the total forward power is a direct result of how the
> forward driving voltage and current from the transmitter add to the
> re-reflected voltage and current developed at the tuner output. The level
> of forward driving voltage and current developed in the transmission line by
> the transmitter is always a direct function of Zo. The level of
> re-reflected voltage and current developed at the tuner output are always a
> function of the impedance seen looking rearward into the tuner.

No argument there but I will add that an antenna system cannot violate the
conservation of energy principle. Assuming that no power is dissipated at
a Z0-match, all of the the reflected energy has no choice except to join
the generated energy and head back toward the load. That there exist two
mechanisms, destructive interference and re-reflection, seems to me to be
splitting hairs since these two energies wind up indistinguishable from
each other on their way back to the load.
--
http://www.mindspring.com/~w6rca

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2256. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 15:21:05 UTC
From: richardharrison@webtv.net
Message-ID: <29050-3AED82E1-200@storefull-117.iap.bryant.webtv.net>
Source record: 164707

Steve, VE9SRB wrote:
"Delivered power is not a forward power and it is not a component of the total forward forward power."

There is power delivered by the sender and power delivered to the antenna. For practical purposes with an almost lossless transmission line, delivered power is the same at both ends of the transmission line. No space exists for long-term storage of accumulated energy in the line. So, what goes in must soon equal what comes out of the line. Additional energy in the line is only the circulating energy represented by the directional wattmeter as reflected power.

Delivered power must be a component of the total forward power, just as Bird says it is.

Best regards, Richard Harrison, KB5WZI

2257. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 15:23:27 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <PrfH6.41965$RF1.3581967@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164705

I think we are talking about two different virtual short circuits in transmission line systems.

One is the virtual short circuit that exists every 1/2 WL away from the end of a lossless transmission line terminated in a short circuit. This virtual short circuit exists because the total voltage at these points becomes zero as a result of the forward and rearward traveling voltages being 180 degrees out of phase at these points. There are no wave reflections occurring at these virtual short circuit points. This virtual short circuit is technically correct.

Walt's virtual short circuit is the one he described as existing at the match point in a transmission line. He indicated that at a match point in a transmission line a total re-reflection of power occurs. Thus he described this as a virtual short circuit to the reflected wave. This entire concept is technically incorrect.

Steve VE9SRB

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:29327-3AED7B2E-37@storefull-112.iap.bryant.webtv.net...
> Steve, VE9SRB wrote:
> "What you describe below is not what Walt called a "virtual short
> circuit".
>
> The virtual short circuit predates Walter Maxwell.
>
> My dictionary says that "virtual" means almost having the power, force,
> or effect of the real thing, though not actually or expressly such.
>
> "Almost" gives room for endless argument.
>
> Engineers must accept "close enough for practical purposes" to produce
> effective designs. There may be no perfect reflection or lossless
> transmission line, etc. but there are plenty of compromises "good enough
> for practical purposes".
>
> Best regards, Richard Harrison, KB5WZI
>

2258. Re: near field directivity?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 15:38:01 UTC
From: richardharrison@webtv.net
Message-ID: <29050-3AED86D9-201@storefull-117.iap.bryant.webtv.net>
Source record: 164706

Bill, W4BSG wrote:
"I don`t have a portable 6 M Rx to walk around with."

There are 49-MHz super-regen kiddie walkie-talkies, baby monitors, and even cordless exension phones that Bill might borrow to track down the 50.1xxx MHz interference.

Best regards, Richard Harrison, KB5WZI

2259. Joining different coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 15:45:23 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3aed8975$0$62148$bbae4d71@news.net-link.net>
Source record: 164709

Will weird things happen or big losses or mis-matches occur with different typs of coax strung together? For example, hooking up various lengths of 9913, 9913F, RG-8, RG-213, RG-214, RG-8X and 1/2" or 3/4" CATV line? I need to go a long way and have many short pieces laying around and am thinking about hooking them up with barrel connectors and seeing how it plays! First run is about 250 feet with about 50 feet of RG-213 (2 pieces), 100 feet of RG-214 (2 pieces) and 100 feet of 9913 (1 piece). This is just a temporary set up. I need to get a UHF antenna back to hard line that I disconnected to hook up a 2 meter beam, and was going to just hook up the HF beam to this coax (it is fed with 1/2" hardline now) until I can get another run of hardline together and out and up the tower for the new 2 meter beam. Antennas are 100 feet up or more and about 120 feet or so from the shack.

2260. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 15:46:40 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AED88E0.C3FA3851@IEEE.org>
Source record: 164708

VE9SRB wrote:
> Walt's virtual short circuit is the one he described as existing at the
> match point in a transmission line. He indicated that at a match point in a
> transmission line a total re-reflection of power occurs. Thus he described
> this as a virtual short circuit to the reflected wave. This entire concept
> is technically incorrect.

The entire concept of an SWR circle is technically incorrect also, Steve.
Do you advocate getting rid of the Smith Chart?

The entire quantity of reflected energy winds up going the same direction
to the same place as it would have if it had been 100% re-reflected. Is it
so important to split hairs and say part of the reflected energy is re-reflected
and part is re-routed along the identical path as the part that was re-reflected?

This discussion reminds me of the rapist defense that he never touched
her because molecules never really touch each other.
--
http://www.mindspring.com/~w6rca

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2261. Re: The Wireman question....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 15:49:19 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3aed8a60$0$62150$bbae4d71@news.net-link.net>
Source record: 164711

I have some and some of it is buried and some is exposed to direct sun. No problems for over 6 years now. I think it is 9913F equivalent. I got a great ham fest deal on a 500 foot spool. I would buy this type again but in RG-213 or RG-214 type. I like the jacket--it is tougher than most. Holds up well to shovels, rakes, tractors and wind rubbing it on trees and towers!
Bill Russell wrote in message
<5qgqeto3lcurutcfs99in730k7qf4nahuv@4ax.com>...
>Is the stuff sold by this company any good....coax for example. And
>finally is the "Bury-Flex" RG-8 type coax any good. I plan to use it
>for both direct-bury and as regular coax, not buryed.
>Thanks

2262. Re: near field directivity?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 15:50:27 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <7RfH6.85101$xN4.5839588@news1.sttls1.wa.home.com>
Source record: 164710

"Bill Aycock" <baycock@hiwaay.net> wrote in message
news:3AED7691.88BC67AB@hiwaay.net...
> I have an interference problem on 6M. there is a noise source that seems
> to be due north from my beam. The noise is about 800 Hz wide, and is, at
> different times, anywhere from 50.125 to 50.131 MHz. (Right- right on
> the calling frequency) Strength is about s9.
>
> The problem is that my shack is due north of the beam, and I am
> wondering if the source could be in the house. The tower is 60 ft north
> of the shack, and the beam is at about 53 ft, just above an ATB34
> tri-bander. THe 6M beam is an MFJ 3el Yagi. THe booms are aligned.
>
> The geometry puts the receiver (and my computer) directly in line, but
> at a very depressed angle, to the beam. THe question is- is there a
> chance that the pattern is directive enough to "see" anything from my
> equipmqnt. or is it more probable that the souce is at a greater
> distance, and the line-up is coincidental?
>
> opinions solicited. I dont have a portable 6M Rx to walk around with. I
> may need to get one.
>
> Bill-W4BSG
>

Hi Bill,

You are describing a situation that leaves open the possibility of home made noise. Yes, the beam will definitely pick up signals at this depressed angle.

I suspect you have already tried the simple things like turning off your computer and/or monitor while listening to the noise. Of course the TV also generates a lot of RF noise. I suspect that devices such as digital weather stations, wireless controls (not infrared), wireless computer networks, and similar devices can also be the culprits. Also garage door openers and portable phones. Flourescent lights can also be the problem but they are usually broader banded than the signal you describe. I have also seen timers and light dimmers cause a problem, both broader banded noise.

Good luck on finding the problem.

73, Roger, W7WKB

2263. FA: Decibel Filter-Combiner

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 16:09:40 UTC
From: Dave <jeronamo@REMOVEaol.com>
Message-ID: <L7gH6.10$9m4.9667@news.pacbell.net>
Source record: 164712

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1234378326

2264. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 16:55:04 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <INgH6.48441$IJ1.3682656@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164713

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AED88E0.C3FA3851@IEEE.org...
> VE9SRB wrote:
> > Walt's virtual short circuit is the one he described as existing at the
> > match point in a transmission line. He indicated that at a match point
in a
> > transmission line a total re-reflection of power occurs. Thus he
described
> > this as a virtual short circuit to the reflected wave. This entire
concept
> > is technically incorrect.
>
> The entire concept of an SWR circle is technically incorrect also, Steve.
> Do you advocate getting rid of the Smith Chart?
>
> The entire quantity of reflected energy winds up going the same direction
> to the same place as it would have if it had been 100% re-reflected. Is it
> so important to split hairs and say part of the reflected energy is
re-reflected
> and part is re-routed along the identical path as the part that was
re-reflected?
>

We are not splitting hairs here. We are talking about technical concepts,
one valid and one not valid. A total re-reflection of power simply does not
occur at the output of a tuner. To say that it does is not a matter of
semantics, nor is it a matter of interpretation. It is simply incorrect.
It is incorrect from a circuit analysis approach and it is incorrect from a
transmission line analysis approach.

In order for the steady state impedance match to occur, the correct portion
of reflected power must be delivered rearward through the tuner to the tuner
input. If it did not, the steady state match would not occur. If you
prevented the reflected power from arriving at the tuner output, the steady
state match would cease to exist. [If it was totally re-reflected, and no
portion was delivered rearward through the tuner, then it would not matter.]

The basic issue, as I see it, is that you assume that 100 watts of the
"delivered" power travels through the tuner and is a forward power in the
transmission line to which the re-reflected power is added (never mind that
100 Watts + 33.33 Watts is not equal to 133.33 Watts). If you could see
that this delivered power does not travel into the transmission line as a
forward power, it would all make sense.

Steve VE9SRB

> This discussion reminds me of the rapist defense that he never touched
> her because molecules never really touch each other.
> --
> http://www.mindspring.com/~w6rca
>
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2265. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 17:16:48 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <46hH6.85362$xN4.5860509@news1.sttls1.wa.home.com>
Source record: 164714

Hi Steve,

I am comparing reflected power to the modulation in an AM transmitter. Is it correct to relate the two as both being voltages superimposed on the plate voltage of the amplifier?

73, Roger, W7WKB

"VE9SRB" <srbest@att.net> wrote in message news:INgH6.48441$IJ1.3682656@bgtnsc05-news.ops.worldnet.att.net...
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3AED88E0.C3FA3851@IEEE.org...
> > VE9SRB wrote:
> > > Walt's virtual short circuit is the one he described as existing at the
> > > match point in a transmission line. He indicated that at a match point
> in a
> > > transmission line a total re-reflection of power occurs. Thus he
> described
> > > this as a virtual short circuit to the reflected wave. This entire
> concept
> > > is technically incorrect.
> >
> > The entire concept of an SWR circle is technically incorrect also, Steve.
> > Do you advocate getting rid of the Smith Chart?
> >
> > The entire quantity of reflected energy winds up going the same direction
> > to the same place as it would have if it had been 100% re-reflected. Is it
> > so important to split hairs and say part of the reflected energy is
> re-reflected
> > and part is re-routed along the identical path as the part that was
> re-reflected?
> >
>
> We are not splitting hairs here. We are talking about technical concepts,
> one valid and one not valid. A total re-reflection of power simply does not
> occur at the output of a tuner. To say that it does is not a matter of
> semantics, nor is it a matter of interpretation. It is simply incorrect.
> It is incorrect from a circuit analysis approach and it is incorrect from

a
> transmission line analysis approach.
>
> In order for the steady state impedance match to occur, the correct
portion
> of reflected power must be delivered rearward through the tuner to the
tuner
> input. If it did not, the steady state match would not occur. If you
> prevented the reflected power from arriving at the tuner output, the
steady
> state match would cease to exist. [If it was totally re-reflected, and no
> portion was delivered rearward through the tuner, then it would not
matter.]
>
> The basic issue, as I see it, is that you assume that 100 watts of the
> "delivered" power travels through the tuner and is a forward power in the
> transmission line to which the re-reflected power is added (never mind
that
> 100 Watts + 33.33 Watts is not equal to 133.33 Watts). If you could see
> that this delivered power does not travel into the transmission line as a
> forward power, it would all make sense.
>
> Steve VE9SRB
>
>
> > This discussion reminds me of the rapist defense that he never touched
> > her because molecules never really touch each other.
> > --
> > http://www.mindspring.com/~w6rca
> >
> >
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>

2266. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 17:21:41 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <FahH6.42046$RF1.3591488@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164715

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AED80CC.C50D001@IEEE.org...
> VE9SRB wrote:
> > The fundamental relationship between these powers is Pg = Pf - Pr.
> > Conceptually, this means that the power delivered to a system is equal
to
> > the total net forward power minus the total net reflected power. No
other
> > conceptual relationships are implied by the mathematical relationship.
>
> I don't know what that means. It doesn't take a rocket scientist to
> figure out that Pg = Pf - Pr and Pf = Pg + Pr are different forms of
> the same equation. If I equals E/R doesn't R equal E/I?
>
> > This does not conceptually mean that the
> > reflected power is a result of any physical (or virtual) mechanism that
> > causes the delivered power to be subtracted from the forward power.
>
> Who said it did? With a Z0-match in the system, the forward energy is
> the *result* of the addition of the generated energy and the reflected
> energy. Otherwise, the conservation of energy principle would be violated.
>
> > At the
> > same time, there is no physical (or virtual) mechanism that causes the
> > reflected power to add to the delivered power.
>
> Of course there is, Steve. It's called the conservation of energy
principle.
> In a system with a Z0-match, if the reflected energy didn't add to the
> generated energy to yield the forward energy, the conservation of energy
> principle would be violated.
>

No it would not. The law of conservation of energy requires that the power
delivered to a lossless tuner is equal to the power delivered to the
transmission line.

Here is how the law of conservation of energy correctly applies to the
lossless tuner, using the 150 ohm antenna example I described earlier.

100 W of forward power arrives at the tuner input. 75 Watts travels as a
forward power in the transmission line. 25 Watts is reflected back towards
the transmitter. Law of conservation of energy satisfied.

33.33 Watts of reflected power arrives at the tuner input. 8.33 Watts of power is re-reflected. 25 Watts of power is delivered rearward through the tuner. Law of conservation of energy satisfied.

At this point we have satisfied the law of conservation of energy AND that fact that the level of power re-reflection is a function of the impedance terminating the line. The rearward traveling reflected wave sees the tuner output impedance as a termination (|RhoT| = 0.5). 8.33 Watts is reflected (33.33 * |0.5|^2)) and 25 Watts of power is transmitted (33.33 * [1 - |0.5|^2])

At the tuner input, there are two steady state rearward traveling waves, the 25 Watts reflected and the 25 Watts transmitted rearward through the tuner. The voltages and currents of these two waves are 180 degrees out of phase so the net rearward power flow is zero.

At the tuner output, there are two steady state forward traveling waves, the 75 Watts of forward power from the transmitter (it is not 100 Watts of forward power in the transmission line) and the 8.33 Watts of re-reflected power. The voltages and currents from these two waves combine such that the total forward power is 133.33 Watts. The voltage magnitude associated with the 75 Watts is approx. 61.24 V and the voltage associated with the 8.33 Watts is approx. 20.41 V. These voltages are in-phase, so the total voltage has a magnitude of approx 81.65 V. The total power is 133.33 W (81.65^2 / 50).

Now, the net power delivered to the tuner input is 100 Watts and the net power delivered to the transmission line is 100 Watts. Law of conservation of energy satisfied.

Considering the total power re-reflection concept: Adding 100 W of forward power in-phase with 33.33 Watts of re-reflected power to get 133.33 Watts of total forward power violates simple circuit theory (Vtotal = V1 + V2).

Cecil, I have babbled enough on this topic and would prefer not to argue and end up going in circles. I will drop out of this thread at this point. You're free to disagree.

Steve VE9SRB

> > At a tuner output, the total forward power is a direct result of how the
> > forward driving voltage and current from the transmitter add to the
> > re-reflected voltage and current developed at the tuner output. The
level
> > of forward driving voltage and current developed in the transmission
line by
> > the transmitter is always a direct function of Zo. The level of
> > re-reflected voltage and current developed at the tuner output are
always a
> > function of the impedance seen looking rearward into the tuner.
>
> No argument there but I will add that an antenna system cannot violate the
> conservation of energy principle. Assuming that no power is dissipated at
> a Z0-match, all of the the reflected energy has no choice except to join

> the generated energy and head back toward the load. That there exist two
> mechanisms, destructive interference and re-reflection, seems to me to be
> splitting hairs since these two energies wind up indistinguishable from
> each other on their way back to the load.
> --
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2267. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 17:44:15 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEDA46F.5347EAAC@IEEE.org>
Source record: 164716

VE9SRB wrote:
> At the tuner input, there are two steady state rearward traveling waves, the
> 25 Watts reflected and the 25 Watts transmitted rearward through the tuner.
> The voltages and currents of these two waves are 180 degrees out of phase so
> the net rearward power flow is zero.

But the energy in the complementary sets of joules/sec involved in that
cancellation does *NOT* disappear from the universe.

> At the tuner output, there are two steady state forward traveling waves, the
> 75 Watts of forward power from the transmitter (it is not 100 Watts of
> forward power in the transmission line) and the 8.33 Watts of re-reflected
> power. The voltages and currents from these two waves combine such that the
> total forward power is 133.33 Watts.

This is where you are violating the conservation of energy principle. There
is absolutely no way for 75 joules/second plus 8.33 joules/second to add
up to 133.33 joules/second. You are simply ignoring the energy in the
canceled waves. Don't you consider it odd that the energy in the canceled
waves is *exactly* what is needed to balance the conservation of energy
equation?

Considering the Z0-match point, we have 100 joules/sec flowing into the
point from the generator and zero joules/sec flowing out of that point
back toward the generator. We know this because we can measure it. We also
have 33.33 joules/sec flowing into the point from the direction of the load.
That means the energy flowing out of the Z0-match point must equal the energy
flowing into the Z0-match, i.e. 100 + 33.3 = 133.33 joules/second to avoid
violation of the conservation of energy principle. Even if reflections are
not considered at all, the energy equation still must balance.
--
http://www.mindspring.com/~w6rca

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2268. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 18:13:12 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEDAB38.A4645346@IEEE.org>
Source record: 164717

VE9SRB wrote:
> We are not splitting hairs here. We are talking about technical concepts,
> one valid and one not valid. A total re-reflection of power simply does not
> occur at the output of a tuner.

Nobody ever said it did, Steve. The total re-reflection being discussed has always been said to occur at the Z0-match at the tuner *INPUT*. In order to simplify things, please discuss the following sans any tuner.

100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load

No tuner, Z0-match at point 'X'. All your other parameters are the same. 100w generated power, 33.33 watts reflected power and 133.33 watts of forward power on the twinlead.

We have two sets of joules flowing into the Z0-match and one set of joules flowing out. We know there is no reverse flowing energy on the 50 ohm coax because we can measure it.

> To say that it does is not a matter of
> semantics, nor is it a matter of interpretation. It is simply incorrect.
> It is incorrect from a circuit analysis approach and it is incorrect from a
> transmission line analysis approach.

Since nobody has ever said that re-reflection occurs at the tuner output, seems your objection is moot. The re-reflection occurs at the Z0-match at the tuner input. The destructive cancellation occurs at the Z0-match at the tuner input. The re-routing of the reflected energy occurs at the Z0-match at the tuner input.

> In order for the steady state impedance match to occur, the correct portion
> of reflected power must be delivered rearward through the tuner to the tuner
> input. If it did not, the steady state match would not occur. If you
> prevented the reflected power from arriving at the tuner output, ...

Forget the tuner output already. NOBODY is discussing the tuner output. The Z0-match we are discussing occurs at the tuner input.

> The basic issue, as I see it, is that you assume that 100 watts of the
> "delivered" power travels through the tuner and is a forward power in the
> transmission line to which the re-reflected power is added ...

"Energy can neither be created or destroyed". The energy that you have destroyed is exactly equal to the energy you are creating. Doesn't that tell you something?

> (never mind that 100 Watts + 33.33 Watts is not equal to 133.33 Watts).

Of course, 100 joules plus 33.33 joules equals 133.33 joules. There is no way to create or destroy joules.

> If you could see
> that this delivered power does not travel into the transmission line as a
> forward power, it would all make sense.

This isn't rocket science, Steve. If you have a black box with 100 joules/sec coming in plus 33.33 more joules/sec coming in from somewhere else, the box either has to get hot or allow 133.33 joules/sec to flow out of it. "Energy can be neither created or destroyed." If you could see that, it would all make sense.
--
http://www.mindspring.com/~w6rca

2269. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 18:20:16 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3aedaccf.173571015@news.aepnet.com>
Source record: 164718

On Sun, 29 Apr 2001 10:21:09 -0500, "William E. Sabin" <sabinw@mwci.net> wrote:

>
>
>Roy Lewallen wrote:
>
>> I'd say that the feedpoint balun prevents current from flowing
>> from the inside of the coax over the end and onto the outside, but know
>> you don't agree that this happens.
>
>There is one basic principle that we have been ignoring. For a thin coax braid, at
>any specific location, there is basically zero voltage difference between the inner
>and outer surfaces.
>
>Another basic principle is that there is a strong electromagnetic coupling between
>braid current, on both the inner and outer surfaces, and the center wire. Common
>mode voltage and impedance are efficiently transferred back and forth.
>
>I am now looking at page 26-16, Fig 24, ARRL Antenna Book, 19th edition.
>
>The first thing that I see is an inside current I2, part of which is looping around
>the edge and flowing down the outside as I3. Consider a short segment near the
>dipole and freeze the action at some particular instant. The I2 inside must
>correspond to a voltage drop along the inside surface. The I3 on the outside must
>correspond to a voltage drop along the outside. I now perceive a voltage difference
>between the inner and outer surfaces at the bottom end of the segment. This is not
>allowed. Right away this braid-loop concept appears to have a problem which we must
>analyze.
>
>Page 26-16, column one text, assumes perfect symmetry of the dipole, so that
>inductions from the two sides cancel on the braid. The dipole impedance is, say 50
>ohms, as measured between the two terminals.
>
>Assume for a moment a 50 ohm resistor (no dipole) at the top of the coax. There
>would be no common mode current. All current would return via the inner surface,
>just as the books all say it is supposed to. The braid longitudinal impedance would
>be irrelevant (it could be zero). The perfectly balanced dipole is also 50 ohms,
>just like the resistor. In order to get common mode current, something else is
>needed. The antenna supplies something that the resistor does not. It supplies a
>path to ground that does not include the coax. It is in the free space coupling
>between dipole and ground. An additional requirement is that there must be an
>unbalance to ground for the two sides. If the balance were perfect there would be
>no common mode path from ground to coax to antenna to ground to coax, and the
>situation would be identical to the resistor. This path, plus the coax braid,

>provides a complete common mode loop. The differential desired signal is the
>generator that "excites" this common mode path current.

>We have seen this in previous discussions, where the common mode path is complete
>from coax ground point, up the outside of the coax, through the antenna, through
>the space from antenna to ground and back to coax. This loop does not include the
>loop that is the inner and outer surfaces of the coax braid. The 50 ohm resistor,
>all by itself, ignores that loop, exactly as it is supposed to.

Maybe I misunderstand all of this (a strong possibility). If the 'transmitter'
was battery-powered and completely isolated from ground and the entire system;
antenna, coax, and transmitter, was placed at great height above earth, with the
coax normal to earth and the antenna parallel to earth, is there still
common-mode current on the outside of the coax?

If the answer is no then that raises some more questions to be asked later.

Otherwise, in your "loop" example above, based upon your earlier assertions of
tight coupling between the inner and outer conductors and zero voltage
difference between inside and outside, why isn't there a "compensating" loop
created between the other half of the antenna, space, coax and ground?

>
>To summarize: The common mode closed loop path must include the free space path
>from antenna to ground. The loop consisting of inner and outer braid surfaces is
>not a legitimate common mode loop; Fig 24 is in error on this issue. Common mode
>effects on the coax are caused by a difference between center wire current and
>braid current, which results in radiation from the coax due to incomplete
>cancellation of external fields. The balun does two things 1) it provides very
>tight coupling between braid and center wire 2) it provides large and equal common
>mode impedances on both the center wire and the braid.

But you already said above :

"Another basic principle is that there is a strong electromagnetic coupling
between braid current, on both the inner and outer surfaces, and the center
wire. Common mode voltage and impedance are efficiently transferred back and
forth."

So isn't the balun redundant? If as I think you say, everything happin' on the
outside is automatically coupled to the inside, with or with balun, why use one.

73,

Wes Stewart N7WS

2270. Re: new ham first HF Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 18:20:28 UTC
From: Ken Jacobs <kjacobs@tekwrite.com>
Message-ID: <3AEDAD15.86906D6A@tekwrite.com>
Source record: 164619

Do a bunch of surrounding trees knock down the signal to a G5RV?

Per Enocson wrote:

> Hi Mark,
>
> There is no vertical which will beat a 135ï¿½cf dipole, if you get it up at a
> height of 40 feet or so. I have made the comparison here between an R5 and a
> couple of full size wire verticals on 14 Mhz and up.In particular, when you
> get above 18 Mhz, there is a noticeable gain difference in favour of the cf
> zepp. It will give you several low angle nodes on the higher bands, plus
> that it will be a good allround antenna on the lower bands. Mine work e.g.
> fine on 40 m, better than an ordinary 40 m dipole. And the price
> difference.... So if you have the space, and some height, don't
> hesitate!Another excellent, inexpensive mulitband antenna is a full siaze
> horizontal loop, see the ARRL Hanbook article "Loop the Skywire" for
> details.
>
> 73ï¿½s de Per/SM0WRA near Stockholm, Sweden
> Mark Langberg <mlangberg@mediaone.net> wrote in message
> news:GsXG6.15617$qD1.343340@typhoon.mw.mediaone.net...
> > I'm agonizing over my first HF antenna. My choices are a balanced dipole
> > (135' wire center fed with ladder line and an antenna tuner) vs. an all
> band
> > verical, like the cushcraft R6000 or R8 or Gap Titan DX. Which will give
> > better gain, the dipole or the vertical? Which vertical is better of the
> > above choices?
> > Has anyone had any experience with the RadioShack 36' telecoping antenna
> > mast (ground mounted with guy wires)? I would use it to support one end
> of
> > the dipole on the corner of my property where I have no trees.
> > If I use a dipole where one end is supported by a tree, should I use a
> > spring (what type?) to allow for swaying of the tree? (it's a tall
> spruce).
> >
> >

2271. Re: EZNEC and wireframe mobile

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 18:47:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AEDB324.DC1A5209@eznec.com>
Source record: 164620

Don't try to connect the model to ground, for two reasons. The first is that it's not needed; if you make the model correctly, the coupling will be correctly calculated. The second is that you need to use the "High Accuracy" ground type for wires this low, and you can't make a predictable connection to this kind of ground anyway.

When making a wire grid model, the grid spacing should be no more than about 0.1 wavelength. At HF, you can probably get by with a pretty abbreviated model. However, another rule you should follow is that the surface area of the grid wires should be about the same as the surface area of the metal plates to be modeled. This requires wires with diameter equal to the spacing/pi, which is quite large. And you have to keep the bottom of the vehicle model a few wire diameters above ground. This means you'll probably need to model the bottom of the car as a denser grid than you'd otherwise need, just to keep the wire diameter small enough that it meets the requirement for spacing from ground.

Roy Lewallen, W7EL

Larry Benko wrote:
>
> I was fooling around with EZNEC3 to try to see some of the effects
> of antenna placement on the pattern in a mobile setup. I under-
> stand the basic pattern distortions and would like to use EZNEC to
> show them. I built a wireframe model of the vehicle and wonder
> what to do next. I assume the wireframe model should be placed the
> same height above ground as the actual vehicle but should I connect
> the wireframe model to actual ground via some capacitance?
> Approximately how much? My vehicle is a Toyota 4 Runner.
>
> Thanks and 73,
> Larry Benko, W0QE

2272. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 18:53:27 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <HwiH6.48575$IJ1.3690128@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164621

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEDA46F.5347EAAC@IEEE.org...
> VE9SRB wrote:
> > At the tuner input, there are two steady state rearward traveling waves,
the
> > 25 Watts reflected and the 25 Watts transmitted rearward through the
tuner.
> > The voltages and currents of these two waves are 180 degrees out of
phase so
> > the net rearward power flow is zero.
>
> But the energy in the complementary sets of joules/sec involved in that
> cancellation does *NOT* disappear from the universe.
>
> > At the tuner output, there are two steady state forward traveling waves,
the
> > 75 Watts of forward power from the transmitter (it is not 100 Watts of
> > forward power in the transmission line) and the 8.33 Watts of
re-reflected
> > power. The voltages and currents from these two waves combine such that
the
> > total forward power is 133.33 Watts.
>
> This is where you are violating the conservation of energy principle.
There
> is absolutely no way for 75 joules/second plus 8.33 joules/second to add
> up to 133.33 joules/second. You are simply ignoring the energy in the
> canceled waves. Don't you consider it odd that the energy in the canceled
> waves is *exactly* what is needed to balance the conservation of energy
> equation?
>

One final post.

Cecil, you need to stop reading tables in EE dictionaries defining the units
of energy and power.

We measure and work with average power which is determined from |V| |I| cos
(theta), where theta is the phase angle difference between V and I. V and I
both being complex quantities. The total forward traveling voltage in a
transmission line is determined from the vector sum of all forward traveling
voltage components. Once the total forward traveling voltage is determined,
we determine the forward traveling power. You're in-phase addition of 100
Watts + 33.33 Watts to get 133.33 Watts violates Kirchoff's voltages laws
and the relationships between voltage and power. All of our circuit

analysis occurs with voltage and current. Average power is a derived quantity.

> Considering the Z0-match point, we have 100 joules/sec flowing into the
> point from the generator and zero joules/sec flowing out of that point
> back toward the generator. We know this because we can measure it. We also
> have 33.33 joules/sec flowing into the point from the direction of the
load.
> That means the energy flowing out of the Z0-match point must equal the
energy
> flowing into the Z0-match, i.e. 100 + 33.3 = 133.33 joules/second to avoid
> violation of the conservation of energy principle. Even if reflections are
> not considered at all, the energy equation still must balance.
> --

Actually, you are looking at net steady state levels. *NET* meaning that you don't see all of the individual steady state components. It is true that the "net power flowing into the node" is 133.33 Watts and the "net power flowing out of the node" is 133.33 Watts. That's all you know from the steady state. To arrive at the conclusion that a total re-reflection of the 33.33 Watts of power occurs to make this happen is incorrect.

You should consider all aspects of your technical position:

Is it consistent with transmission line theory, i.e, the level of wave reflection at the end of a transmission line is a function of the impedance terminating the line? No it is not!

Is it consistent with Kirchoff's voltage laws and the determination of total power from total voltage? No it is not.

The fact that your technical position is inconsistent with these two basic principles should cause you to examine it further.

73
Steve VE9SRB

2273. Downloadable IOTA List - Update 30-Apr-2001

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 19:05:45 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <dIiH6.2886$eZ2.305833@newsread2.prod.itd.earthlink.net>
Source record: 164622
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

Lots of STUFF to do at www.ab7sl.com such as...

Downloadable IOTA List - updated 30-Apr-2001
- on IOTA List Page of site listed above

All - NEW - W9INN antenna page!!

1. Ham Radio Links (some unusual)
2. Several Ham Radio Web Rings !
3.AB7SL Biography
4.Personal Photos
5.Station Description
6.Software Page (downloads)
7.The DX Page (w / Live - DX cluster links)
8.Downloadable IOTA List (updated weekly)
9.W7NH - Elmer Tribute
8.Prescott Arizona Photos
9.Online DX Logbook
10.3D Art Gallery (downloads)
11.Music Page (downloads)
12.Frequently Asked Questions
13.Free-For-All Links Page
14.Guestbook
15.Many Equipment Photos
16.Downloadable DXCC Countries List
17.Downloadable ITU Prefixes List
18.W9INN Antennas Page
--

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

2274. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 19:28:01 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <9veret43123u61kmtb1e53n5a32qi4o1gk@4ax.com>
Source record: 164623

On 30 Apr 2001 12:53:03 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>
>
>Richard Clark wrote:
>>
>> On Sun, 29 Apr 2001 10:22:34 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
>> wrote:
>>
>> >VE9SRB wrote:
>> >> There is no such thing as a totally reflecting "virtual short". This
>> >> concept should never have been introduced to the amateur community. It is
>> >> technically incorrect.
>> >
>> >Yes, there is such a thing as a totally reflecting "virtual short". It
>> >is a *concept* introduced by Walter Maxwell. The *concept* describes what
>> >happens to *scalar* reflected power (not what happens to the associated
>> >phasors). A virtual short, like thousands of other concepts, exists only
>> >in human minds.
>>
>> Hi Cecil,
>>
>> Sorry, but I doubt seriously if your version of Walt's "virtual short"
>> and Walt's version of Walt's "virtual short" are the same thing. THIS
>> is the fundamental problem with it in the first place.
>>
>> As this topic hasn't been visited in a long time, and I having seen no
>> new discussion that has changed the conditions of its description from
>> back then, I would suggest that it is a concept that does not serve
>> any purpose that a simpler, more easily understood description could.
>>
>> In short, it is an incorrect and unnecessary elaboration that both
>> confuses and leads a novice down the wrong path. I would also put it
>> to you, or Walt, that proof of its utility is defeated in proportion
>> to the number of postings spent to explain it. Back then, it pushed
>> the utility to 1/600th or so. These few additions only depress it
>> further.
>
>
> Rich, from the perspective of a ham who doesn' have the advantage of
>extensive higher math skills nor an engineering degree, I must
>respectfully disagree.
>
>73, Dick Wï¿½EX

Hi Dick,

I am speaking from the perspective of a class room instructor of technicians. I am not so text-bound to turn from an effective method, though, when it works for you.

73's
Richard Clark, KB7QHC

2275. Re: 30-88 MHz Log Periodic?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 20:04:06 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <WyjH6.38472$Ce4.2812359@news1.rdc1.ct.home.com>
Source record: 164624

Try Ed at KMA antennas. I believe he does custom work. The antennas are
well made and reasonably
priced.

They also have some off the shelf logs covering 26 to
500 MHz.

http://www.kmaantennas.com/

Peter

"John K Scoggin" <aat3bf@conectiv.com> wrote in message
news:9cjlln0v5c@enews2.newsguy.com...
> I am searching for a manufacturer of log periodics capable of covering
30-88
> MHz.
> The power requirement is low (50 watts or so). This is for a National
Guard
> application using SINCGARS radios.
>
> Any leads?
>
> 73's,
> John
> N3SKO/AAT3BF/AAM3O
>
>

2276. Wow! GAP Super-C

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 20:15:49 UTC
From: ann7how@aol.com
Message-ID: <20010430161549.20000.00002067@ng-mi1.aol.com>
Source record: 164625

Get a copy of George Murphy's(VE3ERP) HAMCALC and compute his CYLOAD. The load need not be cylindrical. If, by your own tests of CYLOAD or Super -C, you get anywhere near 100% efficiency, let the world know ! 73, Hal, W9UYA

2277. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 20:54:11 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AEDD0F3.1E220D8B@mwci.net>
Source record: 164626

Wes Stewart wrote:

> If the 'transmitter'
> was battery-powered and completely isolated from ground and the entire system;
> antenna, coax, and transmitter, was placed at great height above earth, with the
> coax normal to earth and the antenna parallel to earth, is there still
> common-mode current on the outside of the coax?

Only if there is a free space path of some kind from antenna to generator, for example if the generator is attached to a large surface of some kind, such as a satellite. There must be a common mode loop of some kind. That loop cannot be the coax braid acting alone. At each location on the coax braid, it is equipotential from one surface to the other, therefore it cannot provide a common mode loop that consists of the two surfaces operating independently in opposite directions. We sometimes ignore that a current must be accompanied by a voltage change.

> why isn't there a "compensating" loop
> created between the other half of the antenna, space, coax and ground?

There is a good possibility that the system is self-compensating to some extent. The explanation of that could get pretty hairy (simulation would be a better way, but I am not sure how to go about it). But experience shows that some additional help is desirable. The balun has certainly earned a place at the table.

I have not tried to find n'th degree perfection in this discussion, just to indicate the principles that are at work.

> So isn't the balun redundant? If as I think you say, everything happening on the
> outside is automatically coupled to the inside, with or with balun, why use one?

The coax itself is a "pretty good" balun, but we know from experience that it is quite often not nearly as good as we would like. This communication between braid and center wire is a fundamental property of coax, easily explained by Maxwell's equations, but it is not perfect. The balun increases this communication greatly. The other important thing is that the common mode impedance of wire and braid are *both* increased greatly. These two effects collaborate to greatly reduce problems that are due to common mode.

Bill W0IYH

2278. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 21:01:32 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AEDD2AC.4B761F4@mwci.net>
Source record: 164627

William E. Sabin wrote:

> Wes Stewart wrote:
>
> > If the 'transmitter'
> > was battery-powered and completely isolated from ground and the entire system;
> > antenna, coax, and transmitter, was placed at great height above earth, with the
> > coax normal to earth and the antenna parallel to earth, is there still
> > common-mode current on the outside of the coax?
>
> Only if there is a free space path of some kind from antenna to generator, for example
> if the generator is attached to a large surface of some kind, such as a satellite.
> There must be a common mode loop of some kind. That loop cannot be the coax braid acting
> alone. At each location on the coax braid, it is equipotential from one surface to the
> other, therefore it cannot provide a common mode loop that consists of the two surfaces
> operating independently in opposite directions. We sometimes ignore that a current must
> be accompanied by a voltage change.

I must not overlook the possibility of antenna near-field coupling onto the coax braid.
This
would be an example of common mode. I did mention that in my first article.

Bill W0IYH

2279. Re: EZNEC and wireframe mobile

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 21:16:05 UTC
From: Larry Benko <benko@aztek-eng.com>
Message-ID: <3AEDD615.18474A84@aztek-eng.com>
Source record: 164628

Roy,

Thank you very much for the info. I was aware of the need to build the
wire frame with a small spacing compared to a wavelength. I was not
aware of the need to try to have the surface area of the wires equal
the surface area of the vehicle (which would get the coerrect capacitance
to ground). You are right about the wire diameter getting huge and is
a lot of wires. I already have about 80 wires. This is why I had
incorrectly tried to add a bulk capacitance to ground. In general terms,
what would be types of errors I would see if I only made the surface area
of the wires 10% to 20% of the total vehicle surface area? Primarily
would the antenna pattern distortions still be properly represented?

Thank you again for your advice,
Larry Benko, W0QE

Roy Lewallen wrote:
>
> Don't try to connect the model to ground, for two reasons. The first is
> that it's not needed; if you make the model correctly, the coupling will
> be correctly calculated. The second is that you need to use the "High
> Accuracy" ground type for wires this low, and you can't make a
> predictable connection to this kind of ground anyway.
>
> When making a wire grid model, the grid spacing should be no more than
> about 0.1 wavelength. At HF, you can probably get by with a pretty
> abbreviated model. However, another rule you should follow is that the
> surface area of the grid wires should be about the same as the surface
> area of the metal plates to be modeled. This requires wires with
> diameter equal to the spacing/pi, which is quite large. And you have to
> keep the bottom of the vehicle model a few wire diameters above ground.
> This means you'll probably need to model the bottom of the car as a
> denser grid than you'd otherwise need, just to keep the wire diameter
> small enough that it meets the requirement for spacing from ground.
>
> Roy Lewallen, W7EL
>
> Larry Benko wrote:
> >
> > I was fooling around with EZNEC3 to try to see some of the effects
> > of antenna placement on the pattern in a mobile setup. I under-
> > stand the basic pattern distortions and would like to use EZNEC to
> > show them. I built a wireframe model of the vehicle and wonder
> > what to do next. I assume the wireframe model should be placed the
> > same height above ground as the actual vehicle but should I connect

> > the wireframe model to actual ground via some capacitance?
> > Approximately how much? My vehicle is a Toyota 4 Runner.
> >
> > Thanks and 73,
> > Larry Benko, W0QE

2280. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 21:57:42 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AEDDFD6.EE3BF9F4@hiwaay.net>
Source record: 164629

Bill- Wes- what happens if the "dipole" in wes' example is less than
perfect? If it is not symetrical, with one side connected to the center,
and the other to the braid- what happens. (using the conditions set
forth by Wes.) Is there a balance, created by some mechanism, that
satisfies the conditions posited by Bill, while answering the questions
of Wes? (and me)
Bill-W4BSG

"William E. Sabin" wrote:
>
> Wes Stewart wrote:
>
> > If the 'transmitter'
> > was battery-powered and completely isolated from ground and the entire system;
> > antenna, coax, and transmitter, was placed at great height above earth, with the
> > coax normal to earth and the antenna parallel to earth, is there still
> > common-mode current on the outside of the coax?
>
> Only if there is a free space path of some kind from antenna to generator, for example
> if the generator is attached to a large surface of some kind, such as a satellite.
> There must be a common mode loop of some kind. That loop cannot be the coax braid acting
> alone. At each location on the coax braid, it is equipotential from one surface to the
> other, therefore it cannot provide a common mode loop that consists of the two surfaces
> operating independently in opposite directions. We sometimes ignore that a current must
> be accompanied by a voltage change.
>
> > why isn't there a "compensating" loop
> > created between the other half of the antenna, space, coax and ground?
>
> There is a good possibility that the system is self-compensating to some extent. The
> explanation of that could get pretty hairy (simulation would be a better way, but I am
> not sure how to go about it). But experience shows that some additional help is
> desirable. The balun has certainly earned a place at the table.
>
> I have not tried to find n'th degree perfection in this discussion, just to indicate
> the principles that are at work.
>
> > So isn't the balun redundant? If as I think you say, everything happening on the
> > outside is automatically coupled to the inside, with or with balun, why use one?
>
> The coax itself is a "pretty good" balun, but we know from experience that it is quite
> often not nearly as good as we would like. This communication between braid and center
> wire is a fundamental property of coax, easily explained by Maxwell's equations, but it
> is not perfect. The balun increases this communication greatly. The other important

> thing is that the common mode impedance of wire and braid are *both* increased greatly.
> These two effects collaborate to greatly reduce problems that are due to common mode.
>
> Bill W0IYH

2281. Q-section calculations

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 22:20:16 UTC
From: "Don A. Bouquet" <donbouquet@worldnet.att.net>
Message-ID: <3AEDE653.1032EB8B@worldnet.att.net>
Source record: 164630

In a ARRL article concerning matching a Helical antenna with a 140 ohm impedence to a 50 ohm coaxial transmission line; the author mentions using a 84 ohm matching section constructed of 0.4 inch copper tubing and #10 inner conductor both 6.5 inches long. No mention is made of how those dimensions were arrived at - is there a standard formula I've overlooked on how to calculate the dimensions of a custom made Q-section of a specific impedence?
Any info. would be appreciated.
Thank you,
Don

2282. Re: EZNEC and wireframe mobile

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 22:49:11 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AEDEBE7.E10D5083@eznec.com>
Source record: 164631

I don't know. About all I can suggest is to try changing the wire diameter and seeing what difference it makes. Wire grid modeling is as much an art as a science. The equal area rule was emperically determined (by others, not by me) to do the best job for most applications, although not all. For example, the best model for showing scattering (reflection) from a solid or planar object might not be the best for evaluating shielding effectiveness or sidelobe levels from a reflector. Unfortunately, I'm not an expert on the topic. About the only serious wire grid modeling I've done is to model solid plated PC boards acting as reflectors for an antenna in a small microwave radar. For this, the measured frontal pattern was very close to the model, but the rear lobes, which would be more sensitive to error, weren't measured to my knowledge. I've also used it for representing PC boards in an evaluation of inter-board EMI. In that case, the solution I proposed based on modeling results worked, but no quantitative measurements were made to see just how close the model really came. I know wire grid modeling is widely used by EZNEC pro customers -- I've seen a number of pretty elaborate wire grid models they've created, of vehicles, aircraft, and such things as fuel storage tanks. I've also seen elaborate wire grid ship models done by the Navy, which I'm told do very well. So it's a good technique, even though as I said there's considerable art involved.

Roy Lewallen, W7EL

Larry Benko wrote:
>
> Roy,
>
> Thank you very much for the info. I was aware of the need to build the
> wire frame with a small spacing compared to a wavelength. I was not
> aware of the need to try to have the surface area of the wires equal
> the surface area of the vehicle (which would get the coerrect capacitance
> to ground). You are right about the wire diameter getting huge and is
> a lot of wires. I already have about 80 wires. This is why I had
> incorrectly tried to add a bulk capacitance to ground. In general terms,
> what would be types of errors I would see if I only made the surface area
> of the wires 10% to 20% of the total vehicle surface area? Primarily
> would the antenna pattern distortions still be properly represented?
>
> Thank you again for your advice,
> Larry Benko, W0QE

2283. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 23:18:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEDF2DC.95252324@IEEE.org>
Source record: 164632

VE9SRB wrote:
> You're in-phase addition of 100
> Watts + 33.33 Watts to get 133.33 Watts violates Kirchoff's voltages laws
> and the relationships between voltage and power. All of our circuit
> analysis occurs with voltage and current. Average power is a derived
> quantity.

Steve, power has no phase and I am not even considering voltage and current.
I am way down at the most basic level of conservation of energy. Your voltages
and currents are not allowed to violate the conservation of energy principle.

> To arrive at the conclusion that a total re-reflection of
> the 33.33 Watts of power occurs to make this happen is incorrect.

Dang Steve, I wish you would read my postings. I HAVE AGREED WITH
YOU that the 33.33 watts are not re-reflected. Why the hell don't
you read what I have written??? Trying to communicate with you
seems to be a waste of time. You seem to be all output and no input.

The part of the energy that balances the conservation of energy
equation is technically not re-reflected but it is re-routed right
along with the re-reflections. The energy that is re-routed is
the energy used in the destructive interference process. There
is no place else for it to go.

> You should consider all aspects of your technical position:

How do you know what they are if you don't read them? And you obviously
have NOT read them.

> Is it consistent with transmission line theory, i.e, the level of wave
> reflection at the end of a transmission line is a function of the impedance
> terminating the line? No it is not!

Transmission line theory is not allowed to violate the conservation of
energy principle.

> Is it consistent with Kirchoff's voltage laws and the determination of total
> power from total voltage? No it is not.

Kirchoff's laws are not allowed to violate the conservation of energy
principle.

> The fact that your technical position is inconsistent with these two basic
> principles should cause you to examine it further.

I am at the most basic conservation of energy level, Steve. Do you
really believe that the conservation of energy principle can be

violated just because you indicate that it can?

To repeat: Your P1 + P2 + 2 sqrt (P1*P2) is a mathematical nicety but
you cannot add two energies to get more than the sum of the two energies.
The conservation of energy principle will not allow it. The term,
2 sqrt (P1*P2), is the energy used in the destructive interference at
the Z0-match. That is the origin of the energy that balances the energy
equation. I AGREE WITH YOU that the destructive interference energy is
technically not re-reflected but it is certainly re-routed right along
with the re-reflected energy. The only energy moving away from the Z0-
match is the forward power.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2284. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 23:21:17 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEDF36D.F7BDBE23@IEEE.org>
Source record: 164633

"Peter O. Brackett" wrote:
> In the steady state, the one second latency or transport delay of the
> transmission line holds the same number of Joules of energy that it did at
> the start.

Nice try, Peter, but two seconds is still during the transient state.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2285. Re: Radio Shack 14 element two meter beam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 23:47:27 UTC
From: castles <castles@yestertronics.com>
Message-ID: <3AEDF8FE.ABC113D9@yestertronics.com>
Source record: 164634

Hi Dick,

Thanks for the reply.

When this beam came down it had a coaxial balun on it. I have used these before but I wanted to get the dimensions correct. I am sure it is a balance feed and they are usually 200 to 300 ohm matching impedance. With a 4:1 coaxial balun it would either like 50 ohm or 72 ohm coax. Because it had 50 ohm coax driving it when it came down I assume it is 200 ohm balanced feed. I was hoping that someone would have the spec sheet.

73, Don W6QEY

2286. Re: Q-section calculations

Newsgroup: rec.radio.amateur.antenna
Date: 2001-04-30 23:51:09 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <NTmH6.86315$xN4.5944897@news1.sttls1.wa.home.com>
Source record: 164635

Hi Don,

The author is using a Quarter-Wave matching section. The formula is Zo = SQRT(ZinZload) or 84 = SQRT(50*140).

This is probably an antenna designed for 432 MHz because of the 6.5 inch long quarter wave section.

The formula for the coaxial impedance using air for the dielectric is Zo = 138 Log (D/d) where D = inside diameter of the outer conductor and d = outside diameter of the inner conductor. The required diameters and length will change if a plastic tubing is used as the dielectric.

Hope this helps.

73, Roger, WyWKB

"Don A. Bouquet" <donbouquet@worldnet.att.net> wrote in message news:3AEDE653.1032EB8B@worldnet.att.net...
> In a ARRL article concerning matching a Helical antenna with a 140 ohm
> impedence to a 50 ohm coaxial transmission line; the author mentions
> using a 84 ohm matching section constructed of 0.4 inch copper tubing
> and #10 inner conductor both 6.5 inches long. No mention is made of how
> those dimensions were arrived at - is there a standard formula I've
> overlooked on how to calculate the dimensions of a custom made Q-
> section of a specific impedence?
> Any info. would be appreciated.
> Thank you,
> Don
>

2287. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 01:06:21 UTC
From: richardharrison@webtv.net
Message-ID: <29917-3AEE0C0D-273@storefull-118.iap.bryant.webtv.net>
Source record: 164637

Bill, W0IYH wrote:
"I must not overlook the possibility of antenna near field coupling onto the coax braid. This would be an example of common mode."

But, we assume a balanced antenna with a perpendicular feedline. Same voltage and current in both pieces of a dipole. The difference in the current is only that it is toward the feedline on one side and away from the feedline on the other side. That positioning induces equal and opposite fields in the vicinity of the feedline (whether near-field or far-field), given system symmetry, which we specify. The net induced field acting on the outside surface of the coax feedline is zero.

I subscribe to the group which imagines current from the inside surface of the coax shield looping around the butt-end of the coax at the antenna and continuing its journey down the outer surface of the coax shield depending upon the relative attractiveness of the connected 1/2-dipole conductor and that of the outside of the coax shield. Without a balun or iron-doughnut or something to dissuade current on the coax shield`s outer surface, the situation can become messy. This r-f being h-f a-c alternates its direction from inside to outside and from outside to inside during every frequency cycle.

Best regards, Richard Harrison, KB5WZI

2288. Doublet Feeder Length Question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 01:12:25 UTC
From: Jimmie <jimmie418@NOSPAMyahoo.com>
Message-ID: <Z3oH6.49086$IJ1.3722777@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164636

Hello All,

I'm interested in experimenting with a 44' center-fed doublet using cheap
300 ohm twinlead as a feeder.
What is the suggested initial feedline length? Any reported experiences with
this setup would be appreciated.

Thanks,
Jimmie

2289. Re: Radio Shack 14 element two meter beam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 01:19:15 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <862setk1q79jkl5gbo4qvn8om1lodvtdrh@4ax.com>
Source record: 164638

Are you sure it was a balun and not an RF choke? Coax chokes (made by coiling several turns of coax into a small coil) are commonly used to keep RF off the outer shield of the coax. You can read about these in the ARRL Antenna Book. With a choke there is no impedance matching. My Mosley CL-33 tri-bander could be considered to be a balanced feed also, and they do give instructions for a choke (5-turns in a 6" diameter), but it is not mandatory that you use one and I never have. I have used a number of HyGain and Cushcraft yagis over the past 50 years. My antennas work just fine. Even when HyGain provides a balun, such as the BN-86 for low bands, it is a one-to-one balun and not an impedance transformer. Note that HyGain does not provide baluns for any of their UHF/VHF yagis so you can be assured that one is not required for your 214FM. Or, maybe this is a really old Radio Shack antenna and not a HyGain??? Something else to consider is that when you feed a half-wave driven element in the center, the impedance will be in the range of 50 to 70 ohms, not 200 ohms.

73, Dick - W6CCD

On Mon, 30 Apr 2001 23:47:27 GMT, castles <castles@yestertronics.com> wrote:

>Hi Dick,
>
>Thanks for the reply.
>
>When this beam came down it had a coaxial balun on it. I have used these
>before but I wanted to get the dimensions correct. I am sure it is a balance
>feed and they are usually 200 to 300 ohm matching impedance. With a 4:1
>coaxial balun it would either like 50 ohm or 72 ohm coax. Because it had 50
>ohm coax driving it when it came down I assume it is 200 ohm balanced feed.
>I was hoping that someone would have the spec sheet.
>
>73, Don W6QEY

2290. Re: Joining different coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 01:24:57 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3aee1361_4@news3.prserv.net>
Source record: 164639

Rudy:
This is where unexpected problems can occur, especially at VHF. While 1 splice may introduce a fraction of a dB extra loss, two spaced the wrong distance may synergistically produce several dB by interaction. Otherwise, if you stay with the same impedance coax, you should be OK. Mixing 75 ohm CATV cable with the 50 ohm listed may produce most anything, including acceptable performance, but more likely undesirably high losses.
--
Crazy George

Rudy Marcelletti <rudym@net-link.net> wrote in message news:3aed8975$0$62148$bbae4d71@news.net-link.net...
> Will weird things happen or big losses or mis-matches occur with different
> typs of coax strung together? For example, hooking up various lengths of
> 9913, 9913F, RG-8, RG-213, RG-214, RG-8X and 1/2" or 3/4" CATV line? I need
> to go a long way and have many short pieces laying around and am thinking
> about hooking them up with barrel connectors and seeing how it plays! First
> run is about 250 feet with about 50 feet of RG-213 (2 pieces), 100 feet of
> RG-214 (2 pieces) and 100 feet of 9913 (1 piece). This is just a temporary
> set up. I need to get a UHF antenna back to hard line that I disconnected
> to hook up a 2 meter beam, and was going to just hook up the HF beam to this
> coax (it is fed with 1/2" hardline now) until I can get another run of
> hardline together and out and up the tower for the new 2 meter beam.
> Antennas are 100 feet up or more and about 120 feet or so from the shack.
>
>

2291. Re: 30-88 MHz Log Periodic?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 01:26:29 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3aee1362_4@news3.prserv.net>
Source record: 164640

Go to Fair Radio's site and buy the antenna designed for SINCGARS. They have them surplus. Or get the AS number and requisition them.

--
Crazy George
John K Scoggin <aat3bf@conectiv.com> wrote in message news:9cjlln0v5c@enews2.newsguy.com...
> I am searching for a manufacturer of log periodics capable of covering 30-88
> MHz.
> The power requirement is low (50 watts or so). This is for a National Guard
> application using SINCGARS radios.
>
> Any leads?
>
> 73's,
> John
> N3SKO/AAT3BF/AAM3O
>
>

2292. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 01:34:50 UTC
From: richardharrison@webtv.net
Message-ID: <28465-3AEE12BA-32@storefull-114.iap.bryant.webtv.net>
Source record: 164641

Bill Aycock wrote:
"If it is not symmetrical, with one side connected to the center, and the other to the braid - what happens---?"

Some current to and from the inside surface of the coax shield travels in the radiator connected to the shield, and some travels on the outer surface of the shield.

This "unbalanced" dipole with a radiating outer shield is not necessarily a bad antenna. I`ve made many of them for commercial service and never had one which did not perform well.

As Reg pointed out, it helps if the radio has a good ground and has an antenna feedline which is an odd multiple of 1/4-waves long. That makes the outside of the coax nearly an open-circuit at its junction with the antenna.

Best regards, Richard Harrison, KB5WZI

2293. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 01:49:44 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cl4n5kkj1@slb0.atl.mindspring.net>
Source record: 164642

Steve:

Uh... OK... I defer.

I admit that I never read what Walt wrote.

All I meant to say was that the term "virtual short circuit" is in
widespread use and has a definite meaning to those who study, analyze, and
design operational amplifier circuitry.

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message
news:wMdH6.48300$IJ1.3665780@bgtnsc05-news.ops.worldnet.att.net...
>
> What you describe below is not what Walt called a "virtual short circuit".
>
> Steve
>
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> news:9cheff$ad7$1@slb5.atl.mindspring.net...
> > Thread:
> >
> > Ahem.... Walt is right.
> >
> > The concept of a virtual short circuit has been around for a long
time...
> >
> > It is widely used in the analysis of ideal operational amplifier
circuits.
> >
> > In that "theory" one assumes that with forward gain approaching
infinity,
> > say 100dB or more, under negative feedback the (-) and (+) inputs to the
> > operational amplifier may be considered to be a "virtual short circuit".
> >
> > A "virtual short circuit" has the property that the voltage across it
will
> > always be zero, even though it does not allow current to flow through
it.
> > Although not found in nature in it's ideal state, one may approach the
> > conditions of a virtual short circuit as closely as one wishes for most
> > practical purposes. I believe, but I could be corrected by Bob Pease,
> heh,
> > heh... that Dave Philbrick originated the concept of virtual short
> circuit.

> >
> > Of course as anyone familiar with modern analog circuitry is aware,
there
> > are billions of IC operational amplifiers in use today, and so there
must
> > really be billions of "virtual short circuits" operating out there.
> >
> > A complementary analog to the virtual short circuit is the so called
> > "current conveyor", which conveys current from one node to another but
at
> > different impedance levels. The "current conveyer" was "invented" by
Adel
> > S. Sedra, now the Provost of the University of Toronto, back in the late
> > 60's, at least one analog IC manufacturer has marketed the current
> conveyor.
> >
> > Another couple of related concepts are the concepts of "nullor" and
> > "norator"... not widely spoken of today, but quite popular back in the
> 60's
> > and 70's.
> >
> > But... all of these concepts and fictions aside, I still believe that
"All
> > you really need is I and V". Heh, heh...
> >
> > And reflection mechanics is made more complicated than it needs to be!
> >
> > What about those "imaginary resistors"?
> >
> > -Peter K1PO
> >
> >
> >
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > news:3AEC31BA.7CBC2D1A@IEEE.org...
> > > VE9SRB wrote:
> > > > There is no such thing as a totally reflecting "virtual short".
This
> > > > concept should never have been introduced to the amateur community.
> It
> > is
> > > > technically incorrect.
> > >
> > > Yes, there is such a thing as a totally reflecting "virtual short". It
> > > is a *concept* introduced by Walter Maxwell. The *concept* describes
> what
> > > happens to *scalar* reflected power (not what happens to the
associated
> > > phasors). A virtual short, like thousands of other concepts, exists

```
only
> > > in human minds.
> > >
> > > A lot of other useful concepts are technically incorrect. Your
> assumption
> > > that Z0 is purely resistive is technically incorrect. Should a
resistive
> > Z0
> > > never have been introduced to the amateur community? The assumption
that
> > the
> > > conditions on an SWR circle ever exist is technically incorrect.
Should
> > SWR
> > > circles not have been introduced to the amateur community? The
> assumption
> > > that there is such a thing as an infinite series is technically
> incorrect.
> > > Should infinite series not have been introduced. The assumption that
any
> > > number of actual digits can represent the number pi is technically
> > incorrect.
> > > Should pi not have been introduced as a digital number? I could go on
> > forever.
> > >
> > > Remember this diagram from older ham publications? (In fixed font)
> > >
> > > ---->---->---->---->--- Forward Power ---->---->---->---->---->---->
> Load
> > > ---->---->---->---->---->-->---->---->---->---->---
> > > / \
> > > \ Reflected Power /
> > > <----<----<----<----<----<----<----<---<----<----<-
> > >
> > > Is this diagram technically correct? Nope, but it is a useful graphic
> > > of what happens to *scalar* power in a system with reflections. If you
> > > want everything perfectly technically correct, you will lose 99.9999%
> > > of hams. I seriously doubt if you really know what is 100% technically
> > > correct.
> > > --
> > > http://www.mindspring.com/~w6rca
> > >
> > >
> > > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----
> >
> >
>
>
```

2294. Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 01:53:20 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <kGoH6.86649$xN4.5974853@news1.sttls1.wa.home.com>
Source record: 164643

The idea that two separate currents can flow on the braided wire outside conductor of a coaxial line continues to frustrate me.

We are being asked to believe that a very small wire will actually perform as if it were really two separate wires separated by a dielectric. The separation is so good that we apparently do not even need to worry about breakdown voltage as we do if we had a real dielectric, because no limits for the separation are ever given.

I tried to measure the diameter of the wires in RG-8 and RG-8 mini braid. They appear to be made of AWG 34 and AWG 36 respectively, with diameters of 0.016 and 0.0127 cm respectively.

At 20 Meters, skin effect for copper is about .002 cm, which means that at a depth of 0.002 cm, the current flow rate is only about 37% of the rate on the surface.

Using the AWG 34 wire and the depth of 0.002 cm, we can find the volume of wire which carries current at a rate exceeding 37% of the surface rate. It turns out to be about 43% of the total volume of each wire. How can we possibly turn such a high conductive volume into two wires effectively separated by a super dielectric?

We can go on to calculate the square inches of copper connecting the two braid 'surfaces' to learn that the conductive path must be near a zero impedance. What then is to prevent any current flowing on the outside of the coax braid from completely merging with any current flowing on the inside of the coax braid? Once merged the currents would have to act on the center conductor equally.

A misuse of the phenomena of skin effect leads experimenters and designers to believe that it is impossible to use a coaxial configuration for windings in a transformer. A huge error. It also leads people to believe that a balun is a special device with electromagnetic rules all of its own. Another huge error. The magic of the balun disappears when we simply think of it as we would a standard transformer, which is what it is.

73, Roger, W7WKB

2295. Re: Radio Shack 14 element two meter beam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 02:02:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AEE191D.5DA0215F@eznec.com>
Source record: 164644

The common mode choke you describe (and ones constructed differently but for the same purpose) are often called "current baluns" or "choke baluns" because they force the currents in the two conductors to be "balanced", i.e., equal and opposite. This is as opposed to "voltage baluns" which effect equal and opposite voltages in the two conductors relative to the "cold" side of the input. Both current and voltage baluns can be made either to transform impedances or not.

Roy Lewallen, W7EL

Dick Hughes wrote:
>
> Are you sure it was a balun and not an RF choke? Coax chokes (made by
> coiling several turns of coax into a small coil) are commonly used to
> keep RF off the outer shield of the coax. You can read about these in
> the ARRL Antenna Book. With a choke there is no impedance matching.
> My Mosley CL-33 tri-bander could be considered to be a balanced feed
> also, and they do give instructions for a choke (5-turns in a 6"
> diameter), but it is not mandatory that you use one and I never have.
> I have used a number of HyGain and Cushcraft yagis over the past 50
> years. My antennas work just fine. Even when HyGain provides a
> balun, such as the BN-86 for low bands, it is a one-to-one balun and
> not an impedance transformer. Note that HyGain does not provide
> baluns for any of their UHF/VHF yagis so you can be assured that one
> is not required for your 214FM. Or, maybe this is a really old Radio
> Shack antenna and not a HyGain??? Something else to consider is that
> when you feed a half-wave driven element in the center, the impedance
> will be in the range of 50 to 70 ohms, not 200 ohms.
>
> 73, Dick - W6CCD

2296. Using Alinco EDX-2 w/Icom 706MKIIG

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 02:12:21 UTC
From: Ron Harris <ron@rainbow.to>
Message-ID: <3AEE1B85.ED619C3C@rainbow.to>
Source record: 164645

I have an Alinco EDX-2 tuner and I wish to use it with an Icom 706MKIIG.

I need to know the pin out of the connector on the back of the Icom 706.

I have looked all over and can't seem to find any info about using the
Alinco tuner with the Icom 706.

I can make up a plug for the end of the cable from the tuner but I need
to know how to identify
the "tuning in process" and the "start tuning" line at the back of the
Icom. I can probably find the ground and the plus 12VDC pins.

Does anyone have any info that could help?

I think that the Alinco tuner is the same as the AH-4 but I understand
that the plug is different.

Tnx for any help.

73

Ron

Ron@ky6n.com
or ron@rainbow.to

2297. Re: Radio Shack 14 element two meter beam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 02:19:00 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <n96setojcmt13269n2eqmt933uaj9g6akp@4ax.com>
Source record: 164646

Don -

If you really do have an odd-ball Radio Shack antenna with a balanced
200-ohm feed, and not a HyGain 214FB as they currently sell, you can
make a balun from a 1/2-wave piece of coax. This is an electrical
1/2-wave so you have to take the velocity factor of the coax you use
into consideration. The way to check the frequency of your balun is
to short both ends and use a grid-dip meter on one end. If you use
the dimensions in the ARRL Antenna Book, the overall length from end
to end of the center conductor (center of lug holes) would be 750 mm.
The shield length is 664 mm. That's the part of the shield that
covers the center insulation. The remainder is for the pigtails.
Don't cut the shields. The center conductor lugs attach to each side
of the T-match or whatever is used for the feed. The main coax of
course attaches to one side of the feedpoint, in parallel with one end
of the coax balun. These dimensions apply to either RG-142/U or
RG-303/U coax. All coax shields tie together and to the antenna boom.
I'm kind of flying in the blind here as I don't know what kind of
match is on your antenna.

73, Dick - W6CCD

On Mon, 30 Apr 2001 23:47:27 GMT, castles <castles@yestertronics.com>
wrote:

>Hi Dick,
>
>Thanks for the reply.
>
>When this beam came down it had a coaxial balun on it. I have used these
>before but I wanted to get the dimensions correct. I am sure it is a balance
>feed and they are usually 200 to 300 ohm matching impedance. With a 4:1
>coaxial balun it would either like 50 ohm or 72 ohm coax. Because it had 50
>ohm coax driving it when it came down I assume it is 200 ohm balanced feed.
>I was hoping that someone would have the spec sheet.
>
>73, Don W6QEY

2298. Re: Radio Shack 14 element two meter beam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 02:23:35 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <hc7setkl0h6iag3k4tshqn8s2h5qubs00o@4ax.com>
Source record: 164647

No argument here.

On Mon, 30 Apr 2001 19:02:05 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>The common mode choke you describe (and ones constructed differently but
>for the same purpose) are often called "current baluns" or "choke
>baluns" because they force the currents in the two conductors to be
>"balanced", i.e., equal and opposite. This is as opposed to "voltage
>baluns" which effect equal and opposite voltages in the two conductors
>relative to the "cold" side of the input. Both current and voltage
>baluns can be made either to transform impedances or not.
>
>Roy Lewallen, W7EL
>
>Dick Hughes wrote:
>>
>> Are you sure it was a balun and not an RF choke? Coax chokes (made by
>> coiling several turns of coax into a small coil) are commonly used to
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>> also, and they do give instructions for a choke (5-turns in a 6"
>> diameter), but it is not mandatory that you use one and I never have.
>> I have used a number of HyGain and Cushcraft yagis over the past 50
>> years. My antennas work just fine. Even when HyGain provides a
>> balun, such as the BN-86 for low bands, it is a one-to-one balun and
>> not an impedance transformer. Note that HyGain does not provide
>> baluns for any of their UHF/VHF yagis so you can be assured that one
>> is not required for your 214FM. Or, maybe this is a really old Radio
>> Shack antenna and not a HyGain??? Something else to consider is that
>> when you feed a half-wave driven element in the center, the impedance
>> will be in the range of 50 to 70 ohms, not 200 ohms.
>>
>> 73, Dick - W6CCD

2299. Colocation of Feed/Phase Coax for 4 squares?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 02:37:48 UTC
From: mike.luther@ziplog.com
Message-ID: <tes8bsd430m659@corp.supernews.com>
Source record: 164648

The time has come to clean up the 80 meter 4 square. I am tired of
things chewing on the coax that's been laying on the ground for a long
time now. So, we go rent trencher and lay in PVC and bury all the mess
the right way.

But .. can I get away with something neat here, grin?

The design of the site is such that it would save me a complete trench run
if I could take off from the shack and make a short trench to the closest
tower base. From there I'd like to simply run the master feed coax cable
down the same PVC pipe that feeds the phase line to that stick. Much
cheaper, much easier to do. Same route for the relay control cable as
well is wanted.

As well, it would also save me money and time if I could run my
projected master feed and control cable down that same PVC for what
hopefully will someday be a 160 meter version of all this.

Now... what about cross coupling and all that stuff? What problems am I
about to open up by doing this? Anyone got any experience on such things?

I have a feeling this one's a past experience deal and I
sure don't want to make a mistake. Like Alice in contemplation,
"One pill makes you taller; one pill makes you small, and
the ones your Mommy givess you don't do any good at all!"

Thanks for anyone's thoughts and experience on this!

--> Sleep well; OS2's still awake! ;)

Mike - W5WQN
Mike.Luther@ziplog.com
Mike.Luther@f3000.n117.z1.fidonet.org

2300. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 02:38:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cl7id$ga4$1@slb5.atl.mindspring.net>
Source record: 164649

Steve:

No reflections on one side of the tuner and reflections on the other side, eh....

Is it not possible to have a "tuner" that tunes in both directions.

You must agree that it is at least mathematically possible to set up four equations in four unknowns, and "adjust" a four unknown tuner to provide a conjugate match both on the transmitter side and on the antenna side of such a tuner.

Of course this would be impossible with a "standard" amateur radio three lossless element tuner, since then one would have four equations in 3 unknowns and a solution could not be determined. That's why, among other reasons, 3 element T-Tuners and or Pi-Tuners are adjusted for a match looking only one way.

Anyway, you say... why would one want to tune in the reverse direction, eh?

I say, what if one had a transmitter on both ends of the line! Then what? Heh, heh.

Not your standard amateur practice, to have transmitters on both ends of the line, but it occurs millions of times for millions of hours every day.

When you "tune" such an amateur 3 element T-Tuner you are solving two equations in three unknowns. That's why you get several settings that "match". One more unknown than is necessary to solve the system of equations, and so one value is simply arbitrary. Usually one sets the shunt inductance arbitrarily as close to the minimum value as possible and takes the two capacitance values that result.

Of course, this whole antenna tuner, "tuning process" can be performed mathematically, by simply setting up two equations for the impedance looking into the tuner from the transmitter side. One equation for the desired real part and one equation for the desired imaginary part, then "fix" one element value, usually the inductor and solve for the two C's. I've done this hundreds of times, it always works.

Now with that tuner setting [aka simultaneous equation solution], you have a match looking from the transmitter towards the load through the tuner, but... you don't know what you have looking into the tuner from the other side! Is it matched or is it not? And so unless there is some great coincidence, you will only have a match on one side and reflections on the other.

But... heh, heh... that does not have to be the case...

Consider a tuner constructed of four variable lossless elements.

Call these "lossless" elements [jW, jX, jY, jZ] with values W, X, Y & Z.

Now looking into the four element tuner from the transmitter side toward the load, aka "antenna", call the impedance seen Zin.
Clearly Zin is a function of the four lossless element values plus the load impedance, call it Zo = Ro + j Xo. Functionally we can write down Zin as Zin (jW, jX, jY, jZ, Ro, JXo). Then simply set up the two equations, one for the real part (Re) and one for the imaginary part (Im) as follows:

(1) Re [Zin(jW, jX, jY, jZ)] = Desired resistance to match the transmitter, probably 50 Ohms in many cases.
(2) Im [Zin(jW, jX, jY, jZ)] = Desired reactance to match the transmitter, probably zero in most cases.

These are two equations in the four unknowns W, X, Y and Z, can't get a unique solution that way. Need two more equations.

Next set up two more equations for the impedance seen looking into the back end of the tuner, let's call it Zout, clearly:

(3) Re [Zout(jW, jX, jY, jZ)] = Desired resistance looking back into the tuner towards the transmitter to effect a match..
(4) Im [Zout(jW, jX, jY, jZ)] = Desired reactance looking back into the tuner towards the transmitter to effect a match.

Now you have four equations in four unknowns. And you can find W, X, Y, and Z to provide a conjugate match ON BOTH SIDES of the tuner.

This can be set up with real circuitry, I have done it many times myself, using four knobs, two variable capacitors and two variable inductors, with two SWR meters, [aka reflectometers], one on the input of the four element tuner and one on the output of the four element tuner. Of course the two separate SWR meters would of necessity have to have different reference impedances, heh, heh... but that's OK... since, as you may have surmised by now from my postings, I like them that way...

Now you will have a tricky time adjusting those four knobs for reflected voltage dips in two directions simultaneously, but it can be done. Actually the mathematical approach works better, just let MathCAD or MATLAB "solve it".

Now there is no reflected power on either side of the tuner! What?

Another way to set this up is to use two typical ham 3 element antenna tuners [I happen to have two Ameritron ATR-30's and an MFJ-989C to play with].

Hook em up back to back, with two Bird wattmeters. I can hear em now, what you can't do that! Heh, heh... I just did.

Connect one side of this dynamic duo of tuners to a dummy load, say 100 Ohms or 50 Ohms, then transmit into the other side and start messing with those six knobs! Heh, heh.

Now it so happens that you can reduce the so-called "reflected power", I call it the FICTICIOUS reflected power, to zero on both sides!

Just observe it on the two Bird Wattmeters if you don't believe. Actually if you use two T-Tuners you only really have 5 variable elements not 6 since two capacitors are in series.

Now those with an experimental bent might just be able to determine what the impedance is looking back into the transmitter using this set up? Is it really 50 Ohms?

Thoughts, comments on the double barreled antenna tuner dou-match system?

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message
news:INgH6.48441$IJ1.3682656@bgtnsc05-news.ops.worldnet.att.net...
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3AED88E0.C3FA3851@IEEE.org...
> > VE9SRB wrote:
> > > Walt's virtual short circuit is the one he described as existing at
the
> > > match point in a transmission line. He indicated that at a match
point
> in a
> > > transmission line a total re-reflection of power occurs. Thus he
> described
> > > this as a virtual short circuit to the reflected wave. This entire
> concept
> > > is technically incorrect.
> >
> > The entire concept of an SWR circle is technically incorrect also,
Steve.
> > Do you advocate getting rid of the Smith Chart?
> >
> > The entire quantity of reflected energy winds up going the same
direction
> > to the same place as it would have if it had been 100% re-reflected. Is
it
> > so important to split hairs and say part of the reflected energy is
> re-reflected
> > and part is re-routed along the identical path as the part that was
> re-reflected?
> >
>
> We are not splitting hairs here. We are talking about technical concepts,
> one valid and one not valid. A total re-reflection of power simply does
not
> occur at the output of a tuner. To say that it does is not a matter of
> semantics, nor is it a matter of interpretation. It is simply incorrect.
> It is incorrect from a circuit analysis approach and it is incorrect from
a

> transmission line analysis approach.
>
> In order for the steady state impedance match to occur, the correct
portion
> of reflected power must be delivered rearward through the tuner to the
tuner
> input. If it did not, the steady state match would not occur. If you
> prevented the reflected power from arriving at the tuner output, the
steady
> state match would cease to exist. [If it was totally re-reflected, and no
> portion was delivered rearward through the tuner, then it would not
matter.]
>
> The basic issue, as I see it, is that you assume that 100 watts of the
> "delivered" power travels through the tuner and is a forward power in the
> transmission line to which the re-reflected power is added (never mind
that
> 100 Watts + 33.33 Watts is not equal to 133.33 Watts). If you could see
> that this delivered power does not travel into the transmission line as a
> forward power, it would all make sense.
>
> Steve VE9SRB
>
>
> > This discussion reminds me of the rapist defense that he never touched
> > her because molecules never really touch each other.
> > --
> > http://www.mindspring.com/~w6rca
> >
> >
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----
>
>

2301. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 02:39:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cl7l9$4gj$1@slb7.atl.mindspring.net>
Source record: 164650

Cecil:

See my earlier post.

Consider what happens if you arrange a Zo match at both the input and the output of the tuner?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AEDAB38.A4645346@IEEE.org...
> VE9SRB wrote:
> > We are not splitting hairs here. We are talking about technical concepts,
> > one valid and one not valid. A total re-reflection of power simply does not
> > occur at the output of a tuner.
>
> Nobody ever said it did, Steve. The total re-reflection being discussed has
> always been said to occur at the Z0-match at the tuner *INPUT*. In order to
> simplify things, please discuss the following sans any tuner.
>
> 100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load
>
> No tuner, Z0-match at point 'X'. All your other parameters are the
> same. 100w generated power, 33.33 watts reflected power and 133.33
> watts of forward power on the twinlead.
>
> We have two sets of joules flowing into the Z0-match and one set of
> joules flowing out. We know there is no reverse flowing energy on
> the 50 ohm coax because we can measure it.
>
> > To say that it does is not a matter of
> > semantics, nor is it a matter of interpretation. It is simply incorrect.
> > It is incorrect from a circuit analysis approach and it is incorrect from a
> > transmission line analysis approach.
>
> Since nobody has ever said that re-reflection occurs at the tuner output,
> seems your objection is moot. The re-reflection occurs at the Z0-match
> at the tuner input. The destructive cancellation occurs at the Z0-match
> at the tuner input. The re-routing of the reflected energy occurs at

> the Z0-match at the tuner input.
>
> > In order for the steady state impedance match to occur, the correct
portion
> > of reflected power must be delivered rearward through the tuner to the
tuner
> > input. If it did not, the steady state match would not occur. If you
> > prevented the reflected power from arriving at the tuner output, ...
>
> Forget the tuner output already. NOBODY is discussing the tuner output.
> The Z0-match we are discussing occurs at the tuner input.
>
> > The basic issue, as I see it, is that you assume that 100 watts of the
> > "delivered" power travels through the tuner and is a forward power in
the
> > transmission line to which the re-reflected power is added ...
>
> "Energy can neither be created or destroyed". The energy that you have
> destroyed is exactly equal to the energy you are creating. Doesn't that
> tell you something?
>
> > (never mind that 100 Watts + 33.33 Watts is not equal to 133.33 Watts).
>
> Of course, 100 joules plus 33.33 joules equals 133.33 joules. There is no
> way to create or destroy joules.
>
> > If you could see
> > that this delivered power does not travel into the transmission line as
a
> > forward power, it would all make sense.
>
> This isn't rocket science, Steve. If you have a black box with 100
joules/sec
> coming in plus 33.33 more joules/sec coming in from somewhere else, the
box
> either has to get hot or allow 133.33 joules/sec to flow out of it.
"Energy
> can be neither created or destroyed." If you could see that, it would all
> make sense.
> --
> http://www.mindspring.com/~w6rca

2302. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 03:27:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEE2D07.178A4641@IEEE.org>
Source record: 164651

W6RCecilA wrote:
> Dang Steve, I wish you would read my postings. I HAVE AGREED WITH
> YOU that the 33.33 watts are not re-reflected. Why the hell don't
> you read what I have written??? Trying to communicate with you
> seems to be a waste of time. You seem to be all output and no input.

Sorry, I had just had a front tire blowout on the Interstate and I
was still upset. Bad time to do any posting.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2303. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 03:31:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEE2E0D.7FBB5ADB@IEEE.org>
Source record: 164652

John O'Flaherty wrote:
> Power is rate of transfer of energy. Since when is there a requirement that
> there be dissipation for power to exist?

Since he doesn't accept the IEEE definition of "power". :-)
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2304. Re: Q-section calculations

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 03:53:45 UTC
From: richardharrison@webtv.net
Message-ID: <21858-3AEE3349-170@storefull-113.iap.bryant.webtv.net>
Source record: 164653

Don Bouquet wrote:
"---is there a standard formula I`ve overlooked on how to calculate the dimensions of a custom made Q-section of a specific impedance?"

The characteristic impedance of air-dielectric coax is given as:
Zo = 138 (log b/a)
b = inside diameter of the outer pipe
a = outside diameter of the inner conductor
The same units must be used for a and b.

The impedance needed for a Q-section to match two impedances is the square root of their product. If 50-ohms is to be matched to 300-ohms, the impedance of the Q-section is the square root of 15,000 or 122 ohms.

Best regards, Richard Harrison, KB5WZI

2305. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 04:29:16 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cle2s$d1b$0@208.206.142.87>
Source record: 164654

Richard Clark wrote:
>
> >> In short, it is an incorrect and unnecessary elaboration that both
> >> confuses and leads a novice down the wrong path. I would also put it
> >> to you, or Walt, that proof of its utility is defeated in proportion
> >> to the number of postings spent to explain it. Back then, it pushed
> >> the utility to 1/600th or so. These few additions only depress it
> >> further.
> > >
> > >
> > > Rich, from the perspective of a ham who doesn' have the advantage of
> > >extensive higher math skills nor an engineering degree, I must
> > >respectfully disagree.
> > >
> > >73, Dick Wï¿½EX
> >
> > Hi Dick,
> >
> > I am speaking from the perspective of a class room instructor of
> > technicians. I am not so text-bound to turn from an effective method,
> > though, when it works for you.

Ok, so what *do* we agree on? That the antenna tuner does preserve most of the original transmitter power for radiation, (save the additional loss caused by the reflected energy making additional trips up and down the coax) Can we agree on that? Hasn't that been sufficiently proven by field strength tests?

Steve seems to be implying that once steady state is reached then the reflected doesn't travel up and down the coax, rather the system operates as a complex lumped value. Is that what you see in it?

I'll never have a scientist's analytical understanding of this subject, a fact Walt well knew of most hams when he wrote on the subject. That shouldn't make it necessary to screen out all non-scientists from a clear, practical understanding of how it works, to the extent possible. It's clear enough from reading here that the scientists are far from being in agreement.

Dick

2306. Wanted: Plans for 6m antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 04:59:12 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010501005912.07476.00001597@ng-fx1.aol.com>
Source record: 164655

I am considering what to put up for 6m SSB and was wondering if anyone can direct me to good detailed articles that tell how to build one. I would like step by step instruction to include exactly what materials I need, how to do each step, etc. I would like a 2 or 3 ele yagi, a quad or a loop type antenna. Please email me directly.

=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-

73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com
http://egroups.com/group/vhfallmode

2307. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 05:30:31 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9clhlnnhk0@208.206.142.87>
Source record: 164656

W6RCecilA wrote:
>
> VE9SRB wrote:
> > We are not splitting hairs here. We are talking about technical concepts,
> > one valid and one not valid. A total re-reflection of power simply does not
> > occur at the output of a tuner.
>
> Nobody ever said it did, Steve. The total re-reflection being discussed has
> always been said to occur at the Z0-match at the tuner *INPUT*.

Whoa! Once my tuner is adjusted for zo match, I consider it to be a
lumped element in which input=output. Methinks you guys analyze a bit
too much. :-)

Dick

2308. Re: HELP!! FT Yaesu list????

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 05:35:00 UTC
From: Bigdad <Bigdad@rworld.com>
Message-ID: <8WrH6.35226$FS3.439964@sjc-read.news.verio.net>
Source record: 164657

<nannycam@iwvisp.com> wrote in message
news:3aec372c.3660562@news.iwvisp.com...
>
> Is there an FT list for yaesu radios?
> Where do I subscribe??
>
> Thanx
>
> 73 de WB6GKI
>
fox_tango@qth.net

2309. Re: UHF Yagi antenna plans needed

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 06:42:27 UTC
From: DeXXSter <dexxster@coolmail.net>
Message-ID: <nVsH6.12477$0t6.447886@news.infostrada.it>
Source record: 164658

Hi Howard,

I too considered building the Quagi and I just did it, with absolute accuracy: however it performed not so well as expected. I was quite surprised to discover that the old good HB9CV outperformed the Quagi... I'm sure I was enough accurate in measuring element's lenghts and spacing. SWR was also reasonable, now I don't know where's the trouble...

Anyhow, thanks for your suggestions. 73s.

:-? DeXXSter

<#hmnospamkarse#@earthlink.net> ha scritto nel messaggio news:chbnetos1v8q7k6ou0h8d1toir83ar7fi6@4ax.com...
> There is a "Quagi" in the ARRL Antenna Book that would fit your bill.
> The article on it is by Wayne Overbeck and it uses a wood boom and #12
> wire to form a quad driven element and reflecter and 1/8-inch rod (you
> can use the 'aluminum ground wire' that Rat-shack sells or any
> reasonable substitute). This is an 8 element beam, not 10 - but it is
> worth considering. Built one a few years ago, it was easy to build,
> light, inexpensive and only about 5 feet long. It worked very well,
> with it I took second place in a club contest by hitting our repeater
> from a distance of 106 miles using 5 watts. Wayne gives the
> dimensions for 432 as you desire, though if you would want one for FM
> use it is easy enough to recalculate element length.
>
> Hope this helps,
> Howard
> On Sat, 28 Apr 2001 15:49:07 GMT, "DeXXSter" <dexxster@coolmail.net>
> wrote:
>
> >I would like to build a reasonably-performant-but-quite-compact 10
elements
> >Yagi for the 70 cm band (432 MHz) using preferably a squared boom, but
> >didn't find anything suitable yet. Any help ?
> >
> >Thanks a lot in advance,
> >
> >:-) DeXXSter
> >
> >
>

2310. Re: Wanted: Plans for 6m antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 09:30:56 UTC
From: kg4fet@aol.combadspam
Message-ID: <20010501053056.21012.00001268@ng-df1.aol.com>
Source record: 164659

>I am considering what to put up for 6m SSB and was wondering if anyone can
>direct me to good detailed articles that tell how to build one. I would like
>step by step instruction to include exactly what materials I need, how to do
>each step, etc. I would like a 2 or 3 ele yagi, a quad or a loop type
>antenna.
>Please email me directly.
>=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
>73! de KC2SSB (ex: KF4KHC/HL9HCT)
>Toms River, NJ USA! Grid FM29
>http://vhfradiobuff.tripod.com
>http://egroups.com/group/vhfallmode
>
>
Take a look at www.6mt.com This has a section in the technicals strictly for
6 mtr antennas. Great web site for general and technical info on 10/11 mtr -
6mtr conversions on several rigs as well. great site. Hope to catch ya on 6
mtrs soon!
73 de KG4FET Sandor EM90 Proud Owner of Yaesu's FT 100

2311. Re: Joining different coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 09:33:35 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9clvoc$l3t$1@neptunium.btinternet.com>
Source record: 164660

Joining mixed impedances together, compared with a single length of the same type of cable the only difference you will notice at HF will be some small changes in the tuner settings.

With mixed impedances at VHF and UHF, where there is probably not a tuner, there might be problems with obtaining the correct load impedance for the transmitter.

Forget about loss at a joint. There will be less loss and disconinuity than occurs with a male-female connector.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

Rudy Marcelletti <rudym@net-link.net> wrote in message news:3aed8975$0$62148$bbae4d71@news.net-link.net...
> Will weird things happen or big losses or mis-matches occur with different
> typs of coax strung together? For example, hooking up various lengths of
> 9913, 9913F, RG-8, RG-213, RG-214, RG-8X and 1/2" or 3/4" CATV line? I need
> to go a long way and have many short pieces laying around and am thinking
> about hooking them up with barrel connectors and seeing how it plays! First
> run is about 250 feet with about 50 feet of RG-213 (2 pieces), 100 feet of
> RG-214 (2 pieces) and 100 feet of 9913 (1 piece). This is just a temporary
> set up. I need to get a UHF antenna back to hard line that I disconnected
> to hook up a 2 meter beam, and was going to just hook up the HF beam to this
> coax (it is fed with 1/2" hardline now) until I can get another run of
> hardline together and out and up the tower for the new 2 meter beam.
> Antennas are 100 feet up or more and about 120 feet or so from the shack.
>

>

2312. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 09:49:06 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cm0m3$f5u$1@plutonium.btinternet.com>
Source record: 164661

When a matching network is inserted in a transmission system and
adjusted for maximum power transfer in one direction,
simultaneously there will be conditions for maximum power transfer
in the opposite direction.

It's a conjugate match. When the system is cut at any point, EVEN
IN THE MIDDLE OF THE NETWORK, the impedance looking in one
direction will be R+jX and in the other direction R-jX.

Reg, G4FGQ

2313. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 11:07:10 UTC
From: k1bqt@aol.com
Message-ID: <20010501070710.01705.00000798@ng-ff1.aol.com>
Source record: 164662

>it helps if the radio has a good ground and has an antenna feedline which is an odd multiple of 1/4-waves long. That makes
the outside of the coax nearly an open-circuit at its junction with the antenna.<

It had better have a REAL good RF ground at the feedpoint, Richard. Otherwise, you've created the most volitile common-mode situation possible. Bad advice for the typical ham station where the RF impedence of the station ground might be quite high.

Rick K1BQT

2314. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 11:10:29 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AEE99A5.80130960@mwci.net>
Source record: 164663

Richard Harrison wrote:

> Bill, W0IYH wrote:
> "I must not overlook the possibility of antenna near field coupling onto
> the coax braid. This would be an example of common mode."
>
> But, we assume a balanced antenna with a perpendicular feedline. Same
> voltage and current in both pieces of a dipole. The difference in the
> current is only that it is toward the feedline on one side and away from
> the feedline on the other side. That positioning induces equal and
> opposite fields in the vicinity of the feedline (whether near-field or
> far-field), given system symmetry, which we specify. The net induced
> field acting on the outside surface of the coax feedline is zero.

If the symmetry is perfect in all repects, then there is no common mode coupling to the coax. But I said "what if it is not perfectly balanced?" Then we know from experience that a common mode current can flow on the outside of the braid. I thought we *all* understood that.

> I subscribe to the group which imagines current from the inside surface
> of the coax shield looping around the butt-end of the coax at the
> antenna and continuing its journey down the outer surface of the coax
> shield depending upon the relative attractiveness of the connected
> 1/2-dipole conductor and that of the outside of the coax shield.

That is your prerogative, Richard.

73 and good luck.

Bill W0IYH

2315. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 11:14:04 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AEE9A7C.11040AB0@mwci.net>
Source record: 164664

Roger Sparks wrote:

> The idea that two separate currents can flow on the braided wire outside
> conductor of a coaxial line continues to frustrate me.
>
> We are being asked to believe that a very small wire will actually perform
> as if it were really two separate wires separated by a dielectric. The
> separation is so good that we apparently do not even need to worry about
> breakdown voltage as we do if we had a real dielectric, because no limits
> for the separation are ever given.
>
> I tried to measure the diameter of the wires in RG-8 and RG-8 mini braid.
> They appear to be made of AWG 34 and AWG 36 respectively, with diameters of
> 0.016 and 0.0127 cm respectively.
>
> At 20 Meters, skin effect for copper is about .002 cm, which means that at a
> depth of 0.002 cm, the current flow rate is only about 37% of the rate on
> the surface.
>
> Using the AWG 34 wire and the depth of 0.002 cm, we can find the volume of
> wire which carries current at a rate exceeding 37% of the surface rate. It
> turns out to be about 43% of the total volume of each wire. How can we
> possibly turn such a high conductive volume into two wires effectively
> separated by a super dielectric?
>
> We can go on to calculate the square inches of copper connecting the two
> braid 'surfaces' to learn that the conductive path must be near a zero
> impedance. What then is to prevent any current flowing on the outside of
> the coax braid from completely merging with any current flowing on the
> inside of the coax braid? Once merged the currents would have to act on the
> center conductor equally.
>
> A misuse of the phenomena of skin effect leads experimenters and designers
> to believe that it is impossible to use a coaxial configuration for windings
> in a transformer. A huge error. It also leads people to believe that a
> balun is a special device with electromagnetic rules all of its own.
> Another huge error. The magic of the balun disappears when we simply think
> of it as we would a standard transformer, which is what it is.

I agree with this 100 percent. Thanks Roger.

Bill W0IYH

2316. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 11:20:05 UTC
From: 2w8ji@akorn.net
Message-ID: <3aee92eb.507821798@news.accessunited.com>
Source record: 164665

On Tue, 01 May 2001 01:53:20 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:

>The idea that two separate currents can flow on the braided wire outside
>conductor of a coaxial line continues to frustrate me.

I think you have the concept incorrect. The current on the outside of
the cable is a single current, as is the current on the inside of the
braid. Those currents are isolated by the skin depth of the braid.

This effect is the primary reason loss in cables that has been exposed
to water goes up. When the braid tarnishes, the current can no longer
stay on the inside of the shield through the pressure connections in
the woven braid!

If you believe copper cable that has been wet (and drys out) has very
high loss, you surely believe skin effect is real.

>We are being asked to believe that a very small wire will actually perform
>as if it were really two separate wires separated by a dielectric. The
>separation is so good that we apparently do not even need to worry about
>breakdown voltage as we do if we had a real dielectric, because no limits
>for the separation are ever given.

The current in any conductor carrying AC can not be uniformly
distributed.

It isn't a matter of breakdown voltage, it is a matter of impedances.
The impedance inside the conductor is higher than the impedance
outside the conductor. Since the voltage drops must be equal for all
portions of the conductor with the same cross-section, current moves
towards the surface.

Since the inside of the conductor has more flux surrounding it than
the surface, it has a higher impedance. This is the mechanism that
forces current to the ouside.

There is no voltage gradient inside a perfect conductor, and without a
voltage gradient there can be no current. It might as well be an
insulator.

>I tried to measure the diameter of the wires in RG-8 and RG-8 mini braid.
>They appear to be made of AWG 34 and AWG 36 respectively, with diameters of
>0.016 and 0.0127 cm respectively.

>At 20 Meters, skin effect for copper is about .002 cm, which means that at a
>depth of 0.002 cm, the current flow rate is only about 37% of the rate on
>the surface.

I agree braiding is a poor or confusing example, it is very dependent on the density of the braid and the electrical contact at the point where the wires interweave.

We also have to consider some other things.

How thick is the braid? Is it thicker than a single strand of wire?

Why is the AC resistance HIGHER than the DC resistance if there is no skin effect? Why does the RF resistance of braiding skyrocket once it tarnishes or corrodes?

>A misuse of the phenomena of skin effect leads experimenters and designers
>to believe that it is impossible to use a coaxial configuration for windings
>in a transformer. A huge error. It also leads people to believe that a
>balun is a special device with electromagnetic rules all of its own.
>Another huge error. The magic of the balun disappears when we simply think
>of it as we would a standard transformer, which is what it is.

My transformers wound with coaxial (concentric) conductors work OK, as do "shielded" loop antennas. That's because the ends of the shields provide a place for current to spill over.

Neither the electric or magnetic field has to penetrate the conductor for them to work.

As a matter of fact, if you measure this stuff you'll find an extra loss resistance that is not accountable unless current on the shield has a path about TWICE the length of one surface.

Consider also the experiment I did, where I used a thin copper wall and measured the currents on the opposite surface. Directly opposite a current-carrying loop centered on one side, just thousandth's of an inch away, the magnetic field was at a minimum. At the edges of the wall, the current was maximum on that opposite side!

If the current or magnetic field can go "right through" that wall, why isn't current maximum directly opposite the exciting conductor? Why is it actually much much higher at the edges, when the wall is a small fraction of a wavelength square?

73 Tom

2317. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 11:23:34 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AEE9CB6.4ABBEEBD@mwci.net>
Source record: 164666

William E. Sabin wrote:

> Roger Sparks wrote:
>
> > The idea that two separate currents can flow on the braided wire outside
> > conductor of a coaxial line continues to frustrate me.
> >
> > We are being asked to believe that a very small wire will actually perform
> > as if it were really two separate wires separated by a dielectric. The
> > separation is so good that we apparently do not even need to worry about
> > breakdown voltage as we do if we had a real dielectric, because no limits
> > for the separation are ever given.
> >
> > I tried to measure the diameter of the wires in RG-8 and RG-8 mini braid.
> > They appear to be made of AWG 34 and AWG 36 respectively, with diameters of
> > 0.016 and 0.0127 cm respectively.
> >
> > At 20 Meters, skin effect for copper is about .002 cm, which means that at a
> > depth of 0.002 cm, the current flow rate is only about 37% of the rate on
> > the surface.
> >
> > Using the AWG 34 wire and the depth of 0.002 cm, we can find the volume of
> > wire which carries current at a rate exceeding 37% of the surface rate. It
> > turns out to be about 43% of the total volume of each wire. How can we
> > possibly turn such a high conductive volume into two wires effectively
> > separated by a super dielectric?
> >
> > We can go on to calculate the square inches of copper connecting the two
> > braid 'surfaces' to learn that the conductive path must be near a zero
> > impedance. What then is to prevent any current flowing on the outside of
> > the coax braid from completely merging with any current flowing on the
> > inside of the coax braid? Once merged the currents would have to act on the
> > center conductor equally.
> >
> > A misuse of the phenomena of skin effect leads experimenters and designers
> > to believe that it is impossible to use a coaxial configuration for windings
> > in a transformer. A huge error. It also leads people to believe that a
> > balun is a special device with electromagnetic rules all of its own.
> > Another huge error. The magic of the balun disappears when we simply think
> > of it as we would a standard transformer, which is what it is.
>
> I agree with this 100 percent. Thanks Roger.

Also, the balun is at the same time two RF inductors that increase the common mode impedance, which is also important. The balun is typical of a lot of RF

transformers in that its coupling and its winding impedance are both important.

Bill W0IYH

2318. Re: Colocation of Feed/Phase Coax for 4 squares?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 11:27:13 UTC
From: 2w8ji@akorn.net
Message-ID: <3aee9c23.510181858@news.accessunited.com>
Source record: 164667

On Tue, 01 May 2001 02:37:48 -0000, mike.luther@ziplog.com wrote:

>The design of the site is such that it would save me a complete trench run
>if I could take off from the shack and make a short trench to the closest
>tower base. From there I'd like to simply run the master feed coax cable
>down the same PVC pipe that feeds the phase line to that stick. Much
>cheaper, much easier to do. Same route for the relay control cable as
>well is wanted.

Shouldn't be a problem. We all know the shield is well-isolated on the
outside by the skin depth of the shield.

>As well, it would also save me money and time if I could run my
>projected master feed and control cable down that same PVC for what
>hopefully will someday be a 160 meter version of all this.
>
>Now... what about cross coupling and all that stuff? What problems am I
>about to open up by doing this? Anyone got any experience on such things?

> sure don't want to make a mistake. Like Alice in contemplation,
> "One pill makes you taller; one pill makes you small, and
> the ones your Mommy givess you don't do any good at all!"

Hmmm, have you been listening to your old Jefferson Airplane albums
again? Wasn't Grace a doll before the drugs and booze ruined her? Now
she looks like Chip and sings like Bob Dole.

73 Tom

2319. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 11:29:45 UTC
From: 2w8ji@akorn.net
Message-ID: <3aee9d7c.510527083@news.accessunited.com>
Source record: 164668
Body handling: HTML body converted to readable text

On Tue, 01 May 2001 02:55:41 GMT, Irv Finkleman
wrote:

>
>
>I can build a trap antenna with one trap (40 meter band) in each leg and
>use it on
>
80/40/20/15/10 meters. I can also build the same antenna but
>with four traps (40m/20/15/10 meters) in each leg. I can see that
>with four traps you should be able to select the portion of the individual
>bands in which you prefer to operate, but I wonder if there is any other
>advantage to using four traps?

I just measured a bunch of traps for a talk at Dayton.

What kind or construction-style of traps are you going to use? You
might be suprised how lossy some types are, and how good other types
are.

73 Tom

2320. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 12:27:50 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEEABC6.F6225CBE@IEEE.org>
Source record: 164569

Dick Carroll wrote:
> Ok, so what *do* we agree on?

I know what we should all agree on, Dick. In a lossless system, if reflected energy is prohibited from reaching the transmitter (by a Z0-match) then all the generated power, including the reflected power, is routed to the load. There is simply nowhere else for it to go. In a matched lossless system, all reflected energy rejected by the load is eventually re-routed to the load. The only argument is what that process of re-routing is called and exactly how it happens.

> Steve seems to be implying that once steady state is reached then the
> reflected doesn't travel up and down the coax, rather the system
> operates as a complex lumped value. Is that what you see in it?

If you forget voltage, current, waves, and reflections, and look only at energy in and out, it becomes clear what is happening. You know what has to be happening even if you don't know why it's happening. And the question is: If you know what is happening, do you really need to know or care why it's happening? What do you think?

Again, everyone who understands conservation of energy, knows what must happen. The argument is about the nitty-gritty details and what words we use to describe those nitty-gritty details.
--
http://www.mindspring.com/~w6rca

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2321. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 12:35:55 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEEADAB.E95A4868@IEEE.org>
Source record: 164570

Dick Carroll wrote:
>
> W6RCecilA wrote:
> >
> > VE9SRB wrote:
> > > We are not splitting hairs here. We are talking about technical concepts,
> > > one valid and one not valid. A total re-reflection of power simply does not
> > > occur at the output of a tuner.
> >
> > Nobody ever said it did, Steve. The total re-reflection being discussed has
> > always been said to occur at the Z0-match at the tuner *INPUT*.
>
> Whoa! Once my tuner is adjusted for zo match, I consider it to be a
> lumped element in which input=output. Methinks you guys analyze a bit
> too much. :-)

Consider the following two antenna systems.

100w XMTR---50 ohm coax---X---1/2WL 300 ohm twinlead---50 ohm load

100w XMTR---50 ohm coax---TUNER---3/8WL 300 ohm twinlead---50 ohm load

'X' marks the spot of the Z0-match in example #1. Doesn't it seem logical
to assume the Z0-match is at the input of the TUNER in example #2? It
can be proven that reflections exist inside the TUNER. In the above
example, the TUNER has simply replaced 1/8WL of feedline.
--
http://www.mindspring.com/~w6rca

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2322. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 12:38:12 UTC
From: 2w8ji@akorn.net
Message-ID: <3aeead8a.514637113@news.accessunited.com>
Source record: 164571

On 01 May 2001 11:07:10 GMT, k1bqt@aol.com (Rick Littlefield) wrote:

>>it helps if the radio has a good ground and has an antenna feedline which is
>an odd multiple of 1/4-waves long. That makes
>the outside of the coax nearly an open-circuit at its junction with the
>antenna.<
>
>It had better have a REAL good RF ground at the feedpoint, Richard. Otherwise,
>you've created the most volitile common-mode situation possible. Bad advice
>for the typical ham station where the RF impedence of the station ground might
>be quite high.
>
>Rick K1BQT

The feedline must also be nearly lossless or low loss on the OUTSIDE
of the braid, and the electrical length must be known.

That situation is nearly impossible to find, unless the line drops
vertically to a known good RF ground...and has nothing else around it
for a good distance.

73 Tom

2323. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 12:40:17 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEEAEB1.4B150C3E@IEEE.org>
Source record: 164572

Reg Edwards wrote:
> When a matching network is inserted in a transmission system and
> adjusted for maximum power transfer in one direction,
> simultaneously there will be conditions for maximum power transfer
> in the opposite direction.

However, we are normally concerned about transferring power from the
source to the load, not the opposite direction.
--
http://www.mindspring.com/~w6rca

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2324. Re: Joining different coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 12:47:34 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <KeyH6.2493$c4.330417@e420r-chi1.usenetserver.com>
Source record: 164573

Hi Rudy,

I've just read answers to your question posted by both Reg and Crazy George.
Go with Reg's answer!

Walt, W2DU

2325. Re: The Wireman question....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 12:57:48 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <koyH6.2496$c4.331462@e420r-chi1.usenetserver.com>
Source record: 164574

Bill, The Wireman is the best ! You'll never get a better deal with anyone else. Go for him!

Walt Maxwell, W2DU

2326. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 13:14:27 UTC
From: John Passaneau <jxp16@psu.edu>
Message-ID: <9cmcrh$t82@r02n01.cac.psu.edu>
Source record: 164575

Hi Irv:

The one trap per leg solution can be made to be resonate on many of the ham bands by chousing the L-C ratio of the trap just right.
With 40 m traps, the antenna is of course resonate and acts like a half wave dipole on 40 m. Below the trap's resonate frequency it looks like a inductor and is a loading coil on 80. It is also usable on 15 m, as is a normal 40 m dipole. Above the traps resonate frequency the trap looks like a capacitor and shortens the antenna making it resonate on 20 m and if everything is ok it will also show a resonance on 10 m. The sticker is, other than 80 and 40 m the antenna is a not a half wave and the impedance will be resistive, (the definition of resonance) it will not be anywhere close to 50 ohms. On 20 m it will be more like 200 to 300 Ohms. So with a tuner it will be easy to match but it will need a tuner on all bands other than 80 and 40 m.
The multiple trap design how ever, will give true half wave dipole characteristics on the highest band, but loaded half wave dipole performance on the lower bands, with the traps for the upper bands acting like loading coils making the antenna shorter and increasing loss. The 10 m traps act as loading coils on 15 m and the 10 and 15 m traps act like loading coils on 20 and so on. This makes the antenna much shorter than the 2 trap design.

As for loss I just designed a trapped dipole for 80/40/20 using EZNEC. I made my traps out of section of PVC pipe with wire wound on them with a transmitting cap tuned to the middle of the 40 m band. The actual antenna in impedance, swr band width and resonate frequency came out very close to the EZNEC model so I think I have every thing right in the model. Using the data I measured in my shop at work for the traps. EZNEC show a loss in the traps on 80 m (as loading coils) of 9.5 watts out of a 1000 watts. and less than 1 watt out of a 1000 on 40 m. I don't have the data here with me so I can't remember what it was on 20 m, but I was not designing this for use on 20 m, it just happened to work out with the coil/capacitor I picked to use.

So the bottom line is: the multi-trap design may not need a tuner to be usable but will have much higher losses than the two trap design, which will need a tuner to be usable on any band other than 80 and 40 m. Also the SWR band width will be somewhat narrower with any trap design. So for best performance use a "fan dipole" for multi-band use or the favorite of the in crowed here on the newsgroup, a dipole feed with open wire line.
The best reason to use trapped dipoles is because of a lack of space to put up full size dipoles (the reason I did it) as a full size dipole is all ways going to be more efficient. But I must say, that 9 watt out of a 1000 in my design, is not much.

--
John Passaneau, W3JXP
Physics Dept. Electronics Shop
Penn State University
104 Davey Lab, University Park , Pa. 16802
814.863.4297, jxp16@psu.edu

"Irv Finkleman" <finkirvNOSPAM@home.com> wrote in message
news:3AEE2599.40F303DF@home.com...
I can build a trap antenna with one trap (40 meter band) in each leg and use it on 80/40/20/15/10 meters. I can also build the same antenna but with four traps (40m/20/15/10 meters) in each leg. I can see that with four traps you should be able to select the portion of the individual bands in which you prefer to operate, but I wonder if there is any other advantage to using four traps?
--

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

Please delete NOSPAM from my e-mail address when replying. Thanks!

2327. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 13:48:49 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <59zH6.157$4f7.13515@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164576

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEDF2DC.95252324@IEEE.org...
> VE9SRB wrote:
> > You're in-phase addition of 100
> > Watts + 33.33 Watts to get 133.33 Watts violates Kirchoff's voltages
laws
> > and the relationships between voltage and power. All of our circuit
> > analysis occurs with voltage and current. Average power is a derived
> > quantity.
>
> Steve, power has no phase and I am not even considering voltage and
current.
> I am way down at the most basic level of conservation of energy. Your
voltages
> and currents are not allowed to violate the conservation of energy
principle.
>
> > To arrive at the conclusion that a total re-reflection of
> > the 33.33 Watts of power occurs to make this happen is incorrect.
>
> Dang Steve, I wish you would read my postings. I HAVE AGREED WITH
> YOU that the 33.33 watts are not re-reflected. Why the hell don't
> you read what I have written??? Trying to communicate with you
> seems to be a waste of time. You seem to be all output and no input.
>

Cecil, I do read what you have written. I apologize if it appears that I do
not. If I am wasting your time, I apologize for that as well.

> The part of the energy that balances the conservation of energy
> equation is technically not re-reflected but it is re-routed right
> along with the re-reflections. The energy that is re-routed is
> the energy used in the destructive interference process. There
> is no place else for it to go.
>
> > You should consider all aspects of your technical position:
>
> How do you know what they are if you don't read them? And you obviously
> have NOT read them.
>

Clearly, there is a disconnect between what you have written and my
interpretation of it.

In looking at your posts, it appears to be that you do disagree with me. I will read through your post of yesterday on the transmission line example (the no tuner one) and see what I've missed.

> > Is it consistent with transmission line theory, i.e, the level of wave
> > reflection at the end of a transmission line is a function of the impedance
> > terminating the line? No it is not!
>
> Transmission line theory is not allowed to violate the conservation of
> energy principle.
>
> > Is it consistent with Kirchoff's voltage laws and the determination of total
> > power from total voltage? No it is not.
>
> Kirchoff's laws are not allowed to violate the conservation of energy
> principle.
>
> > The fact that your technical position is inconsistent with these two basic
> > principles should cause you to examine it further.
>
> I am at the most basic conservation of energy level, Steve. Do you
> really believe that the conservation of energy principle can be
> violated just because you indicate that it can?
>
> To repeat: Your P1 + P2 + 2 sqrt (P1*P2) is a mathematical nicety but
> you cannot add two energies to get more than the sum of the two energies.
> The conservation of energy principle will not allow it. The term,
> 2 sqrt (P1*P2), is the energy used in the destructive interference at
> the Z0-match. That is the origin of the energy that balances the energy
> equation. I AGREE WITH YOU that the destructive interference energy is
> technically not re-reflected but it is certainly re-routed right along
> with the re-reflected energy. The only energy moving away from the Z0-
> match is the forward power.
> --
> http://www.mindspring.com/~w6rca
>
>
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2328. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 13:58:29 UTC
From: richardharrison@webtv.net
Message-ID: <29326-3AEEC105-246@storefull-112.iap.bryant.webtv.net>
Source record: 164577

Roger Sparks wrote:
"The idea that two separate currents can flow on the braided wire outside conductor of a coax line continues to frustrate me."

Once Roger accepts skin effect as a fact of life, his frustration should be gone.

Starting about 1 MHz and up, isolation between inside and outside of a coax shield is almost complete. Braided or solid makes very little difference. Braid was used only to improve flexibility while retaining nearly all the isolation between the inside and the outside of the coax.

There are 6 references to skin effect in the index of my 1998 ARRL Handbook. Here is a partial yield from each:

20.8) "(In Copperweld) Practically all the RF current is confined to the copper coating because of skin effect."

19.17) "Skin effect on the inside walls of the waveguide confines electromagnetic energy inside the guide in much the same manner that the shield of a coaxial cable confines energy within the coax."

19.5) "Line loss rises with frequency, since the conductor resistance is related to skin effect, and also because dielectric losses rise with frequency."

19.2) "Because of "skin effect" (see the Real World chapter in this Handbook), current flowing in the outer conductor of a coax does so mainly on the inner surface of the outer conductor."

10.12) "This resistance increase, called "skin effect", is insignificant at low (audio) frequencies, but beginning around 1 MHz (depending on the size of the conductor) it is so pronounced that practically all the current flows in a very thin layer near the conductor`s surface."

6.21) "As the frequency increases, the current is confined to a thin layer of the conductor surface. This property is called skin effect."

Isn`t it time to drive a stake through the heart of a myth being promulgated right here that at h-f, r-f current is being substantially conducted directly through the thickness of a coax shield. All the ancient authorities say skin effect precludes this direct conduction, and the ARRL agrees with clear and simple language.

Best regards, Richard Harrison, KB5WZI

2329. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 14:35:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEEC9AA.5101630E@IEEE.org>
Source record: 164578

VE9SRB wrote:

Steve, I had a terrible day yesterday and I apologize for taking
it out on you.

> In looking at your posts, it appears to be that you do disagree with me.

I do disagree with you when you say 75 joules plus 8.33 joules equals
133.33 joules. I don't disagree with you when you say 8.33 joules/sec
is re-reflected outright. We are having a conservation of energy
disagreement, not a reflection mechanism disagreement.

If, from my 100w transmitter, I run two transmission lines, T1 and
T2, with 50w in each, P1 and P2, then when I combine them at a junction,
will I get Ptot = P1 + P2 + 2 sqrt P1*P2 = 200 watts? Of course not.
That equation is at least as confusing as a "virtual short".

To balance your energy equation of 75 + 8.33 = 133.33 we need another
term. 75 + 8.33 +(50) = 133.33 It is true that 50 joules equals
2 sqrt P1*P2 but that doesn't tell us where it came from. In a
previous posting, I showed that the 50 joules is exactly equal to
the energy in the destructive interference pattern between the
complimentary sets of reflections, one at the Z0-match and the other
arriving back at the Z0-match from the load 180 degrees out of phase
for both voltage and current.

Those reflected energies cannot be destroyed by the destructive interference
and we know there is no energy traveling back to the transmitter.
Although not technically re-reflected, the energy associated with the
destructive interference action joins the total forward energy. It has
no other place to go.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2330. Re: Joining different coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 15:00:11 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3aeed02f$0$88178$bbae4d71@news.net-link.net>
Source record: 164579

Thanks all. I have several runs of hardline up with 9913F jumpers and they all work fine. The post was just to see if I was going to run into problems running all the different coaxes together to make a long run. I thought that even though they are all 50 or 52 ohm, the velocity factors are different. Maybe I will hook all similar coaxes together that have similar velocity, then possibly have less impedance bumps? Maybe just say the heck with all this techno babble and hook up what I need to get where I need to go and see how it plays! It is all for HF fun anyway and that is what tuners are for.
Walter Maxwell wrote in message ...
>Hi Rudy,
>
>I've just read answers to your question posted by both Reg and Crazy George.
>Go with Reg's answer!
>
>Walt, W2DU
>
>
>

2331. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 15:05:42 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <s4ktetsgrcqrrrbtu4q8rl1m4pghfko64f@4ax.com>
Source record: 164581
Body handling: HTML body converted to readable text

On Tue, 01 May 2001 11:29:45 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:

>On Tue, 01 May 2001 02:55:41 GMT, Irv Finkleman
> wrote:
>
>>
>>
>>I can build a trap antenna with one trap (40 meter band) in each leg and
>>use it on
>>
80/40/20/15/10 meters. I can also build the same antenna but
>>with four traps (40m/20/15/10 meters) in each leg. I can see that
>>with four traps you should be able to select the portion of the individual
>>bands in which you prefer to operate, but I wonder if there is any other
>>advantage to using four traps?
>
>I just measured a bunch of traps for a talk at Dayton.
>
>What kind or construction-style of traps are you going to use? You
>might be suprised how lossy some types are, and how good other types
>are.
>
>73 Tom

Tom,

How about some more info? The good, bad and ugly?

73
Danny

2332. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 15:41:34 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cmlfe$3fr$0@208.206.142.108>
Source record: 164580

W6RCecilA wrote:
>
> Dick Carroll wrote:
> >
> > W6RCecilA wrote:
> > >
> > > VE9SRB wrote:
> > > > We are not splitting hairs here. We are talking about technical concepts,
> > > > one valid and one not valid. A total re-reflection of power simply does not
> > > > occur at the output of a tuner.
> > >
> > > Nobody ever said it did, Steve. The total re-reflection being discussed has
> > > always been said to occur at the Z0-match at the tuner *INPUT*.
> >
> > Whoa! Once my tuner is adjusted for zo match, I consider it to be a
> > lumped element in which input=output. Methinks you guys analyze a bit
> > too much. :-)
>
> Consider the following two antenna systems.
>
> 100w XMTR---50 ohm coax---X---1/2WL 300 ohm twinlead---50 ohm load
>
> 100w XMTR---50 ohm coax---TUNER---3/8WL 300 ohm twinlead---50 ohm load
>
> 'X' marks the spot of the Z0-match in example #1. Doesn't it seem logical
> to assume the Z0-match is at the input of the TUNER in example #2? It
> can be proven that reflections exist inside the TUNER. In the above
> example, the TUNER has simply replaced 1/8WL of feedline.
>

****

OK. And after another torturous round of posting here on RRAA, I think
we've finally distilled it down to the basic
conflict-disagreement-misunderstanding,

To Wit:

Whether the Zo match is at the output, imput, or within the *TUNER*

Which makes absolutely no difference at all.....(except to analysts).

73 all, Dick Wï¿½EX

****

2333. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 15:53:24 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <UZAH6.274$4f7.19835@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164582

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEEC9AA.5101630E@IEEE.org...
> VE9SRB wrote:
>
> Steve, I had a terrible day yesterday and I apologize for taking
> it out on you.
>

Cecil, not a problem from my end. I hope today's better.

> > In looking at your posts, it appears to be that you do disagree with me.
>
> I do disagree with you when you say 75 joules plus 8.33 joules equals
> 133.33 joules. I don't disagree with you when you say 8.33 joules/sec
> is re-reflected outright. We are having a conservation of energy
> disagreement, not a reflection mechanism disagreement.
>
> If, from my 100w transmitter, I run two transmission lines, T1 and
> T2, with 50w in each, P1 and P2, then when I combine them at a junction,
> will I get Ptot = P1 + P2 + 2 sqrt P1*P2 = 200 watts? Of course not.
> That equation is at least as confusing as a "virtual short".
>

This is an entirely different example.

We are talking about adding two forward voltages and currents traveling in a transmission line and then trying to determine the resulting total forward power.

Assume Zo = 50 ohms.

Look at what you are saying relative to adding 100 Watts (70.71 V) plus 33.33 Watts (40.82 V) to get 133.33 Watts (81.64 V). You're telling me that the in-phase addition of 70.71 V plus 40.82 V equals 81.64 V.

You must forget about adding power or energy together in this manner. Adding two forward powers traveling in the same line to get total forward power just does not work. You must always perform the addition with voltage and current.

For 75 Watts, V = 61.24 V. For 8.33 Watts, V = 20.4 V. Vtotal = 81.64 V. Total resulting power is 133.33 W.

Steve

2334. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 15:54:45 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <9%AH6.281$4f7.20949@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164583

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEDAB38.A4645346@IEEE.org...
> VE9SRB wrote:
> > We are not splitting hairs here. We are talking about technical
concepts,
> > one valid and one not valid. A total re-reflection of power simply does
not
> > occur at the output of a tuner.
>
> Nobody ever said it did, Steve. The total re-reflection being discussed
has
> always been said to occur at the Z0-match at the tuner *INPUT*. In order
to
> simplify things, please discuss the following sans any tuner.
>

We do disagree on this point Cecil. There is no re-reflection occurring at the input of the tuner. Not even a partial re-reflection occurs at the tuner input. For the rearward traveling wave, the transition between the transmission line and the tuner occurs at the tuner output. That is where the partial re-reflection of power occurs.

> 100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load
>
> No tuner, Z0-match at point 'X'. All your other parameters are the
> same. 100w generated power, 33.33 watts reflected power and 133.33
> watts of forward power on the twinlead.

Agreed.

>
> We have two sets of joules flowing into the Z0-match and one set of
> joules flowing out. We know there is no reverse flowing energy on
> the 50 ohm coax because we can measure it.
>

I agree that there is no reverse energy flowing on the 50 ohm coax. My previous point is that this is a net steady state condition. We must agree that we can only measure net steady state power or energy. Remember also that power and energy are derived scalar quantities. They are derived from the addition of vector voltages and currents. In trying to "add" power or energy traveling in the same direction in a transmission line, we lose the phase relationships that exist between the two voltage components or the two current components that we are trying to add.

In a transmission line or circuit analysis, it is correct to determine Pdel from Pdel = Pfwd - Pref. It is also true as you state, that the total power "entering the node" must equal the total power "exiting the node". I believe that this is Tellegen's Theorem, which is similar to Kirchoff's current law. This is not the exact issue we are discussing. The important issue for us is how to correctly determine the total forward power or energy traveling forward in the line. To do this, we cannot add individual forward power or energy components and sum them to get total power or current. We must add individual forward voltage and current and then determine the total forward power or energy.

> > To say that it does is not a matter of
> > semantics, nor is it a matter of interpretation. It is simply
incorrect.
> > It is incorrect from a circuit analysis approach and it is incorrect
from a
> > transmission line analysis approach.
>
> Since nobody has ever said that re-reflection occurs at the tuner output,
> seems your objection is moot. The re-reflection occurs at the Z0-match
> at the tuner input. The destructive cancellation occurs at the Z0-match
> at the tuner input. The re-routing of the reflected energy occurs at
> the Z0-match at the tuner input.
>

Two point here.

First, in any transmission line system, wave reflections occur when there is an impedance discontinuity relative to the transmission line Zo. Reflections occur at the transition between the transmission line and the lumped circuit elements in the tuner. When the reflected wave arrives at the tuner output, it will see an impedance discontinuity. A reflection (or re-reflection) must occur at the tuner output. From the tuner's perspective, all it sees is a total voltage and current developing at its output terminals. The steady state reflected wave arriving at the tuner output is effectively a voltage source applied at the tuner output. Simply circuit theory can then be used to determine the total voltage and current resulting at the tuner input. There is no re-reflection occurring at the tuner input. The voltage and current developed at the tuner input from the voltage developed at the tuner output is simply launched as a rearward traveling wave in the transmission line connected to the transmitter.

Second, on the Zo match (still the tuner example). There is no re-reflection at the Zo match (tuner input). Yes, there is destructive cancellation occurring. It occurs because there are two steady state rearward traveling waves developed in the transmission line at the tuner input. These two waves are 180 degrees out of phase, so the net rearward traveling wave is zero.

Let's look at this transmission line example further. Please correct me if I mistate your position below.

> 100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load
>
> No tuner, Z0-match at point 'X'. All your other parameters are the
> same. 100w generated power, 33.33 watts reflected power and 133.33
> watts of forward power on the twinlead.

In the 50 ohm line, there is 100 Watts of forward power arriving at the match point. There is no (net) reflected power. In the 150 ohm line, there is 133.33 Watts of forward power and 33.33 Watts of reflected power. The power delivered to the 150 ohm line is Pdel = Pfwd - Pref = 133.33 - 33.33 = 100 Watts. You have stated that a total re-reflection of power occurs at the Zo match such that the 33.33 Watts of power adds to the 100 Watts of "transmitter power" and the two combine to become the 133.33 Watts of total forward power. You have also stated that Pdel = Pfwd - Pref can be re-written as Pfwd = Pdel + Pref to validate this total power re-reflection concept.

The relationship Pdel = Pfwd - Pref is valid at all times even when a Zo match does not exist. This point is very significant. Lets modify your example slightly. Lets make the 150 ohm line 1/4 WL long.

In this case, a Zo match does not exist at the transition point between the 50 and 150 ohm lines. A reflection must occur at this point. The steady state line impedance at this point is 450 ohms. The reflection coefficient is 0.5. Let's now adjust the forward power in the 50 ohm line to be 133.33 Watts. The reflected power in the 50 ohm line is 33.33 Watts. The forward power in the 150 ohm line is 133.33 Watts. The reflected power in the 150 ohm line is 33.33 Watts. Think about this a bit, with only the wattmeter readings you could *interpret* these steady state conditions two entirely different ways.

Lets consider another example

100w XMTR---50 ohm coax---X---1/2WL 200 ohm twinlead---50 ohm load
Z0-match at point 'X'. 100w generated power. 56.25 watts reflected power and 156.25 watts of forward power on the twinlead.

Let's modify this example such that the 200 ohm line is 1/4 WL. Let's increase the forward power in the 50 ohm line to 451.7 Watts. There is 351.7 Watts reflected power in the 50 ohm line. There is 156.25 Watts of forward power and 56.25 Watts of reflected power in the 200 ohm line.

I would be interested in your perspective on these examples as it relates to the concept of total power re-reflection.

Steve VE9SRB

2335. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 15:58:16 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <s2BH6.294$4f7.21323@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164584

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote

VE9SRB wrote:

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote

VE9SRB wrote:

"W6RCecilA" <Cecil.A.Moore@IEEE.org wrote

VE9SRB wrote:

W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote

VE9SRB wrote:

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote

VE9SRB wrote:

Cecil, I have to stop for now. This thread is like a balck hole sucking
time away.

Have a good day.

73,
Steve

2336. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 16:02:56 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <Q6BH6.302$4f7.21207@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164585

"Roger Sparks" <sparksrc@home.com> wrote in message
news:46hH6.85362$xN4.5860509@news1.sttls1.wa.home.com...
> Hi Steve,
>
> I am comparing reflected power to the modulation in an AM transmitter. Is
> it correct to relate the two as both being voltages superimposed on the
> plate voltage of the amplifier?
>
> 73, Roger, W7WKB
>

Hi Roger:

My point has been that there exists two steady state forward voltages "superimposed" on the transmission line. To determine the total resulting power you must sum the voltages. The total power is not determined by summing the power from each in the case where they exist individually on the line.

Steve

2337. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 16:05:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEEDEE1.509AB4A0@IEEE.org>
Source record: 164586

VE9SRB wrote:
> You must forget about adding power or energy together in this manner.

Nope Steve, you must forget about adding 75 joules to 8.33 joules
and getting 133.33 joules. That is a gross violation of the
conservation of energy principle. You seem to me to be confusing
cause and effect.

The mathematical tricks you play with voltage doesn't shed any light
on where the energy came from that caused those voltages. I
showed in a previous posting that the "extra" energy you pick up in
those voltages comes from the destructive interference of the
complimentary pairs of reflected waves. You, OTOH, so far have ignored
where that causal energy comes from and have merely reported what the
voltages are. Those voltages are not a cause, they are the effect of the
energy behind them. Those voltages have a cause, Steve, and that cause
is partly the energy in the destructive interference patterns. The energy
in the destructive interference patterns joins with the forward wave and
that's why those voltages are what they are. Energy causes voltages, not
vise versa.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2338. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 16:33:29 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cmogp$b1f$0@208.206.142.108>
Source record: 164587

W6RCecilA wrote:
>

> If you forget voltage, current, waves, and reflections, and look only at
> energy in and out, it becomes clear what is happening. You know what has
> to be happening even if you don't know why it's happening. And the question
> is: If you know what is happening, do you really need to know or care why
> it's happening? What do you think?
>

I think you're right, of course. And there are too many learned
individuals with varying interpretations of "why" for anyone to be able
to say definitively exactly how it happens.

> Again, everyone who understands conservation of energy, knows what must
> happen. The argument is about the nitty-gritty details and what words
> we use to describe those nitty-gritty details.

Sometimes the nitty gritty gets pretty gritty. :-)

Dick

2339. Re: Doublet Feeder Length Question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 16:47:33 UTC
From: KA9CAR <nospam@nospam.usa>
Message-ID: <9cmp9e$j60$1@news.tribune.com>
Source record: 164589

Personally I find it convienent to use a feed line that reaches from the antenna feed point to my tuner.

KA9CAR

Jimmie <jimmie418@NOSPAMyahoo.com> wrote in message news:Z3oH6.49086$IJ1.3722777@bgtnsc05-news.ops.worldnet.att.net...
> Hello All,
>
> I'm interested in experimenting with a 44' center-fed doublet using cheap
> 300 ohm twinlead as a feeder.
> What is the suggested initial feedline length? Any reported experiences with
> this setup would be appreciated.
>
> Thanks,
> Jimmie
>
>

2340. Re: feeding several dipoles into one downlead

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 16:49:12 UTC
From: KA9CAR <nospam@nospam.usa>
Message-ID: <9cmpch$j9j$1@news.tribune.com>
Source record: 164590

That system is even shown for Transmitting.
At my high school club that is what we used.

You don't need to include any dipole, if a longer one is 3, 5 or other ODD multiple of the length you would need.

KA9CAR

Richard Harrison <richardharrison@webtv.net> wrote in message news:21750-3AEB821A-266@storefull-116.iap.bryant.webtv.net...
> Paul Logan wrote:
> "Anyone got any ideas on if it is ok to feed several dipoles with coax
> then join all the leads into one and feed it to my scanner?"
>
> Interaction is likely bad. Better to get some cheap oriental broadband
> amplifiers (such as Radio Shack TV boosters making sure they cover your
> intended reception frequencies) one booster for each antenna, then
> parallel all their outputs to your scanner. You can use resistance pads
> to rid yourself of excess gain if necessary. You have constructed a real
> combiner when this lash-up is complete.
>
> Best regards, Richard Harrison, KB5WZI
>

2341. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 16:58:43 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AEEEB43.41C67EA6@rupert.tds-az.lmco.com>
Source record: 164550

Irv Finkleman wrote:
>
> I can build a trap antenna with one trap (40 meter band) in each leg
> and use it on
> 80/40/20/15/10 meters. I can also build the same antenna but with
> four traps (40m/20/15/10 meters) in each leg. I can see that with
> four traps you should be able to select the portion of the individual
> bands in which you prefer to operate, but I wonder if there is any
> other advantage to using four traps?
>
> --
>
> Irv Finkleman,
> Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
> Calgary, Alberta, Canada
>

I have read the other postings and thought I would relate my
experiences with trap dipoles.

If you want to operate without a tuner you will need to use the
multiple trap dipole. I use a trap dipole designed for 40/20/15/10
meters. Because of the traps, and the fact that I am only using a
#14 stranded wire, the bandwidth on 80 meters would be very small,
so I chose not to include 80 meters. The traps are built on
PVC couplings and are wound with RG-59 coax. I made a set with
RG-58, but had some stability troubles. The RG-59 gave better
characteristics and was nice and stable.

The 2:1 SWR for 40 Meters is about 300 KHz and wider for the
higher frequency bands. Plenty of coverage for me.

There are a few pieces of test equipment that are good to have
for working with trap dipoles. A Grid Dip Meter and an
Antenna Analyzer. Without these you will have a hard time
getting the antenna tuned up correctly. The traps are adjusted
to frequency on the bench using the Grid Dip Meter. You can
adjust the center frequency by spreading or compressing the
coil turns. Once you have it correct secure the windings with
a good electrical tape. Try to make sure that the trap pairs
are as close to each other as possible. Once the traps are
installed on the antenna you will no longer be able to check
the frequency with the Grid Dip Meter.

Then, with the traps installed on the antenna, use the Antenna
Analyzer to adjust the lengths of the wire connecting the traps.

Start with the 10 Meter section and work your way up.

A nice program for determining the physical dimension of traps
made from coaxial cable is from VE6YP at:

http://www.nucleus.com/~field/CoaxTrap.html

Another good article from NU3E on Trap Dipoles can be had at:

An Attic Coaxial-Cable Trap Dipole for 10, 15, 20, 30, 40,and 80 Meters
http://www.nerc.com/~jdegood/coaxtrap/

Well, good luch with your antenna. Mine works great. Just get it up
in the air as high as you can.

Martin, K7MEM

--
Martin E. Meserve K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore
my responses may not be as timely as you, or I, would like them to
be. If I seem to be ignoring you, send me another E-Mail to jog my
memory. Opinions are my own and do not reflect the opinions of my
employer.

2342. Re: Using Alinco EDX-2 w/Icom 706MKIIG

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 17:05:16 UTC
From: KA9CAR <nospam@nospam.usa>
Message-ID: <9cmqaljho1@news.tribune.com>
Source record: 164588

I have an EDX-2 and an Alinco DX-77T.

The radio manual shows how to hook the Icom Tuner to a Alinco Radio.

Pin out is the same and colors are the same according to my book.

It lists; Starting at the blunt end of the Alinco plug.
White Start
x No connection
Green Key
Red Plus 12
White Earth, Ground etc.

INSIDE the alinco tuner is a 5th terminal labled TT. Kenwood uses this terminal instead of KEY. The manual suggests that the tuner was assembled in a low humidity atmosphere, and you should avoid opening it unless you really need to.

KA9CAR

Ron Harris <ron@rainbow.to> wrote in message
news:3AEE1B85.ED619C3C@rainbow.to...
> I have an Alinco EDX-2 tuner and I wish to use it with an Icom 706MKIIG.
>
> I need to know the pin out of the connector on the back of the Icom 706.
>
> I have looked all over and can't seem to find any info about using the
> Alinco tuner with the Icom 706.
>
> I can make up a plug for the end of the cable from the tuner but I need
> to know how to identify
> the "tuning in process" and the "start tuning" line at the back of the
> Icom. I can probably find the ground and the plus 12VDC pins.
>
> Does anyone have any info that could help?
>
> I think that the Alinco tuner is the same as the AH-4 but I understand
> that the plug is different.
>
> Tnx for any help.
>
> 73
>
> Ron
>
> Ron@ky6n.com

> or ron@rainbow.to
>

2343. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 18:46:10 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEF0472.67AE9C3@IEEE.org>
Source record: 164591

VE9SRB wrote:
> For the rearward traveling wave, the transition between the
> transmission line and the tuner occurs at the tuner output. That is where
> the partial re-reflection of power occurs.

If the tuner were a point impedance, the re-reflection would occur
at the tuner output. But the tuner is a distributed impedance. The
point at which reflected energy stops traveling toward the input of
the tuner is the Z0-match point. That point is closer to the input
of the tuner than it is to the output as can be seen by plotting the
tuner impedance changes on a Smith Chart and noting the SWR at the
internal points. But this subject is not worth arguing about. Things
are a lot more clear when the tuner is simply removed entirely as in
the example below. The tuner simply muddies the argument.

> > 100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load

> I agree that there is no reverse energy flowing on the 50 ohm coax. My
> previous point is that this is a net steady state condition. We must agree
> that we can only measure net steady state power or energy. Remember also
> that power and energy are derived scalar quantities. They are derived from
> the addition of vector voltages and currents.

Voltage and current are derived from energy, not vise versa.
Energy is the cause - voltage and current are the effect.
Once we understand the energy flow, the voltages and currents simply fall
where they may. IMO, your rules-of-thumb are getting in the way of
understanding just as you accuse the "virtual short" of doing.

> It is also true as you state, that the total power
> "entering the node" must equal the total power "exiting the node". I
> believe that this is Tellegen's Theorem, which is similar to Kirchoff's
> current law. This is not the exact issue we are discussing.

It's the exact issue that I am discussing, Steve. I don't have any argument
with you except on the conservation of energy principle. When you have two
powers, where does the power come from that makes the total power more than
the sum of the powers? You know it has to be there because of the voltages
and currents. Did it appear out of thin air? Your failure to recognize the
source of the missing energy that *causes* the voltages and currents to
assume their specific values is what my argument is all about.

Why can't I take a kilowatt from my house and a kilowatt from my neighbor's
house and have a total of four kilowatts? That is exactly what you are
claiming to be able to do. You are simply ignoring the power from the
destructive interference pattern which joins the forward waves just like

the re-reflected power does. It doesn't satisfy the technical requirements
of re-reflection but it is re-routed which IMO is as good as being re-reflected.

> The important
> issue for us is how to correctly determine the total forward power or energy
> traveling forward in the line. To do this, we cannot add individual forward
> power or energy components and sum them to get total power or current. We
> must add individual forward voltage and current and then determine the total
> forward power or energy.

The voltages and currents are *caused* by the energy, Steve, not vice versa.
You are still confusing cause and effect. Not only are you wrong when you
say we cannot add energies, we absolutely *MUST* add energies to ensure that
we are not violating the conservation of energy principle. Energy in must equal
energy out. Your voltages and currents cannot just magically pick up energy
from outside the universe. The energy that your voltages and currents pick
up is *EXACTLY* equal to the energy required to perform the destructive
interference function. That has to be more than mere coincidence.

> First, in any transmission line system, wave reflections occur when there is
> an impedance discontinuity relative to the transmission line Zo.

I agree. I have not disagreed with that.

> Reflections occur at the transition between the transmission line and the
> lumped circuit elements in the tuner.

Not exactly true since the circuit elements are not lumped in reality. If
you mentally put a tiny SWR meter along a tuner series coil, you will find
variations in SWR along the coil. What we can be sure of is that the Z0-match
inside a tuner is closer to the input than it is to the output. It is more
logical to assume that the re-reflection takes place close to the input of
the tuner but that is not a point worth arguing over. Let's decrease the
complexity by dropping the tuner from the discussion.

> When the reflected wave arrives at
> the tuner output, it will see an impedance discontinuity.

It will NOT see a lumped impedance discontinuity because the tuner
components are not lumped in reality. But this is not worth arguing
over. Please take the tuner out of the circuit so we can simplify
the discussion. Our basic argument is one over conservation of energy
and the tuner is irrelevant to that discussion.

> Let's look at this transmission line example further. Please correct me if
> I mistate your position below.
>
> > 100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load
> >
> > No tuner, Z0-match at point 'X'. All your other parameters are the
> > same. 100w generated power, 33.33 watts reflected power and 133.33
> > watts of forward power on the twinlead.
>

> In the 50 ohm line, there is 100 Watts of forward power arriving at the
> match point. There is no (net) reflected power. In the 150 ohm line,
> there is 133.33 Watts of forward power and 33.33 Watts of reflected power.
> The power delivered to the 150 ohm line is Pdel = Pfwd - Pref = 133.33 -
> 33.33 = 100 Watts.

> You have stated that a total re-reflection of power
> occurs at the Zo match such that the 33.33 Watts of power adds to the 100
> Watts of "transmitter power" and the two combine to become the 133.33 Watts
> of total forward power.

I didn't say that, Steve!!! I have agreed with your 8.33 watts of re-reflected power. Consider yourself corrected.

> You have also stated that Pdel = Pfwd - Pref can be
> re-written as Pfwd = Pdel + Pref to validate this total power re-reflection
> concept.

I didn't said that either, Steve. I did say, assuming a Z0-match, the equation could be rewritten that way but the conclusion applies *ONLY* to Z0-matched systems. Consider yourself corrected.

> The relationship Pdel = Pfwd - Pref is valid at all times even when a Zo
> match does not exist.

Agreed. My statements have *ALL* assumed Z0-matched antenna systems. In a Z0-matched antenna system, it is true that Pf = Pg + Pr A Z0-matched system is proof that no reflected energy reaches the transmitter. Please stick with a Z0-matched system. Introducing non-Z0-matched systems simply muddies the water. You don't really want to muddy the waters, do you? :-)

> I would be interested in your perspective on these examples as it relates to
> the concept of total power re-reflection.

They don't relate to a Z0-matched system, Steve. Let's get the basics of a no-tuner Z0-matched system down before we complicate the examples. My entire argument is about conservation of energy in a tunerless Z0-matched system. You have implied that 75 joules plus 8.33 joules can equal 133.33 joules. I say that is ridiculous. The extra energy required by your voltages and currents is supplied by the destructive interference pattern at the Z-match point.

To refresh your memory:

100w XMTR---50 ohm coax---+---1/2WL 150 ohm twinlead---50 ohm load

As I understood it, you said that 75w of generated power makes it to the twinlead. You said that 8.33w of the 33.33w is re-reflected. You said that 75w plus 8.33w is equal to 133.33w which is the forward power. You said that when P1+P2 are added together, the total power is more than the sum of the two powers.

I submit to you that there is a power that you didn't take into account that balances the energy equation. That power is the 25w of reflected power that was used to cancel the 25w of generated power that would have been reflected if a Z0-match didn't exist. These two power associated with the destructive interference pattern at the Z0-point, add up to exactly the energy necessary to balance the energy equation.

I submit to you that the 25w of power that would have been reflected if the Z0-match had not existed has been re-routed from flowing back toward the transmitter to joining the forward power. I submit to you that the 25w of power from the reflected power that was used to cancel the reflections at the Z0-match has been re-routed from flowing through the Z0-match back to the transmitter to joining the forward power. I submit to you that re-routing power is just as effective as re-reflecting power and has exactly the same outcome *AS IF* all the reflected power had been re-reflected. What's wrong with shortcuts if they work?

It seems that the appreciable effort to gain the additional knowledge doesn't change the outcome at all so one wonders if it is worth the effort to learn and try to try to discredit the previous model. All the energy winds up at exactly the same place in either model. Someone once said that explanations should be made as simple as possible but no simplier. One wonders where to draw the line on this subject.
--
http://www.mindspring.com/~w6rca

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2344. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 18:47:28 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEF04C0.DF1A1C@IEEE.org>
Source record: 164592

VE9SRB wrote:
> Cecil, I have to stop for now. This thread is like a balck hole sucking
> time away.

Come back when you get the time, Steve. The thread just climaxed.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2345. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 19:05:02 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <CMDH6.2616$c4.364498@e420r-chi1.usenetserver.com>
Source record: 164593

Gentlemen, I've gotten in here late, and haven't had the chance to read the last hundred posts, but I would like to put in two cents worth.

First, on the subject of reflected power being fictitious, I'll ask Peter to consider a 3-port circulator. Port #1 is the input, port has a mismatched load, and port #3 has a purely matched non-reactive load with a voltmeter connected across the terminals. The power absorbed in the load on port #3 will equal exactly the square of the voltage indicated on the meter divided by the resistance of the load. This power is that reflected from port #2. There's no way it could be fictitious power because the power reflected from port #2 caused real power to be dissipated in the load on port #3.

Second, on the subject of virtual short circuits. Let's assume two ac generators are connected in parallel. They each deliver the same voltage across the load, but they are 180 degrees out of phase. The result is a short circuit at their terminals. The same is true for two sets of rearward traveling waves of voltage and current where the waves are of the same magnitude and opposite phase. The result is a short circuit, because at any point along the transmission line the power reflected from each discontinuity that produces the reflections, the reflected powers at that point can be replaced with corresponding generators producing equal voltages but 180 degrees out of phase. We are not considering just one reflected wave of voltage and current in conjunction with the forward wave of voltage and current. We are considering TWO sets of reflected waves--one set generated by the mismatch terminating the line, and the other is the set generated by the matching network (or stub).

If you measure the SWR on the line with line mismatched (no matching network), and then replace the mismatch with a matched load, but keep either the matching network or stub in the line, the input SWR of the line and the magnitude of the reflection coefficient will be the same as before, but with the opposite angle of reflection coefficient.

This concept is explained in my QEX article of Apr/May 1998, that Steve says is totally incorrect, and which I've challenged him with no success. I hope this will help.

Walt, W2DU

2346. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 19:18:50 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <u_DH6.412$t12.29467@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164594

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEF0472.67AE9C3@IEEE.org...

<snip>
>
> To refresh your memory:
>
> 100w XMTR---50 ohm coax---+---1/2WL 150 ohm twinlead---50 ohm load
>
> As I understood it, you said that 75w of generated power makes it to
> the twinlead. You said that 8.33w of the 33.33w is re-reflected. You
> said that 75w plus 8.33w is equal to 133.33w which is the forward
> power. You said that when P1+P2 are added together, the total power is
> more than the sum of the two powers.
>
> I submit to you that there is a power that you didn't take into account
> that balances the energy equation. That power is the 25w of reflected
> power that was used to cancel the 25w of generated power that would
> have been reflected if a Z0-match didn't exist. These two power associated
> with the destructive interference pattern at the Z0-point, add up to
> exactly the energy necessary to balance the energy equation.
>
> I submit to you that the 25w of power that would have been reflected
> if the Z0-match had not existed has been re-routed from flowing back
> toward the transmitter to joining the forward power. I submit to you
> that the 25w of power from the reflected power that was used to
> cancel the reflections at the Z0-match has been re-routed from flowing
> through the Z0-match back to the transmitter to joining the forward
> power. I submit to you that re-routing power is just as effective as
> re-reflecting power and has exactly the same outcome *AS IF* all the
> reflected power had been re-reflected. What's wrong with shortcuts
> if they work?
>

Cecil:

Sounds like you agree with me more than you disagree.

I took all of the power into account and it all balances with regards to the
conservation of energy principles.

100 Watts of forward power arrives at the transmission line junction. 75
Watts is delivered forward into 150 ohm line. 25 Watts is reflected back
into the 50 ohm line.

33.33 Watts of reflected power arrives back at the transmission line junction. 8.33 Watts is re-reflected. 25 Watts is delivered rearward into the 50 ohm line.

The law of conservation of energy holds with these two statements. In each case, the total energy IN balances with the total energy OUT.

Now look at the COMBINATION of these powers at the junction. The issue is how do multiple powers traveling in the same direction in a transmission line add together.

The two 25 watt powers traveling rearward at the junction are "180 degrees out of phase" so the NET rearward power flow "out of the junction" is zero. Since the net rearward power flow out of the junction goes to zero with this out of phase addition of power, the addition of power "out of the junction" elesewhere must compensate for the net loss of 50 Watts out.

The forward power (75 W) and re-reflected power (8.33 W) are "in phase" and combine to a total of 133.33 Watts. Multiple powers traveling in the same direction add differently as a function of their phase relationship. This relationship is established by their voltage and current. The law of conservation of energy does not preclude this from being true. In fact, power addition in this manner is an absolute necessity in order to balance the law of conservation of energy with the arrival of multiple powers at the junction. Since the two 25 Watt rearward powers canceled, the net power out for these components goes to zero. The remaining 75 W plus the 8.33 Watts out must add to 133.33 Watts to balance the conservation of energy equation.

These relationships are consistent with wave reflection theory, circuit theory and the law of conservation of energy.

Steve VE9SRB

2347. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 19:37:37 UTC
From: richardharrison@webtv.net
Message-ID: <1304-3AEF1081-44@storefull-115.iap.bryant.webtv.net>
Source record: 164595

Steve, VE9SRB wrote:
"The important issue for us is how to correctly determine the total forward power or energy traveling forward in the line. To do this, we cannot add individual forward power or energy components and sum them to get total power or current."

I think an analogy to a pair of identical transformer secondaries may be in order. If connected series aiding, the voltage doubles, and so does the current, resulting in 4 times the power. On the other hand, paralleling the same phased coils produces the same voltage as one coil and ignoring the impedance of the coils, the same current results, so there is no change in power delivered to the load.

I haven`t followed this thread carefully, but it seems Steve is implying there are phase angles other than zero and 180-degrees between the voltage and current in one of the two directions on a transmission line of significant length. I think there are not any such angles. Thus, voltage, current, and power are all scalar values.

The Bird wattmeter measures "RF power flow in either direction accurately under any load condition." (from Bird literature) Zo of the transmssion line is a resistance which means the current associated with a voltage applied to the line can only flow toward or away from the application point, and it is in-phase with the voltage. For a particular direction of wave progress, along a transmission line of significant length, there are no shifted-phase currents. They can be algebraically added or subtracted. Phase angles are associated only with interaction between waves traveling in opposite directions on the line. The sum of these oppositely traveling waves produces VSWR.

The Bird wattmeter ignores the sum of waves traveling in opposite directions when it senses power, one direction at a time. "Turning the element 180-degrees reverses the loop and, therefore the current pick-up, while the voltage sample remains unchanged."

Since all forward power on a line is not accepted by a mis-matched load, the reflected power is that part of the forward power rejected by the load.

Best regards, Richard Harrison, KB5WZI

2348. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 19:51:57 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <xtEH6.91523$xN4.6204973@news1.sttls1.wa.home.com>
Source record: 164596

I am going to draw another word picture. Please draw the picture on paper to better understand what I am saying.

I am looking at the small wires of the coax braid. I notice that they are all round. Now I am going to cut one wire and look at the end of the wire. I see a circle so I draw a circle on my paper. I label the diameter of the circle 0.016 cm.

My text books tell me that skin effect divides this wire into an inner and outer surface when wire is used to make the braid in a coaxial cable. Therefore I draw a vertical line through the center of the circle, dividing the circle in half. I label the left side of the circle 'inside' and the right half 'outside'. I now have a drawing which shows how a wire is divided by skin effect.

According to the books, currents flow separately on the inner and outer surfaces, so I can place dots within the left half of the circle which represent current flowing from the page towards me, and crosses within the right half of the circle which represent current flowing from me into the page.
Later we can concentrate the dots and crosses in the parts of the circle where we think the most current will flow.

Because currents are driven by voltages, the left side of the circle must be positive and the right side of the circle negative, meaning that a voltage must exist between the two sides of the wire.

Now according to the book, skin effect is measured from the surface toward the center of the wire. At 14 MHz, the skin effect is about 0.002 cm, so we measure from the left side in 0.002 cm and draw a vertical line. This line represents the plane at which the current has decreased to 37% of the rate flowing on the wire inside surface. We next measure in 0.002 cm from the right side to establish the plane at which the current has decreased to 37% of the rate flowing on the wire outside surface.

Looking at our picture, we see that we must concentrate most of our dots and crosses in the small areas outside the 37% lines. You can see that most of the current is restricted to a very small portion of the total volume of the wire.

The drawing we just completed is 'according to the book'. It is WRONG for at least four reasons.

1) The depiction of skin effect was incorrect. Skin effect is a measurement in from the surface OF THE WIRE, not the surface of the coaxial cable. The correct way to depict skin effect in a wire is a circle within a circle, with the inner circle in this case 0.002 cm in from the outer

surface. The outer skin is 0.002 cm thick and is about 43% of the total wire volume.

2) Copper is not a perfect conductor but has resistance. The voltage developed as current flows will cause the current to spread into a least energy distribution over the entire wire surface, not just the small slabs carved out by the skin effect in the drawing just made. Skin effect will hold the current near the entire surface of the wire.

3) The resistance due to skin effect would increase much faster than what is observed if the depiction according to the book was reality. This is because the volume available for current transportation decreases much faster under the book depiction than occurs just by the thinning of the conductive surface.

3) Voltages can exist within a conductor only if a current is flowing. The voltage which would exist if the currents flowed separately would cause a current from one side of the wire to the other which would have the effect of merging the currents.

73, Roger, W7WKB

2349. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 20:17:36 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3aef193f.266881200@news.aepnet.com>
Source record: 164597
Body handling: HTML body converted to readable text

Turn off the HTML and maybe you will get some more responses.

On Tue, 01 May 2001 16:05:39 GMT, Irv Finkleman wrote:

>
>
>Tom,
>
I am playing with coaxial-cable
>traps at the moment. I may try discrete LC traps later.
>
I have previously played with linear traps (Lattin). Does the
>type of trap have any bearing on
>
my question? I'm learning -- but never fast enough!
>
Tom W8JI wrote:
>
On Tue, 01 May 2001 02:55:41 GMT, Irv Finkleman
>
<finkirvNOSPAM@home.com> wrote:
>
>
>
>
>
>I can build a trap antenna with one trap (40 meter band) in each leg
>and
>
>use it on
>
>
80/40/20/15/10 meters. I can also build the same
>antenna but
>
>with four traps (40m/20/15/10 meters) in each leg. I can
>see that
>
>with four traps you should be able to select the portion of the individual
>
>bands in which you prefer to operate, but I wonder if there is any
>other
>
>advantage to using four traps?

>
I just measured a bunch of traps for a talk at Dayton.
>
What kind or construction-style of traps are you going to use? You
>
might be suprised how lossy some types are, and how good other types
>
are.
>
73 Tom

>
>
--
>
Irv Finkleman,
>
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
>
Calgary, Alberta, Canada
>
Please delete NOSPAM from my e-mail address when replying. Thanks!
>

>

2350. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 20:25:14 UTC
From: goofy <dbeard@aoc.nrao.edu>
Message-ID: <9cn63v$s0j$1@chaos.aoc.nrao.edu>
Source record: 164598

> The code study is coming slow. I've got a problem (some call it an
> excuse), in that I'm dyslexic. I hear a dit and it's really a dah, or
> vice versa.

BIG SNIP --------

My sympathies. I have been studying for the Tech with code test all winter.
At least a half hour
every eve. and boy is it tough. I too get things twisted but only if I'm
tired and should be doing
something else. I can copy the Marconi method of 5 WPM with no problem but
when I tune
in the world and try to copy real humans, I can't help but wonder who
they've been listening to!
I have never heard so many BAD fists. There is no one I can copy even if
they are sending slow
because they'll send a slow letter and without giving it a space start
sending the next letter. My mind
locks up. Maybe some beginning Tender Keys out there will read this and take
the hint. Here goes--
dah di dah dit - space, don't hurry, there is no rush - dah dah di dah.
That's it you did it! Now try it
again and this time leave a bigger space and don't forget to leave HUGE
spaces between the words!

73s es tnx fer qso

DJ

2351. Re: Joining different coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 20:35:48 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3aef1e21.268131936@news.aepnet.com>
Source record: 164599

On Tue, 1 May 2001 11:00:11 -0400, "Rudy Marcelletti" <rudym@net-link.net>
wrote:

>Thanks all. I have several runs of hardline up with 9913F jumpers and they
>all work fine. The post was just to see if I was going to run into problems
>running all the different coaxes together to make a long run. I thought
>that even though they are all 50 or 52 ohm, the velocity factors are
>different. Maybe I will hook all similar coaxes together that have similar
>velocity, then possibly have less impedance bumps? Maybe just say the heck
>with all this techno babble and hook up what I need to get where I need to
>go and see how it plays! It is all for HF fun anyway and that is what

If the cables you intend to connect is series are all nominally 50 ohm, I don't
see a problem. In your initial post, you mentioned CATV hardline and I believe
that caused some---umm---shall we say different responses.

The velocity factors have nothing to do with impedance bumps. You could have an
air line with very nearly 100% velocity and another line with 66% velocity and
the impedances can be the same. The impedance is a function of the conductor
ratios and dielectric constant. The velocity factor is dependent only on the
dielectric constant.

Well-installed good quality connectors do not introduce any significant loss.
The major problem with a lot of connectors in a system is that every one of them
is a potential source of water leakage. Since you are talking about a temporary
installation, this is probably not a concern. But then I live in Tucson, so
maybe my outlook on this is distorted.

Go for it.

Wes Stewart N7WS

>tuners are for.
>Walter Maxwell wrote in message ...
>>Hi Rudy,
>>
>>I've just read answers to your question posted by both Reg and Crazy
>George.
>>Go with Reg's answer!
>>
>>Walt, W2DU
>>
>>
>>
>
>

2352. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 20:39:55 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEF1F1B.53E45EF9@IEEE.org>
Source record: 164600

VE9SRB wrote:
> Sounds like you agree with me more than you disagree.

Yes, that's right. Makes me wonder why you treated me like an
ugly step-child.

> I took all of the power into account and it all balances with regards to the
> conservation of energy principles.

Nope, it doesn't, Steve. You can't say energy flows away from a junction so
it has to be made up for elsewhere. Energy doesn't leave the system and
magically appear somewhere else, at least not in transmission lines.

You've got 25w+25w being delivered rearward into the 50 ohm line.
That is sheer nonsense. That 50w is delivered into the twinlead to join
the forward power. You got the direction exactly backwards because we
don't measure that energy as existing on the 50 ohm line. That energy
acts the same way it would have if it had been re-reflected, i.e. it
joins the forward wave. That's why this whole argument tends to be moot.
What real difference does it make if the power is re-reflected or simply
re-routed right along with the re-reflected power?

> The law of conservation of energy holds with these two statements. In each
> case, the total energy IN balances with the total energy OUT.

You've got that 50w going out. Where and when does it return? By
what process does it exit and then magically return just when you need
it? Where did it go while it was waiting to come back into the system?
Maybe it circulates in a black hole somewhere?

> Now look at the COMBINATION of these powers at the junction. The issue is
> how do multiple powers traveling in the same direction in a transmission
> line add together.

Since powers are scalar, they can do nothing except add together as scalars.
You cannot add two component powers and get more than the sum of the components.
That you think it is possible represents a pathological belief in your voltage
and current models. I repeat: Voltage and current are the effects, not the
cause. The energy is the cause and the energy that causes the voltage and
current does NOT exit the system. If it did, it couldn't be the cause, could it?

> Since the net rearward power flow out of the junction goes to zero with this
> out of phase addition of power, the addition of power "out of the junction"
> elesewhere must compensate for the net loss of 50 Watts out.

There is absolutely no loss of energy, Steve. It is impossible to lose energy.
There is absolutely no "out of the junction" flow of power. Your model is

flawed. ABSOLUTELY no energy flows out of that junction toward the transmitter. Please tell us exactly how that out of the junction energy gets back to the system. Magic?

> The forward power (75 W) and re-reflected power (8.33 W) are "in phase" and
> combine to a total of 133.33 Watts.

This is absolutely ridiculous. Power is a scalar. There is no phase involved in power. You cannot rationally believe the above. You are so involved in the reality of your models that you have completely lost contact with the reality of reality. The only energy flowing away from the Z0-match is the forward energy. Any other energy flowing away from the Z0-match exists only in a human mind and not in reality.

> In fact,
> power addition in this manner is an absolute necessity in order to balance
> the law of conservation of energy with the arrival of multiple powers at the
> junction.

Nope, it isn't, Steve. You are totally out of contact with reality on this one. Given that time always exists, power and energy are equivalent. You are not allowed to bend the laws of physics to match your mental model.

> These relationships are consistent with wave reflection theory, circuit
> theory and the law of conservation of energy.

Only in your mind, Steve. It is impossible for two scalars to add up to be more than the sum of the component parts. Sorry, but scalars of 75+8.33 just don't equal 133.33. I was born at night but it wasn't last night. If I give you $75 and then give you $8.33, will you give me back $133.33? If not, why not?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2353. Re: Colocation of Feed/Phase Coax for 4 squares?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 20:50:00 UTC
From: mike.luther@ziplog.com
Message-ID: <teu8boksa3hieb@corp.supernews.com>
Source record: 164601

In <3aee9c23.510181858@news.accessunited.com>, 2w8ji@akorn.net (Tom W8JI) writes:
>On Tue, 01 May 2001 02:37:48 -0000, mike.luther@ziplog.com wrote:

>>down the same PVC pipe that feeds the phase line to that stick. Much
>>cheaper, much easier to do. Same route for the relay control cable as
>>well is wanted.
>
>Shouldn't be a problem. We all know the shield is well-isolated on the
>outside by the skin depth of the shield.

Thanks Tom ..

>Hmmm, have you been listening to your old Jefferson Airplane albums
>again? Wasn't Grace a doll before the drugs and booze ruined her? Now
>she looks like Chip and sings like Bob Dole.

Wide grin! ;)

--> Sleep well; OS2's still awake! ;)

Mike.Luther@ziplog.com
Mike.Luther@f3000.n117.z1.fidonet.org

2354. Re: RF - Problem vs Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 21:00:30 UTC
From: g0xay@aol.com
Message-ID: <20010501170030.05401.00000978@ng-ca1.aol.com>
Source record: 164602

Hank.
'More Wire Antenna Classics Vol 2' - ARRL $14 has several useful articles on this subject, from QST May 96, Oct 96 (2 items).

Hope this helps

73

Dick G0XAY

2355. Re: Joining different coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 21:09:50 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEF261E.49DF8938@IEEE.org>
Source record: 164603

Wes Stewart wrote:
> But then I live in Tucson, so maybe my outlook on this is distorted.

I would agree that most people who live in Tucson have a distorted
outlook, at least compared to people who live in Queen Creek. :-)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2356. Re: Joining different coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 21:13:30 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cn8os$qi6$1@uranium.btinternet.com>
Source record: 164604

Rudi Marcelletti wrote -
> I thought that even though they are all 50 or 52 ohm,
> the velocity factors are different. Maybe I will hook
> all similar coaxes together that have similar
> velocity, then possibly have less impedance bumps?
==========
Rudi, for your particular setup, you can disregard different velocity factors faster than you can disregard different Zo impedances. But it's useful to remember ALL coaxial lines with solid polyethylene insulation have the same VF regardless of Zo :- VF = 0.665.

I think your biggest problem will be how to keep rain water out of the 50 ohm to 75 ohm soldered joints. ;o)

Reg, G4FGQ

2357. Destructive Interference

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 21:24:21 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cn9dprtj1@neptunium.btinternet.com>
Source record: 164605

Destructive interference occurs when someone directs a question to
a second person and a 3rd person, who imagines he knows all the
answers, jumps in.

It makes me want to scream !

Reg, G4FGQ

2358. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 21:46:56 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <n8GH6.3462$c4.377186@e420r-chi1.usenetserver.com>
Source record: 164606

Steve's problem with addition of voltages or powers on a transmission line is that it is NOT the voltages that add, it's power, even though Steve denies that this is true. His misconception on this issue is why his powers don't add up correctly. Everything cpmes out correctly when powers are added, but never come out correctly by adding voltages. Kirchoff's law simply doesn't apply here.

Steve and I had a real pulling match on this issue, and even after I pointed out an equation in Johnson that proves it, he still goes on in the wrong direction. We're leaving Florida for Michigan on Thursday and my Johnson book is already packed away so I can't tell you the Eq number in Johnson. However, his equation shows that the square of the source voltage divided by Zo is the source power and the square of the reflected voltage divided by Zo is the reflected power. His equation then shows that the sum of the source and reflected powers equals the total forward power. Thus it follows that the sum of the voltages divided by Zo cannot give the correct results.

Hope this helps.

Walt, W2DU

2359. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 21:54:05 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <ki=vOi=mHRYupACvdqx=8ymNurIA@4ax.com>
Source record: 164607
Body handling: HTML body converted to readable text

IRV, BELOW IS WHAT YOUR MESSAGE LOOKS LIKE WHEN YOU POST IN HTML, AND OTHERS,
WITHOUT HTML, TRY TO READ THE DARNED THING.

TURN THAT HTML OFF.

POST IN PLAIN ASKII, PLAIN TEXT.

BOB
K5QWG

.....

.....

Tom,

I am playing with coaxial-cable
traps at the moment. I may try discrete LC traps later.

I have previously played with linear traps (Lattin). Does the
type of trap have any bearing on

my question? I'm learning -- but never fast enough!

Tom W8JI wrote:

On Tue, 01 May 2001 02:55:41 GMT, Irv Finkleman

<finkirvNOSPAM@home.com> wrote:

>

>

>I can build a trap antenna with one trap (40 meter band) in each leg
and

>use it on

>
80/40/20/15/10 meters. I can also build the same
antenna but

>with four traps (40m/20/15/10 meters) in each leg. I can
see that

>with four traps you should be able to select the portion of the individual

>bands in which you prefer to operate, but I wonder if there is any
other

>advantage to using four traps?

I just measured a bunch of traps for a talk at Dayton.

What kind or construction-style of traps are you going to use? You

might be suprised how lossy some types are, and how good other types

are.

73 Tom

--

Irv Finkleman,

Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP

Calgary, Alberta, Canada

Please delete NOSPAM from my e-mail address when replying. Thanks!

2360. Re: QST QST QST -- Fraudtenna Still At It

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 21:57:30 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <tTDvOn2ZiTT365irLfh6q1GTHImQ@4ax.com>
Source record: 164608

"Lumpy" <lumpy@digitalcartography.com> wrote:

>Fractenna wrote:
>
>More of his/their typical, crap.
>
>Man, you go away for a few months and
>come back only to find this poor excuse
>for a ham is still blabbering bullshit.
>
>Still waiting for my lawsuit...lumpy n0eq
>

Well, I've confined all versions of Frac-what-the-hell to my kill files. He hardly ever shows up, except when somebody spells franctenna in a new way, as you just did :-(

Bob
k5qwg

2361. Commercial dipole for 6m?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 22:05:14 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010501180514.00321.00000766@ng-cf1.aol.com>
Source record: 164609

Can anyone suggest a good commercially made balun for a 6m dipole? I plan on putting one together, fed with RG-8 coax and using standard copper wire. I am not interested in homebrewing one.
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com
http://egroups.com/group/vhfallmode

2362. Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 22:30:50 UTC
From: wa9mzt@arrl.net
Message-ID: <3aef2f21.92517222@news.fuse.net>
Source record: 164610

I have a few questions regarding grounding my station, vertical antenna and my satellite dish.

I have done a lot of reading regarding this and I am a little confused on how I should implement my setup. My ham shack is in my basement office and is next to the outside wall where my ground mounted vertical is (actually it's about 6' high) and is 40' from the wall. I have 8 radials on the ground at this time

The power company ground is about 75 feet from my antenna

I have 8' ground rods at the coax antenna ground; at the dish coax ground and outside my hamshack for my station ground. I am planning on putting a coax ground at the entry to my ham shack before it gets inside. I am not connected to the power ground at this time.

X Satellite Dish
-30' from ham shack wall

Antenna ham shack wall power company gnd
X X X
X -40' - X -- 35' -- X
X X X

My questions:

Should I connect the antenna coax ground, the dish coax ground and the staion ground together WITHOUT the ground rods and then run the 35' from the ham shack to the power ground with a #6 copper wire?

Should the station ground be included with this? Or should it be left out and grounded only my the AC power ground?

I could run the ground wire to the AC power panel from my ham shack, inside the house and save about 20''. I would guess it's better to keep it outside even if the distance is further.

Thanks,

Steve WA9MZT

2363. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 22:49:27 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <m8fuetoh4eh64od97uq0v5vgs2al79a4hd@4ax.com>
Source record: 164616

If anyone wants to know Irv said here it is.

Irv,

Turn off that damn HTML.

Danny

OK -- so now I have two reasons for multi-trap operation; (a) better selection of desired
operating portions on each band, and (b) shorter overall. Good stuff John! Anybody out there
with more pros and cons, including the types of traps used?
John Passaneau wrote:

Hi Irv: The one trap per leg solution can be made to be resonate on many of the ham bands by chousing the L-C ratio of the trap just right.With 40 m traps, the antenna is of course resonate and acts like a half wave dipole on 40 m. Below the trap's resonate frequency it looks like a inductor and is a loading coil on 80. It is also usable on 15 m, as is a normal 40 m dipole. Above the traps resonate frequency the trap looks like a capacitor and shortens the antenna making it resonate on 20 m and if everything is ok it will also show a resonance on 10 m. The sticker is, other than 80 and 40 m the antenna is a not a half wave and the impedance will be resistive, (the definition of resonance) it will not be anywhere close to 50 ohms. On 20 m it will be more like 200 to 300 Ohms. So with a tuner it will be easy to match but it will need a tuner on all bands other than 80 and 40 m.The multiple trap design how ever, will give true half wave dipole characteristics on the highest band, but loaded half wave dipole performance on the lower bands, with the traps for the upper bands acting like loading coils making the antenna shorter and increasing loss. The 10 m traps act as loading coils on 15 m and the 10 and 15 m traps act like loading coils on 20 and so on. This makes the antenna much shorter than the 2 trap design. As for loss I just designed a trapped dipole for 80/40/20 using EZNEC. I made my traps out of section of PVC pipe with wire wound on them with a transmitting cap tuned to the middle of the 40 m band. The actual antenna in impedance, swr band width and resonate frequency came out very close to the EZNEC model so I think I have every thing right in the model. Using the data I measured in my shop at work for the traps. EZNEC show a loss in the traps on 80 m (as loading coils) of 9.5 watts out of a 1000 watts. and less than 1 watt out of a 1000 on 40 m. I don't have the data here with me so I can't remember what it was on 20 m, but I was not designing this for use on 20 m, it just happened to work out with the coil/capacitor I picked to use. So the bottom line is: the

multi-trap design may not need a tuner to be usable but will have much higher losses than the two trap design, which will need a tuner to be usable on any band other than 80 and 40 m. Also the SWR band width will be somewhat narrower with any trap design. So for best performance use a "fan dipole" for multi-band use or the favorite of the in crowed here on the newsgroup, a dipole feed with open wire line.The best reason to use trapped dipoles is because of a lack of space to put up full size dipoles (the reason I did it) as a full size dipole is all ways going to be more efficient. But I must say, that 9 watt out of a 1000 in my design, is not much.
--
John Passaneau, W3JXP
Physics Dept. Electronics Shop
Penn State University
104 Davey Lab, University Park , Pa. 16802
814.863.4297, jxp16@psu.edu
"Irv Finkleman" <finkirvNOSPAM@home.com> wrote in message
news:3AEE2599.40F303DF@home.com...I can build a trap antenna with one trap (40 meter band) in each leg and use it on
80/40/20/15/10 meters. I can also build the same antenna but with four traps (40m/20/15/10 meters) in each leg. I can see that with four traps you should be able to select the portion of the individual bands in which you prefer to operate, but I wonder if there is any other advantage to using four traps?
--

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

Please delete NOSPAM from my e-mail address when replying. Thanks!

2364. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 22:51:39 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AEF3DFB.7C192C99@bwcc.com>
Source record: 164611

wa9mzt@arrl.net wrote:
> I have 8' ground rods at the coax antenna ground; at the dish coax
> ground and outside my hamshack for my station ground. I am planning
> on putting a coax ground at the entry to my ham shack before it gets
> inside. I am not connected to the power ground at this time.

Your ground rods outside your shack need to be bonded to your house electrical common earth ground system with #4 bare, solid copper wire, 1/2 inch braided copper strap, or better.

You are also asking for trouble, including ground loops, anywhere you have ground rod that aren't connected to each other by something that you intend can haul the current. That should be something other than your coax shield.

> Should I connect the antenna coax ground, the dish coax ground [...] together
Using wide braided copper? Yes! At once!

> WITHOUT the ground rods
No. You have the ground rods. They are in close proximity.
You should tie them in with a high ampacity conductor to the rest of your house.

> and then run the 35' from the ham shack to the power ground with a #6 copper wire?
A buried copper braid would work.
For that distance, again, you want to use #4.

However, most of you real grounding is occurring in the nearby rods.
They should have low resistance to moist earth.

> Should the station ground be included with this?
No. Nothing indoors.

> Or should it be left out and grounded only my the AC power ground?
That is correct.
But it is extremely important that your electric panel ground rods be solidly tied to the other ground rods with a high ampacity conductor such as #4 copper.

> I could run the ground wire to the AC power panel from my ham shack,
> inside the house and save about 20''. I would guess it's better to
> keep it outside even if the distance is further.
No. If it is inside your house, it must go through your electric panel on its way to earth.
Keep what is outside, outside. But ...

*** Whatever is inside your house needs to leave via a single point for the whole house, and that is your electric service entrance panel. ***

If you provide another path, the lightning and fault currents will come to your radio looking for a path to earth. This includes neutral return current from your electric mixer in the upstairs kitchen that is just looking for a path back to the power generator. You don't need that noise coming by your radio.

2365. WTT: Isoloop for 6m yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 22:51:51 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010501185151.24430.00001733@ng-cf1.aol.com>
Source record: 164612

I am looking to trade an Isoloop 10-30mhz antenna for a 6m yagi. The Isoloop
does not have the tuner that came with it. Please email me directly.
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com
http://egroups.com/group/vhfallmode

2366. Re: Commercial dipole for 6m?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 23:13:58 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <hlguetcgndum54iakmkk39jcv24nhqo3b8@4ax.com>
Source record: 164613

I found one in the latest HRO catalog. It's made by CAL-AV. The EB-2
covers 10 to 60 Mhz and is rated for 3 KW. Price is $42.95.

73, Dick - W6CCD

On 01 May 2001 22:05:14 GMT, vhfradiobuff@aol.comspamsux
(VHFRadioBuff) wrote:

>Can anyone suggest a good commercially made balun for a 6m dipole? I plan on
>putting one together, fed with RG-8 coax and using standard copper wire. I am
>not interested in homebrewing one.
>=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
>73! de KC2SSB (ex: KF4KHC/HL9HCT)
>Toms River, NJ USA! Grid FM29
>http://vhfradiobuff.tripod.com
>http://egroups.com/group/vhfallmode

2367. Cellsite Base Antenna Recommendation

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 23:27:32 UTC
From: Tom Evans <prosperous@usa.net>
Message-ID: <dfhuetgj3i7fb9v1thirud8bdbchlqh49n@4ax.com>
Source record: 164614

Cellsite Base Antenna Recommendation
Looking for suggestions on the best base station antenna out there.
Need 6 degree vertical beamwidth or tighter, excellent front to back
ratio, 60-80 degree horizontal beamwidth.
I am using Decibel Product's DB898H60's now, but am looking for
something better, that is if anyone else had a better one out there..
Needs to me 880-896 Mhz
Need this for a project where I need to spot beam power to an area
less than 1.3 miles from tower, but dont want to overload the imediate
area next to tower and cause blanketing interference.
Will have to downtilt about 5 degrees and an elevation of 35'
Thanks in advance.

2368. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-01 23:32:07 UTC
From: richardharrison@webtv.net
Message-ID: <1305-3AEF4777-17@storefull-115.iap.bryant.webtv.net>
Source record: 164615

Roger Sparks wrote:
"The depiction of skin effect was incorrect. Skin effect is a measurement in from the surface of the wire, not the surface of the coaxial cable."

That would be correct for a single current carrying wire not for a woven braid. The wires in the braid are intentionally uninsulated so they will short together to imitate a solid shield. No one wants leaky coax except for distribution of radiation in tunnels and other such leaky applications. For these leaky jobs, special Heliax has a longitudinal slot cut along its length. Handy tip: twinlead works about the same and is much less expensive.

Remember, the braided shield coax was designed and tested to be as much like solid shield coax as possible and is only braided for flexibility, not to make it leak r-f. If the designers were unsuccessful in making almost leakless coax, their product would be considered nearly worthless.

Best regards, Richard Harrison, KB5WZI

2369. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 00:05:28 UTC
From: 2w8ji@akorn.net
Message-ID: <3aef4e5c.555813243@news.accessunited.com>
Source record: 164617

On Tue, 01 May 2001 19:51:57 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:

>I am going to draw another word picture. Please draw the picture on paper
>to better understand what I am saying.
>
>I am looking at the small wires of the coax braid. I notice that they are
>all round. Now I am going to cut one wire and look at the end of the wire.
>I see a circle so I draw a circle on my paper. I label the diameter of the
>circle 0.016 cm.
>
>My text books tell me that skin effect divides this wire into an inner and
>outer surface when wire is used to make the braid in a coaxial cable.
>Therefore I draw a vertical line through the center of the circle, dividing
>the circle in half. I label the left side of the circle 'inside' and the
>right half 'outside'. I now have a drawing which shows how a wire is
>divided by skin effect.
>
>According to the books, currents flow separately on the inner and outer
>surfaces, so I can place dots within the left half of the circle which
>represent current flowing from the page towards me, and crosses within the
>right half of the circle which represent current flowing from me into the
>page.
>Later we can concentrate the dots and crosses in the parts of the circle
>where we think the most current will flow.
>
>Because currents are driven by voltages, the left side of the circle must be
>positive and the right side of the circle negative, meaning that a voltage
>must exist between the two sides of the wire.
>
>Now according to the book, skin effect is measured from the surface toward
>the center of the wire. At 14 MHz, the skin effect is about 0.002 cm, so
>we measure from the left side in 0.002 cm and draw a vertical line. This
>line represents the plane at which the current has decreased to 37% of the
>rate flowing on the wire inside surface. We next measure in 0.002 cm from
>the right side to establish the plane at which the current has decreased to
>37% of the rate flowing on the wire outside surface.
>
>Looking at our picture, we see that we must concentrate most of our dots and
>crosses in the small areas outside the 37% lines. You can see that most of
>the current is restricted to a very small portion of the total volume of the
>wire.
>
>The drawing we just completed is 'according to the book'. It is WRONG for

>at least four reasons.

It's wrong for one major reason. You are treating the individual wires like they are insulated from each other.

If you want to make them insulated from each other, soak the cable in water for a week and then let it dry out.

Now you will have thousands and thousands of insulated wires, or at least wires with high resistance at the overlays.

When you are done, measure the leakage from that cable through the shield.... and the loss.

73 Tom

2370. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 00:08:25 UTC
From: 2w8ji@akorn.net
Message-ID: <3aef4f6e.556087968@news.accessunited.com>
Source record: 164618
Body handling: HTML body converted to readable text

On Tue, 01 May 2001 16:05:39 GMT, Irv Finkleman
wrote:

>
>
>Tom,
>
I am playing with coaxial-cable
>traps at the moment. I may try discrete LC traps later.

Coaxial cable traps have the highest loss and poorest bandwidth of any
trap I tested at the trap frequency.

The difference in loss between a L/C trap and a coaxial trap is quite
large, even when the L/C trap uses modest components.

73 Tom

2371. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 00:14:22 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cnje9$a6k$1@plutonium.btinternet.com>
Source record: 164521

Cecil, please accept my compliments.

To analyse a system in terms of energy and energy transfer for many engineering problems is the most simple, most reliable and most intellectually satisfying way of going about it.

Amongst the mechanical engineers, analysis procedures are known as "Energy Methods". For example, consider the problem of calculating the compression, tension and torsion stresses in every member of a steel lattice girder bridge when a locomotive drawing a railway train of loaded wagons passes over it. If any structural member of the bridge fails excess stress is thrown on other members and the bridge collapses. So it is not a trivial problem.

Clearly the matter cannot be resolved by browsing through a manufacturer's catalogue of digital integrated circuits which most of our young and budding engineering students seem to be capable of. Japanese, Chinese and Koreans seem to be better.

It is the amount of energy stored in a welded steel rod, bar or plate, compressive, tensile or torsional, which decides its fate.

To us electrical mortals the problem is intractable.

But a professional bridge designer simply equates the sum of the energies stored in each member to the sum of the energies supplied by the loads on the structure. The energy supplied by a load is the force or weight multiplied by the small distance moved. So the physical distortion of the loaded structure can also obtained in a very beautiful manner.

These Energy Methods were sorted out by German dam-building, British railway and ship-building engineers way back in the Victorian age. They were, of course, supported on the shoulders of the French mathematicians of the Napoleonic era. Boney knew what he was doing. It was he, in effect, who divided the distance between the Equator and the North Pole by 10 million and called it metres.

The German dams and the Forth Railway Bridge are still in working order. Oliver Heaviside, that other eccentric, underestimated Englishman, further advanced the mathematics to deal with sudden and transient loads. It appears Oliver was not just concerned with the acceleration of newly invented electrons in the ionosphere.

Application of sudden and transient loads to electrical machines and equipment occurs all the time in the ordinary course of events.

The multi-lattice structural arrangement of a girder bridge is closely related to a complex network of resistors, capacitors and inductors. At any point in time, the energy stored in a capacitor is 0.5*C*(V-squared). The energy stored in an inductor is 0.5*L*(I-squared). And the rate at which energy is being expended in the network is the sum of (I-squared)*R.

Bear in mind that Energies, regardless of where they may reside, either in L or C, at any instant of time can be simply added. That's where the beautiful simplification arises.

In generators, loads and transmission lines, with uniformly distributed L and C, it is even more simple. It is only necessary to keep track of where the energy is located at what point in time. The behaviour of the system as a whole, of course, is subject to the principle of the conservation of energy at all instants of time.

The invovement of time is obvious. Time cannot be divorced from reflections and echos.

Cecil, I'll leave it in your good hands to sort it out. I cannot remember any references except that a few years back there were some articles, in the British IEE Engineering Journal or educational journal, on energy methods applied to network analysis. It seemed quite understandable.

As for me, I am content to understand things using no more than the simple applications of Ohm's Law which I can recommend with confidence to readers of this newsgroup. Don't lose any sleep over standing waves.

Good night old man from,

Your old friend, Reg, G4FGQ.

--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

W6RCecilA <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEEABC6.F6225CBE@IEEE.org...
> Dick Carroll wrote:
> > Ok, so what *do* we agree on?
>
> I know what we should all agree on, Dick. In a lossless system,
if
> reflected energy is prohibited from reaching the transmitter (by
a
> Z0-match) then all the generated power, including the reflected

power,
> is routed to the load. There is simply nowhere else for it to go.
> In a matched lossless system, all reflected energy rejected by
the
> load is eventually re-routed to the load. The only argument is
what
> that process of re-routing is called and exactly how it happens.
>
> > Steve seems to be implying that once steady state is reached
then the
> > reflected doesn't travel up and down the coax, rather the
system
> > operates as a complex lumped value. Is that what you see in it?
>
> If you forget voltage, current, waves, and reflections, and look
only at
> energy in and out, it becomes clear what is happening. You know
what has
> to be happening even if you don't know why it's happening. And
the question
> is: If you know what is happening, do you really need to know or
care why
> it's happening? What do you think?
>
> Again, everyone who understands conservation of energy, knows
what must
> happen. The argument is about the nitty-gritty details and what
words
> we use to describe those nitty-gritty details.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2372. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 00:14:57 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AEF5181.2CB051FA@bwcc.com>
Source record: 164519

Tom W8JI wrote:
> If you want to make them insulated from each other, soak the cable in
> water for a week and then let it dry out.
>
> Now you will have thousands and thousands of insulated wires, or at
> least wires with high resistance at the overlays.

Although I haven't sat down to count the little wires, "thousands" sounds like quite an exaggeration, at least for any coax I've ever cut.

2373. Re: Doublet Feeder Length Question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 00:19:52 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <3AEF5263.288F1C49@att.net>
Source record: 164520

Exactly as long as the distance from your antenna tuner to the feedpoint on the antenna. <:}

I use an 88 ft 20-meter extended double zepp and the ladderline feeder is about 42 feet. That goes through a W2DU 1:1 choke balun and then 13 ft of RG-213 coax to the MFJ 989C tuner. All those lengths were chosen per the criterion stated above.

Seriously, feedline length will probably not be a problem unless on some bands you end up with an input impedance to the 300-ohm line that your tuner can't handle.

Easy way is to try it and see. If you have problems, add a few feet of line and try again.

Or, you can use a modeling program to estimate the driving point impedance of your antenna and any of several Smith-Chart-like programs to calculate the input impedance to the line. But then you are stuck not knowing whether or not your tuner will handle that impedance since few if any tuners are documented as to the range of complex impedances at various frequencies that they can transform to 50 ohms resistive.

So, in the real world, we are back to the "try it and see" approach. BTW, within its power rating, the 300-ohm line will probably work just as well for you as the heavier ladderline. But keep in mind that it is not as strong, so strain-relieve it where possible to minimize pulling, etc.

Good luck and enjoy the antenna. Mine works great on all bands from 80 through 10 meters and is readily tuned over that range with the 989C tuner.

72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
Amateur Radio W5YR, in the 55th year and it just keeps getting better!
Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437

Jimmie wrote:
>
> Hello All,
>
> I'm interested in experimenting with a 44' center-fed doublet using cheap
> 300 ohm twinlead as a feeder.
> What is the suggested initial feedline length? Any reported experiences with
> this setup would be appreciated.
>
> Thanks,
> Jimmie

- -

2374. Re: Commercial dipole for 6m?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 00:25:26 UTC
From: kg4ggx@aol.com
Message-ID: <20010501202526.03074.00001919@ng-mo1.aol.com>
Source record: 164522

Check out www.radioworks.com

2375. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 00:28:09 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cnkk5$b5j$1@plutonium.btinternet.com>
Source record: 164524

Cecil said -
> However, we are normally concerned about transferring power from
the
> source to the load, not the opposite direction.
==========
Dear Cecil,

So why are you so concerned about driving yourself, and everybody
else on the Newsgroup, nuts about reflections back from the load ?

Save yourself the bother of replying to such a silly question. ;o)

Reg.

2376. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 00:47:34 UTC
From: Irv Finkleman <finkirvNOSPAM@home.com>
Message-ID: <3AEF590E.AEDFB9F7@home.com>
Source record: 164523
Body handling: HTML body converted to readable text

Sorry Guys -- I wasn't aware, How's this?

Bob Miller wrote:

> IRV, BELOW IS WHAT YOUR MESSAGE LOOKS LIKE WHEN YOU POST IN HTML, AND OTHERS,
> WITHOUT HTML, TRY TO READ THE DARNED THING.
>
> TURN THAT HTML OFF.
>
> POST IN PLAIN ASKII, PLAIN TEXT.
>
> BOB
> K5QWG
>
> ....
>
> ....
>
>
>
> Tom,
>
I am playing with coaxial-cable
> traps at the moment. I may try discrete LC traps later.
>
I have previously played with linear traps (Lattin). Does the
> type of trap have any bearing on
>
my question? I'm learning -- but never fast enough!
>
Tom W8JI wrote:
>
On Tue, 01 May 2001 02:55:41 GMT, Irv Finkleman
>
<finkirvNOSPAM@home.com> wrote:
>
>
>
>
>
>I can build a trap antenna with one trap (40 meter band) in each leg
> and
>
>use it on

>
>
80/40/20/15/10 meters. I can also build the same
> antenna but
>
>with four traps (40m/20/15/10 meters) in each leg. I can
> see that
>
>with four traps you should be able to select the portion of the individual
>
>bands in which you prefer to operate, but I wonder if there is any
> other
>
>advantage to using four traps?
>
I just measured a bunch of traps for a talk at Dayton.
>
What kind or construction-style of traps are you going to use? You
>
might be suprised how lossy some types are, and how good other types
>
are.
>
73 Tom

>
>
--
>
Irv Finkleman,
>
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
>
Calgary, Alberta, Canada
>
Please delete NOSPAM from my e-mail address when replying. Thanks!
>

--

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

Please delete NOSPAM from my e-mail address when replying. Thanks!

2377. Re: Destructive Interference

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 01:03:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEF5CD1.EB19B116@IEEE.org>
Source record: 164525

Reg Edwards wrote:
>
> Destructive interference occurs when someone directs a question to
> a second person and a 3rd person, who imagines he knows all the
> answers, jumps in.
>
> It makes me want to scream !

With an open-forum unmoderated world-wide newsgroup, you probably
want to scream a lot. Email is better for one-on-one correspondence.
--
http://www.mindspring.com/~w6rca

2378. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 01:10:00 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEF5E68.412E427D@IEEE.org>
Source record: 164527

Reg Edwards wrote:
> As for me, I am content to understand things using no more than the
> simple applications of Ohm's Law which I can recommend with
> confidence to readers of this newsgroup. Don't lose any sleep over
> standing waves.

I usually sleep well, Reg, but when someone says that 75 joules/sec
plus 8.33 joules/sec equals 133.33 joules/sec, I just can't seem to
drift off.
--
http://www.mindspring.com/~w6rca

2379. Re: Doublet Feeder Length Question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 01:10:44 UTC
From: Jimmie <jimmie418@NOSPAMyahoo.com>
Message-ID: <o8JH6.785$4f7.60095@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164526

Thanks for the encouragement. I guess there's no substitute for trial &
error in the antenna biz...
BTW, I'll be using this setup for QRP field operating; so the lightweight
stuff shouldn't be a problem.

Jimmie

George, W5YR <w5yr@att.net> wrote in message
news:3AEF5263.288F1C49@att.net...
>
> So, in the real world, we are back to the "try it and see" approach. BTW,
> within its power rating, the 300-ohm line will probably work just as well
> for you as the heavier ladderline. But keep in mind that it is not as
> strong, so strain-relieve it where possible to minimize pulling, etc.
>

2380. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 01:19:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cnn9kakh1@slb7.atl.mindspring.net>
Source record: 164528

Walter:

Hello....

[snip]
> First, on the subject of reflected power being fictitious, I'll ask Peter
to
> consider a 3-port circulator. Port #1 is the input, port has a mismatched
> load, and port #3 has a purely matched non-reactive load with a voltmeter
> connected across the terminals. The power absorbed in the load on port #3
> will equal exactly the square of the voltage indicated on the meter
divided
> by the resistance of the load. This power is that reflected from port #2.
> There's no way it could be fictitious power because the power reflected
from
> port #2 caused real power to be dissipated in the load on port #3.
[snip]

I agree with your statement that you will measure a power at port 4 of the
circulator.

BUT.... a circulator is an entirely different kettle of fish from a single
transmission line.

The power measured at port 3 in the example you give is not a "reflected
power", rather
it is but a part of the "delivered" or transmitted power, delivered to two
separate loads.

The action of the circulator is to simply split the total real power
delivered to port 1
between the loads at port 2 and port 3 of the circulator.

You may call the power appearing at port 3 a "reflected power" but that is
merely a play
on words, it is nothing more than residual transmitted power not absorbed at
port 3.

If you wish I could share with you some complete schematic diagrams of
simple
circulator circuits so that you could do the analysis yourself. This is
somewhat
like the simple analysis of the simple reflectometer, which shows that all
such
circuits are analog's of a simple wheatstone bridge. A circulator is little
more
than three Wheatstone bridges arranged in a "circle".

A detailed study the internal action of the circuitry of a circulator, which is not as intimidating as one might think, just like a study of the internal action of the circuitry of a relfectometer will lead you to see that the circulator operates by resolving voltages and currents, or E and H fields and is simply not reflecting power and sending it back to the original source! Rather it is simply a power "splitter", separating the power applied to port 1 into a sum of two powers, one of which is dissipated at port 2 and the other of which is dissipated at port 3. The power splitting ratio of such a circulator set up is simply a function of the "mismatch" at port 2 which "unbalances" the bridge at that port and allows some of the voltage impinging theron to be applied to port 3. A simple enough operation but definitely not a "reflection". Heh, heh... folks just call it that... it's little more than a power splitter. Do not be confused by the complicated sounding name "circulator", they are very simple devices. The power at port 3 in you case is not a reflected power, returned somehow to the source that originated it, rather it is a continuation in one direction of a power that started a port 1 and dropped off some at port 2 on it's way to port 3 on its' "one way" path around the ring we call the circulator.

No reflections there!

Here's some more food for thought/

Walt... did you see my nearby post on the back to back antenna tuners?

i.e. I asked if one can eliminate reflections on one side of an antenna tuner, leaving reflections remaining on the other side, why not put two antenna tuners back to back and eliminate reflections on both sides?

I assert that you can do that.

Reg denied my assertion, he claimed that if you match on one side of the tuner, the opposite side of the tuner is also matched and there is no need for the second back to back tuner!

I refute his claim.

What do you think?

One might ask why? And in amateur radio applications there is no real reason to do so...

but...it is done all the time in millions of practical commercial situattions where two transmitters
are hooked to opposite ends of a transmission line and "glare" at each other... needing the
reflections in both directions to be reduced. This happens for instance on long telephone line twisted
pairs rinning full duplex echo cancelled DSL transcievers. In fact it is happening right now as I type
this on my laptop connected via my V.90 modem to my ISP...

An interesting question is...What is the minimum number of lossless elements required of an
antenna tuner that can eliminate reflections on both sides of the tuner?

Of course you may need two directional couplers, one on each side, to adjust said tuner and the
manual dexterity required is challenging, but with the aid of automatic adjustments it is easy.

Food for thought.

Enjoy your trip from FL to MI...

-Peter K1PO

2381. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 01:20:57 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEF60F9.FFF45A40@IEEE.org>
Source record: 164529

Bob Miller wrote:
> POST IN PLAIN ASKII, PLAIN TEXT.

Bob, is that the American Standard Kode for Information Interchange? :-)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2382. Re: Destructive Interference

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 01:39:18 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cnofi$56j$1@nntp9.atl.mindspring.net>
Source record: 164530

Reg, Cecil:

To which do you refer, AC or DC destructive interference?

Here's another of my "direct reflections" to amuse you...

If a one battery has a terminal potential of 12 volts and I connect a one Ohm resistor across it, then 12 Amps flows in that resistor, then I disconnect one end of the resistor and connect another battery of 12 volts in series with the resistor, [series opposing of course"] will current continue to flow?

Is that "destructive interference"?

The "forward wave" cancels the "reverse wave" I guess that's destructive interference...

It would be nice if all our batteries were unopposed!

Did y'all like my example in the thread "Direct Reflections" of "tuning" the reflections out of a DC cirucuit using a tuner comprised of imaginary resistors?

Works for me... And those DC directional couplers are so much easier to build, no messy parasitic capacitances to mess up the readings.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AEF5CD1.EB19B116@IEEE.org...
> Reg Edwards wrote:
> >
> > Destructive interference occurs when someone directs a question to
> > a second person and a 3rd person, who imagines he knows all the
> > answers, jumps in.
> >
> > It makes me want to scream !
>
> With an open-forum unmoderated world-wide newsgroup, you probably
> want to scream a lot. Email is better for one-on-one correspondence.
> --
> http://www.mindspring.com/~w6rca

2383. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 01:54:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cnpcb$5i6$1@slb3.atl.mindspring.net>
Source record: 164531

Richard:

You are unfair...

I don't believe that anyone said that current was conducted across the great "skin effect divide". Certainly not current. But...

What some did say, and I agree, is that the "voltage" on one side is "mirrored" on the other.

It's just mirrored at a very different impedance level, an impedance level that differs from it's native environment by perhaps upwards of a ratio of 100dB, or whatever the common mode rejection ratio is.

Said mirrored voltage, is difficult to measure, since it just cannot support much current flow if the common mode impedance is high, or said another way, the leakage is high.

Consequently since voltages add when currents are superimposed. a large differential mode current will very easily mask, by superposition of currents, the "mirrored" voltage from a common mode current that "leaks" across that "skin effect divide".

So in the presence of meaningful differential mode currents one will never be able to measure the mirrored voltage that sneaks across the great skin effect divide.

To resolve such signals in practice would require instruments with self common mode rejection substantially greater than the common mode rejection of the cable itself. An extremely challenging metrological assignment.

Nevertheless, all the theory says it's so... an ephemeral voltage the exact image of the voltage on the outside of the shield of the coaxial cable, appears on the inside of the shield of the coaxial cable, in perfect synchronism with the common mode voltage on the outside, and with very carefully set up experiments, using extremely "leaky" cables, it can be measured...

If one wanted to prove the point...

-Peter K1PO

.

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:29326-3AEEC105-246@storefull-112.iap.bryant.webtv.net...
> Roger Sparks wrote:
> "The idea that two separate currents can flow on the braided wire

> outside conductor of a coax line continues to frustrate me."
>
> Once Roger accepts skin effect as a fact of life, his frustration should
> be gone.
>
> Starting about 1 MHz and up, isolation between inside and outside of a
> coax shield is almost complete. Braided or solid makes very little
> difference. Braid was used only to improve flexibility while retaining
> nearly all the isolation between the inside and the outside of the coax.
>
> There are 6 references to skin effect in the index of my 1998 ARRL
> Handbook. Here is a partial yield from each:
>
> 20.8) "(In Copperweld) Practically all the RF current is confined to the
> copper coating because of skin effect."
>
> 19.17) "Skin effect on the inside walls of the waveguide confines
> electromagnetic energy inside the guide in much the same manner that the
> shield of a coaxial cable confines energy within the coax."
>
> 19.5) "Line loss rises with frequency, since the conductor resistance is
> related to skin effect, and also because dielectric losses rise with
> frequency."
>
> 19.2) "Because of "skin effect" (see the Real World chapter in this
> Handbook), current flowing in the outer conductor of a coax does so
> mainly on the inner surface of the outer conductor."
>
> 10.12) "This resistance increase, called "skin effect", is insignificant
> at low (audio) frequencies, but beginning around 1 MHz (depending on the
> size of the conductor) it is so pronounced that practically all the
> current flows in a very thin layer near the conductor`s surface."
>
> 6.21) "As the frequency increases, the current is confined to a thin
> layer of the conductor surface. This property is called skin effect."
>
> Isn`t it time to drive a stake through the heart of a myth being
> promulgated right here that at h-f, r-f current is being substantially
> conducted directly through the thickness of a coax shield. All the
> ancient authorities say skin effect precludes this direct conduction,
> and the ARRL agrees with clear and simple language.
>
> Best regards, Richard Harrison, KB5WZI
>

2384. Re: Commercial dipole for 6m?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 02:29:46 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010501222946.11469.00000305@ng-fw1.aol.com>
Source record: 164532

>I found one in the latest HRO catalog. It's made by CAL-AV. The EB-2
>covers 10 to 60 Mhz and is rated for 3 KW. Price is $42.95.
>

Hmm.. anything that covers less frequencies and less power? Say VHF only and
300 watts or less? :)
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com
http://egroups.com/group/vhfallmode

2385. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 02:31:34 UTC
From: richardharrison@webtv.net
Message-ID: <16541-3AEF7186-78@storefull-118.iap.bryant.webtv.net>
Source record: 164533

Reg wrote:
"The multi-lattice structural arrangement of a girder bridge is closely related to a complex network of resistors, capacitors, and inductors."

An astute observation. Reg is waxing eloquent today. My recollection of such a complicated bridge structure was that it immediately had to be declared indeterminate and then had to be analyzed anyway using the right educated guesses (approximations) to make the problem solvable. Reg`s comparison of structures and networks is especially apt when the dynamics as well as the statics are considered. Reg has an interesting insight into the stored energy of deformation.

Best regards, Richard Harrison, KB5WZI

2386. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 02:49:59 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cokad$26b$1@plutonium.btinternet.com>
Source record: 164549

Unless anyone can supply the formulae for calculating trap L and C values for multiband dipole antennas, he does not have much of an idea of what it is all about. A tuner at the transceiver end of the line will still be needed even with trapped dipoles.

And although he, or she, may be able to provide some numerical values of L and C, will the coils be able to dissipate the losses without the solder melting or the capacitors breaking down ?

It's a difficult problem. Easiest thing to do is copy exactly someone else's proven design. Or mess about with your own experiments until you find something that works after a fashion. Then, if no-one has already sorted it out, slap on a patent.

Bear in mind someone else's "proven design" has probably been proven by someone who knows as much about it as you do.

Have a very enjoyable time experimenting. You will eventually wind up with an antenna without any traps or coils, of no particular length, fed with no particular length of 450-ohm ladderline or 600-ohm open wire line. Put all your effort or expense into a tuner.

Reg.
==========
John Passaneau <jxp16@psu.edu> wrote in message news:9cmcrh$t82@r02n01.cac.psu.edu...
Hi Irv:

The one trap per leg solution can be made to be resonate on many of the ham bands by chousing the L-C ratio of the trap just right. With 40 m traps, the antenna is of course resonate and acts like a half wave dipole on 40 m. Below the trap's resonate frequency it looks like a inductor and is a loading coil on 80. It is also usable on 15 m, as is a normal 40 m dipole. Above the traps resonate frequency the trap looks like a capacitor and shortens the antenna making it resonate on 20 m and if everything is ok it will also show a resonance on 10 m. The sticker is, other than 80 and 40 m the antenna is a not a half wave and the impedance will be resistive, (the definition of resonance) it will not be anywhere close to 50 ohms. On 20 m it will be more like 200 to 300 Ohms. So with a tuner it will be easy to match but it will need a tuner on all bands other than 80 and 40 m.
The multiple trap design how ever, will give true half wave dipole characteristics on the highest band, but loaded half wave dipole performance on the lower bands, with the traps for the upper bands

acting like loading coils making the antenna shorter and increasing loss. The 10 m traps act as loading coils on 15 m and the 10 and 15 m traps act like loading coils on 20 and so on. This makes the antenna much shorter than the 2 trap design.

As for loss I just designed a trapped dipole for 80/40/20 using EZNEC. I made my traps out of section of PVC pipe with wire wound on them with a transmitting cap tuned to the middle of the 40 m band. The actual antenna in impedance, swr band width and resonate frequency came out very close to the EZNEC model so I think I have every thing right in the model. Using the data I measured in my shop at work for the traps. EZNEC show a loss in the traps on 80 m (as loading coils) of 9.5 watts out of a 1000 watts. and less than 1 watt out of a 1000 on 40 m. I don't have the data here with me so I can't remember what it was on 20 m, but I was not designing this for use on 20 m, it just happened to work out with the coil/capacitor I picked to use.

So the bottom line is: the multi-trap design may not need a tuner to be usable but will have much higher losses than the two trap design, which will need a tuner to be usable on any band other than 80 and 40 m. Also the SWR band width will be somewhat narrower with any trap design. So for best performance use a "fan dipole" for multi-band use or the favorite of the in crowed here on the newsgroup, a dipole feed with open wire line.
The best reason to use trapped dipoles is because of a lack of space to put up full size dipoles (the reason I did it) as a full size dipole is all ways going to be more efficient. But I must say, that 9 watt out of a 1000 in my design, is not much.

--
John Passaneau, W3JXP
Physics Dept. Electronics Shop
Penn State University
104 Davey Lab, University Park , Pa. 16802
814.863.4297, jxp16@psu.edu

"Irv Finkleman" <finkirvNOSPAM@home.com> wrote in message
news:3AEE2599.40F303DF@home.com...
I can build a trap antenna with one trap (40 meter band) in each leg and use it on
80/40/20/15/10 meters. I can also build the same antenna but with four traps (40m/20/15/10 meters) in each leg. I can see that with four traps you should be able to select the portion of the individual bands in which you prefer to operate, but I wonder if there is any other advantage to using four traps?
--

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

Please delete NOSPAM from my e-mail address when replying.
Thanks!

2387. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 02:53:27 UTC
From: 2w8ji@akorn.net
Message-ID: <3aef7552.565789464@news.accessunited.com>
Source record: 164535

On Tue, 01 May 2001 20:14:57 -0400, Denver Braughler
<Braughler@bwcc.com> wrote:

>Tom W8JI wrote:
>> If you want to make them insulated from each other, soak the cable in
>> water for a week and then let it dry out.
>>
>> Now you will have thousands and thousands of insulated wires, or at
>> least wires with high resistance at the overlays.
>
>Although I haven't sat down to count the little wires, "thousands" sounds like quite an
exaggeration, at least for any coax I've ever cut.

I meant to describe the junctions where the wires move from the
outside to the inside of the weave, not the number of strands. I could
have worded that better, but I'm sure you get the idea.

If the current had no problem weaving in and out, the loss with a
tarnished braid would not be nearly as dramatic as it turns out to be.

A tarnished braid off RG-8 coax has about the same resistance as an
equal length of #22 wire, at least when I've measured a few hunks.

73 Tom

2388. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 02:56:24 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AEF7758.39D4AF54@eznec.com>
Source record: 164534

This afternoon I ran the following experiment. I made a current probe by winding 10 turns on a high permeability ferrite core of about 1 inch OD. The impedance of one turn on this core at 10 MHz was measured as 7.3 + j2 ohms. The winding was connected to 4-1/2 feet of RG-58, then run to a scope input which also had a 50 ohm termination. An ideal current tranformer with these turns and termination would have a sensitivity of 5.0 volts/amp. This probe measured 4.43 - 4.74 over the range of 1 - 30 MHz, and 4.83 at 10 MHz where the remaining measurements were done. Currents shown are relative; to get absolute values in amperes divide the values shown by 4.83.

A 2 foot piece of RG-58 was connected as follows. The shield of the input end was connected via a short (about 1/2") pigtail to a piece of solid plated PCB material. This point is defined as "ground" in the experiments, and all ground connections are to this single point. A signal generator was run to a BNC connector grounded at "ground", and the center conductor of the connecter was attached to the center conductor of the input end of the 2 foot coax. The voltage at the input end was used as the phase reference. In retrospect, I didn't carefully measure the phase of the current probe output relative to the indicated voltage, except to note that it was close to zero. So the current phases should be regarded as also being relative.

As a first test, a 51 ohm resistor was connected between the shield and center conductor at the output end of the coax. No other connection was made to the output end. The current through the 51 ohm resistor was measured, and the current on the outside of the coax was measured. This outside current was measured by running the whole cable through the current probe core. For a resistor current of 0.366, the outer shield current was 0.001. This shows that 1. All the current coming out of the center conductor at the load is flowing back to the source via the inside of the shield, and 2. The current on the inside of the coax shield is not visible to the probe.

The output side shield was then connected to "ground". No noticeable change in the resistor current was seen; the current on the outside of the coax increased to about 0.005. Despite the easiest possible path back via the "ground" connection, virtually all the current on the inside of the shield still returns through the resistor to the center conductor. This is because of the strong mutual coupling inside the cable. If any of the shield inner current were to return by another path, then the current on the inside of the shield would be different than the current on the center conductor (by the amount that returns via another path). The strong mutual coupling within the cable prohibits this.

Then the output end connections were changed. The center conductor of the output end of the 2 foot cable was connected to "ground" via a 25.5 ohm resistor (two 51 ohm resistors in parallel). The shield of the output end was also connected to "ground" via a 25.5 ohm resistor. Currents were measured at six places:

I1i - Input center conductor
I2i - Input shield pigtail
I3i - Outside of shield at input end

I1o - Output center conductor
I2o - Output shield pigtail
I3o - Outside of shield at output end

The "shield pigtail" measurements are measurements of the current flowing from the shield to "ground". The assumed positive direction of current flow is toward the load end for all measurements. Currents were measured as magnitude and phase, then converted to rectangular form.

I1i 0.353 - j0.164
I2i -0.308 - j0.106
I3i 0.057 - j0.267

I1o 0.337 - j-0.245
I2o -0.300 - j0.032
I3o 0.027 - j0.262

What can we learn from these?

I maintain that the current on the inside of the coax flows "over the edge" and onto the outer surface, and that no current flows through the shield. Let's see if the numbers bear that out.

Let's begin by determining the amount of current on the inside of the shield. By Kirchoff's current law, I2i, I3i, and the current on the inside of the shield at the input have to add to zero, taking direction into account. Considering the directional conventions, the current on the inside of the coax (positive defined as toward the load) = I2i - I3i = -0.365 + j0.161. Compare this to I1i, the current on the center conductor. Within measurement error, the current on the inside of the shield is equal in magnitude to and opposite in direction from the current on the center conductor, as it must be. Notice also the important fact that the current on the inside of the shield has no obvious relationship to the current on the outside. In fact, they're about in quadrature.

Making the same calculation at the output end, the shield inner current is I2o - I3o = -0.327 + j0.230, again equal to -I1o within measurement error.

If there were extra current on the outside of the shield from any source other than flowing over the edge, either the currents wouldn't sum to zero at the ends of the cable shield (eventually filling the room with couloumbs), or the currents on the inside of the shield and center

conductor would have to be different.

The current on the inside of the shield has two return paths to "ground": via its resistor, or along the outside of the shield. The amount of current which takes each path is inversely proportional to the ratio of impedances of those two paths. From knowing the value of the resistor, and the measured currents, we can calculate the impedance along the outside of the shield. It works out to 0 + j1.15 ohms -- it looks like an inductor of approximately 470 nH, about what we'd expect.

With the principles that:

1. The current on the inside of the shield is different from the current on the outside
2. The current on the inside of the shield is equal in magnitude to and opposite in direction from the current on the center conductor
3. The current on the inside of the shield can flow around the end onto the outside
4. No current flows through the shield

all the observed currents are completely explained, are self consistent, and comply with Kirchoff's current law.

I challenge anyone disagreeing with these principles to likewise fully account for these currents. If not as I've explained, then where are each of the currents coming from and where is each going?

Roy Lewallen, W7EL

"William E. Sabin" wrote:
>
> Roy Lewallen wrote:
>
> > I'd say that the feedpoint balun prevents current from flowing
> > from the inside of the coax over the end and onto the outside, but know
> > you don't agree that this happens.
>
> There is one basic principle that we have been ignoring. For a thin coax braid, at
> any specific location, there is basically zero voltage difference between the inner
> and outer surfaces.
>
> Another basic principle is that there is a strong electromagnetic coupling between
> braid current, on both the inner and outer surfaces, and the center wire. Common
> mode voltage and impedance are efficiently transferred back and forth.
>
> I am now looking at page 26-16, Fig 24, ARRL Antenna Book, 19th edition.
>
> The first thing that I see is an inside current I2, part of which is looping around
> the edge and flowing down the outside as I3. Consider a short segment near the
> dipole and freeze the action at some particular instant. The I2 inside must
> correspond to a voltage drop along the inside surface. The I3 on the outside must
> correspond to a voltage drop along the outside. I now perceive a voltage difference

> between the inner and outer surfaces at the bottom end of the segment. This is not
> allowed. Right away this braid-loop concept appears to have a problem which we must
> analyze.
>
> Page 26-16, column one text, assumes perfect symmetry of the dipole, so that
> inductions from the two sides cancel on the braid. The dipole impedance is, say 50
> ohms, as measured between the two terminals.
>
> Assume for a moment a 50 ohm resistor (no dipole) at the top of the coax. There
> would be no common mode current. All current would return via the inner surface,
> just as the books all say it is supposed to. The braid longitudinal impedance would
> be irrelevant (it could be zero). The perfectly balanced dipole is also 50 ohms,
> just like the resistor. In order to get common mode current, something else is
> needed. The antenna supplies something that the resistor does not. It supplies a
> path to ground that does not include the coax. It is in the free space coupling
> between dipole and ground. An additional requirement is that there must be an
> unbalance to ground for the two sides. If the balance were perfect there would be
> no common mode path from ground to coax to antenna to ground to coax, and the
> situation would be identical to the resistor. This path, plus the coax braid,
> provides a complete common mode loop. The differential desired signal is the
> generator that "excites" this common mode path current.
>
> We have seen this in previous discussions, where the common mode path is complete
> from coax ground point, up the outside of the coax, through the antenna, through
> the space from antenna to ground and back to coax. This loop does not include the
> loop that is the inner and outer surfaces of the coax braid. The 50 ohm resistor,
> all by itself, ignores that loop, exactly as it is supposed to.
>
> To summarize: The common mode closed loop path must include the free space path
> from antenna to ground. The loop consisting of inner and outer braid surfaces is
> not a legitimate common mode loop; Fig 24 is in error on this issue. Common mode
> effects on the coax are caused by a difference between center wire current and
> braid current, which results in radiation from the coax due to incomplete
> cancellation of external fields. The balun does two things 1) it provides very
> tight coupling between braid and center wire 2) it provides large and equal common
> mode impedances on both the center wire and the braid. Finally, an imbalance in the
> antenna can produce unsymmetrical near field coupling to the braid, which is an
> additional source of common mode current.
>
> I agree with your other comments about balun placement, but I must distinguish
> between coupling from radiator to coax-outside and the other thing that I mentioned
> previously, which is the failure of *all available* differential mode return
> current to find its way into the inner surface of the coax (in the correct phase)
> where it must be in order to minimize coax radiation leakage. This includes
> extraneous paths such as dirt, buried pipes etc. This must surely be a problem that
> the baluns improve also. It must be true that broadcast stations try to gather up
> all of the return current into the inner surface of the coax (in the correct phase)
> and return it to the transmitter, to keep from setting fire to the neighborhood. I
> have read that they sometimes "tune" the ground radials.
>

> Bill W0IYH

2389. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 03:07:44 UTC
From: wa9mzt@arrl.net
Message-ID: <3aef783b.111230911@news.fuse.net>
Source record: 164536

Denver,

Thanks a lot for the valuable information you provided. I thought
that's the way it should be done, but I didn't know about the long
ground strap to the power ground. I am going to get the rods strapped
together as soon as I can.

Is it ok to run the ground strap in the same trench as the coax?

Thanks,

Steve

On Tue, 01 May 2001 18:51:39 -0400, Denver Braughler
<Braughler@bwcc.com> wrote:

>wa9mzt@arrl.net wrote:
>> I have 8' ground rods at the coax antenna ground; at the dish coax
>> ground and outside my hamshack for my station ground. I am planning
>> on putting a coax ground at the entry to my ham shack before it gets
>> inside. I am not connected to the power ground at this time.
>
>Your ground rods outside your shack need to be bonded to your house electrical common
earth ground system with #4 bare, solid copper wire, 1/2 inch braided copper strap, or
better.
>
>You are also asking for trouble, including ground loops, anywhere you have ground rod that
aren't connected to each other by something that you intend can haul the current. That
should be something other than your coax shield.
>
>> Should I connect the antenna coax ground, the dish coax ground [...] together
>Using wide braided copper? Yes! At once!
>
>> WITHOUT the ground rods
>No. You have the ground rods. They are in close proximity.
>You should tie them in with a high ampacity conductor to the rest of your house.
>
>> and then run the 35' from the ham shack to the power ground with a #6 copper wire?
>A buried copper braid would work.
>For that distance, again, you want to use #4.
>
>However, most of you real grounding is occurring in the nearby rods.
>They should have low resistance to moist earth.
>
>> Should the station ground be included with this?
>No. Nothing indoors.

>
>> Or should it be left out and grounded only my the AC power ground?
>That is correct.
>But it is extremely important that your electric panel ground rods be solidly tied to the other ground rods with a high ampacity conductor such as #4 copper.
>
>> I could run the ground wire to the AC power panel from my ham shack,
>> inside the house and save about 20''. I would guess it's better to
>> keep it outside even if the distance is further.
>No. If it is inside your house, it must go through your electric panel on its way to earth.
>Keep what is outside, outside. But ...
>
>*** Whatever is inside your house needs to leave via a single point for the whole house, and that is your electric service entrance panel. ***
>
>If you provide another path, the lightning and fault currents will come to your radio looking for a path to earth. This includes neutral return current from your electric mixer in the upstairs kitchen that is just looking for a path back to the power generator. You don't need that noise coming by your radio.

2390. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 03:10:16 UTC
From: richardharrison@webtv.net
Message-ID: <16541-3AEF7A98-81@storefull-118.iap.bryant.webtv.net>
Source record: 164541

Peter, K1PO wrote:
"What some did say, and I agree is that the "voltage" on one side is "mirrored" on the other."

Maybe mirrored as by a fun-house mirror. As a h-f current sinks deeper into a conductor it is increasingly delayed as its progress slows. So, when a voltage results on "the far side" it may even appear as moving in the opposite direction from that on the original side of the shield.

Best regards, Richard Harrison, KB5WZI

2391. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 03:15:03 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <LVKH6.5408$5k1.580491@e420r-chi2.usenetserver.com>
Source record: 164537

Peter, I wish I had time right now to review all of your post, but readying for the trek to MI precludes it. However, with all due respect to your learned treatise on circulators, I must disagree. If port #2 had a matched load there would be no reflection and therefore no power would arrive at port #3. But going back to the case where port #2 is mismatched, the circulator prevents the reflected power from returning on the line feeding port #1, instead, rerouting it to port #3. I wa hoping this would convince you that reflected power is real, not fictitious.

Wish I had more time to continue, but must stop now.l

73, Walt, W2DU

2392. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 03:21:33 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <52LH6.4487$c4.426627@e420r-chi1.usenetserver.com>
Source record: 164538

On my post today at 3:05 I made a misstatement concerning the polarity of reflected voltages and currents. What I meant to say is that when the voltages of the two sets of reflected voltages are 180 degrees out of phase and the currents are in phase a virtual short circuit is established in the same manner as two generators in parallel where the voltages are 180 degrees out of phase. The result is currents in phase resulting in a short circuit between the two generators. The same occurs when two rearward-traveling voltages are 180 degrees out of phase and their respective currents are in phase. The result is a virtual short circuit to the reflected waves, but which is transparent to the forward waves from the source.

I hope this clarifies my misstatement.

Walt, W2DU

2393. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 03:28:26 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AEF7EDA.39030388@bwcc.com>
Source record: 164539

wa9mzt@arrl.net wrote:
> Is it ok to run the ground strap in the same trench as the coax?
If the run were short, like 1-3 m, I would say no on account of the fact that if lightning ever travels on the grounding strap it will magnetically induce a powerful current in a parallel coaxial cable.

But for the distance that you are running and since it sounds like your coax might be grounded to the thing at both ends any way, I don't see a problem. Try to give them some separation, and waste a few feet of grounding strap along the way so the the strap has some wiggles to decrease the inductive coupling to the coax.

I would probably put the strap shallower than the coax so that if lightning strikes the earth somewhere in the middle, the strap will serve to divert some of the energy before it gets down to the coax.

By trench, I hope you mean at least 18" deep. Covering the coax with some sand will help to keep the rocks off it.

2394. Ideas(?) on..."location, location, location..."

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 03:31:42 UTC
From: dhassler@orednet.org
Message-ID: <dhassler-0105012031570001@192.168.150.3>
Source record: 164540

Hi guys. Here's my predicament: I live in a small town -- Madras, OR -- that's essentially in a bowl. I'm at 2,200 feet, and almost the whole surrounding area is at about 2,800 ft. within about a 2 mile radius of my house. From there, it only gets worse. The next "level" up is Bend, OR at 3,500 feet.

Bend, pop. 50,000 is where the action is on 2 meters and it's 45 miles away. I'm OK if I drive up on top of the plain in the car. I have a J-Pole up on the roof at home, but at 25 watts, I *still* have trouble getting out to the repeater in Bend. And *packet*, well, let's not go there just yet. Heck, I'd just like to be able to talk to guys for more than 45 seconds at a time at home, if I'm lucky.

Any ideas or suggestions?

73,
Dave, kd7mpd

2395. Hamstick Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 03:36:56 UTC
From: dmccord@usol.com
Message-ID: <3aef7d17.11525477@news.usol.com>
Source record: 164543

I have just purchased a 12 year old travel trailer. I wish to put my Icom 706 in the trailer and I am thinkin go of using Hamsticks in a dipole configuration. (using two hamsticks for each band) on a 15 foot pipe. Or would one hamstick work just as well as a vertical. My problem is I do not have a ground or room to put up radials. The mount will be on a metal utility rack about 2 feet behind the trailer. Would the antenna mast be enough to act as a counter poise?

Thanks for any help you pass along,
Delbert McCord

2396. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 03:50:11 UTC
From: richardharrison@webtv.net
Message-ID: <1304-3AEF83F3-93@storefull-115.iap.bryant.webtv.net>
Source record: 164542

Roy, W7EL measured coax shield leakage, currents in the center-conductor and inner surface of the coax shield, current on the outside of the shield and in a matched load on the coax. Roy even included tests with a balanced load across the coax.

Many thanks, Roy.

Roy`s results seem to quantify the results many of us would expect and they fit with our experience in using coax. We now know a lot more because we have numbers!

Confirmation of the theory is very comforting.

Best regards, Richard Harrison, KB5WZI

2397. Re: Commercial dipole for 6m?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 05:01:00 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <525vetk7at7uv72vv929qjtue4f8ifif9l@4ax.com>
Source record: 164544

You might check out the URL posted by KG4GGX.

On 02 May 2001 02:29:46 GMT, vhfradiobuff@aol.comspamsux
(VHFRadioBuff) wrote:

>>I found one in the latest HRO catalog. It's made by CAL-AV. The EB-2
>>covers 10 to 60 Mhz and is rated for 3 KW. Price is $42.95.
>>
>
>Hmm.. anything that covers less frequencies and less power? Say VHF only and
>300 watts or less? :)
>=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
>73! de KC2SSB (ex: KF4KHC/HL9HCT)
>Toms River, NJ USA! Grid FM29
>http://vhfradiobuff.tripod.com
>http://egroups.com/group/vhfallmode

2398. Re: Hamstick Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 05:30:34 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <3AEF9B35.1E09B583@att.net>
Source record: 164545

You shouldn't need any "counterpoise" since the dual Hamstick dipole would be very nearly a balanced antenna. I would use either a current balun or at least a coil of coax at the feedpoint, though. Don't ground the coax to the mast or RV frame anywhere except at the radio.

I have heard that such antennas, while they load and "work", do not work all that well due to excessive losses. In any event, the only way to find out is to build one and try it!

I have always used a Hustler vertical on the luggage rail of my motorhome with good success, and the Hustler elements are rather lossy due to the way the loading coils are constructed.

One other point, which probably does not apply to a travel trailer: please do not ever attempt to operate HF radio while in motion. Wait until you are parked and then fire up the rig!

Good luck!

72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
Amateur Radio W5YR, in the 55th year and it just keeps getting better!
Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437

Delbert McCord wrote:
>
> I have just purchased a 12 year old travel trailer. I wish to put my
> Icom 706 in the trailer and I am thinkin go of using Hamsticks in a
> dipole configuration. (using two hamsticks for each band) on a 15 foot
> pipe. Or would one hamstick work just as well as a vertical. My
> problem is I do not have a ground or room to put up radials. The mount
> will be on a metal utility rack about 2 feet behind the trailer. Would
> the antenna mast be enough to act as a counter poise?
>
> Thanks for any help you pass along,
> Delbert McCord

2399. Re: Ideas(?) on..."location, location, location..."

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 07:27:17 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <pFOH6.2420$Gf1.810379@paloalto-snr1.gtei.net>
Source record: 164546

Dump the J-Pole, and put up Cushcraft 13B2 - or similar - yagi.

I live in the Mohave desert next to Edwards AFB. I have no problems talking simplex to Orange and San Diego counties with a 13B2 at 30 feet and 50 watts. (There are three mountain ranges between me and San Diego - about 175 miles away)

With a high gain directional antenna, you may find - like I did - that you can use the "knife edge" refractive nature of the mountain ranges to your advantage. Quite often, I have to point to a completely different direction than where I am trying to reach in order to get the best signal report.

73 de W6DKN

"KD7MPD" <dhassler@orednet.org> wrote in message
news:dhassler-0105012031570001@192.168.150.3...
> Hi guys. Here's my predicament: I live in a small town -- Madras, OR --
> that's essentially in a bowl. I'm at 2,200 feet, and almost the whole
> surrounding area is at about 2,800 ft. within about a 2 mile radius of my
> house. From there, it only gets worse. The next "level" up is Bend, OR
> at 3,500 feet.
>
> Bend, pop. 50,000 is where the action is on 2 meters and it's 45 miles
> away. I'm OK if I drive up on top of the plain in the car. I have a
> J-Pole up on the roof at home, but at 25 watts, I *still* have trouble
> getting out to the repeater in Bend. And *packet*, well, let's not go
> there just yet. Heck, I'd just like to be able to talk to guys for more
> than 45 seconds at a time at home, if I'm lucky.
>
> Any ideas or suggestions?
>
> 73,
> Dave, kd7mpd

2400. Base station antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 07:28:48 UTC
From: Titus Cheung <titus@ieee.org>
Message-ID: <QGOH6.151705$166.2762674@news1.rdc1.bc.home.com>
Source record: 164547

Hello:

Are there anyone familiar in the type of antennas cellular providers use for sectorizing a cell?

Thanks

2401. Re: Hamstick Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 07:38:13 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AEFB965.625C83FC@oio.net>
Source record: 164548

Delbert,
The 'Hamstick dipole' should work fairly well. How well depends on how much trouble you take in tuning it. And, like any dipole antenna, the higher the better. This arrangement will have a very narrow usable bandwidth, depending on the band(s) you use it on. A tuner would be a handy thing to have around.
'Doc

2402. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 10:09:07 UTC
From: 2w8ji@akorn.net
Message-ID: <3aefdb26.591861453@news.accessunited.com>
Source record: 164551

On Wed, 02 May 2001 03:07:44 GMT, wa9mzt@arrl.net wrote:

>Denver,
>
>Thanks a lot for the valuable information you provided. I thought
>that's the way it should be done, but I didn't know about the long
>ground strap to the power ground. I am going to get the rods strapped
>together as soon as I can.
>
>Is it ok to run the ground strap in the same trench as the coax?
Lightning contains all sorts of RF energy. Most of the destructive
energy is down near the 100 kilohertz range.

Never use braiding for a ground unless you have absolutely no choice
(because of flexing).

Dry, clean, tightly packed braid has several times the RF resistance
of a smooth conductor the same size. The clean dry shiney briad of
RG-8 has about the same RF resistance as a number 12 wire.

When it is loosely packed, or if it tarnishes, it is like a resistor
for RF. It is terrible.

Not only is resistance high, it rots easily.

Other than that, everything sounded OK.

73 Tom

2403. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 11:04:36 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9copfn$5tq$1@plutonium.btinternet.com>
Source record: 164552

Quite right Tom.

You only have to take one look at the very thin inner coaxial conductor to realise that it's far more lossy than the nice thick wire used in the ordinary solenoidal trap coil.

Coax inner conductors in high-current tuned circuits behave like fuse wire. The only doubtful advantage of a coax trap is that it provides its own high voltage tuning capacitor. But it's mighty bulky and heavy. And there's two of 'em to be suspended in one dipole.

I have a design formula for coax traps, number of turns on what diameter, Zo, etc., but I have not put it in the form of a computer program because I would not recommend use of such lossy, heavy gimmicks.

I do have a design and performance program for a trapped dipole but admit that performance is invariably worse than a random-length dipole fed via an open-wire feeder or ladder line. If you have any money to spare invest in a wide Z range, high-power, low-loss tuner.

Don't inconveniently hang coils in the antenna which restricts operation to only 2 or 3 bands. Keep bigger high-Q coils in the shack and enjoy multi-band, efficient operation.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

Tom W8JI wrote -
> Coaxial cable traps have the highest loss and poorest bandwidth of any
> trap I tested at the trap frequency.
>
> The difference in loss between a L/C trap and a coaxial trap is quite
> large, even when the L/C trap uses modest components.

2404. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 11:35:51 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9core2$nf1$1@slb6.atl.mindspring.net>
Source record: 164553

Richard:

Consider an array of infinitely long coaxial cables each with the same level of common mode signal present and no differential mode signal. Each of these coaxial cables has a "shield" of a different depth, the depths varying in say, 1/10'ths of a skin depth.

What voltrages, if any, appear on the inside surface of the shields due to common mode voltages on the outside?

Especially when the thickness of the shield is very small, say only 1/10 of a "skin depth"?

Or, what I say is equivalent, if there are very many small "holes" or "leaks" in the shield.

Then what is happening on the various cables as the thickness of the shield is allowed to increase in steps, say of 1/10 of a skin depth.

Will there be a voltage on the inside surface with the thickness at 2/10 of a skin depth, at 3/10 of a skin depth, at 4/10 of a skin depth, at... ... at 500/10 of a skin depth, etc... ?

At what number of 1/10ths of a skin depth, say x/10 times skin depth will the voltage on the inside of the shield suddenly dissappear?

Or if the thickness of the cable shield is held constant, but a number of tiny holes punctured through the shields is allowed to vary from say one hole per mile, down to say a hole every 1/100 of an inch....

At what number of holes in the shield per inch will the voltage on the inside dissappear?

Thoughts, comments...

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:16541-3AEF7A98-81@storefull-118.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "What some did say, and I agree is that the "voltage" on one side is
> "mirrored" on the other."
>
> Maybe mirrored as by a fun-house mirror. As a h-f current sinks deeper
> into a conductor it is increasingly delayed as its progress slows. So,
> when a voltage results on "the far side" it may even appear as moving in
> the opposite direction from that on the original side of the shield.
>

> Best regards, Richard Harrison, KB5WZI
>

2405. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 11:42:53 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9corri$4if$1@slb5.atl.mindspring.net>
Source record: 164554

Walt: Send me, by private email, a fax number or email address where you will be located after your trip, and sometime later I'll send you schematics of some circulators for various frequency ranges which we could discuss in detail -Peter K1PO

"Walter Maxwell" <w2du@iag.net> wrote in message news:LVKH6.5408$5k1.580491@e420r-chi2.usenetserver.com...
> Peter, I wish I had time right now to review all of your post, but readying
> for the trek to MI precludes it. However, with all due respect to your
> learned treatise on circulators, I must disagree. If port #2 had a matched
> load there would be no reflection and therefore no power would arrive at
> port #3. But going back to the case where port #2 is mismatched, the
> circulator prevents the reflected power from returning on the line feeding
> port #1, instead, rerouting it to port #3. I wa hoping this would convince
> you that reflected power is real, not fictitious.
>
> Wish I had more time to continue, but must stop now.l
>
> 73, Walt, W2DU
>
>
>

2406. Re: Hamstick Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 11:46:19 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <fsSH6.305$2_.67952@news3.rdc1.on.home.com>
Source record: 164555

It can be done, not too sure how well it would work. Mounting will also be an issue. They are fairly heavy. Possibly 2 5/8thsx24tpi mounted on some insulator.

--
Rob St.Denis

"Delbert McCord" <dmccord@usol.com> wrote in message
news:3aef7d17.11525477@news.usol.com...
> I have just purchased a 12 year old travel trailer. I wish to put my
> Icom 706 in the trailer and I am thinkin go of using Hamsticks in a
> dipole configuration. (using two hamsticks for each band) on a 15 foot
> pipe. Or would one hamstick work just as well as a vertical. My
> problem is I do not have a ground or room to put up radials. The mount
> will be on a metal utility rack about 2 feet behind the trailer. Would
> the antenna mast be enough to act as a counter poise?
>
> Thanks for any help you pass along,
> Delbert McCord
>

2407. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 12:11:26 UTC
From: 2w8ji@akorn.net
Message-ID: <3aeff61d.598765028@news.accessunited.com>
Source record: 164556

On Tue, 01 May 2001 09:58:43 -0700, K7MEM <jda@rupert.tds-az.lmco.com>
wrote:

>The 2:1 SWR for 40 Meters is about 300 KHz and wider for the
>higher frequency bands. Plenty of coverage for me.

Coaxial traps may be cheap and easy, but they are also quite lossy.

According to models of trapped antennas using the data I measured, the
VSWR bandwidth is narrower with a coaxial trap than a conventional
trap on the band wher the trap is being a trap.

That is because the L/C ratio is very small, and reactance and
impedance changes rapidly with frequency.

The measure resonant-frequency resistance of several traps was in the
13,000 to 17,000 ohm range.

In comparion, a much lighter trap made only from #14 wire and a
conventional ceramic transmitting capacitor (the one in the Handbook
usinga 100 pF capacitor) had wider bandwidth AND a resistance at
resonance of 100,000 ohms or so.

A portion of the poor resonant resistance is from the
capacitor-style....a length of coax makes a lossy capacitor because of
series resistance. The bulk of loss, however, is because of the vinal
jacket and the close spaced turns and the poor conductivity for
physical size of braided conductors.

The difference in loss, when the traps were inserted in a dipole
model, was about 2 dB on the band where the traps were resonant at the
resonant frequency.

Loss decreases off resonance, but of course SWR increases and feedline
losses increase.

More details at Dayton, in the antenna forum on Friday.

73 Tom

2408. Re: Commercial dipole for 6m?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 12:31:34 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEFFE26.AA7EEB9@IEEE.org>
Source record: 164557

VHFRadioBuff wrote:
>
> >I found one in the latest HRO catalog. It's made by CAL-AV. The EB-2
> >covers 10 to 60 Mhz and is rated for 3 KW. Price is $42.95.
>
> Hmm.. anything that covers less frequencies and less power? Say VHF only and
> 300 watts or less? :)

Seems you might be interested in homebrewing after all. You can get
an FT-240-67 toroid from Amidon for about ten bucks and wind some
small coax on it.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2409. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 12:34:37 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <x9TH6.1645$t12.116810@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164558

"Walter Maxwell" <w2du@iag.net> wrote in message
news:CMDH6.2616$c4.364498@e420r-chi1.usenetserver.com...
> Gentlemen, I've gotten in here late, and haven't had the chance to read
the
> last hundred posts, but I would like to put in two cents worth.
>
> First, on the subject of reflected power being fictitious, I'll ask Peter
to
> consider a 3-port circulator. Port #1 is the input, port has a mismatched
> load, and port #3 has a purely matched non-reactive load with a voltmeter
> connected across the terminals. The power absorbed in the load on port #3
> will equal exactly the square of the voltage indicated on the meter
divided
> by the resistance of the load. This power is that reflected from port #2.
> There's no way it could be fictitious power because the power reflected
from
> port #2 caused real power to be dissipated in the load on port #3.
>
> Second, on the subject of virtual short circuits. Let's assume two ac
> generators are connected in parallel. They each deliver the same voltage
> across the load, but they are 180 degrees out of phase. The result is a
> short circuit at their terminals. The same is true for two sets of
rearward
> traveling waves of voltage and current where the waves are of the same
> magnitude and opposite phase. The result is a short circuit, because at
any
> point along the transmission line the power reflected from each
> discontinuity that produces the reflections, the reflected powers at that
> point can be replaced with corresponding generators producing equal
voltages
> but 180 degrees out of phase. We are not considering just one reflected
wave
> of voltage and current in conjunction with the forward wave of voltage and
> current. We are considering TWO sets of reflected waves--one set generated
> by the mismatch terminating the line, and the other is the set generated
by
> the matching network (or stub).
>

Walter, parts of this are simply incorrect.

Two rearward traveling waves of equal amplitude being 180 degrees out of phase cancel one another to a net rearward wave of zero. At this point of rearward wave cancelation there will still be a total non-zero voltage. This is not the same as a short circuit on a transmission line. A short

circuit on a transmission line occurs when the forward and rearward traveling waves are 180 degrees out of phase and the total voltage goes to zero at that point.

> If you measure the SWR on the line with line mismatched (no matching
> network), and then replace the mismatch with a matched load, but keep either
> the matching network or stub in the line, the input SWR of the line and the
> magnitude of the reflection coefficient will be the same as before, but with
> the opposite angle of reflection coefficient.
>
> This concept is explained in my QEX article of Apr/May 1998, that Steve says
> is totally incorrect, and which I've challenged him with no success. I hope
> this will help.
>

I did not say that you were totally incorrect. I believe that several key statements and concepts you introduced are incorrect. As for challenging me, you have yet to directly discuss the key points that we disagree on and answer several direct questions that I have asked of you.

Steve

>

2410. Re: Hamstick Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 12:37:12 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AEFFF78.DCC83D0B@IEEE.org>
Source record: 164559

Delbert McCord wrote:
>
> I have just purchased a 12 year old travel trailer. I wish to put my
> Icom 706 in the trailer and I am thinkin go of using Hamsticks in a
> dipole configuration. (using two hamsticks for each band) on a 15 foot
> pipe. Or would one hamstick work just as well as a vertical. My
> problem is I do not have a ground or room to put up radials. The mount
> will be on a metal utility rack about 2 feet behind the trailer. Would
> the antenna mast be enough to act as a counter poise?

Your dipole idea will work 20m-10m but will be a dog on the lower
bands. Personally, I would go with a screwdriver. The grounding/
counterpoise problem is just that - a problem that can be solved.
--
http://www.mindspring.com/~w6rca

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2411. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 12:39:54 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <ueTH6.1651$t12.116141@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164560

"Walter Maxwell" <w2du@iag.net> wrote in message
news:n8GH6.3462$c4.377186@e420r-chi1.usenetserver.com...
> Steve's problem with addition of voltages or powers on a transmission
line
> is that it is NOT the voltages that add, it's power, even though Steve
> denies that this is true. His misconception on this issue is why his
powers
> don't add up correctly. Everything cpmes out correctly when powers are
> added, but never come out correctly by adding voltages. Kirchoff's law
> simply doesn't apply here.
>

Let's not call this "Steve's problem".

Powers do not add as you claim they do. 100 Watts added in phase with 33.33 Watts simply does not add to 133.33 Watts. This violates Kirchoff's voltage law.

Everything only comes out "correctly" because you do not want to believe otherwise.

> Steve and I had a real pulling match on this issue, and even after I
pointed
> out an equation in Johnson that proves it, he still goes on in the wrong
> direction.

I've gone through Johnson in detail and his analysis contradicts your power addition. I would be happy to go through this here on the NG. Let's go through Johnson's analysis.

>We're leaving Florida for Michigan on Thursday and my Johnson
> book is already packed away so I can't tell you the Eq number in Johnson.
> However, his equation shows that the square of the source voltage divided
by
> Zo is the source power and the square of the reflected voltage divided by
Zo
> is the reflected power. His equation then shows that the sum of the source
> and reflected powers equals the total forward power. Thus it follows that
> the sum of the voltages divided by Zo cannot give the correct results.
>

Walter, Johnson shows that the sum of the forward source voltage and re-reflected voltage add to the total voltage. He does not add power.

Steve

> Hope this helps.
>
> Walt, W2DU
>
>
>

2412. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 12:44:07 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <riTH6.1652$t12.118004@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164561

Cecil:

I am going to start another thread called "addition of power" and we will
focus on that issue specifically.

Steve

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEF1F1B.53E45EF9@IEEE.org...
> VE9SRB wrote:
> > Sounds like you agree with me more than you disagree.
>
> Yes, that's right. Makes me wonder why you treated me like an
> ugly step-child.
>
> > I took all of the power into account and it all balances with regards to
the
> > conservation of energy principles.
>
> Nope, it doesn't, Steve. You can't say energy flows away from a junction
so
> it has to be made up for elsewhere. Energy doesn't leave the system and
> magically appear somewhere else, at least not in transmission lines.
>
> You've got 25w+25w being delivered rearward into the 50 ohm line.
> That is sheer nonsense. That 50w is delivered into the twinlead to join
> the forward power. You got the direction exactly backwards because we
> don't measure that energy as existing on the 50 ohm line. That energy
> acts the same way it would have if it had been re-reflected, i.e. it
> joins the forward wave. That's why this whole argument tends to be moot.
> What real difference does it make if the power is re-reflected or simply
> re-routed right along with the re-reflected power?
>
> > The law of conservation of energy holds with these two statements. In
each
> > case, the total energy IN balances with the total energy OUT.
>
> You've got that 50w going out. Where and when does it return? By
> what process does it exit and then magically return just when you need
> it? Where did it go while it was waiting to come back into the system?
> Maybe it circulates in a black hole somewhere?
>
> > Now look at the COMBINATION of these powers at the junction. The issue
is
> > how do multiple powers traveling in the same direction in a transmission

> > line add together.
>
> Since powers are scalar, they can do nothing except add together as
scalars.
> You cannot add two component powers and get more than the sum of the
components.
> That you think it is possible represents a pathological belief in your
voltage
> and current models. I repeat: Voltage and current are the effects, not the
> cause. The energy is the cause and the energy that causes the voltage and
> current does NOT exit the system. If it did, it couldn't be the cause,
could it?
>
> > Since the net rearward power flow out of the junction goes to zero with
this
> > out of phase addition of power, the addition of power "out of the
junction"
> > elesewhere must compensate for the net loss of 50 Watts out.
>
> There is absolutely no loss of energy, Steve. It is impossible to lose
energy.
> There is absolutely no "out of the junction" flow of power. Your model is
> flawed. ABSOLUTELY no energy flows out of that junction toward the
transmitter.
> Please tell us exactly how that out of the junction energy gets back to
the
> system. Magic?
>
> > The forward power (75 W) and re-reflected power (8.33 W) are "in phase"
and
> > combine to a total of 133.33 Watts.
>
> This is absolutely ridiculous. Power is a scalar. There is no phase
involved
> in power. You cannot rationally believe the above. You are so involved in
> the reality of your models that you have completely lost contact with the
> reality of reality. The only energy flowing away from the Z0-match is
> the forward energy. Any other energy flowing away from the Z0-match exists
> only in a human mind and not in reality.
>
> > In fact,
> > power addition in this manner is an absolute necessity in order to
balance
> > the law of conservation of energy with the arrival of multiple powers at
the
> > junction.
>
> Nope, it isn't, Steve. You are totally out of contact with reality on this
> one. Given that time always exists, power and energy are equivalent. You
> are not allowed to bend the laws of physics to match your mental model.

>
> > These relationships are consistent with wave reflection theory, circuit
> > theory and the law of conservation of energy.
>
> Only in your mind, Steve. It is impossible for two scalars to add up to be
> more than the sum of the component parts. Sorry, but scalars of 75+8.33
just
> don't equal 133.33. I was born at night but it wasn't last night. If I
give
> you $75 and then give you $8.33, will you give me back $133.33? If not,
why
> not?
> --
> http://www.mindspring.com/~w6rca
>
>
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2413. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 12:45:12 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <sjTH6.1653$t12.117209@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164562

Walter et al:

I am going to start another thread called "addition of power" to discuss
this specific issue.

Steve

"Walter Maxwell" <w2du@iag.net> wrote in message
news:n8GH6.3462$c4.377186@e420r-chi1.usenetserver.com...
> Steve's problem with addition of voltages or powers on a transmission
line
> is that it is NOT the voltages that add, it's power, even though Steve
> denies that this is true. His misconception on this issue is why his
powers
> don't add up correctly. Everything cpmes out correctly when powers are
> added, but never come out correctly by adding voltages. Kirchoff's law
> simply doesn't apply here.
>
> Steve and I had a real pulling match on this issue, and even after I
pointed
> out an equation in Johnson that proves it, he still goes on in the wrong
> direction. We're leaving Florida for Michigan on Thursday and my Johnson
> book is already packed away so I can't tell you the Eq number in Johnson.
> However, his equation shows that the square of the source voltage divided
by
> Zo is the source power and the square of the reflected voltage divided by
Zo
> is the reflected power. His equation then shows that the sum of the source
> and reflected powers equals the total forward power. Thus it follows that
> the sum of the voltages divided by Zo cannot give the correct results.
>
> Hope this helps.
>
> Walt, W2DU
>
>
>

2414. Saturn Station Wagons and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 12:47:38 UTC
From: kb9rpd@arrl.net
Message-ID: <3aefffb2.1197062503@netnews.worldnet.att.net>
Source record: 164563

I'm a closet ham. Beat me with an old yagi as they say.

I've been a bit inactive since I got my ticket in 1997. In June, I will begin studying to upgrade to General.

Here's my quandry. All I was able to afford was a RadioShack HTX-202 back in 1998. I have that and that's all I've used for my radio. My wife and I are building a house. But, to be a good ambassador to amateur radio and to stay on the good graces of my neighbors, I won't challenge the community doctrines/rules by erecting an antenna on my property. And, the other reason is I don't have a lot of money to spend on a nice rig at home. Perhaps in 5 or 6 years, I'll have money enough to buy a nice rig with a nice small antenna farm at home.

But, for now, I'm pretty much settled on using my car as a mobile shack. Here's my quandry. I've ONLY used magentic mount antennas (2 Meters with my HT). Right now, I'm max at 5 watts. Does the job, but I want something better.

Since I still don't have a lot of money, I may purchase an Alinco mobile 6 Meter that I can use with my current licnese.

Here's my problem. If anyone knows much about Saturns, they'll understand my quandry with the space in the car.

#1 - I have no clue as to where to put the radio in the car. I want to put it someplace that doesn't get in my way or the front passenger. I want to put it someplace I can easily remove it for security.

#2 - I want a REAL antenna on my car. Since it's a station wagon, I don't have the luxury of a trunk. I've never installed a "real" antenna....where can I find information on how to properly do this without destorying my car or subjecting it to rust?

#3 - has anyone any experience installing radios in small cars that may be able to offer advice or would someone know of some links on the internet to point me in the right direction?

#4 - Because of #1, this setup will be portable as well as mobile. I want to be able to remove my radio and use it for field day with a "portable" setup...power supply, antenna, etc. What would anyone recommend for "in-line" connectors for the power harness on the radio?

Any information would be GREATLY appreciated. I haven't had much luck finding anything on the internet.

Thanks

73, Ted KB9RPD

2415. Re: Base station antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 13:13:45 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3af00800_4@news3.prserv.net>
Source record: 164565

Titus Cheung <titus@ieee.org> wrote in message
news:QGOH6.151705$166.2762674@news1.rdc1.bc.home.com...
> Hello:
>
> Are there anyone familiar in the type of antennas cellular providers use
for
> sectorizing a cell?
>
> Thanks
>
>
Yes.

PCS antennas too.

--
Crazy George

2416. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 13:14:15 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <HKTH6.95385$xN4.6446798@news1.sttls1.wa.home.com>
Source record: 164564

Tom and Reg, you are hard to convince but maybe this observation will do it.

I took a look at some RG-8 and RG-8 Mini with a magnifying glass. I particularly looked at how the weave was arranged. Both cables had the braid made of groups of 8 wires running flat (laid together without insulation). The weave was two over, two under. By this I mean that a group of 8 wires ran on the inside for the width of two groups of 8 wires, and then was brought back on top to run over two groups of 8 wires before going under again.

When you look carefully at the contact points, you notice that each group of 8 are in loose contact along the sides of each wire in the group. The contact between groups however is always on either the top or bottom of the wire, with top or bottom referenced to the center of the coax.

With this arrangement, the inside surface is actually inside for the distance of two groups, and then it becomes the bottom surface of the top layer for two groups. While on top, the bottom surface (the former inside surface) is in contact with the top of the inside group (the former outside surface). As a result of this geometry, a current flowing on the inside surface (of the coax braid)
would have to flow
from the top to bottom of each weave overlay to stay on the bottom, and visa-versa for any outside surface current.

If I wanted to design the braid to mix the two currents and to prevent separation of inside and outside currents, this is the way I would design it.

You will want to look for your selves to see how the braid is actually made. I think you will have to agree that a separation of the inside and outside currents is absolutely impossible.

I am ready to call for a rewrite of some of our books. How about you?

73, Roger, W7WKB

2417. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 13:22:09 UTC
From: John Passaneau <jxp16@psu.edu>
Message-ID: <9cp1lv$11cs@r02n01.cac.psu.edu>
Source record: 164566

Hi all:

The loss in coax traps due to their low Q is why I went with the
conventional trap. I was designing a 2 band dipole. 80/40m, and was not
worried about operation on other bands. It is easy to figure the coil in
this case.
How did I do it? My junk box had 2 50pf 7KV caps so I made a coil that
resonated with that. There might be a "better" L/C ratio but it would not,
in my application, gain me much. A smaller cap would have meant a larger
coil, which would have made the 80m dipole shorter, more loss and a narrower
SWR bandwidth.
I've seen a message worrying about traps melting etc. EZNEC with the real
values for my traps plugged in shows a 9 watt TOTAL loss for both coils with
1000 watt input, they will not even get warm, in fact the sun will heat them
more than that.

--
John Passaneau, W3JXP
Physics Dept. Electronics Shop
Penn State University
104 Davey Lab, University Park , Pa. 16802
814.863.4297, jxp16@psu.edu

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3aeff61d.598765028@news.accessunited.com...
> On Tue, 01 May 2001 09:58:43 -0700, K7MEM <jda@rupert.tds-az.lmco.com>
> wrote:
>
> >The 2:1 SWR for 40 Meters is about 300 KHz and wider for the
> >higher frequency bands. Plenty of coverage for me.
>
> Coaxial traps may be cheap and easy, but they are also quite lossy.

snip

> The measure resonant-frequency resistance of several traps was in the
> 13,000 to 17,000 ohm range.
>
> In comparion, a much lighter trap made only from #14 wire and a
> conventional ceramic transmitting capacitor (the one in the Handbook
> usinga 100 pF capacitor) had wider bandwidth AND a resistance at
> resonance of 100,000 ohms or so.
>
> A portion of the poor resonant resistance is from the
> capacitor-style....a length of coax makes a lossy capacitor because of
> series resistance. The bulk of loss, however, is because of the vinal

> jacket and the close spaced turns and the poor conductivity for
> physical size of braided conductors.
>
> The difference in loss, when the traps were inserted in a dipole
> model, was about 2 dB on the band where the traps were resonant at the
> resonant frequency.
>
> Loss decreases off resonance, but of course SWR increases and feedline
> losses increase.
>
> More details at Dayton, in the antenna forum on Friday.
>
> 73 Tom

2418. Re: Hamstick Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 13:54:47 UTC
From: kd1jt@arrl.net
Message-ID: <3af011a2.96205925@news.mybizz.net>
Source record: 164567

On Wed, 02 May 2001 05:30:34 GMT, "George, W5YR" <w5yr@att.net> wrote:

>One other point, which probably does not apply to a travel trailer: please
>do not ever attempt to operate HF radio while in motion. Wait until you are
>parked and then fire up the rig!

Why? You're not one of those folks who advocate banning cell phone
use while driving, are you?

2419. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 13:55:04 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF011B8.A04FD554@IEEE.org>
Source record: 164469

VE9SRB wrote:
> Powers do not add as you claim they do. 100 Watts added in phase with 33.33
> Watts simply does not add to 133.33 Watts.

Uhhhhh Steve, power is a scalar and doesn't have a phase. Scalars add
directly with no phase angle involved. If you have a 100 watt light
bulb and a 33.33 watt light bulb, aren't they dissipating 133.33 watts?

> Walter, Johnson shows that the sum of the forward source voltage and
> re-reflected voltage add to the total voltage. He does not add power.

On the contrary, Equation (6.17) P = (|E+|^2)/Z0 - (|E-|^2)/Z0
on page 150 of the first edition clearly shows that Johnson adds power
and that the power he adds/subtracts is a *scalar* value with no phase
in sight. Note the absolute value of the voltages.
--
http://www.mindspring.com/~w6rca

2420. Addition of Power

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 13:55:46 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <CIUH6.1720$4f7.120830@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164568

Cecil:

I decided to just change the thread title.

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEF1F1B.53E45EF9@IEEE.org...
>
> Only in your mind, Steve. It is impossible for two scalars to add up to be
> more than the sum of the component parts. Sorry, but scalars of 75+8.33
just
> don't equal 133.33. I was born at night but it wasn't last night. If I
give
> you $75 and then give you $8.33, will you give me back $133.33? If not,
why
> not?

The issue here is the addition of two scalar powers traveling in the same direction in a transmission line to arrive at the total power traveling in the transmission line. Walt Maxwell recently posted in this thread that it is incorrect to add the two voltages together and that to determine the total power you must add the powers together.

The specific issue is whether or not two forward waves, one having a power of 75 Watts and the other having a power of 8.33 Watts combine to a total power of 133.33 Watts. Walt and Cecil would say that the two must combine to 83.33 Watts, because 75 + 8.33 = 83.33.

My position is that it is fundamentally incorrect to add power in this manner. In order to correctly determine the true total forward power, you must add the two forward voltages together to determine the total forward voltage and then determine the total forward power. The reason that voltages must be added is because power is a scalar quantity and the phase relationship between the two voltages is lost when adding scalar power.

Let's consider that the two forward traveling waves have individual powers of 75 Watts and 75 Watts. What is the total forward traveling power? Knowing only the power levels you cannot answer this question. If the two powers are 180 degrees out of phase, the total forward power will be 0 Watts. What if the two powers are in-phase? Is the total forward power equal to 150 Watts (75 + 75)? No it is not, the correct answer is 300 Watts. Note that adding 75 W + 75 W to get 150 Watts implies that two in-phase signals of the same power, traveling in the same direction, combine with a power gain of 3 dB. Adding 75 W + 75 W to get 300 Watts implies that two in-phase signals traveling in the same direction, combine with a power gain of 6 dB. This is consistent with the fact that when you double the voltage (Vtotal = 2 V), you quadruple the power (Ptotal = 4 P). Remember

that we must add voltages, not powers.

Adding powers does not give the correct answer. Why? Because two powers traveling in the same direction in space add with the following relationship:

Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) Cos(theta),

where theta is the relative phase difference between the two waves. If P1 equals P2, then the equation can be written as

Ptotal = 2P1 + 2P1 Cos(theta)

When the two waves are 180 degrees out of phase, Cos(theta) = -1 and the total power is 0. When the two waves are in-phase, Cos(theta) = 1 and the total power is 4 P1 (6 dB power gain)

Lets consider an example outside of the transmission line problem that illustrates power addition in this manner. Lets consider a horizontal dipole over a perfect ground plane.

The dipole in free space has a gain of 2.1 dBi (a dimensionless factor of approximately 1.63). If the power delivered to the dipole is 1 Watt, the effective radiated power will be 1.63 Watts.

Now lets place a perfect reflector 1/2 wavelength behind the dipole. Here the total forward wave will be equal to the sum of the dipole wave plus the reflected wave. In this case, the two waves are 180 degrees out of phase at the dipole and the total forward traveling wave in this direction will be 0. The dipole over the ground plane will exhibit a null in its radiation pattern in the normal direction off of the reflector. This "wave cancellation" process is identical to the rearward wave cancellation process that occurs at the Zo match. Two waves traveling in the same direction are 180 degrees out of phase and the net rearward traveling wave is 0. This is equivalent to a null in the dipole radiation pattern.

Now let's place a perfect reflector 1/4 WL behind the dipole. In this case, the two waves are in-phase at the dipole and the total forward traveling wave in this direction will be approximately 6.5 larger (1.63 x 4). In this case, the power gain in this direction will increase by 6 dB. The power gain increase for two equal in-phase waves traveling in the same direction is 6 dB not 3 dB. In this case, the effective power radiated by the dipole is not 3.26 Watts (1.63 + 1.63), it is 6.52 Watts (4 x 1.63). This is exactly the same principle that applies with the re-reflections at a tuner or Zo match point.

75 W added in phase with 8.33 Watts results in a total forward power of 133.33 Watts. 100 Watts added in phase with 33.33 Watts is simply not equal to 133.33 Watts.

Steve VE9SRB

2421. Re: Base station antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 13:59:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF012BF.BD620F0D@IEEE.org>
Source record: 164470

Crazy George wrote:
>
> Titus Cheung <titus@ieee.org> wrote in message
> > Are there anyone familiar in the type of antennas cellular providers use
> > for sectorizing a cell?
> >
> Yes. PCS antennas too.

In my cellular phone book, it shows a hexagonal radiation pattern
for those antennas. How do they do that? :-)
--
http://www.mindspring.com/~w6rca

2422. Re: Hamstick Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 14:02:53 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <hsUH6.840$2_.215873@news3.rdc1.on.home.com>
Source record: 164471

And we also should ban am/fm radios or cd players or talking in cars too
hihi

--
Rob St.Denis

"Dennis Collin" <kd1jt@arrl.net> wrote in message
news:3af011a2.96205925@news.mybizz.net...
> On Wed, 02 May 2001 05:30:34 GMT, "George, W5YR" <w5yr@att.net> wrote:
>
> >One other point, which probably does not apply to a travel trailer:
please
> >do not ever attempt to operate HF radio while in motion. Wait until you
are
> >parked and then fire up the rig!
>
> Why? You're not one of those folks who advocate banning cell phone
> use while driving, are you?

2423. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 14:13:57 UTC
From: richardharrison@webtv.net
Message-ID: <15622-3AF01625-3@storefull-113.iap.bryant.webtv.net>
Source record: 164474

Peter, K1PO wrote:
"Consider an array of infinitely long coaxial cables each with the same level of common mode signal pesent and no differential mode signal. Each of these coaxial cables has a shield of different depth, the depths varying in say, 1/10ths of a skin depth. What voltages, if any, appear in the inside of the shields----?"

No shield is perfect. In Peter`s example some are better than others. In an infinite length, a small leakage through the shield results in coupling the signal on the outside of the shield to the inside, and thus to the center conductor. Less perfect shields allow more coupling sooner, but with infinite length all coaxes will get differential signals from the external field.

Exponential decline with shield thickness, eddy current magnetic field rejection, and easy electric field rejection by even incomplete shielding have little consequence with infinite exposure. Phase delays occur, but the cross-talk happens. Reg could tell us about that. He has worked with trans-Atlantic cables and measured the cross-talk, I believe. These coaxes may even be wrapped with permalloy tape to cut the cross-talk, but it happens with great lengths.

Best regards, Richard Harrison, KB5WZI

2424. Re: Ideas(?) on..."location, location, location..."

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 14:41:52 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <q070ftogptu7tilvsie5q4aov5n8bdhm61@4ax.com>
Source record: 164472

On Tue, 01 May 2001 20:31:42 -0700, dhassler@orednet.org (KD7MPD) wrote:

>Heck, I'd just like to be able to talk to guys for more
>than 45 seconds at a time at home, if I'm lucky.

Try 40, 80 or 160 meters. They all get out fine from the bottom of a valley, almost like the hills weren't there. 20 meters works fairly well too, but as you go higher in frequency, the "valley effect" becomes more pronounced, as you found out on 2 meters.

73, Bill W7TI

2425. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 14:45:06 UTC
From: richardharrison@webtv.net
Message-ID: <19841-3AF01D72-3@storefull-116.iap.bryant.webtv.net>
Source record: 164477

Tom, W8JI wrote:
"The feedline must also be nearly lossless or low loss on the OUTSIDE of the braid, and the electrical length must be known."

No super coax is required. Ordinary coax in reasonable condition will have a high impedance as a copper insulator if it is near an odd multiple of 1/4-wavelength. The v=f(lambda) relationship should be memorized by serious students.

The arrangement to produce a high impedance with a tuned line fails in multiband operation. Use a balun.

Best regards, Richard Harrison, KB5WZI

2426. Re: Hamstick Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 14:45:10 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <8870ft4sio2341pnkdtsh3untr14h9aju3@4ax.com>
Source record: 164473

On Wed, 02 May 2001 03:36:56 GMT, dmccord@usol.com (Delbert McCord) wrote:

>I wish to put my
>Icom 706 in the trailer and I am thinkin go of using Hamsticks in a
>dipole configuration.

It will work, but the feed impedance will be quite low, probably between 5-10 ohms. You'll need a matching network of some kind. The cheapest and best is probably an L network. See any ARRL handbook for details. Have fun!

73, Bill W7TI

2427. Re: Addition of Power

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 14:56:06 UTC
From: Larry Benko <benko@aztek-eng.com>
Message-ID: <3AF02006.4764C2D0@aztek-eng.com>
Source record: 164475

Steve,

Very logical explanation. It is a pleasure reading your posts.

Larry, W0QE

VE9SRB wrote:

> The issue here is the addition of two scalar powers traveling in the same
> direction in a transmission line to arrive at the total power traveling in
> the transmission line. Walt Maxwell recently posted in this thread that it
> is incorrect to add the two voltages together and that to determine the
> total power you must add the powers together.
>
> The specific issue is whether or not two forward waves, one having a power
> of 75 Watts and the other having a power of 8.33 Watts combine to a total
> power of 133.33 Watts. Walt and Cecil would say that the two must combine
> to 83.33 Watts, because 75 + 8.33 = 83.33.
>
> My position is that it is fundamentally incorrect to add power in this
> manner. In order to correctly determine the true total forward power, you
> must add the two forward voltages together to determine the total forward
> voltage and then determine the total forward power. The reason that
> voltages must be added is because power is a scalar quantity and the phase
> relationship between the two voltages is lost when adding scalar power.
>
> Let's consider that the two forward traveling waves have individual powers
> of 75 Watts and 75 Watts. What is the total forward traveling power?
> Knowing only the power levels you cannot answer this question. If the two
> powers are 180 degrees out of phase, the total forward power will be 0
> Watts. What if the two powers are in-phase? Is the total forward power
> equal to 150 Watts (75 + 75)? No it is not, the correct answer is 300
> Watts. Note that adding 75 W + 75 W to get 150 Watts implies that two
> in-phase signals of the same power, traveling in the same direction, combine
> with a power gain of 3 dB. Adding 75 W + 75 W to get 300 Watts implies that
> two in-phase signals traveling in the same direction, combine with a power
> gain of 6 dB. This is consistent with the fact that when you double the
> voltage (Vtotal = 2 V), you quadruple the power (Ptotal = 4 P). Remember
> that we must add voltages, not powers.
>
> Adding powers does not give the correct answer. Why? Because two powers
> traveling in the same direction in space add with the following
> relationship:
>
> Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) Cos(theta),

>
> where theta is the relative phase difference between the two waves. If P1
> equals P2, then the equation can be written as
>
> Ptotal = 2P1 + 2P1 Cos(theta)
>
> When the two waves are 180 degrees out of phase, Cos(theta) = -1 and the
> total power is 0. When the two waves are in-phase, Cos(theta) = 1 and the
> total power is 4 P1 (6 dB power gain)
>
> Lets consider an example outside of the transmission line problem that
> illustrates power addition in this manner. Lets consider a horizontal
> dipole over a perfect ground plane.
>
> The dipole in free space has a gain of 2.1 dBi (a dimensionless factor of
> approximately 1.63). If the power delivered to the dipole is 1 Watt, the
> effective radiated power will be 1.63 Watts.
>
> Now lets place a perfect reflector 1/2 wavelength behind the dipole. Here
> the total forward wave will be equal to the sum of the dipole wave plus the
> reflected wave. In this case, the two waves are 180 degrees out of phase at
> the dipole and the total forward traveling wave in this direction will be 0.
> The dipole over the ground plane will exhibit a null in its radiation
> pattern in the normal direction off of the reflector. This "wave
> cancellation" process is identical to the rearward wave cancellation process
> that occurs at the Zo match. Two waves traveling in the same direction are
> 180 degrees out of phase and the net rearward traveling wave is 0. This is
> equivalent to a null in the dipole radiation pattern.
>
> Now let's place a perfect reflector 1/4 WL behind the dipole. In this case,
> the two waves are in-phase at the dipole and the total forward traveling
> wave in this direction will be approximately 6.5 larger (1.63 x 4). In this
> case, the power gain in this direction will increase by 6 dB. The power
> gain increase for two equal in-phase waves traveling in the same direction
> is 6 dB not 3 dB. In this case, the effective power radiated by the dipole
> is not 3.26 Watts (1.63 + 1.63), it is 6.52 Watts (4 x 1.63). This is
> exactly the same principle that applies with the re-reflections at a tuner
> or Zo match point.
>
> 75 W added in phase with 8.33 Watts results in a total forward power of
> 133.33 Watts. 100 Watts added in phase with 33.33 Watts is simply not equal
> to 133.33 Watts.
>
> Steve VE9SRB

2428. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 15:06:17 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <JnVH6.95879$xN4.6471958@news1.sttls1.wa.home.com>
Source record: 164476

Tom and Richard, you are hard to convince but maybe this observation will do it.

I took a look at some RG-8 and RG-8 Mini with a magnifying glass. I particularly looked at how the weave was arranged. Both cables had the braid made of groups of 8 wires running flat (laid together without insulation). The weave was two over, two under. By this I mean that a group of 8 wires ran on the inside for the width of two groups of 8 wires, and then was brought back on top to run over two groups of 8 wires before going under again.

When you look carefully at the contact points, you notice that each group of 8 are in loose contact along the sides of each wire in the group. The contact between groups however is always on either the top or bottom of the wire, with top or bottom referenced to the center of the coax.

With this arrangement, the inside surface is actually inside for the distance of two groups, and then it becomes the bottom surface of the top layer for two groups. While on top, the bottom surface (the former inside surface) is in contact with the top of the inside group (the former outside surface). As a result of this geometry, a current flowing on the inside surface (of the coax braid)
would have to flow
from the top to bottom of each weave overlay to stay on the bottom, and visa-versa for any outside surface current.

If I wanted to design the braid to mix the two currents and to prevent separation of inside and outside currents, this is the way I would design it.

You will want to look for your selves to see how the braid is actually made. I think you will have to agree that a separation of the inside and outside currents is absolutely impossible.

I am ready to call for a rewrite of some of our books. How about you?

73, Roger, W7WKB

2429. Re: Addition of Power

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 16:00:45 UTC
From: richardharrison@webtv.net
Message-ID: <3591-3AF02F2D-22@storefull-115.iap.bryant.webtv.net>
Source record: 164478

Steve, VE9SRB wrote:
"75 W added in-phase with 8.33 Watts results in a total forward power of 133.33 Watts."

In space, all the energy which might radiate in an expanding bubble, may instead be concentrated in an ever so small area representing a tiny patch of that bubble. Not so on a good transmission line. Energy is confined to two directions, forward and reverse along the line.

Actual line voltages and current on the line are always the vector sums of the forward and reflected waves at a particular point.

If a line is open-circuited, the incident (forward) and reflected voltages are in-phase at the break, and their associated currents cancel. No energy has been added or subtracted. Energy associated with the current has been temporarily transferred to the electric field to soon re-emerge as current in the line.

There s no energy gain or loss nor power gain or loss from a reflection on a transmission line.

Best regards, Richard Harrison, KB5WZI

2430. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 16:38:03 UTC
From: richardharrison@webtv.net
Message-ID: <25635-3AF037EB-23@storefull-117.iap.bryant.webtv.net>
Source record: 164479

Roger, W7WKB wrote:
"If I wanted to design the braid to mix the two currents and prevent separation of inside and outside currents, this is the way I would design it."

GE used to call this "Value Engineering". It meant, good enough with no costly excess. It`s the fabled trailer-house design. Just remove braces, one at a time, until the structure collapses, then replace the last brace removed, and go into production.

The coax you examined was declared "good enough" and had it not proved so, more wires or a different weave may have been used in the "new and improved" coax shield.

Often, actual construction is determined by ease of manufacture before maximum performance is considered. It can be more competitively priced that way.

Best regards, Richard Harrison, KB5WZI

2431. Re: Saturn Station Wagons and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 17:04:32 UTC
From: cj697@freenet.buffalo.edu
Message-ID: <GCpwrL.57u@freenet.buffalo.edu>
Source record: 164481

> I'm a closet ham. Beat me with an old yagi as they say.
>
> I've been a bit inactive since I got my ticket in 1997. In June, I
> will begin studying to upgrade to General.
>
> Here's my quandry. All I was able to afford was a RadioShack HTX-202
> back in 1998. I have that and that's all I've used for my radio. My
> wife and I are building a house. But, to be a good ambassador to
> amateur radio and to stay on the good graces of my neighbors, I won't
> challenge the community doctrines/rules by erecting an antenna on my
> property. And, the other reason is I don't have a lot of money to
> spend on a nice rig at home. Perhaps in 5 or 6 years, I'll have money
> enough to buy a nice rig with a nice small antenna farm at home.
>
> But, for now, I'm pretty much settled on using my car as a mobile
> shack. Here's my quandry. I've ONLY used magentic mount antennas (2
> Meters with my HT). Right now, I'm max at 5 watts. Does the job, but
> I want something better.
>
> Since I still don't have a lot of money, I may purchase an Alinco
> mobile 6 Meter that I can use with my current licnese.
>
> Here's my problem. If anyone knows much about Saturns, they'll
> understand my quandry with the space in the car.
>
> #1 - I have no clue as to where to put the radio in the car. I want
> to put it someplace that doesn't get in my way or the front passenger.
> I want to put it someplace I can easily remove it for security.

I am not familiar with Saturns, but I run an HT mobile myself and I
generally put the HT in the center console.

>
> #2 - I want a REAL antenna on my car. Since it's a station wagon, I
> don't have the luxury of a trunk. I've never installed a "real"
> antenna....where can I find information on how to properly do this
> without destorying my car or subjecting it to rust?
>

That magmount you have is just as good as an equivalent permanent antenna,
except that it is easier to remove. If you have a 1/4 wave, move up to a
5/8ths. That will help some. But I see no real reason to go to a
permanent installation, especially if you ever plan on selling the car.

> #3 - has anyone any experience installing radios in small cars that
> may be able to offer advice or would someone know of some links on the
> internet to point me in the right direction?
>
> #4 - Because of #1, this setup will be portable as well as mobile. I
> want to be able to remove my radio and use it for field day with a
> "portable" setup...power supply, antenna, etc. What would anyone
> recommend for "in-line" connectors for the power harness on the radio?
>
> Any information would be GREATLY appreciated. I haven't had much luck
> finding anything on the internet.
>
> Thanks
>
> 73, Ted KB9RPD

I would go with what you have now, except you might want to get an
amplifier if you really feel the need for more than 5 watts.

By the way, used radios aren't that expensive. You can pick up a Kenwood
TS-520 HF rig for $300 or so. I use one as my main HF rig. It takes a
licking and keeps on ticking. I believe it still has the same finals in
it from the 1970's.

73 de Bill N2KMF

--

Real men use flintlocks... In the rain.

2432. Re: Hamstick Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 17:10:54 UTC
From: aduffy@sprint.ca
Message-ID: <3AF03F9E.6178F2B7@sprint.ca>
Source record: 164480

Hi Delbert,

You can get away with a couple of Hamsticks as a dipole but your making sacrifices though. If you are going to try them I suggest pre matching both of them on a vehicle first then putting them into a dipole configuration for final tuning. I made an emergence setup like that for 80m but due to restrictions I can't use a 16' dipole in the house. I should mention that I used Valor ones. I was able to get a reasonable match the way they sat (18' up on a roller extension handle and a tripod for test purposes)

This summer I hope to try them on the air but I haven't another antenna to compare it to.

Another thing to consider is supporting the main part of each antenna to minimize drooping and help take some of the stress off the mounts. I installed the mounts on a project case which was then mounted to a wood cross bar that supported the antennas about 2' out (or at the balance points). You'll definitely need a few turns of coax in line to isolate the radio from the antenna though.

Have fun!

73,
Tony

Delbert McCord wrote:

> I have just purchased a 12 year old travel trailer. I wish to put my
> Icom 706 in the trailer and I am thinkin go of using Hamsticks in a
> dipole configuration. (using two hamsticks for each band) on a 15 foot
> pipe. Or would one hamstick work just as well as a vertical. My
> problem is I do not have a ground or room to put up radials. The mount
> will be on a metal utility rack about 2 feet behind the trailer. Would
> the antenna mast be enough to act as a counter poise?
>
> Thanks for any help you pass along,
> Delbert McCord

2433. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 17:34:02 UTC
From: kelly@nospam.dvol.com
Message-ID: <3af044ba.86584189@news2.dvol.com>
Source record: 164482

On Wed, 02 May 2001 00:47:34 GMT, Irv Finkleman
<finkirvNOSPAM@home.com> wrote:

>Sorry Guys -- I wasn't aware, How's this?
>
Works ducky . . . finally . . ! Sheesh . . . !

>

2434. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 17:37:52 UTC
From: kelly@nospam.dvol.com
Message-ID: <3af04595.86802934@news2.dvol.com>
Source record: 164483
Body handling: HTML body converted to readable text

On Tue, 01 May 2001 16:09:21 GMT, Irv Finkleman
wrote:

>
>
>
>OK -- so now I have two reasons for multi-trap operation; (a) better selection
>of desired
>
operating portions on each band, and (b) shorter overall. Good
>stuff John! Anybody out there
>
with more pros and cons, including the types of traps used?
>
John Passaneau wrote:
>

>Hi Irv: The
>
Fer chrissake Irv go out and downlaod Free Agent and get into the
program willya?

2435. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 17:44:15 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AF0476F.32205481@mwci.net>
Source record: 164484

Roy Lewallen wrote:

> This afternoon I ran the following experiment. I made a current probe by
> winding 10 turns on a high permeability ferrite core of about 1 inch OD.
> The impedance of one turn on this core at 10 MHz was measured as 7.3 +
> j2 ohms. The winding was connected to 4-1/2 feet of RG-58, then run to a
> scope input which also had a 50 ohm termination. An ideal current
> tranformer with these turns and termination would have a sensitivity of
> 5.0 volts/amp. This probe measured 4.43 - 4.74 over the range of 1 - 30
> MHz, and 4.83 at 10 MHz where the remaining measurements were done.
> Currents shown are relative; to get absolute values in amperes divide
> the values shown by 4.83.
>
> A 2 foot piece of RG-58 was connected as follows. The shield of the
> input end was connected via a short (about 1/2") pigtail to a piece of
> solid plated PCB material. This point is defined as "ground" in the
> experiments, and all ground connections are to this single point. A
> signal generator was run to a BNC connector grounded at "ground", and
> the center conductor of the connecter was attached to the center
> conductor of the input end of the 2 foot coax. The voltage at the input
> end was used as the phase reference. In retrospect, I didn't carefully
> measure the phase of the current probe output relative to the indicated
> voltage, except to note that it was close to zero. So the current phases
> should be regarded as also being relative.
>
> As a first test, a 51 ohm resistor was connected between the shield and
> center conductor at the output end of the coax. No other connection was
> made to the output end. The current through the 51 ohm resistor was
> measured, and the current on the outside of the coax was measured. This
> outside current was measured by running the whole cable through the
> current probe core. For a resistor current of 0.366, the outer shield
> current was 0.001. This shows that 1. All the current coming out of the
> center conductor at the load is flowing back to the source via the
> inside of the shield, and 2. The current on the inside of the coax
> shield is not visible to the probe.
>
> The output side shield was then connected to "ground". No noticeable
> change in the resistor current was seen; the current on the outside of
> the coax increased to about 0.005. Despite the easiest possible path
> back via the "ground" connection, virtually all the current on the
> inside of the shield still returns through the resistor to the center
> conductor. This is because of the strong mutual coupling inside the
> cable. If any of the shield inner current were to return by another
> path, then the current on the inside of the shield would be different

> than the current on the center conductor (by the amount that returns via
> another path). The strong mutual coupling within the cable prohibits
> this.
>
> Then the output end connections were changed. The center conductor of
> the output end of the 2 foot cable was connected to "ground" via a 25.5
> ohm resistor (two 51 ohm resistors in parallel). The shield of the
> output end was also connected to "ground" via a 25.5 ohm resistor.
> Currents were measured at six places:
>
> I1i - Input center conductor
> I2i - Input shield pigtail
> I3i - Outside of shield at input end
>
> I1o - Output center conductor
> I2o - Output shield pigtail
> I3o - Outside of shield at output end
>
> The "shield pigtail" measurements are measurements of the current
> flowing from the shield to "ground". The assumed positive direction of
> current flow is toward the load end for all measurements. Currents were
> measured as magnitude and phase, then converted to rectangular form.
>
> I1i 0.353 - j0.164
> I2i -0.308 - j0.106
> I3i 0.057 - j0.267
>
> I1o 0.337 - j-0.245
> I2o -0.300 - j0.032
> I3o 0.027 - j0.262
>
> What can we learn from these?
>
> I maintain that the current on the inside of the coax flows "over the
> edge" and onto the outer surface, and that no current flows through the
> shield. Let's see if the numbers bear that out.
>
> Let's begin by determining the amount of current on the inside of the
> shield. By Kirchoff's current law, I2i, I3i, and the current on the
> inside of the shield at the input have to add to zero, taking direction
> into account. Considering the directional conventions, the current on
> the inside of the coax (positive defined as toward the load) = I2i - I3i
> = -0.365 + j0.161. Compare this to I1i, the current on the center
> conductor. Within measurement error, the current on the inside of the
> shield is equal in magnitude to and opposite in direction from the
> current on the center conductor, as it must be. Notice also the
> important fact that the current on the inside of the shield has no
> obvious relationship to the current on the outside. In fact, they're
> about in quadrature.
>

> Making the same calculation at the output end, the shield inner current
> is I2o - I3o = -0.327 + j0.230, again equal to -I1o within measurement
> error.
>
> If there were extra current on the outside of the shield from any source
> other than flowing over the edge, either the currents wouldn't sum to
> zero at the ends of the cable shield (eventually filling the room with
> couloumbs), or the currents on the inside of the shield and center
> conductor would have to be different.
>
> The current on the inside of the shield has two return paths to
> "ground": via its resistor, or along the outside of the shield. The
> amount of current which takes each path is inversely proportional to the
> ratio of impedances of those two paths. From knowing the value of the
> resistor, and the measured currents, we can calculate the impedance
> along the outside of the shield. It works out to 0 + j1.15 ohms -- it
> looks like an inductor of approximately 470 nH, about what we'd expect.
>
> With the principles that:
>
> 1. The current on the inside of the shield is different from the current
> on the outside
> 2. The current on the inside of the shield is equal in magnitude to and
> opposite in direction from the current on the center conductor
> 3. The current on the inside of the shield can flow around the end onto
> the outside
> 4. No current flows through the shield
>
> all the observed currents are completely explained, are self consistent,
> and comply with Kirchoff's current law.

Some things are bothering me.

I2i is the *entire* braid current, inside plus outside, except it has minus signs. I2o is almost the same value, and it also has minus signs, indicating that I2i and I2o are both flowing *into* the braid (or away from).

Something is wrong with this. It doesn't make sense, especially on such a short coax.

The sum of all currents to and from coax grounds should be identical to I1i. If I2i were reversed we would have

(0.337-j.245)+(-.300-j.032)+(.308+j0.106)=(0.345-j.171) which is very close to I1i

Also, if I2i were reversed, then it would be very close to I2o, in which case the loop current would be practically zero). This reversal makes a lot of sense.

Also, the braid reactance (measured by me) is j28 ohms. Using I2o and this reactance, I get a common mode current of 0.027-j0.262, traveling toward the load, which is your I3o, travelling toward the load end.

If I reverse I2i and add it to I3o I get

(.308+j.106)+(.027-j.262)=(.335-j.156) which is close to I1i, as it should be.

If I reverse I2i and add it to I3i I get

(.308+j.106)+(.365-j.161)=(.365-j.161) which is also quite close to I1i. I3i and I3o are certainly very close to each other, and I question whether they should be construed as different. I would not expect to see different values of I3i and I3o on such a short coax.

There is no loop current at the load end of the braid.

Bill W0IYH

2436. My take on reflected power

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 18:14:45 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF04E95.C75A6BC1@IEEE.org>
Source record: 164485

Consider the folling lossless (except for the load) antenna system
with a Z0-match at point 'X'.

100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load

Point 'X' is at a 50 ohm to 150 ohm transition point so the SWR
caused by that transition would be 3:1. At the load, we have a
150 ohm to 50 ohm transition so the SWR there is 3:1. On the 150
ohm twinlead, we have a steady-state forward power of 133.33 watts
and a steady-state reflected power of 33.33 watts. There is no
steady-state reflected power on the coax.

I accept the premise that reflections occur only at real impedance
bumps and a reflection does indeed occur at 'X'. 75 watts of power
is accepted at point 'X' and 25 watts tries to be rejected. However,
33 watts of reflected power is arriving back at 'X' and only 8.33
watts of that power will be truly re-reflected. That leaves 25 watts
of reflected power that is accepted at 'X', equal to the 25 watts
of power trying to be rejected at 'X'. The result of the interaction
of these two 25 watt quantities is destructive interference since
the voltage and current associated with each 25 watts is 180 degrees
out of phase.

So the 25 watts of generated power trying to be rejected at 'X'
never appears on the coax. It is re-routed before it has a chance
to be reflected. The only flow of energy from XMTR is into 'X'.
There is no energy flow back to XMTR. We know that because we can
measure it. There are only two paths into and out of 'X'. We know
no energy is exiting 'X' back toward XMTR so the only exit for
energy is toward the load. We know total energy must be conserved.

Therefore, the 50 watts involved in the destructive interference
MUST join the forward power waves. The 100 watts of generated power
MUST join the forward power wave. The 8.33 watts of re-reflected
power *MUST* join the forward power wave. 100 watts plus 50 watts
plus 8.33 watts equals 133.33 watts, the known value of the forward
power. No need to resort to voltage and current. It is obvious what
happens dealing only with energy. The energy is the cause. The voltages
and currents are the result.

I agree that the 50 watts involved in the destructive interference is
re-routed and not technically re-reflected but it might as well be.
It winds up at exactly the same place as the re-reflected power and
becomes indistinguishable from the re-reflected power.
--
http://www.mindspring.com/~w6rca

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2437. Re: Saturn Station Wagons and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 18:21:02 UTC
From: kb9rpd@arrl.net
Message-ID: <3af04d71.3716561@netnews.worldnet.att.net>
Source record: 164486

FB Bill,

>I am not familiar with Saturns, but I run an HT mobile myself and I
>generally put the HT in the center console.

I've been looking at that. I'm trying to study this so that I can put something in that's not so cumbersome. My console in the front has no room...the CD player/AM/FM radio that's factory installed takes up the only free room since the heater/air controls are right there as well. However, the center console between the seats may offer a solution. But, it is quite narrow since it is a small car. I may device some sort of "insert" that fits in that opening. It's probably 3 - 3.5" wide and about 12" long or so. I may be able to make an insert that allows the radio to stick up so I can still use the knobs, etc.

>That magmount you have is just as good as an equivalent permanent antenna,
>except that it is easier to remove. If you have a 1/4 wave, move up to a
>5/8ths. That will help some. But I see no real reason to go to a
>permanent installation, especially if you ever plan on selling the car.

Hmmm. Well, you are right there I think. I have a 5/8ths right now. The reason I was thinking permanent is because of the coax running from the mag base. Right now, the only option I have is to run it through the door. I cringe every time I have to use the door because eventually, that darn coax is going to get damaged.

I haven't seen a good way to run the coax (yet) that will prevent rain from getting in the window. I bought a window mount from a hamfest and tried to alter it so the coax would pass through from the antenna. But, probably due to the construction of my car, when it rains, I get a lot of water through the window at the point where the window mount meets the top of the door.

>I would go with what you have now, except you might want to get an
>amplifier if you really feel the need for more than 5 watts.

I may consider an amp. Repeater location here in Indy is a bit odd...and, the areas I travel I tend to have problems reaching the repeater unless I'm traveling east and west. There are a few spots where the signals bounce around and signals can get unreadable.

>By the way, used radios aren't that expensive. You can pick up a Kenwood
>TS-520 HF rig for $300 or so. I use one as my main HF rig. It takes a

hehehe. Well, I wish I could say I have $300. In a couple years, not too much of a problem. I may have to be patient and wait. That's why I may make my car into a mobile shack. My top spending limit (at the

moment) is $200 which will get me a very basic mobile 25 watter I think.

However, I sometimes do some side-work that will net me some cash...that may allow me to get a better transceiver at some point.

I really like my 5/8 mag mount. It's a very fine antenna I got up at the Fort Wayne, Ind. hamfest in 1998. It works splendidly. For field work, however, I believe I'd have to find a good piece of flat metal to use as a ground plane. That shouldn't be TOO awfully difficult I think.

I may have to think more on how to run this coax so it's not crimped in the door of my car. I may have to be a bit inventive.

Thanks again Bill. I appreciate the advice.

73, Ted KB9RPD

2438. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 18:29:39 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cpjlq$2ch$1@uranium.btinternet.com>
Source record: 164487

Another disadvantage of coaxial traps is that the L/C value can have only two values, one associated with Zo = 50 ohms and the other with 75 ohms. The antenna designer has no control of it.

When a trap is inserted in an antenna wire, at frequencies lower than the trap frequency it behaves as a loading coil. Loading inductance depends on the L/C ratio and sets the next lower resonant frequency of the antenna.

For a given end-to-end length of dipole, full control over the trap L/C ratio is essential to set resonant frequencies.

And I have just noticed Tom's comment that the pvc jacket between trap turns is a lossy dielectric material. It may be a satisfactory insulator at dc and 60 Hz but it is manufactured and used because of its physical rather than its electrical attributes. It has a coloring pigment and may be treated or adulterated with other compounds to improve its mechanical properties and resistance to chemical attack.

Download program TRAPDIP. It assists with trap design and overall dipole length when two resonant frequencies are specified. Performance at each frequency is also computed.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

2439. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 18:39:45 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <RvYH6.1843$t12.138366@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164488

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF011B8.A04FD554@IEEE.org...
> VE9SRB wrote:
> > Powers do not add as you claim they do. 100 Watts added in phase with
33.33
> > Watts simply does not add to 133.33 Watts.
>
> Uhhhhh Steve, power is a scalar and doesn't have a phase. Scalars add
> directly with no phase angle involved. If you have a 100 watt light
> bulb and a 33.33 watt light bulb, aren't they dissipating 133.33 watts?
>
> > Walter, Johnson shows that the sum of the forward source voltage and
> > re-reflected voltage add to the total voltage. He does not add power.
>
> On the contrary, Equation (6.17) P = (|E+|^2)/Z0 - (|E-|^2)/Z0
> on page 150 of the first edition clearly shows that Johnson adds power
> and that the power he adds/subtracts is a *scalar* value with no phase
> in sight. Note the absolute value of the voltages.
> --
> http://www.mindspring.com/~w6rca

This is Pdelivered = Pforward - Prearward.

We do not disagree on this concept.

Steve

2440. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 18:45:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF055B7.70166AF1@IEEE.org>
Source record: 164490

VE9SRB wrote:
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3AF011B8.A04FD554@IEEE.org...
> > VE9SRB wrote:
> > > Powers do not add as you claim they do. 100 Watts added in phase with
> 33.33
> > > Watts simply does not add to 133.33 Watts.
> >
> > Uhhhhh Steve, power is a scalar and doesn't have a phase. Scalars add
> > directly with no phase angle involved. If you have a 100 watt light
> > bulb and a 33.33 watt light bulb, aren't they dissipating 133.33 watts?
> >
> > > Walter, Johnson shows that the sum of the forward source voltage and
> > > re-reflected voltage add to the total voltage. He does not add power.
> >
> > On the contrary, Equation (6.17) P = (|E+|^2)/Z0 - (|E-|^2)/Z0
> > on page 150 of the first edition clearly shows that Johnson adds power
> > and that the power he adds/subtracts is a *scalar* value with no phase
> > in sight. Note the absolute value of the voltages.
> > --
> > http://www.mindspring.com/~w6rca
>
> This is Pdelivered = Pforward - Prearward.
>
> We do not disagree on this concept.

But, but, but, Steve. You said "He (Johnson) does not add power."
Have you changed your mind about that? :-)
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2441. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 18:47:51 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <rDYH6.1847$t12.138769@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164491

"Walter Maxwell" <w2du@iag.net> wrote in message
news:n8GH6.3462$c4.377186@e420r-chi1.usenetserver.com...
> Steve's problem with addition of voltages or powers on a transmission
line
> is that it is NOT the voltages that add, it's power, even though Steve
> denies that this is true. His misconception on this issue is why his
powers
> don't add up correctly. Everything cpmes out correctly when powers are
> added, but never come out correctly by adding voltages. Kirchoff's law
> simply doesn't apply here.
>

Walter:

If one forward voltage is 100 V and another forward voltage is 100 V, do you
deny that the total voltage is 200 V?

Steve

> Steve and I had a real pulling match on this issue, and even after I
pointed
> out an equation in Johnson that proves it, he still goes on in the wrong
> direction. We're leaving Florida for Michigan on Thursday and my Johnson
> book is already packed away so I can't tell you the Eq number in Johnson.
> However, his equation shows that the square of the source voltage divided
by
> Zo is the source power and the square of the reflected voltage divided by
Zo
> is the reflected power. His equation then shows that the sum of the source
> and reflected powers equals the total forward power. Thus it follows that
> the sum of the voltages divided by Zo cannot give the correct results.
>
> Hope this helps.
>
> Walt, W2DU
>
>
>

2442. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 18:48:19 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF05673.BF7504D@eznec.com>
Source record: 164489

"William E. Sabin" wrote:
>
> Some things are bothering me.
>
> I2i is the *entire* braid current, inside plus outside, except it has minus signs. I2o
> is almost the same value, and it also has minus signs, indicating that I2i and I2o are
> both flowing *into* the braid (or away from).

** If you claim that I'm measuring the current on both the inside and outside of the braid, then I must also be measuring the current on the inner conductor. And the sum of those three currents is the same as the current on the outside of the braid alone. If you believe that when I place the core over the whole cable I'm measuring only the current on the inside and outside of the shield but not the center conductor, you can't explain the measurement in the first experiment (with a 51 ohm resistor directly from center conductor to shield) in which the shield current measured essentially zero.

> Something is wrong with this. It doesn't make sense, especially on such a short coax.
>
> The sum of all currents to and from coax grounds should be identical to I1i. If I2i were
> reversed we would have

** I don't agree. The shield inner current should be equal to I1i (but opposite in direction). And it is. It always is, regardless of the current on the outside of the shield.

> (0.337-j.245)+(-.300-j.032)+(.308+j0.106)=(0.345-j.171) which is very close to I1i
>
> Also, if I2i were reversed, then it would be very close to I2o, in which case the loop
> current would be practically zero). This reversal makes a lot of sense.
>
> Also, the braid reactance (measured by me) is j28 ohms. Using I2o and this reactance, I
> get a common mode current of 0.027-j0.262, traveling toward the load, which is your I3o,
> travelling toward the load end.

** I apologize, I made an error in giving the braid impedance. In my initial impedance calculation, I neglected to multiply by 25.5. When I calculated the inductance, it was obviously too small. I discovered my error and corrected the inductance value, but didn't go back and correct the impedance. The impedance calculated from the current division is +j29.3 ohms, quite close to the 28 ohms you measured. You'll find that the 470 nH I gave for the inductance is consistent with the correct impedance value. I aplogize for the error. The calculation is Z/25.5 = I2o/-I3o.

> If I reverse I2i and add it to I3o I get
>
> (.308+j.106)+(.027-j.262)=(.335-j.156) which is close to I1i, as it should be.
>
> If I reverse I2i and add it to I3i I get
>
> (.308+j.106)+(.365-j.161)=(.365-j.161) which is also quite close to I1i. I3i and I3o are
> certainly very close to each other, and I question whether they should be construed as
> different. I would not expect to see different values of I3i and I3o on such a short
> coax.
>
> There is no loop current at the load end of the braid.
>
> Bill W0IYH

No currents need to be reversed to fit the explanation I've given. But I might not have been clear enough in describing how I defined the positive direction of current flow. I don't trust an ASCII art drawing, so I'll try to do it in words. Draw the coax horizontally, with the input end at the left. Draw a ground plane under it. On the input end connect a generator from the center conductor downward to ground. Connect the input shield to ground with a line extending down from the coax end to the ground plane. On the output end, connect the center conductor to ground via a resistor, and do the same for the shield. The direction of positive current is defined as:

I1i is upward from ground through the generator into the coax.
I2i is upward from ground into the coax shield.
I3i is toward the right (toward the output end).
I1o is downward from the center conductor through the resistor to ground.
I2o is downward from the shield through the resistor to ground.
I3o is toward the right (toward the output end).

I was careful to observe this convention when placing the current probe. Here are the raw measurements, in case I made an error in converting to rectangular form:

I1i = 0.389 /_-25 deg.
I2i = 0.326 /_-161 deg.
I3i = 0.273 /_-78 deg.
I1o = 0.417 /_-36 deg.
I2o = 0.302 /_-174 deg.
I3o = 0.263 /_-84 deg.

If you believe that any measurements are in error, please make them yourself and post the results. I used only a dual-channel scope (an analog model, but with automated voltage measurement and with cursors to ease the phase measurement) and a signal generator. Just about any ferrite core with reasonable impedance at 10 MHz will do for the probe, as long as it's big enough to slide over a piece of RG-58. Be sure to terminate the probe cable at the scope. The whole process, including building and checking the probe, took no more than a couple of hours.

Roy Lewallen, W7EL

2443. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 18:49:15 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <LEYH6.1848$t12.138358@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164492

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF055B7.70166AF1@IEEE.org...
> VE9SRB wrote:
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > news:3AF011B8.A04FD554@IEEE.org...
> > > VE9SRB wrote:
> > > > Powers do not add as you claim they do. 100 Watts added in phase
with
> > 33.33
> > > > Watts simply does not add to 133.33 Watts.
> > >
> > > Uhhhhh Steve, power is a scalar and doesn't have a phase. Scalars add
> > > directly with no phase angle involved. If you have a 100 watt light
> > > bulb and a 33.33 watt light bulb, aren't they dissipating 133.33
watts?
> > >
> > > > Walter, Johnson shows that the sum of the forward source voltage and
> > > > re-reflected voltage add to the total voltage. He does not add
power.
> > >
> > > On the contrary, Equation (6.17) P = (|E+|^2)/Z0 - (|E-|^2)/Z0
> > > on page 150 of the first edition clearly shows that Johnson adds power
> > > and that the power he adds/subtracts is a *scalar* value with no phase
> > > in sight. Note the absolute value of the voltages.
> > > --
> > > http://www.mindspring.com/~w6rca
> >
> > This is Pdelivered = Pforward - Prearward.
> >
> > We do not disagree on this concept.
>
> But, but, but, Steve. You said "He (Johnson) does not add power."
> Have you changed your mind about that? :-)
> --

He's subtracting two powers traveling in opposite directions. He is not
adding two powers traveling in the same direction. Big conceptual
difference.

Steve

2444. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 19:19:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF05DA7.FED391A2@IEEE.org>
Source record: 164493

VE9SRB wrote:
> If one forward voltage is 100 V and another forward voltage is 100 V, do you
> deny that the total voltage is 200 V?

I will deny it, Steve. Paralleling equal in-phase voltages results in
the same voltage. The voltage remains the same while the current doubles.
If you parallel 120v at 1 amp with 120v at 1 amp, you get 120v at 2 amps.

If you series 120v at 1 amp with 120v at 1 amp, you get 240v at 1 amp.
In each case, the power adds to a value that satisfies the conservation
of energy principle.

You simply cannot parallel current and series voltage *at the same time*.
If you think you can, I've got some "Oceanfront Property in Arizona"
for you.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2445. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 19:27:30 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <HbZH6.6864$c4.513370@e420r-chi1.usenetserver.com>
Source record: 164494

VE9SRB <srbest@att.net> wrote in message
news:x9TH6.1645$t12.116810@bgtnsc05-news.ops.worldnet.att.net...
>
> "Walter Maxwell" <w2du@iag.net> wrote in message
> news:CMDH6.2616$c4.364498@e420r-chi1.usenetserver.com...
> > Gentlemen, I've gotten in here late, and haven't had the chance to read
> the
> > last hundred posts, but I would like to put in two cents worth.
> >
> > First, on the subject of reflected power being fictitious, I'll ask
Peter
> to
> > consider a 3-port circulator. Port #1 is the input, port has a
mismatched
> > load, and port #3 has a purely matched non-reactive load with a
voltmeter
> > connected across the terminals. The power absorbed in the load on port
#3
> > will equal exactly the square of the voltage indicated on the meter
> divided
> > by the resistance of the load. This power is that reflected from port
#2.
> > There's no way it could be fictitious power because the power reflected
> from
> > port #2 caused real power to be dissipated in the load on port #3.
> >
> > Second, on the subject of virtual short circuits. Let's assume two ac
> > generators are connected in parallel. They each deliver the same voltage
> > across the load, but they are 180 degrees out of phase. The result is a
> > short circuit at their terminals. The same is true for two sets of
> rearward
> > traveling waves of voltage and current where the waves are of the same
> > magnitude and opposite phase. The result is a short circuit, because at
> any
> > point along the transmission line the power reflected from each
> > discontinuity that produces the reflections, the reflected powers at
that
> > point can be replaced with corresponding generators producing equal
> voltages
> > but 180 degrees out of phase. We are not considering just one reflected
> wave
> > of voltage and current in conjunction with the forward wave of voltage
and
> > current. We are considering TWO sets of reflected waves--one set

generated
> > by the mismatch terminating the line, and the other is the set generated
> by
> > the matching network (or stub).
> >
>
> Walter, parts of this are simply incorrect.

Sorry Steve, they are not incorrect. You apparently still fail to
understand the concept.
>
> Two rearward traveling waves of equal amplitude being 180 degrees out of
> phase cancel one another to a net rearward wave of zero. At this point of
> rearward wave cancelation there will still be a total non-zero voltage.
> This is not the same as a short circuit on a transmission line. A short
> circuit on a transmission line occurs when the forward and rearward
> traveling waves are 180 degrees out of phase and the total voltage goes to
> zero at that point.

Steve, sorry, but you just don't get it, the same as in our previous
discussions a year ago. You are not appreciating the resultant effect of TWO
sets of REARWARD traveling waves. When the voltages of these two sets are of
equal magnitude and opposite phase the resultant is zero voltage and max
current. There is NO non-zero voltage. If you'll read my earlier posting
carefully you'll see that I did not say that this is the same as a short
circuit on a transmission line, because this would prevent wave travel in
both directions. My virtual short is only a short to the rearward traveling
waves that establish the virtual short, which is totally transparent to the
forward waves from the source. This is why there is a match at the point
where the two sets of rearward traveling waves join. The rearward traveling
waves are totally re-reflected, and that you say a portion of the reflected
waves travels still further rearward beyond the matching point is nonsense.
If this were the case the SWR measured looking into the matching point (the
INPUT of the antenna tuner) would not be 1:1.

Steve, if you cannot comprehend this concept then I don't care to continue
the discussion, because it will be fruitless. From all the unproductive
discussions we've had for more than two years on this very issue it appears
that you are unwilling to face reality.
>
> > If you measure the SWR on the line with line mismatched (no matching
> > network), and then replace the mismatch with a matched load, but keep
> either
> > the matching network or stub in the line, the input SWR of the line and
> the
> > magnitude of the reflection coefficient will be the same as before, but
> with
> > the opposite angle of reflection coefficient.
> >
> > This concept is explained in my QEX article of Apr/May 1998, that Steve
> says

> > is totally incorrect, and which I've challenged him with no success. I
> hope
> > this will help.
> >
>
> I did not say that you were totally incorrect. I believe that several key
> statements and concepts you introduced are incorrect. As for challenging
> me, you have yet to directly discuss the key points that we disagree on
and
> answer several direct questions that I have asked of you.

Yes Steve, I am challenging you. Allright then, please direct those several question again, but on the newsgroup so all can see. I won't be back on the NG until Friday or later, because we're moving back to Michigan tomorrow from Florida, six mo in MI and six mo in FL

Walt, W2DU

2446. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 19:29:26 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <fbZH6.9506$5k1.674706@e420r-chi2.usenetserver.com>
Source record: 164495

Peter, I'll be in Michigan tomorrow, but won't get on line until Friday at least. However, use the same email address for me.

CUL

Walt, W2DU

2447. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 19:32:53 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <ueZH6.9512$5k1.674997@e420r-chi2.usenetserver.com>
Source record: 164496

Peter, I just read that your sister is a grad of U. of Arizona. What a coincidence--my niece is a PhD grad of U of A, and she is also the principal oboeist with the Tucson Symphony Orchestra!

Walt

2448. Re: Saturn Station Wagons and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 19:44:47 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <OV=wOthx3oHhMYc81aMbWyZhi25x@4ax.com>
Source record: 164497

kb9rpd@arrl.net (Ted Wagner - KB9RPD) wrote:

>
>#2 - I want a REAL antenna on my car. Since it's a station wagon, I
>don't have the luxury of a trunk. I've never installed a "real"
>antenna....where can I find information on how to properly do this
>without destorying my car or subjecting it to rust?

A few thoughts, some from a recent thread on drilling holes in cars.

Some car dealers who have been consulted say it is no big deal to drill a hole in a car. When you sell it, you can plug it. Or you can simply replace the ham antenna with a cell phone antenna, and the car will be "phone-ready" for the next owner.

Any antenna you buy should have fairly clear instructions on how to mount it to your metal -- how to drill the hole, etcetera, so if you have a power drill, that should be no big deal.

If you're drilling into the roof of your car, you want to be careful not to punch the headliner inside. One thing you can do is take your car to a place that sells and installs business radios in cars. They have special drills that will make the hole in your roof without going through the headliner, and they're pretty experienced at running the coax to wherever you need it to go. Of couse, this will cost a few dollars in labor.

You might want to look at the ARRL's bookstore web site, and see what they have on mobiling -- there's all kinds of ins and outs that you can probably get in a good book on this subject.

There's also some very good tech info on mobiling at the arrl web site, http://www.arrl.org/tis/ regarding antennas, installations, and so forth...

Good luck...

Bob
k5qwg

2449. long dipole vs trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 19:52:06 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3af06656$0$62142$bbae4d71@news.net-link.net>
Source record: 164498

After reading the posts on the trap dipole--I started thinking--which IS the better antenna: Ladder line fed dipole cut for 160 meters used with a tuner on all bands, versus a dipole with traps for 20, 40, 80 (for example, B&W AS-160) and fed with RG-8 type coax. I have both. The Trap antenna is mounted inverted V with apex about 48 feet and wires going NE/SW. Ends are only about 12 feet off the ground. The other antenna has its apex at about 90 feet with one end at about 45 feet and the other at about 30 feet, with the wires going SE/NW. 9 times out of 10 I will get the better signal report and hear best on the ladder line fed dipole, but I think this is simply because it is higher up and there is more wire up there. The wire antenna was a lot easier to put up, easier to take down and store, and there was NO tuning or fiddling with trimming wire lengths. Heck of a lot lighter also. Obviously you need a tuner with the ladder line antenna. If they were both mounted at the same height and configuration and measured, which one would would out perform the other?

2450. Re: Base station antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 19:52:38 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3af0819a_4@news3.prserv.net>
Source record: 164506

W6RCecilA <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF012BF.BD620F0D@IEEE.org...
> Crazy George wrote:
> >
> > Titus Cheung <titus@ieee.org> wrote in message
> > > Are there anyone familiar in the type of antennas cellular providers
use
> > > for sectorizing a cell?
> > >
> > Yes. PCS antennas too.
>
> In my cellular phone book, it shows a hexagonal radiation pattern
> for those antennas. How do they do that? :-)

Magic.
--
Crazy George

> --
> http://www.mindspring.com/~w6rca

2451. Re: Hamstick Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 20:05:58 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3af06996$0$62151$bbae4d71@news.net-link.net>
Source record: 164499

If your trailer has a metal roof--you already have your "ground plane" so you should forget the dipole idea and go with a screwdriver type antenna, or a tall vertical mast and match with a coupler, like SGC 230. If you are able to park near trees, then you could just shoot a wire up into a tree, hook it to the SGC coupler, and use the trailer for the other half. With a screwdriver, you should be able to get 80 to 10 meter coverage no problem. You will get 160 to 10 meter coverage automatically with a 40 foot wire up a tree with the SGC230 coupler. You can leave the coupler on the roof and just roll up the wire when you move. You could bolt a rod holder on your rear rack and use a fiberglass fishing pole to support the wire "invert V" style. You should mount the screwdriver up as high as you can and make use of a lay over or QD mount for travel. Both cost a lot more than the hamstick dipole, but much less hassle, better looking, and a lot better performing on way more bands, and in the case of the SGC, fully automatic! I use the SGC230 coupler, a park on stand, a 26 foot aluminum push up mast with a rod hold mounted on it to hold a 20 foot fiberglass mast to support wire. I also use a Comet GP-15 antenna on the mast with a IC-706MKIIG and have 160 meter to 70cm coverage--all automatic. Takes about 15 minutes to put up--and most of that is unrolling coax and wire. Do NOT use the 14 gauge hard drawn stranded copper antenna wire--it really tangles up fast. Use Flexweave insulated wire in 14 or 12 gauge. It has a lay of hand like rope.

Delbert McCord wrote in message <3aef7d17.11525477@news.usol.com>...

>I have just purchased a 12 year old travel trailer. I wish to put my
>Icom 706 in the trailer and I am thinkin go of using Hamsticks in a
>dipole configuration. (using two hamsticks for each band) on a 15 foot
>pipe. Or would one hamstick work just as well as a vertical. My
>problem is I do not have a ground or room to put up radials. The mount
>will be on a metal utility rack about 2 feet behind the trailer. Would
>the antenna mast be enough to act as a counter poise?
>
>Thanks for any help you pass along,
>Delbert McCord
>

2452. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 20:10:43 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <7RZH6.41758$Ce4.3153749@news1.rdc1.ct.home.com>
Source record: 164500

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3aef4f6e.556087968@news.accessunited.com...
>
> The difference in loss between a L/C trap and a coaxial trap is quite
> large, even when the L/C trap uses modest components.
>
> 73 Tom

Tom

Is this for coaxial trap designs that use the inherent
center conductor shield capacitance per foot to
provide the resonating capacitance, or those that
use an external fixed vacuum or high-voltage RF
ceramic to resonate the braid? Or, both?

Pete

2453. Re: long dipole vs trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 20:13:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF06A4F.7AF7CCD0@IEEE.org>
Source record: 164501

Rudy Marcelletti wrote:
> Obviously you need a tuner with the ladder line antenna. If they
> were both mounted at the same height and configuration and measured, which
> one would would out perform the other?

If certain precautions are taken, IMO, there is no substitute for being
able to do the tuning of the antenna system at same place as the operator.
Given a near-lossless transmission line, a non-resonant antenna length
will radiate virtually just as well as a resonant antenna length.
--
http://www.mindspring.com/~w6rca

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2454. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 20:25:30 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AF06D3A.1274541F@mwci.net>
Source record: 164502

Roy Lewallen wrote:

> "William E. Sabin" wrote:
> >
> > I2i is the *entire* braid current, inside plus outside, except it has minus signs.

This is correct. It is obvious by inspection that I2i is all of the entire braid current that
flows in the little link to ground at the input. The same is true at I2o. It is also quite correct that I1i is the sum of all other ground connections. That is, I1i is the source of all
other currents. And all of these currents return to I1i via the ground connections. If those
currents are measured correctly we are in business. By putting I2i in the proper direction I
get a result that's just as accurate as the one that you got. I went through all of this in my
July 1997 QEX article on the balun, which referenced your Compendium article. That QEX piece
was also a very good article, by the way. Frank Witt helped with comments.

My activity schedule may not allow time to duplicate your experiment for awhile (we have some
home improvements in progress), but my carefully considered opinion is that I do not need a loop current concept to get correct answers. I was up all last night struggling with this. That
loop concept has other problems in other applications also, and I think it's just more ham radio baloney.

In Fig 24, chapter 26, 19th edition, the loop current idea is a loser because in a perfectly
symmetrical antenna there is no common mode current. And if there is an asymmetry, the loop idea is not needed in order to account for everything that is going on.

Others can think what they like, that's what I think. It's nothing personal, just a technical
opinion that I believe.

Bill W0IYH

2455. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 21:12:06 UTC
From: mulveyr@zippy.aa2ys.ampr.org
Message-ID: <slrn9f0tn6.1gh.mulveyr@zippy.aa2ys.ampr.org>
Source record: 164505

On 2 May 2001 21:56:56 GMT, Twistedhed <twistedhed@webtv.net> wrote:
>
>I am posting here because of some of the nasty things I have read in this
>group and in QRZ discussions regarding freebanders. We who use the frequencies
>from 27.405 to 28.000 have more in common with hams than you might think.
>We are good operators and have knowledge of propagation and skip conditions.
>We use Yasus, Kenwoods and Icomm radios just like you do, so we know technical
>issues as well or better. However, the attitude of some hams toward us is
>rude and condescending. We are treated like 2nd class citizens. This should
>not be. We have the same rights under the constitution as legal hams do.
>For those that do not wish to be under Uncle Sam's thumb, freebanding is
>a viable alternative to getting a ham radio license. What I am saying is
>that maybe the next time you meet a freebander it might be wise to talk with
>him before you condemn him.
>
>This article ought to clarify things, as I am the author:
http://sporadic1.tripod.com/page7.html
>
>I am QRT and standing by. (No flames answered. Please reply via email)

Of course "free-banders" are second class citizens. They're criminals.
Some of them are even dumb enough to try to justify that fact
with high-minded, yet meaningless, justifications.

Heck, they're in the same league as web-tv users.

- Rich

2456. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 21:13:40 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF07884.F3694597@bwcc.com>
Source record: 164504

Tom W8JI wrote:
> Lightning contains all sorts of RF energy.
All sorts except for nice sine waves.

> Never use braiding for a ground unless you have absolutely no choice
> (because of flexing).
Lightning is not that particular about resistance.
Having just arced 20000 ft, encountering another 20 ohms of resistance won't make a lot of difference.

> Dry, clean, tightly packed braid has several times the RF resistance
> of a smooth conductor the same size. The clean dry shiney briad of
> RG-8 has about the same RF resistance as a number 12 wire.
We don't want the lightning to travel end to end freely.
We want it to dissipate into the ground.

> When it is loosely packed, or if it tarnishes, it is like a resistor
> for RF. It is terrible.
And the center of solid conductor is better.
Are you a non-believer in skin-effect?

I agree that it would be nice if the braid didn't get dirt or water in it.
But it is not intended to conduct very far or efficiently.

> Not only is resistance high, it rots easily.
If buried deeply, that is a function of the soil type and atmospheric pollutants.
I know of loosely braided copper that is eighty plus years old and doing fine.
But it couldn't hurt to wrap the portion from 8 inches above ground to the bottom of the trench with rubber tape and coat that with friction tape to reduce corrosion where the cable is in contact with shallow ground and string trimmers and prevent water from following the cable.

> Other than that, everything sounded OK.
Thanks!
One thing about public newsgroups is the peer review.
Bad advice tends to get shot down quickly.

2457. Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 21:56:56 UTC
From: Twistedhed <twistedhed@webtv.net>
Message-ID: <3af07498$1@news2.mibx.net>
Source record: 164503

I am posting here because of some of the nasty things I have read in this group and in QRZ discussions regarding freebanders. We who use the frequencies from 27.405 to 28.000 have more in common with hams than you might think. We are good operators and have knowledge of propagation and skip conditions. We use Yasus, Kenwoods and Icomm radios just like you do, so we know technical issues as well or better. However, the attitude of some hams toward us is rude and condescending. We are treated like 2nd class citizens. This should not be. We have the same rights under the constitution as legal hams do. For those that do not wish to be under Uncle Sam's thumb, freebanding is a viable alternative to getting a ham radio license. What I am saying is that maybe the next time you meet a freebander it might be wise to talk with him before you condemn him.

This article ought to clarify things, as I am the author:
http://sporadic1.tripod.com/page7.html

I am QRT and standing by. (No flames answered. Please reply via email)

Unit 2711, Florida

2458. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 22:01:21 UTC
From: ? & The Mysterians <nospam@clearsail.net>
Message-ID: <3AF083B1.F5D8C69D@clearsail.net>
Source record: 164507

The Troll-O-Meter is pinned, but I'll bit on this:

If you want to be a real ham, why not take the technician's test? After all, you use the same
equipment as hams, know the Q Codes, can even read! Wasn't there something in the rules about
licensed hams carrying on conversations with unlicensed hams? This is just a thought, but maybe the
difference is that we like to abide by the rules.

Twistedhed wrote:

> I am posting here because of some of the nasty things I have read in this
> group and in QRZ discussions regarding freebanders. We who use the frequencies
> from 27.405 to 28.000 have more in common with hams than you might think.
> We are good operators and have knowledge of propagation and skip conditions.
> We use Yasus, Kenwoods and Icomm radios just like you do, so we know technical
> issues as well or better. However, the attitude of some hams toward us is
> rude and condescending. We are treated like 2nd class citizens. This should
> not be. We have the same rights under the constitution as legal hams do.
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> a viable alternative to getting a ham radio license. What I am saying is
> that maybe the next time you meet a freebander it might be wise to talk with
> him before you condemn him.
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> This article ought to clarify things, as I am the author:
http://sporadic1.tripod.com/page7.html
>
> I am QRT and standing by. (No flames answered. Please reply via email)
>
> Unit 2711, Florida

2459. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 22:16:52 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <oH%H6.2831$Cq3.259821@newsread1.prod.itd.earthlink.net>
Source record: 164508
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

I chuckled out loud when this thread first got started...and I haven't stopped yet.

There is - NO RESPECT - for freebanders because - CRIMINALS - deserve none!

--

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

2460. Re: Commercial dipole for 6m?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 22:38:01 UTC
From: HelmutSweenie <helmutsweenie@youranus.com>
Message-ID: <d%%H6.44413$B22.10953125@news1.rdc2.pa.home.com>
Source record: 164509

Cecil only real Hams Homebrew not these No-Code types.
"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AEFFE26.AA7EEB9@IEEE.org...
> VHFRadioBuff wrote:
> >
> > >I found one in the latest HRO catalog. It's made by CAL-AV. The EB-2
> > >covers 10 to 60 Mhz and is rated for 3 KW. Price is $42.95.
> >
> > Hmm.. anything that covers less frequencies and less power? Say VHF only
and
> > 300 watts or less? :)
>
> Seems you might be interested in homebrewing after all. You can get
> an FT-240-67 toroid from Amidon for about ten bucks and wind some
> small coax on it.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2461. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 22:52:33 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF08FB1.A16089B6@eznec.com>
Source record: 164510

Again I apologize. I'm guilty once again of not reading carefully enough. Yes, you are correct. I2 is the entire braid current. It's I3 which is the current on the outside. I agree that I1i has to equal the sum of all the ground currents. Another way to say the same thing is that the sum of all the currents entering (or leaving) ground has to equal zero. The sum of all currents entering ground is -I1i - I2i + I1o + I2o. I get -0.01 - j0.01 for this sum, as close to zero as I can expect.

Do you still need to reverse one or more currents to explain them? If so, do the currents into or out of ground still sum to zero? How about the currents at the shield ends?

I'll try to review your QEX article within the next day or so. I also have a lot of other things requiring attention.

Roy Lewallen, W7EL

In light of my second posting, do you still need to reverse

"William E. Sabin" wrote:
>
> Roy Lewallen wrote:
>
> > "William E. Sabin" wrote:
> > >
> > > I2i is the *entire* braid current, inside plus outside, except it has minus signs.
>
> This is correct. It is obvious by inspection that I2i is all of the entire braid current that
> flows in the little link to ground at the input. The same is true at I2o. It is also quite
> correct that I1i is the sum of all other ground connections. That is, I1i is the source of all
> other currents. And all of these currents return to I1i via the ground connections. If those
> currents are measured correctly we are in business. By putting I2i in the proper direction I
> get a result that's just as accurate as the one that you got. I went through all of this in my
> July 1997 QEX article on the balun, which referenced your Compendium article. That QEX piece
> was also a very good article, by the way. Frank Witt helped with comments.
>
> My activity schedule may not allow time to duplicate your experiment for awhile (we have some

> home improvements in progress), but my carefully considered opinion is that I do not need
a
> loop current concept to get correct answers. I was up all last night struggling with
this. That
> loop concept has other problems in other applications also, and I think it's just more
ham
> radio baloney.
>
> In Fig 24, chapter 26, 19th edition, the loop current idea is a loser because in a
perfectly
> symmetrical antenna there is no common mode current. And if there is an asymmetry, the
loop
> idea is not needed in order to account for everything that is going on.
>
> Others can think what they like, that's what I think. It's nothing personal, just a
technical
> opinion that I believe.
>
> Bill W0IYH

2462. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 22:59:12 UTC
From: Larry Naumann <n0sa@earthlink.net>
Message-ID: <4j0I6.5094$Rm1.248063@newsread2.prod.itd.earthlink.net>
Source record: 164511

Freebanding just seems to be the lazy way to get on the air. And you get what you worked for, virtually nothing. One little slice of one band. There is so much more to ham radio than what is done by freebanders it is silly to even discuss it. Reminds me of the phrase" you can't argue with ignorance".
Larry N0SA
Twistedhed <twistedhed@webtv.net> wrote in message news:3af07498$1@news2.mibx.net...
>
> I am posting here because of some of the nasty things I have read in this
> group and in QRZ discussions regarding freebanders. We who use the frequencies
> from 27.405 to 28.000 have more in common with hams than you might think.
> We are good operators and have knowledge of propagation and skip conditions.
> We use Yasus, Kenwoods and Icomm radios just like you do, so we know technical
> issues as well or better. However, the attitude of some hams toward us is
> rude and condescending. We are treated like 2nd class citizens. This should
> not be. We have the same rights under the constitution as legal hams do.
> For those that do not wish to be under Uncle Sam's thumb, freebanding is
> a viable alternative to getting a ham radio license. What I am saying is
> that maybe the next time you meet a freebander it might be wise to talk with
> him before you condemn him.
>
> This article ought to clarify things, as I am the author:
http://sporadic1.tripod.com/page7.html
>
> I am QRT and standing by. (No flames answered. Please reply via email)
>
> Unit 2711, Florida
>
>
>

2463. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 22:59:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF0914D.870D62E1@IEEE.org>
Source record: 164512

W6RCecilA wrote:
>
> VE9SRB wrote:
> > If one forward voltage is 100 V and another forward voltage is 100 V, do you
> > deny that the total voltage is 200 V?
>
> I will deny it, Steve. Paralleling equal in-phase voltages results in
> the same voltage. The voltage remains the same while the current doubles.
> If you parallel 120v at 1 amp with 120v at 1 amp, you get 120v at 2 amps.

System Reset! I'm obviously talking about 60Hz power. I temporarily forgot
that, in an RF transmission line, Z0 is in control of the V/I ratio.
However, if one adds 100v at 1 amp to 100v at 1 amp in a transmission line,
one still doesn't get 200v unless the Z0 changes. If Z0 remains constant
at 100 ohms, then the combined voltage would 141.4v and the combined
current will be 1.414 amps assuming they were in phase.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2464. Re: Base station antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 23:02:46 UTC
From: Titus Cheung <titus@ieee.org>
Message-ID: <qm0l6.154247$166.2831753@news1.rdc1.bc.home.com>
Source record: 164513

Hello:

So what type of antennas are used to sectorize cells? Panel antennas or
corner reflectors variety?

Titus

"Crazy George" <munschNO@attglobal.net.SPAM> wrote in message
news:3af00800_4@news3.prserv.net...
> Titus Cheung <titus@ieee.org> wrote in message
> news:QGOH6.151705$166.2762674@news1.rdc1.bc.home.com...
> > Hello:
> >
> > Are there anyone familiar in the type of antennas cellular providers use
> for
> > sectorizing a cell?
> >
> > Thanks
> >
> >
> Yes.
>
> PCS antennas too.
>
> --
> Crazy George
>
>

2465. Re: The Wireman question....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 23:20:14 UTC
From: Joe Giacobello <k2xx@swva.net>
Message-ID: <3AF0962E.F7A6D63C@swva.net>
Source record: 164514

Bill, I can't comment on the Bury_flex, but The Wireman's products are of the highest quality, and the boss ia quite helpful re technical questions.

73, Joe

Bill Russell wrote:

> Is the stuff sold by this company any good....coax for example. And
> finally is the "Bury-Flex" RG-8 type coax any good. I plan to use it
> for both direct-bury and as regular coax, not buryed.
> Thanks

2466. REC.RADIO.AMATEUR.ANTENNA?????

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 23:23:10 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3af09807_3@news3.prserv.net>
Source record: 164515

This newsgroup section is recreation(al). The specific category is amateur (radio antennas). However, we regularly see postings which are essentially requesting design engineering information for commercial facilities. Just yesterday there were two questions relating to cell sites. Do I misunderstand the NG purpose?

OK, so there are two ends to the cell circuit. The provider and the customer. Simple business arrangement. Business of providing telephone service. Recreational? Maybe. Amateur? If it's not free, it's not amateur. Now, I submit this is not the forum for a cellular company (employee) to solicit engineering services for cellular system antenna design (for free). I suspect the various communications engineering companies would agree. As for the customer, if his service is not satisfactory, he should complain to his provider and make them fix it, and complain to his PUC if satisfaction is not obtained.

As for antenna specifics, they are (generally) specialized wide band directional arrays developed using NEC (see Roy L.) and a lot of proprietary testing and corporate experience based on the same (Maxwell's) principles which are widely discussed in Kraus, Johnson and Jasik, and many other excellent electromagnetics texts. Most ham UHF antennas have higher gain over a narrower bandwidth which fits the bandwidth of the amateur frequency allocation, so not much place for application of cell antenna design there.

Pandering to the transgressors, cell and PCS antennas are manufactured by Antenna Specialists, DB Products (Allen Telecom) Sinclair, Comtelco, Allgon, Antel International, Antenex, Astron Antenna, Celwave, RFS Cablewave, Cushcraft/Signals, EMS Wireless, DAPA, Hustler, Larsen, Maxrad, Mobile Mark, Telewave, and lots of other companies. Try your web browser.

I fail to understand how cellular and PCS antenna design discussion fits into REC.radio.AMATEUR.antenna. Maybe we need a new NG. sci.electronics.rip-off-the-cell-company.

Flame away!

--
Crazy George
The opinions expressed are mine, and do not necessarily reflect those of any purportedly sane person or other entity.

2467. Cushcraft A627013S questions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 23:33:55 UTC
From: Ronald Twining <twining@attglobal.net>
Message-ID: <3af098df_2@news3.prserv.net>
Source record: 163473

Hi all
I got a good deal on a A627013S at a hamfest.
But it is designed with 6m horizontal and 2m/70cm vertical.
I want to use it all horizontal (SSB). Physically no problem. But what about
the interaction of the reoriented 6m elements.
Also comes with a cable with T -connector to feed 2m/70cm and you feed the
6m separately. I want to use only one feed line.
So I sent Cushcraft tech support the following E-mail:
1) Can you recommend a di/triplexer for use of one
feed line?
2) What are the effects of operating the 6 meter element on the same plane
as the 2meter/440?
Their response:
"I do not know if it will work ,but you can try and see.
Cushcraft Technical Support"

I hope someone will be of more help than that.

Thanks
de KG4IMB AAT4YF/SC Ron 73

2468. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 23:37:01 UTC
From: Bob <bob@bob.com>
Message-ID: <3AF09A1D.1F7C4E45@bob.com>
Source record: 164516
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Ok, Mr. Letter of the Law.

And I bet you ALWAYS obey the maximum posted speed limit. If you wanted to speed, you would take the right approach to speeding legally - because, hey man, you do EVERYTHING right. You would put your mind to becoming a race car driver and do your speeding on the track where it belongs. You would follow the proper steps to becoming a race car driver:

1. Learn to ride a unicycle, because that's how it all started, man. Our forefather's rode unicycles before fast cars were around, so must you learn.
2. Learn everything there is to know about cars - including memorizing the answers to questions about walking, unicycles, horse and carriage, boats, planes, etc.
3. If you skip the step on learning to ride a unicycle, prepare to be chastised by old-timers that had to learn how to ride it and by some who love the unicycle and can ride it at over 20 mph! BTW - learning to ride the unicycle keeps bad people from becoming race car drivers.
4. Prepare to spend some money. Your standard car won't do - it doesn't fit race car specs! And every race track requires a different car and tire combination.

Is becoming a race car driver what you should do because you like to take those 15 turns of Bear Mountain road at an faster than the posted speed? Well, ham radio IS NOT a replacement for the "freeband" either. Ham radio doesn't fit everybody. Maybe its a bit of an extreme commitment for some. Hey, I can operate my equipment and make sure that it complies with the same rules the FCC mandates for hams. I can operate it responsibly. I can operate it courteously . I can use the minimum amount of power necessary for a contact.

Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is it immoral? A crime against humanity? Absolutely not. To me - speeding in your car is a far more worse crime.

BTW, I do not condone operating on ham bands or intentionally interfering with any service that I am aware of. Yes, I know there are (very few, non essential) services allocated between 27.405 and 28Mhz. I support operations on 27.405 - 27.855 Mhz that follow the same regulations that hams follow.

Hopefully this metaphor can crack the thick skull of the "yes, but it's illegal, yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't black and white.

Bob.

Scott Townley wrote:

> But you *do* have all the respect you deserve...the same respect we
> all grant to FELONS, which is what you are, buddy...

>
> On 30 Apr 2001 21:04:39 GMT, "Twistedhed" <twistedhed@webtv.net>
> wrote:
>
> >
> >I am posting here because of some of the nasty things I have read in this
> >group and in QRZ discussions regarding freebanders. We who use the frequencies
> >from 27.405 to 28.000 have more in common with hams than you might think.
> >We are good operators and have knowledge of propagation and skip conditions.
> >We use Yasus, Kenwoods and Icomm radios just like you do, so we know technical
> >issues as well or better. However, the attitude of some hams toward us is
> >rude and condescending. We are treated like 2nd class citizens. This should
> >not be. We have the same rights under the constitution as legal hams do.
> >For those that do not wish to be under Uncle Sam's thumb, freebanding is
> >a viable alternative to getting a ham radio license. What I am saying is
> >that maybe the next time you meet a freebander it might be wise to talk with
> >him before you condemn him.
> >
> >I am QRT and standing by. (No flames answered. Please reply via email)
> >
> >Unit 2711, Florida
> >

2469. Re: REC.RADIO.AMATEUR.ANTENNA?????

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 23:38:28 UTC
From: fractenna@aol.com
Message-ID: <20010502193828.14725.00001931@ng-mb1.aol.com>
Source record: 164517

>cell and PCS antennas are manufactured by
>Antenna Specialists, DB Products (Allen Telecom) Sinclair, Comtelco, Allgon,
>Antel International, Antenex, Astron Antenna, Celwave, RFS Cablewave,
>Cushcraft/Signals, EMS Wireless, DAPA, Hustler, Larsen, Maxrad, Mobile Mark,
>Telewave, and lots of other companies. Try your web browser.
>
>I fail to understand how cellular and PCS antenna design discussion fits
>into REC.radio.AMATEUR.antenna. Maybe we need a new NG.
>sci.electronics.rip-off-the-cell-company.
>
>Flame away!
>

You certainly left out a key commercial firm. Since you are mentioning them you should not play favorites.

** Fractal Antenna Systems, Inc. **

Use your web browser and you will have no problem finding it. Lots of folks have.

73
Phil
de N1ZKT

2470. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 23:49:11 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <X11l6.1360$aR4.401482@paloalto-snr1.gtei.net>
Source record: 164518
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

No amount of self justification will erase the simple fact that what you are doing is a crime. That makes you a criminal, and therefore not worthy of respect. You sound like the gang bangers in LA bitching because they are treated like hoodlums.

By the way, I do have a cherry 1974 427 FI ' Vette that I take out to LA County Raceway when I want to speed (it turns low 12's with street tires). When I am driving my Blazer on city streets, I obey the traffic laws. That's what honest people do...

73 de W6DKN

"Bob" <bob@bob.com> wrote in message news:3AF09A1D.1F7C4E45@bob.com...
> Ok, Mr. Letter of the Law.
>
> And I bet you ALWAYS obey the maximum posted speed limit. If you wanted to speed,
> you would take the right approach to speeding legally - because, hey man, you do
> EVERYTHING right. You would put your mind to becoming a race car driver and do your
> speeding on the track where it belongs. You would follow the proper steps to
> becoming a race car driver:
>
> 1. Learn to ride a unicycle, because that's how it all started, man. Our
> forefather's rode unicycles before fast cars were around, so must you learn.
> 2. Learn everything there is to know about cars - including memorizing the answers
> to questions about walking, unicycles, horse and carriage, boats, planes, etc.
> 3. If you skip the step on learning to ride a unicycle, prepare to be chastised by
> old-timers that had to learn how to ride it and by some who love the unicycle and
> can ride it at over 20 mph! BTW - learning to ride the unicycle keeps bad people
> from becoming race car drivers.
> 4. Prepare to spend some money. Your standard car won't do - it doesn't fit race
> car specs! And every race track requires a different car and tire combination.
>

> Is becoming a race car driver what you should do because you like to take
those 15
> turns of Bear Mountain road at an faster than the posted speed? Well, ham
radio IS
> NOT a replacement for the "freeband" either. Ham radio doesn't fit
everybody. Maybe
> its a bit of an extreme commitment for some. Hey, I can operate my
equipment and
> make sure that it complies with the same rules the FCC mandates for hams.
I can
> operate it responsibly. I can operate it courteously . I can use the
minimum amount
> of power necessary for a contact.
>
> Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is it
immoral? A
> crime against humanity? Absolutely not. To me - speeding in your car is a
far more
> worse crime.
>
> BTW, I do not condone operating on ham bands or intentionally interfering
with any
> service that I am aware of. Yes, I know there are (very few, non
essential)
> services allocated between 27.405 and 28Mhz. I support operations on
27.405 -
> 27.855 Mhz that follow the same regulations that hams follow.
>
> Hopefully this metaphor can crack the thick skull of the "yes, but it's
illegal,
> yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't
black and
> white.
>
> Bob.
>
>
> Scott Townley wrote:
>
> > But you *do* have all the respect you deserve...the same respect we
> > all grant to FELONS, which is what you are, buddy...
> >

2471. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-02 23:58:18 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <ua1l6.41876$Ce4.3186846@news1.rdc1.ct.home.com>
Source record: 164419
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Bob" <bob@bob.com> wrote in message news:3AF09A1D.1F7C4E45@bob.com...
> Ok, Mr. Letter of the Law.
Hey, I can operate my equipment and
> make sure that it complies with the same rules the FCC mandates for hams.

FCC rules mandates amateurs operate on frequencies
authorized by their their class of license. How do you
manage to comply with FCC laws when:
]
1: operating out of band?
2: operating without a license?
3: operating non type accepted equipment?

2472. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 00:01:04 UTC
From: richardharrison@webtv.net
Message-ID: <19839-3AF09FC0-40@storefull-116.iap.bryant.webtv.net>
Source record: 164423

Bill Sabin wrote:
"In Fig 24, chapter 26, 19th edition, the loop current idea is a loser because in a perfectly symmetrical antenna there is no common mode current."

I looked at Fig 24 and wrote an analysis before reading the text. When I read the text, it was very similar to what I had written. The book is the new "ARRL Antenna Book".

The only fault I find is: "The worst-case common-mode impedance occurs when the overall effective path length to ground is an odd multiple of lambda/2, making this path half-wave resonant." I think the word "odd" above should be eradicated. Are you lurking, Ed Hare?

Best regards, Richard Harrison, KB5WZI

2473. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 00:06:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF0A101.CD48E752@IEEE.org>
Source record: 164420
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

W6DKN wrote:
> No amount of self justification will erase the simple fact that what you
> are doing is a crime.

Are there any victims or is it like the crime of oral sex?
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2474. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 00:12:59 UTC
From: W4NTI <w4nti@nospammindspring.com>
Message-ID: <9cq7onqpr1@slb4.atl.mindspring.net>
Source record: 164421
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Look dumbass...you ain't going to convince the people that have a license.
So quite trying to explain what you think is alright. The bottom line is
YOU ARE ILLEGAL. PERIOD.

Dan/W4NTI

"Bob" <bob@bob.com> wrote in message news:3AF09A1D.1F7C4E45@bob.com...
> Ok, Mr. Letter of the Law.
>
> And I bet you ALWAYS obey the maximum posted speed limit. If you wanted to
speed,
> you would take the right approach to speeding legally - because, hey man,
you do
> EVERYTHING right. You would put your mind to becoming a race car driver
and do your
> speeding on the track where it belongs. You would follow the proper steps
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> becoming a race car driver:
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> 1. Learn to ride a unicycle, because that's how it all started, man. Our
> forefather's rode unicycles before fast cars were around, so must you
learn.
> 2. Learn everything there is to know about cars - including memorizing the
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> to questions about walking, unicycles, horse and carriage, boats, planes,
etc.
> 3. If you skip the step on learning to ride a unicycle, prepare to be
chastised by
> old-timers that had to learn how to ride it and by some who love the
unicycle and
> can ride it at over 20 mph! BTW - learning to ride the unicycle keeps bad
people
> from becoming race car drivers.
> 4. Prepare to spend some money. Your standard car won't do - it doesn't
fit race
> car specs! And every race track requires a different car and tire
combination.
>
> Is becoming a race car driver what you should do because you like to take
those 15
> turns of Bear Mountain road at an faster than the posted speed? Well, ham
radio IS
> NOT a replacement for the "freeband" either. Ham radio doesn't fit
everybody. Maybe

> its a bit of an extreme commitment for some. Hey, I can operate my
equipment and
> make sure that it complies with the same rules the FCC mandates for hams.
I can
> operate it responsibly. I can operate it courteously . I can use the
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> of power necessary for a contact.
>
> Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is it
immoral? A
> crime against humanity? Absolutely not. To me - speeding in your car is a
far more
> worse crime.
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> BTW, I do not condone operating on ham bands or intentionally interfering
with any
> service that I am aware of. Yes, I know there are (very few, non
essential)
> services allocated between 27.405 and 28Mhz. I support operations on
27.405 -
> 27.855 Mhz that follow the same regulations that hams follow.
>
> Hopefully this metaphor can crack the thick skull of the "yes, but it's
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> yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't
black and
> white.
>
> Bob.
>
>
> Scott Townley wrote:
>
> > But you *do* have all the respect you deserve...the same respect we
> > all grant to FELONS, which is what you are, buddy...
> >
> > On 30 Apr 2001 21:04:39 GMT, "Twistedhed" <twistedhed@webtv.net>
> > wrote:
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> > >
> > >I am posting here because of some of the nasty things I have read in
this
> > >group and in QRZ discussions regarding freebanders. We who use the
frequencies
> > >from 27.405 to 28.000 have more in common with hams than you might
think.
> > >We are good operators and have knowledge of propagation and skip
conditions.
> > >We use Yasus, Kenwoods and Icomm radios just like you do, so we know
technical

> > >issues as well or better. However, the attitude of some hams toward us
is
> > >rude and condescending. We are treated like 2nd class citizens. This
should
> > >not be. We have the same rights under the constitution as legal hams
do.
> > >For those that do not wish to be under Uncle Sam's thumb, freebanding
is
> > >a viable alternative to getting a ham radio license. What I am saying
is
> > >that maybe the next time you meet a freebander it might be wise to talk
with
> > >him before you condemn him.
> > >
> > >I am QRT and standing by. (No flames answered. Please reply via email)
> > >
> > >Unit 2711, Florida
> > >
>

2475. Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 00:14:10 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF0A2D2.72CB417D@IEEE.org>
Source record: 164422

Just got my copy of "Science News" and there's an article that says
we have accounted for only 4.5% of the mass in the universe. Maybe
empty space is not empty?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2476. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 00:20:06 UTC
From: k3bu@aol.com
Message-ID: <20010502202006.04225.00002118@ng-fa1.aol.com>
Source record: 164425

>
>Just got my copy of "Science News" and there's an article that says
>we have accounted for only 4.5% of the mass in the universe. Maybe
>empty space is not empty?
>--
>http://www.mindspring.com/~w6rca
>
>

How can it be empty, when there is stuff, free energy, radiation traversing it?
My radio waves are no nothing!

Yuri

2477. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 00:23:11 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF0A4EF.F54EFE0F@eznec.com>
Source record: 164424

Dean Straw is the Antenna Book editor. I'm sure he'd appreciate your bringing the error to his attention. You can reach him at n6bv@arrl.org.

Roy Lewallen, W7EL

Richard Harrison wrote:
>
> Bill Sabin wrote:
> "In Fig 24, chapter 26, 19th edition, the loop current idea is a loser
> because in a perfectly symmetrical antenna there is no common mode
> current."
>
> I looked at Fig 24 and wrote an analysis before reading the text. When I
> read the text, it was very similar to what I had written. The book is
> the new "ARRL Antenna Book".
>
> The only fault I find is: "The worst-case common-mode impedance occurs
> when the overall effective path length to ground is an odd multiple of
> lambda/2, making this path half-wave resonant." I think the word "odd"
> above should be eradicated. Are you lurking, Ed Hare?
>
> Best regards, Richard Harrison, KB5WZI

2478. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 00:26:38 UTC
From: Bill Meacham <NOSPAMexray@coqui.net>
Message-ID: <3AF0A5BE.486CBDA9@coqui.net>
Source record: 164426
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

W6RCecilA wrote:
>
> W6DKN wrote:
> > No amount of self justification will erase the simple fact that what you
> > are doing is a crime.
>
> Are there any victims or is it like the crime of oral sex?
> --
> http://www.mindspring.com/~w6rca

Well, if allowing this renegade swatch of the social fabric to
choose not to obey laws is any example of where we are headed, I
guess we are all victims.
-BM

2479. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 01:08:51 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <Dc2I6.4688$2_.1227138@news3.rdc1.on.home.com>
Source record: 164427
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

> BTW, I do not condone operating on ham bands or intentionally interfering
with any
> service that I am aware of. Yes, I know there are (very few, non
essential)
> services allocated between 27.405 and 28Mhz. I support operations on
27.405 -
> 27.855 Mhz that follow the same regulations that hams follow.

Hams don't break the law ... hams learned what they needed to know to get
where they are ... you took it ... you demean their effort ... go back on cb
(and trust me you aren't any more of a techie if you say 11m)

2480. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 01:08:53 UTC
From: richardharrison@webtv.net
Message-ID: <21338-3AF0AFA5-72@storefull-114.iap.bryant.webtv.net>
Source record: 164429

Yuri, K3BU wrote:
"How can it (Cecil`s free space) be empty, when there is stuff, free energy, radiation traversing it?"

How do we know something does not exist that we are not equipped to sense? Aether would have to be something not removed by a vacuum pump.

In that CRT with the air removed, the accelerating anodes exert their electrostatic influence on free electrons to illuminate the screen. The deflection coils exert their magnetic influence to paint a picture on the screen. All this happens through a high vacuum without any strings to pull. How can this be?

Best regards, Richard Harrison, KB5WZI

2481. Re: Saturn Station Wagons and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 01:08:59 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF0AFAB.86DD49ED@spam.me.not>
Source record: 164428

I may be off on this, as I'm not sure if my memory is playing tricks on me, but doesn't the Saturn have a small storage bin about 3" tall and 8" wide or so at the bottom of the center console where it joins the center "hump" that goes between the front seats?

If it is there, couldn't you remove that "bin" and fashion a mounting bracket/face to mount a radio in?

Just an idea... of course, I may be way off base.

-SSB

Ted Wagner - KB9RPD wrote:
>
> FB Bill,
>
> >I am not familiar with Saturns, but I run an HT mobile myself and I
> >generally put the HT in the center console.
>
> I've been looking at that. I'm trying to study this so that I can put
> something in that's not so cumbersome. My console in the front has no
> room...the CD player/AM/FM radio that's factory installed takes up the
> only free room since the heater/air controls are right there as well.
> However, the center console between the seats may offer a solution.
> But, it is quite narrow since it is a small car. I may device some
> sort of "insert" that fits in that opening. It's probably 3 - 3.5"
> wide and about 12" long or so. I may be able to make an insert that
> allows the radio to stick up so I can still use the knobs, etc.
>
> >That magmount you have is just as good as an equivalent permanent antenna,
> >except that it is easier to remove. If you have a 1/4 wave, move up to a
> >5/8ths. That will help some. But I see no real reason to go to a
> >permanent installation, especially if you ever plan on selling the car.
>
> Hmmm. Well, you are right there I think. I have a 5/8ths right now.
> The reason I was thinking permanent is because of the coax running
> from the mag base. Right now, the only option I have is to run it
> through the door. I cringe every time I have to use the door because
> eventually, that darn coax is going to get damaged.
>
> I haven't seen a good way to run the coax (yet) that will prevent rain
> from getting in the window. I bought a window mount from a hamfest
> and tried to alter it so the coax would pass through from the antenna.
> But, probably due to the construction of my car, when it rains, I get
> a lot of water through the window at the point where the window mount

> meets the top of the door.
>
> >I would go with what you have now, except you might want to get an
> >amplifier if you really feel the need for more than 5 watts.
>
> I may consider an amp. Repeater location here in Indy is a bit
> odd...and, the areas I travel I tend to have problems reaching the
> repeater unless I'm traveling east and west. There are a few spots
> where the signals bounce around and signals can get unreadable.
>
> >By the way, used radios aren't that expensive. You can pick up a Kenwood
> >TS-520 HF rig for $300 or so. I use one as my main HF rig. It takes a
>
> hehehe. Well, I wish I could say I have $300. In a couple years, not
> too much of a problem. I may have to be patient and wait. That's why
> I may make my car into a mobile shack. My top spending limit (at the
> moment) is $200 which will get me a very basic mobile 25 watter I
> think.
>
> However, I sometimes do some side-work that will net me some
> cash...that may allow me to get a better transceiver at some point.
>
> I really like my 5/8 mag mount. It's a very fine antenna I got up at
> the Fort Wayne, Ind. hamfest in 1998. It works splendidly. For field
> work, however, I believe I'd have to find a good piece of flat metal
> to use as a ground plane. That shouldn't be TOO awfully difficult I
> think.
>
> I may have to think more on how to run this coax so it's not crimped
> in the door of my car. I may have to be a bit inventive.
>
> Thanks again Bill. I appreciate the advice.
>
> 73, Ted KB9RPD

2482. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 01:19:51 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF0B237.6672F147@IEEE.org>
Source record: 164430
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

```
Bill Meacham wrote:
>
> W6RCecilA wrote:
> >
> > W6DKN wrote:
> > > No amount of self justification will erase the simple fact that what you
> > > are doing is a crime.
> >
> > Are there any victims or is it like the crime of oral sex?
>
> Well, if allowing this renegade swatch of the social fabric to
> choose not to obey laws is any example of where we are headed, I
> guess we are all victims.

How have we been hurt? Not implying anything, just questioning.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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```

2483. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 01:21:14 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF0B28A.63A33E25@IEEE.org>
Source record: 164431
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Rob St.Denis" wrote:
> Hams don't break the law ...

Maybe you should change that to: Most hams don't break the law.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2484. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 02:05:11 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <r13I6.4872$2_.1379222@news3.rdc1.on.home.com>
Source record: 164432
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

A ham by definition does not break the law ... a freebander does

--
Rob St.Denis

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF0B28A.63A33E25@IEEE.org...
> "Rob St.Denis" wrote:
> > Hams don't break the law ...
>
> Maybe you should change that to: Most hams don't break the law.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2485. FS: Arrow Handheld Satellite Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 02:18:07 UTC
From: Chuck Costa <cvc@bigfoot.com>
Message-ID: <zd3I6.36040$Jh5.32823941@news1.rdc1.sfba.home.com>
Source record: 164433
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.space

Brand New in the bag, Arrow Handheld Satellite Antenna. Split Boom model
with duplexer included.
Retails for $139. Buy this one for $110 shipped to your door.

Chuck K6CVC

k6cvc@home.com

2486. FS: Icom Programming Software & Cable

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 02:22:20 UTC
From: Chuck Costa <cvc@bigfoot.com>
Message-ID: <wh3I6.36044$Jh5.32829367@news1.rdc1.sfba.home.com>
Source record: 164434
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.space

Icom CSW32 Programming Software & Cable. Works on IC-W32A and others.

Retails for $39.95. Buy this one for $29 shipped to your door.

Chuck K6CVC

K6CVC@home.com

2487. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 02:44:41 UTC
From: wa9mzt@arrl.net
Message-ID: <3af0bfc4.49757697@news.fuse.net>
Source record: 164435

I wasn't thinking of the trench that deep, but I'll do that; it makes sense. Regarding the copper wire that I will run from the copper strapped ground rods, to the power ground, is it necessary to bury that, also? It will run against the house alll the way, so for most of the length it will impossible.

Thanks again, Denver.

Steve

On Tue, 01 May 2001 23:28:26 -0400, Denver Braughler <Braughler@bwcc.com> wrote:

>wa9mzt@arrl.net wrote:
>> Is it ok to run the ground strap in the same trench as the coax?
>If the run were short, like 1-3 m, I would say no on account of the fact that if lightning ever travels on the grounding strap it will magnetically induce a powerful current in a parallel coaxial cable.
>
>But for the distance that you are running and since it sounds like your coax might be grounded to the thing at both ends any way, I don't see a problem. Try to give them some separation, and waste a few feet of grounding strap along the way so the the strap has some wiggles to decrease the inductive coupling to the coax.
>
>I would probably put the strap shallower than the coax so that if lightning strikes the earth somewhere in the middle, the strap will serve to divert some of the energy before it gets down to the coax.
>
>By trench, I hope you mean at least 18" deep. Covering the coax with some sand will help to keep the rocks off it.

2488. Re: Commercial dipole for 6m?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 02:58:18 UTC
From: #hmkarse#@earthlink.net
Message-ID: <22i1ftcquc7s9qasuebrku1hpp3erj92i6@4ax.com>
Source record: 164436

On Wed, 02 May 2001 07:31:34 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>VHFRadioBuff wrote:
>>
>> >I found one in the latest HRO catalog. It's made by CAL-AV. The EB-2
>> >covers 10 to 60 Mhz and is rated for 3 KW. Price is $42.95.
>>
>> Hmm.. anything that covers less frequencies and less power? Say VHF only and
>> 300 watts or less? :)
>
>Seems you might be interested in homebrewing after all. You can get
>an FT-240-67 toroid from Amidon for about ten bucks and wind some
>small coax on it.

Another option is a parallel conductor, 1/4 wave as shown in the ARRL
Antenna Book in the section on 'Coupling the Line to the Antenna'.
For what it's worth, I went through a similar process a few years ago,
spent money on the commercial balun and found that it was no better
than the original parallel 1/4 wave - the balun also cost more.

2489. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 03:01:13 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <ZR3I6.2701$4f7.178243@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164437

```
"Walter Maxwell" <w2du@iag.net> wrote in message
news:HbZH6.6864$c4.513370@e420r-chi1.usenetserver.com...
>
> VE9SRB <srbest@att.net> wrote in message
> news:x9TH6.1645$t12.116810@bgtnsc05-news.ops.worldnet.att.net...
> >
> > "Walter Maxwell" <w2du@iag.net> wrote in message
> > news:CMDH6.2616$c4.364498@e420r-chi1.usenetserver.com...
> > > Gentlemen, I've gotten in here late, and haven't had the chance to
read
> > the
> > > last hundred posts, but I would like to put in two cents worth.
> > >
> > > First, on the subject of reflected power being fictitious, I'll ask
> Peter
> > to
> > > consider a 3-port circulator. Port #1 is the input, port has a
> mismatched
> > > load, and port #3 has a purely matched non-reactive load with a
> voltmeter
> > > connected across the terminals. The power absorbed in the load on port
> #3
> > > will equal exactly the square of the voltage indicated on the meter
> > divided
> > > by the resistance of the load. This power is that reflected from port
> #2.
> > > There's no way it could be fictitious power because the power
reflected
> > from
> > > port #2 caused real power to be dissipated in the load on port #3.
> > >
> > > Second, on the subject of virtual short circuits. Let's assume two ac
> > > generators are connected in parallel. They each deliver the same
voltage
> > > across the load, but they are 180 degrees out of phase. The result is
a
> > > short circuit at their terminals. The same is true for two sets of
> > rearward
> > > traveling waves of voltage and current where the waves are of the same
> > > magnitude and opposite phase. The result is a short circuit, because
at
> > any
> > > point along the transmission line the power reflected from each
> > > discontinuity that produces the reflections, the reflected powers at
```

> that
> > > point can be replaced with corresponding generators producing equal
> > voltages
> > > but 180 degrees out of phase. We are not considering just one
reflected
> > wave
> > > of voltage and current in conjunction with the forward wave of voltage
> and
> > > current. We are considering TWO sets of reflected waves--one set
> generated
> > > by the mismatch terminating the line, and the other is the set
generated
> > by
> > > the matching network (or stub).
> > >
> >
> > Walter, parts of this are simply incorrect.
>
> Sorry Steve, they are not incorrect. You apparently still fail to
> understand the concept.
> >

Why the "I'm right and your wrong approach". Why not enter a technical
discussion?

> > Two rearward traveling waves of equal amplitude being 180 degrees out of
> > phase cancel one another to a net rearward wave of zero. At this point
of
> > rearward wave cancelation there will still be a total non-zero voltage.
> > This is not the same as a short circuit on a transmission line. A short
> > circuit on a transmission line occurs when the forward and rearward
> > traveling waves are 180 degrees out of phase and the total voltage goes
to
> > zero at that point.
>
> Steve, sorry, but you just don't get it, the same as in our previous
> discussions a year ago. You are not appreciating the resultant effect of
TWO
> sets of REARWARD traveling waves. When the voltages of these two sets are
of
> equal magnitude and opposite phase the resultant is zero voltage and max
> current. There is NO non-zero voltage.

The resulting voltage that goes to zero is the total rearward voltage. This
is the rearward wave cancellation process that causes the steady state
match. The non-zero voltage at the match point is the remaining forward
traveling voltage. The total voltage at the match point does not go to
zero.

>If you'll read my earlier posting
> carefully you'll see that I did not say that this is the same as a short

> circuit on a transmission line, because this would prevent wave travel in
> both directions. My virtual short is only a short to the rearward
traveling
> waves that establish the virtual short, which is totally transparent to
the
> forward waves from the source. This is why there is a match at the point
> where the two sets of rearward traveling waves join. The rearward
traveling
> waves are totally re-reflected, and that you say a portion of the
reflected
> waves travels still further rearward beyond the matching point is
nonsense.
> If this were the case the SWR measured looking into the matching point
(the
> INPUT of the antenna tuner) would not be 1:1.
>

There is a partial re-reflection of the reflected waves but not a total re-reflection. I did not say that a portion of the reflected wave travels rearward past the match point. I said that there was a total cancellation of the both rearward traveling waves. The total net rearward traveling wave goes to zero.

> Steve, if you cannot comprehend this concept then I don't care to continue
> the discussion, because it will be fruitless. From all the unproductive
> discussions we've had for more than two years on this very issue it
appears
> that you are unwilling to face reality.

Great approach to dealing with another person because they disagree with you. Why can't you for one instant consider that you may have made a mistake? It this possibility that improbable?

> >
> > > If you measure the SWR on the line with line mismatched (no matching
> > > network), and then replace the mismatch with a matched load, but keep
> > either
> > > the matching network or stub in the line, the input SWR of the line
and
> > the
> > > magnitude of the reflection coefficient will be the same as before,
but
> > with
> > > the opposite angle of reflection coefficient.
> > >
> > > This concept is explained in my QEX article of Apr/May 1998, that
Steve
> > says
> > > is totally incorrect, and which I've challenged him with no success. I
> > hope
> > > this will help.

> > >
> >
> > I did not say that you were totally incorrect. I believe that several
key
> > statements and concepts you introduced are incorrect. As for
challenging
> > me, you have yet to directly discuss the key points that we disagree on
> and
> > answer several direct questions that I have asked of you.
>
> Yes Steve, I am challenging you. Allright then, please direct those
several
> question again, but on the newsgroup so all can see. I won't be back on
the
> NG until Friday or later, because we're moving back to Michigan tomorrow
> from Florida, six mo in MI and six mo in FL
>

I will send them out sometime tomorrow.

Steve VE9SRB

> Walt, W2DU
>
>
>

2490. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 03:10:55 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF0CC3F.AD8A948@bwcc.com>
Source record: 164438

wa9mzt@arrl.net wrote:
> I wasn't thinking of the trench that deep, but I'll do that; it makes
> sense.

It makes it less likely that anyone will dig into by accident.

There is less rodent activity and temperature fluctuation at that level too.

> Regarding the copper wire that I will run from the copper
> strapped ground rods, to the power ground, is it necessary to bury
> that, also?
No, not if it is #6 or larger, like it should be.
#4 has plenty of mechanical strength.

If not buried you should keep it high enough above ground that lawn mowers won't get it.
And it should be fastened so that children don't hang on it, hang themselves on it, or tie the dog to it.

> It will run against the house alll the way, so for most
> of the length it will impossible.
That's fine.
Make sure that water dripping off it won't land on any "less noble" metal such as steel or aluminum.

Be sure to use at least two clamps on each rod.
The top clamp can be thought of as a strain relief to insure the the wire is never pulled from the bottom clamp, provided that you leave a little slack between the two.
I always bury at least one clamp.
If the clamp above it is not buried, I make it so close to the earth that nothing can be wedged between the wire and the rod.
A loose ground wire is about the same as no ground wire when you have a fault in your 120/240 V electrical system.

I was thinking about lightning and resistance some more.
Lightning doesn't care much about 300 V PVC insulation.
I doubt that it will see much resistance from a wet patina.
Lightning is a voltage which causes air to breakdown (turn to plasma) and become a conductor.

You don't want lightning to flow freely from your tower to your house anyway.
So if it encounters some resistance, I don't see that as a bad thing at all.
What you want is a path to earth from your electric panel that 60 Hz finds a lot more favorable than traveling there via your coax.

2491. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 03:13:56 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <K_3I6.10614$5k1.739284@e420r-chi2.usenetserver.com>
Source record: 164440

Steve, I'll be traveling to Michigan tomorrow. I may be able to get my
compututer set up Friday, but perhaps not. So don't expect a quick reply.

Walt

2492. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 03:15:41 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <i6f1ftcnfb2caqj5jekkk429ugjt49masi@4ax.com>
Source record: 164439

On Wed, 02 May 2001 13:14:15 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:

>Tom and Reg, you are hard to convince but maybe this observation will do it.
>
>I took a look at some RG-8 and RG-8 Mini with a magnifying glass. I
>particularly looked at how the weave was arranged. Both cables had the
>braid made of groups of 8 wires running flat (laid together without
>insulation). The weave was two over, two under. By this I mean that a
>group of 8 wires ran on the inside for the width of two groups of 8 wires,
>and then was brought back on top to run over two groups of 8 wires before
>going under again.
>

Hi Roger,

There's no need to contemplate the currents weaving in and out, there
is a simpler explanation. It is called appropriately "Shield
Coverage."

You have done the hard work already, with more data, plugging and
chugging through a rather large formula would give us something to
think about.

From Alpha Wire:

K = (2 * F - F**) * 100 shield coverage in percent
where
F = N * d * P / sin(a)
a = inv_tan(2 * pi * (D + 2 * d) * P / C)
D = Diameter under shield, inches
d = Diameter of one strand, inches
P = Picks (diagonal squares in the basket weave) per inch
N = Number of strands ("threads") per carrier(the weave "yarn")
C = Number of carriers ("yarns")

I picked up a scrap piece of shield to illustrate

C = 20
N = 6
P = 8
d = .005
D = .25
a = inv_tan(.65) = 33.2
F = .438
K = 68% which confirms its scrap status.

One common rating of Mutual capacitance for the center conductor of RG-58 to a metal tray (cable run) is 0.15 pF per foot.

The simple fact of the matter is that coax is leaky. Each open in the weave is the more significant factor of this debate. True, any particular open in the weave would appear to support very little in the way of significant leakage. But it is the amount of leaks, and their distance from one another that begins to present itself to analysis as a multi ported directional coupler. There are so many ports, in fact, that over a great length of cable they mutually rebuild a coupled field to the outside (by their individual, combined coupling factor).

The shield example above would qualify as a -5dB coupler at a distance where all the leaks would be in phase to the load of your leak detector (and if you could detect all sides of the shield - impossible without reflectors and this gets quickly out of hand).

I would think that the field contribution of this weaving current is negligible to the sieve already hemorrhaging.

73's
Richard Clark, KB7QHC

2493. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 03:36:58 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <3AF0D25A.910@bellsouth.net>
Source record: 164441
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Bob,

Yours is the kind of misunderstanding that, try as people might, just can't seem to be overcome. I know FIRSTHAND that there are agencies that are assigned frequencies above and below the 11 meter CB band. Tell me, what is "unessential" about forest rangers. What is "unessential" about military comms? The difference is the type and duration of commercial and military comms as opposed to civilians who are there just to talk, often as much as possible, to as many people as possible. Business or military comms are short and to the point.

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There IS no excuse for operating on unauthorized frequencies. You might *think* these freqs are unoccupied and that the agencies thereto assigned are "non-essential". That is not for individuals to decide. Just because *you* don't hear anyone doesn't mean they aren't there and that there is no traffic being passed that you could hinder.

Finally, let's say I, or you, rent/lease a piece of property with a nice lake on it. Intending to do a little fishing, you stock that lake with a variety of game fish--bass, crappy, catfish, perch, or whatever. You are busy and don't get out to your lake real often, but one day you decide it would be a good day to go fishing; remember, it's "your" lake by virtue of your lease to use as you see fit within the guidelines of your agreement with the owner. When you arrive, you discover a large group of people on your property, at YOUR lake, catching the fish YOU stocked--in spite of the fact there are No Trespassing signs all over-even right where the trespassers are fishing. I'd be angry and I'd bring charges against each and every one that trespassed on my land. It doesn't make any difference if I don't come to the lake every day, it is STILL property assigned to me by virtue of rent or lease and nobody has any business on it without permission.

"Freebanders" don't have "permission" (license) to operate on frequencies outside the 11 meter band. They are trespassing just as surely as those people I cited in the above paragraph. And when they DO trespass, it pisses off those who are legitimately assigned said frequencies for their exclusive use and it don't make ANY difference if they "visit" (use) their "property" (frequency) once a minute or once a year--the "freebanders" are trespassing just as surely as if they just walked into your/my house uninvited. There is no respect due, and none forthcoming for trespassers, "freebanders", or outlaw radio ops.

Jerry
K4KWH

Bob wrote:
>
> Ok, Mr. Letter of the Law.
>
> And I bet you ALWAYS obey the maximum posted speed limit. If you wanted to speed,
> you would take the right approach to speeding legally - because, hey man, you do
> EVERYTHING right. You would put your mind to becoming a race car driver and do your
> speeding on the track where it belongs. You would follow the proper steps to
> becoming a race car driver:
>
> 1. Learn to ride a unicycle, because that's how it all started, man. Our
> forefather's rode unicycles before fast cars were around, so must you learn.
> 2. Learn everything there is to know about cars - including memorizing the answers
> to questions about walking, unicycles, horse and carriage, boats, planes, etc.
> 3. If you skip the step on learning to ride a unicycle, prepare to be chastised by
> old-timers that had to learn how to ride it and by some who love the unicycle and
> can ride it at over 20 mph! BTW - learning to ride the unicycle keeps bad people
> from becoming race car drivers.

> 4. Prepare to spend some money. Your standard car won't do - it doesn't fit race
> car specs! And every race track requires a different car and tire combination.
>
> Is becoming a race car driver what you should do because you like to take those 15
> turns of Bear Mountain road at an faster than the posted speed? Well, ham radio IS
> NOT a replacement for the "freeband" either. Ham radio doesn't fit everybody. Maybe
> its a bit of an extreme commitment for some. Hey, I can operate my equipment and
> make sure that it complies with the same rules the FCC mandates for hams. I can
> operate it responsibly. I can operate it courteously . I can use the minimum amount
> of power necessary for a contact.
>
> Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is it immoral? A
> crime against humanity? Absolutely not. To me - speeding in your car is a far more
> worse crime.
>
> BTW, I do not condone operating on ham bands or intentionally interfering with any
> service that I am aware of. Yes, I know there are (very few, non essential)
> services allocated between 27.405 and 28Mhz. I support operations on 27.405 -
> 27.855 Mhz that follow the same regulations that hams follow.
>
> Hopefully this metaphor can crack the thick skull of the "yes, but it's illegal,
> yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't black and
> white.
>
> Bob.

> > >

2494. Re: Joining different coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 03:38:14 UTC
From: nielsen@remove_this.oz.net
Message-ID: <9cqjr6$45b$0@216.39.171.5>
Source record: 164442

```
On Tue, 01 May 2001 16:09:50 -0500, W6RCecilA wrote:
> Wes Stewart wrote:
>> But then I live in Tucson, so maybe my outlook on this is distorted.
>
> I would agree that most people who live in Tucson have a distorted
> outlook, at least compared to people who live in Queen Creek. :-)

I moved from Tucson a year ago and my outlook has almost gotten back to
normal....

Bob N7XY
```

2495. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 03:50:48 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <3AF0D598.1734@bellsouth.net>
Source record: 164443
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Cecil,

If it were YOU on an international flight from London, and an outlaw operator decided to operate on 6.628 MHZ one of the HF aviation frequencies or even a tower frequency of 118.1 MHZ causing your plane to misread instructions, stray into the path of another plane and crash, would that hurt YOU? Of course. Operating on any frequency not assigned to an individual carries the risk of causing loss of lives or property--forest rangers attempting to determine, for example, the direction of a fire's travel in order to evacuate people from its path. US Forest Rangers DO operate above 27 MHZ. Would you want YOUR home destroyed or you life put at risk because somebody thought his hobby was more important than your life? Simply because there was someone with a "leen-yar" covering up fire comms keeping the fire fighters from getting the right instructions?

THAT is the potential harm. That is the reason it is illegal--not because FCC is trying to mess up somebody's fun.

73

Jerry
K4KWH

W6RCecilA wrote:
>
> Bill Meacham wrote:
> >
> > W6RCecilA wrote:
> > >
> > > W6DKN wrote:
> > > > No amount of self justification will erase the simple fact that what you
> > > > are doing is a crime.
> > >
> > > Are there any victims or is it like the crime of oral sex?
> >
> > Well, if allowing this renegade swatch of the social fabric to
> > choose not to obey laws is any example of where we are headed, I
> > guess we are all victims.
>
> How have we been hurt? Not implying anything, just questioning.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----

> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2496. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 04:23:08 UTC
From: ccom2@socket.net
Message-ID: <3af0dcb3.3549117@news.socket.net>
Source record: 164444
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Preach it Brother
It could not have been said any better.

FreeBanders are bottom feeding scum.
That should have all their equipment taken away.
Mike
AB0IV

Jerry Oxendine <joxendi@bellsouth.net> wrote:

>Bob,
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>Yours is the kind of misunderstanding that, try as people might, just
>can't seem to be overcome. I know FIRSTHAND that there are agencies
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>low power 26 MHZ band was to prevent news hounds, ambulance chasers,
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>scanner. *Most* scanners don't deal too well with SSB. We quickly dis-
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>I happened to be in a nearby town, and absently switched on one of my

>radios in the car not expecting to hear anything. The guy was pegging
>my meter and almost busted my speaker. On my way out of town, I made
>a screeching U-turn and went back into town, stopping at the town PD to
>ask if they recognized that voice. Yup, they knew the fella and where he
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>lake on it. Intending to do a little fishing, you stock that lake with
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>are busy and don't get out to your lake real often, but one day you
>decide it would be a good day to go fishing; remember, it's "your" lake
>by virtue of your lease to use as you see fit within the guidelines of
>your agreement with the owner. When you arrive, you discover a large
>group of people on your property, at YOUR lake, catching the fish YOU
>stocked--in spite of the fact there are No Trespassing signs all over-
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>> yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't black and
>> white.
>>
>> Bob.
>
>> > >

2497. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 04:50:08 UTC
From: richardharrison@webtv.net
Message-ID: <23175-3AF0E380-100@storefull-112.iap.bryant.webtv.net>
Source record: 164446

Richard Clark, KB7QHC wrote:
"K = 68% which confirms the scrap status."

This is from a formula from Alpha Wire said to give the "percent coverage". Perhaps this is not the percentage of signal rejection, but it did incorporate the frequency, so it may be related.

Copper window screen is full of holes but still shields rather well at h-f. It is the material used in many screened rooms.

We know from Faraday shields that fair sized gaps can exist between wires or teeth used to terminate the electric field and yet almost all the electric lines go no farther than the shield. We also know that shorting the open-circuit ends of the Faraday shield almost completely kills the magnetic coupling through the shield, too. So is 68% as dire as it sounds for h-f?

Does Alpha Wire explain the consequences of percentage coverage?

Best regards, Richard Harrison, KB5WZI

2498. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 04:53:01 UTC
From: mike.luther@ziplog.com
Message-ID: <tf1p1dhsuq6k97@corp.supernews.com>
Source record: 164445

In <3AF0A2D2.72CB417D@IEEE.org>, W6RCecilA <Cecil.A.Moore@IEEE.org> writes:

>Just got my copy of "Science News" and there's an article that says
>we have accounted for only 4.5% of the mass in the universe. Maybe
>empty space is not empty?

>http://www.mindspring.com/~w6rca

In humor, Cecil, "In space no one can hear you scream." Maybe it's
filled with LDE's! ;)

--> Sleep well; OS2's still awake! ;)

Mike - W5WQN
Mike.Luther@ziplog.com
Mike.Luther@f3000.n117.z1.fidonet.org

2499. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 05:23:44 UTC
From: w9wi@linux1.localdomain
Message-ID: <slrn9f1nl6.5c7.w9wi@linux1.localdomain>
Source record: 164447
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Wed, 02 May 2001 20:19:51 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>How have we been hurt? Not implying anything, just questioning.

In most cases, we aren't.

The most apparent case of damage is when freebanders get above 28MHz.

--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

2500. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 08:06:08 UTC
From: N9ECR@webtv.net
Message-ID: <23891-3AF11170-5@storefull-131.iap.bryant.webtv.net>
Source record: 164448

o.k. expain Litz wire ?

2501. Re: Respect For Freebanders Response

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 08:23:38 UTC
From: Arf! Arf! <DoggieDaze@Liberal.comz>
Message-ID: <9cr4i5ale0@pita.alt.net>
Source record: 164449
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Gee whiz! When you guys gonna learn to keep your responses short and to the point? Don't write a darn book....nobody reads past the first two paragraphs anyway.
If you can't say it in a few sentences, nobody cares.
Save your editorializing for the New York Times....

<ccom2@socket.net> wrote in message news:3af0dcb3.3549117@news.socket.net...
> Preach it Brother
> It could not have been said any better.
>
> FreeBanders are bottom feeding scum.
> That should have all their equipment taken away.
> Mike
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> Jerry Oxendine <joxendi@bellsouth.net> wrote:
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> >Bob,
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> >can't seem to be overcome. I know FIRSTHAND that there are agencies
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> >>
> >> Hopefully this metaphor can crack the thick skull of the "yes, but it's illegal,
> >> yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't black and
> >> white.
> >>
> >> Bob.
> >
> >> > >
>

2502. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 09:09:38 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AF12052.D074189E@mwci.net>
Source record: 164450

Roy Lewallen wrote:

> Do you still need to reverse one or more currents to explain them? If
> so, do the currents into or out of ground still sum to zero? How about
> the currents at the shield ends?

I think we are all on the same track now. One other useful bit of info is the complex braid impedance, which helps to determine common mode current. This info, plus the complex ground currents,
are enough to determine everything that is going on inside the coax, at least for an electrically
short length. If the coax is long, the exercise gets very hairy, and probably not worth putzing with.

Your experiment on this subject is appreciated by all, I'm sure.

Bill W0IYH

2503. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 09:15:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF121C6.DEFC9480@eznec.com>
Source record: 164451

Scott Webb wrote:
>
> o.k. expain Litz wire ?

We don't need to -- Terman did a perfectly adequate job in 1947. Earlier, actually -- the following is from the Third Edition of his _Radio Engineering_, published that year:

"The effective alternating-current resistance of a conductor can be made to approach the direct-current resistance at low and moderate radio frequencies, by forming the conductor from a number of strands of small enameled wires connected in parallel at their ends, but insulated throughout the rest of their length, and thoroughly interwoven. If the stranding is properly done, each wire will, on the average, link with the same number of flux lines as every other wire, and the current will divide evenly among the strands. If at the same time each strand is of small diameter, it will have relatively little skin effect over its cross section, so all of the material is equally effective in carrying the current. Such a stranded cable is called a litz conductor.

Practical litz conductors are very effective at frequencies below about 1000 kc, but as the frequency becomes higher the benefits disappear. This is because irregularities of stranding, and capacitance between the strands, cause a failure to realize the ideal condition at very high frequencies."

Roy Lewallen, W7EL

2504. Re: Respect For Freebanders Response

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 09:19:11 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <jo9l6.2816$aR4.814387@paloalto-snr1.gtei.net>
Source record: 164452
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Arf! Arf!" <DoggieDaze@Liberal.comz> wrote in message
news:9cr4i5ale0@pita.alt.net...
> Gee whiz! When you guys gonna learn to keep your responses short and to
the
> point? Don't write a darn book....nobody reads past the first two
paragraphs
> anyway.
> If you can't say it in a few sentences, nobody cares.
> Save your editorializing for the New York Times....

And how did you make these determinations? Did you take a poll of everybody who reads these newsgroups in order to validate your statements, or did you just make an assumption based on your own habits - in which case your statements are only a personal opinion (often referred to as an editorial) ? :>)

73 de W6DKN

2505. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 11:05:12 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cre14$r9n$1@slb4.atl.mindspring.net>
Source record: 164453

Cecil:

Just because power is a scaler doesn't mean you should add them.

You might be able to write powers down on paper and add them using a pencil or calculator... but the Chief Ham in that big hamshack in the sky does not do this "willy nilly".

Voltages and currents are "added" by mother nature, but powers are not.

Especially since power and voltage are related non-linearly [P = I*V] by a product, then one cannot simply assume that linearity follows across the great power divide, from volts to power...heh, heh.

A little careful thought will show that this is not so.

As a simple example, of the "error" in making such assumptions, we know that 5 is made up of the sum of 3 + 2,

5 = 3 + 2

But...

3^2 + 2^2 = 9 + 4 = 13

While

5^2 = 25

This kind of little error alone is one of the largest sources of confusion in the debates on "reflected" power. One must take great care with voltages and currents in handling the components into which we claim to be able to "resolve" those voltages and currents. And especially subsequently with the "powers that we mathematically derive from those components.

It's "safer" to deal only with I and V and leave power out of it.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF011B8.A04FD554@IEEE.org...
> VE9SRB wrote:
> > Powers do not add as you claim they do. 100 Watts added in phase with 33.33
> > Watts simply does not add to 133.33 Watts.
>
> Uhhhhh Steve, power is a scalar and doesn't have a phase. Scalars add
> directly with no phase angle involved. If you have a 100 watt light
> bulb and a 33.33 watt light bulb, aren't they dissipating 133.33 watts?

>
> > Walter, Johnson shows that the sum of the forward source voltage and
> > re-reflected voltage add to the total voltage. He does not add power.
>
> On the contrary, Equation (6.17) P = (|E+|^2)/Z0 - (|E-|^2)/Z0
> on page 150 of the first edition clearly shows that Johnson adds power
> and that the power he adds/subtracts is a *scalar* value with no phase
> in sight. Note the absolute value of the voltages.
> --
> http://www.mindspring.com/~w6rca

2506. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 11:07:20 UTC
From: CW <cmagers@sprynet.com>
Message-ID: <9crehfise1@slb7.atl.mindspring.net>
Source record: 164456

As are most criminals.
--
CW
KC7NOD
"Twistedhed" <twistedhed@webtv.net> wrote in message
news:3af07498$1@news2.mibx.net...
>
We are treated like 2nd class citizens.

2507. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 11:08:41 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cre73$l30$1@nntp9.atl.mindspring.net>
Source record: 164454

Cecil:

Huh? I am surprised by your last comment...

Why would there be a difference between 60Hz and a transmission line...

Or for that matter a difference between AC and DC when it comes to a
mismatch.

Nature does not change the rules of addition of volts and amps, just because
the voltage and current is on a transmission line!

As far as nature is concerned, the whole Universe is a transmission line.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF0914D.870D62E1@IEEE.org...
> W6RCecilA wrote:
> >
> > VE9SRB wrote:
> > > If one forward voltage is 100 V and another forward voltage is 100 V,
do you
> > > deny that the total voltage is 200 V?
> >
> > I will deny it, Steve. Paralleling equal in-phase voltages results in
> > the same voltage. The voltage remains the same while the current
doubles.
> > If you parallel 120v at 1 amp with 120v at 1 amp, you get 120v at 2
amps.
>
> System Reset! I'm obviously talking about 60Hz power. I temporarily forgot
> that, in an RF transmission line, Z0 is in control of the V/I ratio.
> However, if one adds 100v at 1 amp to 100v at 1 amp in a transmission
line,
> one still doesn't get 200v unless the Z0 changes. If Z0 remains constant
> at 100 ohms, then the combined voltage would 141.4v and the combined
> current will be 1.414 amps assuming they were in phase.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2508. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 11:14:01 UTC
From: "VE3TMT (Max Donoghue)" <mdonoghue1@sympatico.ca>
Message-ID: <Z3bl6.39$Hv1.10065@news20.bellglobal.com>
Source record: 164455

"Twistedhed" <twistedhed@webtv.net> wrote in message
news:3af07498$1@news2.mibx.net...
>
> I am posting here because of some of the nasty things I have read in this
> group and in QRZ discussions regarding freebanders. We who use the
frequencies
> from 27.405 to 28.000 have more in common with hams than you might think.
> We are good operators and have knowledge of propagation and skip
conditions.
> We use Yasus, Kenwoods and Icomm radios just like you do, so we know
technical
> issues as well or better. However, the attitude of some hams toward us is
> rude and condescending. We are treated like 2nd class citizens. This
should
> not be. We have the same rights under the constitution as legal hams do.
> For those that do not wish to be under Uncle Sam's thumb, freebanding is
> a viable alternative to getting a ham radio license. What I am saying is
> that maybe the next time you meet a freebander it might be wise to talk
with
> him before you condemn him.
>
> This article ought to clarify things, as I am the author:
http://sporadic1.tripod.com/page7.html
>
> I am QRT and standing by. (No flames answered. Please reply via email)
>
> Unit 2711, Florida
>
>
Yasus? is this a new company? Oh, you mean Yaesu! Ok I get it now. Icomm??
Enough said. Being an "ex-freebander" myself I consider getting my ham
license 11 years ago the best thing I ever did. The amount of frequencies
available, modes, power levels, etc etc and all legal is just half the fun
in amateur radio. If you know so much about our hobby, why not take the
test? You can read can't you? And please explain a couple of things to me:

1. You can spell words like "viable" and "constitution", but not Icom?

2. When was the last time you read your Q-codes? Just how does one be QRT
and standing by? After you have shut your "radio" equipment off, do you
just stand there looking at it?

Sounds to me like you want the same priviledges as hams without having to
take the test. Why should you? We all had to take the test, and at the time
I thought I would never get past 10 wpm code, but I did. And I don't mind

admitting just how happy I was to hear the examiner tell me so. I remember reading CQ magazine when I was 10 years old, running an old Radio Shack 23 channel SSB mobile to a mag mount, telling myself I would get my license some day. Sixteen years later I did, and don't regret the all the nights studying for one minute. And who do you think helped me? Most of the guys were local hams, and some of them to this day are very close friends still. I don't use CW anymore, but I still tune the novice bands trying to pick out something once in a while.

My point...stdy for your ham ticket, and when (if) you pass the test, enjoy all the hobby has to offer, but remember the most important thing..IT'S LEGAL

2509. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 11:18:04 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9creom$a4k$1@slb2.atl.mindspring.net>
Source record: 164457

Walt:

I seems that you have a very accomplished niece. Congratulations.

My "kid" sister is/was a journalism grad of U of Arizona in Tucson. She has lived and worked at "small town" newspapers around AZ. But... She now lives and works in San Antonio, TX.

Speaking of U of AZ, in Tucson, on the "technical side", they have a very well respected school of optics there. I have met and worked with a couple of their "grads". Optics and optical networking is fast becoming "the place to be" these days, and folks with formal training in these areas are in great demand.

I have noted that... optical engineers understand "reflections" on a whole different level.

Safe trip,

-Peter K1PO

"Walter Maxwell" <w2du@iag.net> wrote in message
news:ueZH6.9512$5k1.674997@e420r-chi2.usenetserver.com...
> Peter, I just read that your sister is a grad of U. of Arizona. What a
> coincidence--my niece is a PhD grad of U of A, and she is also the
principal
> oboeist with the Tucson Symphony Orchestra!
>
> Walt
>
>
>

2510. Does anyone have experience of antenna systems design?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 11:24:52 UTC
From: Tom Puffett <tom@goldgroup.co.uk>
Message-ID: <NbbI6.13174$bC3.252594@monolith.news.easynet.net>
Source record: 164458

[No readable article body recovered]

2511. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 11:25:35 UTC
From: n2ey@aol.com
Message-ID: <20010503072535.27024.00000651@nso-ma.aol.com>
Source record: 164460

In article <3AEBBB20.28A3684B@spam.me.not>, Sideband <sideband@spam.me.not>
writes:

>I wasn't worried. I had a feeling you'd reply if you had something to
>offer. I find most people in this NG to be helpful, worthwhile
>individuals.

Me too!
>
>The code study is coming slow. I've got a problem (some call it an
>excuse), in that I'm dyslexic.

I'm not a speech-and-language professional, but the term dyslexia covers a lot
of ground. Here's a simple "thought experiment":

Suppose you had to listen to someone spelling out words phonetically, and write
down what was said. For example, you would hear:
"Tango...hotel....india.....sierra.....india.....sierra.....alpha....tango
....echo......sierrra....tango....."

and would write down:

"THIS IS A TEST"

For most people, doing the above for a couple of minutes would be very easy,
while for some it would be extremely difficult. The basic skill of copyng code
is no more than this, except that instead of words you hear short and long
tones.

> I hear a dit and it's really a dah, or
>vice versa.

I think you are listening to code that is TOO SLOW. Have you tried the Koch
method? What speed is your training software set for?

>I've tried the "tricks", etc, such as turning each letter
>into a cute phrase, etc, but for some reason it doesn't want to work for
>me.

Those "tricks" add a step to the decoding process - an unnecessary step.

Take a look at these, if you haven't already:

http://www.sdc.org/~finley/

and

http://www.joates.demon.co.uk/megs/N0HFF/contents.htm

> I've been going at it steady for the last two years or so, and the
>best I've been able to manage is about 2 words/minute, and that's after
>correcting the "text" post-send.

Try the methods described at the above websites. I do think the slow code may
be the problem!

> Honestly, I'm wondering if it would be
>any easier to learn on the air. The local club here in Livingston County
>does code study up on 2M weekly, and I've finally found an Elmer who
>said he'd help me out on the air with it, as well. Honestly, I think the
>only way I'm going to get it down is to do it on the air.

Good idea! Try it!
>
>I'll check out the sets you mentioned for HF, and I'll give serious
>thought to a 2M only set as well. If there's no use for 440 here in the
>area, or if repeaters out here bridge across the bands, I'll probably go
>with just a 2M set and be done with it.

Lotsa good used stuff out there. I'm still using the Heathkit HW-2036 I built
from a kit in 1977.
>
>As for the HF, I'm really looking forward to the DX.
>
Lots of it out there. Good luck!

73 de Jim, N2EY

2512. Antenna Systems Design for Cellphones?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 11:27:54 UTC
From: Tom Puffett <tom@goldgroup.co.uk>
Message-ID: <Bebl6.13364$bC3.253169@monolith.news.easynet.net>
Source record: 164459

I have a career opportunity in the UK for someone with a good working knowledge of cellphone antenna design. If anyone is interested in finding out more information, please email me.

tom@goldgroup.co.uk

I look forward to hearing from you.

Regards,

Tom Puffett

2513. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 11:53:34 UTC
From: scooter <scooter9@richnet.net>
Message-ID: <3af14658$0$88188$6d5eecc5@news.eurekanet.com>
Source record: 164461
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Excellent! I agree totally.

Chris Van Hesteren
KB8ZHW
AEC Ashland County ARES

"Jerry Oxendine" <joxendi@bellsouth.net> wrote in message
news:3AF0D25A.910@bellsouth.net...
> Bob,
>
> Yours is the kind of misunderstanding that, try as people might, just
> can't seem to be overcome. I know FIRSTHAND that there are agencies
> that are assigned frequencies above and below the 11 meter CB band.
> Tell me, what is "unessential" about forest rangers. What is "unessen-
> tial" about military comms? The difference is the type and duration of
> commercial and military comms as opposed to civilians who are there just
> to talk, often as much as possible, to as many people as possible. Busi-
> ness or military comms are short and to the point.
>
> I know the regulars get tired of reading this example, but it is a per-
> fect example of why NOT to "freeband". Some years ago, I was acting
> as communications officer for Civil Air Patrol on a live search for a
> light plane that disappeared during a storm. We planned to use a freq-
> uency near 11 meters which is a USAF frequency assigned to CAP. Like
> many rescue agencies, both civilian and military, we use our assigned
> frequencies so as to separate various kinds of traffic, take advantage
> of atmospherics (time of day), and keep from "interfering" with our-
> selves--air to ground on one freq., mobile to base on another, and yet
> another for "incidental comms" such as flight line, safety, or even
> sending out for food for the searchers. Another reason for choosing the
> low power 26 MHZ band was to prevent news hounds, ambulance chasers,
> and even possibly the family of the pilot from hearing adverse news via
> scanner. *Most* scanners don't deal too well with SSB. We quickly dis-
> covered that there was a "freebander" on that frequency calling, "BREAK,
> BREAK, skipland", etc with a linear that made it difficult or impossible
> to use this frequency forcing a lot of incidental traffic onto VHF. I
> was LIVID! There was NO excuse for this person operating on that freq-
> uency whatsoever. He was interfering with an active USAF authorized
> mission, a real emergency where a life was hanging in the balance. In
> the following week after the mission was suspended, I began to DF this
> pirate, determined to put a stop to his outlaw operations. One evening,
> I happened to be in a nearby town, and absently switched on one of my
> radios in the car not expecting to hear anything. The guy was pegging
> my meter and almost busted my speaker. On my way out of town, I made

> a screeching U-turn and went back into town, stopping at the town PD to
> ask if they recognized that voice. Yup, they knew the fella and where he
> lived. I drove to his house and confirmed the location. Outlaw was
> reported to FCC field office, and was busted for out-of-band operation
> AND interfering with emergency communications--a serious Federal
> offense. Betcha he got tired of eating beans from a .10 can!
>
> There IS no excuse for operating on unauthorized frequencies. You might
> *think* these freqs are unoccupied and that the agencies thereto assign-
> ed are "non-essential". That is not for individuals to decide. Just
> because *you* don't hear anyone doesn't mean they aren't there and that
> there is no traffic being passed that you could hinder.
>
> Finally, let's say I, or you, rent/lease a piece of property with a nice
> lake on it. Intending to do a little fishing, you stock that lake with
> a variety of game fish--bass, crappy, catfish, perch, or whatever. You
> are busy and don't get out to your lake real often, but one day you
> decide it would be a good day to go fishing; remember, it's "your" lake
> by virtue of your lease to use as you see fit within the guidelines of
> your agreement with the owner. When you arrive, you discover a large
> group of people on your property, at YOUR lake, catching the fish YOU
> stocked--in spite of the fact there are No Trespassing signs all over-
> even right where the trespassers are fishing. I'd be angry and I'd bring
> charges against each and every one that trespassed on my land. It
> doesn't make any difference if I don't come to the lake every day, it
> is STILL property assigned to me by virtue of rent or lease and nobody
> has any business on it without permission.
>
> "Freebanders" don't have "permission" (license) to operate on frequen-
> cies outside the 11 meter band. They are trespassing just as surely
> as those people I cited in the above paragraph. And when they DO tres-
> pass, it pisses off those who are legitimately assigned said frequencies
> for their exclusive use and it don't make ANY difference if they "visit"
> (use) their "property" (frequency) once a minute or once a year--the
> "freebanders" are trespassing just as surely as if they just walked into
> your/my house uninvited. There is no respect due, and none forthcoming
> for trespassers, "freebanders", or outlaw radio ops.
>
> Jerry
> K4KWH
>
>
> Bob wrote:
> >
> > Ok, Mr. Letter of the Law.
> >
> > And I bet you ALWAYS obey the maximum posted speed limit. If you wanted
to speed,
> > you would take the right approach to speeding legally - because, hey
man, you do

> > EVERYTHING right. You would put your mind to becoming a race car driver and do your
> > speeding on the track where it belongs. You would follow the proper steps to
> > becoming a race car driver:
> >
> > 1. Learn to ride a unicycle, because that's how it all started, man. Our
> > forefather's rode unicycles before fast cars were around, so must you learn.
> > 2. Learn everything there is to know about cars - including memorizing the answers
> > to questions about walking, unicycles, horse and carriage, boats, planes, etc.
> > 3. If you skip the step on learning to ride a unicycle, prepare to be chastised by
> > old-timers that had to learn how to ride it and by some who love the unicycle and
> > can ride it at over 20 mph! BTW - learning to ride the unicycle keeps bad people
> > from becoming race car drivers.
> > 4. Prepare to spend some money. Your standard car won't do - it doesn't fit race
> > car specs! And every race track requires a different car and tire combination.
> >
> > Is becoming a race car driver what you should do because you like to take those 15
> > turns of Bear Mountain road at an faster than the posted speed? Well, ham radio IS
> > NOT a replacement for the "freeband" either. Ham radio doesn't fit everybody. Maybe
> > its a bit of an extreme commitment for some. Hey, I can operate my equipment and
> > make sure that it complies with the same rules the FCC mandates for hams. I can
> > operate it responsibly. I can operate it courteously . I can use the minimum amount
> > of power necessary for a contact.
> >
> > Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is it immoral? A
> > crime against humanity? Absolutely not. To me - speeding in your car is a far more
> > worse crime.
> >
> > BTW, I do not condone operating on ham bands or intentionally interfering with any
> > service that I am aware of. Yes, I know there are (very few, non essential)
> > services allocated between 27.405 and 28Mhz. I support operations on

27.405 -
> > 27.855 Mhz that follow the same regulations that hams follow.
> >
> > Hopefully this metaphor can crack the thick skull of the "yes, but it's
illegal,
> > yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't
black and
> > white.
> >
> > Bob.
>
> > > > >

2514. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 12:00:23 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3AF14857.4AF91BFB@berkshire.net>
Source record: 164370
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

why do those who break the law always assume that everyone else does also and use that to justify what they do? this argument goes right around in a circle and shows how hypocritical these freebanders are... if you chastise someone by assuming that he is speeding and then tell him to go become a race car driver to do it legally, why don't you get down to work and learn how to be a legal ham so you can speed on the legal ham bands properly instead of slinking around illegally.

Bob wrote:
>
> Ok, Mr. Letter of the Law.
>
> And I bet you ALWAYS obey the maximum posted speed limit. If you wanted to speed,
> you would take the right approach to speeding legally - because, hey man, you do
> EVERYTHING right. You would put your mind to becoming a race car driver and do your
> speeding on the track where it belongs. You would follow the proper steps to
> becoming a race car driver:

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

2515. Re: Saturn Station Wagons and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 12:13:51 UTC
From: N3WWN <n3wwn@futuretek.cx>
Message-ID: <06esc9.ref.ln@ns2.ecommanagement.com>
Source record: 164344

>> I'm a closet ham. Beat me with an old yagi as they say.
>>
>> I've been a bit inactive since I got my ticket in 1997. In June, I
>> will begin studying to upgrade to General.

Sounds like we have quite a bit in common, Ted! I got my ticket in Feb '96 and only had a HTX-202 and an old Kenwood TH-21A 2m transceivers up until just recently.

I am also studying for my General ticket and own a Saturn (SL2 - 2dr sedan, not SWx station wagon).

>> Here's my quandry. All I was able to afford was a RadioShack HTX-202
>> back in 1998. I have that and that's all I've used for my radio. My
>> wife and I are building a house. But, to be a good ambassador to
>> amateur radio and to stay on the good graces of my neighbors, I won't
>> challenge the community doctrines/rules by erecting an antenna on my
>> property. And, the other reason is I don't have a lot of money to
>> spend on a nice rig at home. Perhaps in 5 or 6 years, I'll have money
>> enough to buy a nice rig with a nice small antenna farm at home.
>>
>> But, for now, I'm pretty much settled on using my car as a mobile
>> shack. Here's my quandry. I've ONLY used magentic mount antennas (2
>> Meters with my HT). Right now, I'm max at 5 watts. Does the job, but
>> I want something better.
>>
>> Since I still don't have a lot of money, I may purchase an Alinco
>> mobile 6 Meter that I can use with my current licnese.

I'm not sure, but you're probably looking into the Alinco DR-M06T. Seems like a fine radio, but I decided against it myself due to the fact that it is FM only. There are a few 6m FM repeaters in my area, but I wanted 6m for Sporadic-E openings on SSB.

>> Here's my problem. If anyone knows much about Saturns, they'll
>> understand my quandry with the space in the car.

I sure do! :)

>> #1 - I have no clue as to where to put the radio in the car. I want
>> to put it someplace that doesn't get in my way or the front passenger.
>> I want to put it someplace I can easily remove it for security.

Well, I have a couple solutions.

1) My Saturn SL2 has 2 cup holders at the very front of the center console. The cigarette lighter is in a strange place, directly above

(by about 2 inches) the driver side cup holder.
I have purchased a lighter power cord which has a small enough plug to allow me to plug the cord into the lighter outlet, run the cord down the driver's side of the console and hide the majority of the cord under the driver's seat and run it back up to the cup holder. Then place the HTX-202 into the cup holder (don't forget to disconnect the battery pack or you risk blowing a diode or two!). Since the HT is only about 4 to 5 inches tall without the battery, it sits VERY well in side the cup holder. I personally face the display and keypad towards the front of the car. I cannot read the display, but after getting familiar with the finite state machine which governs the features and memorizing the keypad layout, you can operate quite well if you program your favorite repeaters into memory. You'll need an external mic/speaker, which is available from Radio Shack for a couple bucks (I think mine cost $15).

2) If you don't have power windows, there is a very small tray behind the gear shift in the center console. It's about 2inches by 4inches.
I've ran off battery power (no lighter cord...remember those diodes! hi hi) and slid the radio, battery pack first, of course, into that tray.

When using 1) above, I place the mic/speaker on this tray with the mic clip turned to hold the mic in place. If you try this, you'll see what I mean. When the mic clip is turned right, the coiled cord will push the mic off the console, but the clip will hold the mic on the console. (The clip is in the small tray with the speaker/mic is facing up)

I find this very beneficial since I usually have a passenger or two and when the noise floor jumps in an area, you can cover the speaker with your hand and REALLY lower the volume and then remove you hand when you move into a better area.

>> #2 - I want a REAL antenna on my car. Since it's a station wagon, I
>> don't have the luxury of a trunk. I've never installed a "real"
>> antenna....where can I find information on how to properly do this
>> without destorying my car or subjecting it to rust?

I'm not sure what you're considering a "REAL antenna", but I have a 5/8 wave glass mount antenna on my Saturn and it works great! I've suprised people by how great my signal. The most memorable was when I was about 40 miles from the repeater on a hilly back road and was able to get into the small repeater that my club (at the time) had and carry on a very respectable QSO! All on 5W! This wasn't a best case scenario, but a few variables, such as altitude of the repeater and my car in reference to the land between us, were definitely working in my favor!

I'm not sure who makes the glass mount (inductive through-glass, no drilling required!) antenna I have, but it was in packaged on a peice of cardboard with that shink plastic on it. The kind that some drill bits and bathroom fixtures are packaged in.

The cost was excellent. I picked it up at a local hamfest for about $30.

The antenna needs to be mounted with no defrosting "wires" between the innder and outer parts and about an inch on all sides from these "wires" and the edge of the window. I found that the driver's side of the rear window had a small area near the top that had the exact space I needed!

In order to run the cable (which has a BNC connector, which is a plus! No adapter necessary!) from the back of the car to the radio, I simply ran the cable straight down and behind the back seat (I have the 60/40 split rear seat) and then along the back door, under the driver's seat, and up to the radio in the same approximate place that the power cord comes back up.

While your station wagon would have a slightly different setup, you could probably still use a glass mount antenna on your back window and run the cabling down the rear of the vehicle and along the floor. Just make sure to leave enough cable for the hatch to open and try to position the whip so that it doesn't bend much, if at all, when the hatch is opened.

>> #3 - has anyone any experience installing radios in small cars that
>> may be able to offer advice or would someone know of some links on the
>> internet to point me in the right direction?
>>
>> #4 - Because of #1, this setup will be portable as well as mobile. I
>> want to be able to remove my radio and use it for field day with a
>> "portable" setup...power supply, antenna, etc. What would anyone
>> recommend for "in-line" connectors for the power harness on the radio?

I find that with my setup, I can remove the HT from the cup holder, use the spare lengths of cable to place the HT into a window mount cup holder (you can find them at any truck stop) that clips into the space between the door and the wind down window and operate from outside the car. I've done this for weather spotting where it is easier to spot from outside the car. That way, you still have full output power and the 5/8 wave antenna.

I can also detach the antenna and power cord and put the battery pack back on and the rubber ducky radiating dummy load and use it normally as an HT in about 10 seconds.

>> Any information would be GREATLY appreciated. I haven't had much luck
>> finding anything on the internet.

Good luck and 73!

-Rich
N3WWN

>> Thanks
>>
>> 73, Ted KB9RPD

2516. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 12:16:42 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF14C2A.F037A8F2@IEEE.org>
Source record: 164462
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Rob St.Denis" wrote:
> A ham by definition does not break the law ... a freebander does

You mean those ARRL newsletter reports of hams breaking the law
and being fined are just a hoax?
--
http://www.mindspring.com/~w6rca

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2517. Re: Does anyone have experience of antenna systems design?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 12:19:33 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF14CD5.A3586B7A@IEEE.org>
Source record: 164463

Tom Puffett wrote:

I just designed a 40m vertical antenna system. :-)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2518. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 12:42:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF1524D.EE357446@IEEE.org>
Source record: 164465

"Peter O. Brackett" wrote:
> Voltages and currents are "added" by mother nature, but powers are not.

That's funny, Peter. When I screw in an extra light bulb, sure seems
like mother nature makes the room brighter. Is that not power being
added to make the room warmer and brighter?

> Especially since power and voltage are related non-linearly [P = I*V] by a
> product, then one cannot simply assume that linearity follows across the
> great power divide, from volts to power...heh, heh.

Nobody assumes that "linearity follows across the great power divide".
The very basic principle behind voltage, current, and power is that
energy cannot be created or destroyed (by ordinary means). The energy
is the cause. The voltages and currents are the effects. If you double
the energy, you do NOT double the voltage AND current. When someone
claims that 75 joules plus 8.33 joules is equal to 133.33 joules
because of the voltages involved, that is more than enough reason to
distrust the voltage analysis.

> This kind of little error alone is one of the largest sources of confusion
> in the debates on "reflected" power. One must take great care with
> voltages and currents in handling the components into which we claim to be
> able to "resolve" those voltages and currents. And especially subsequently
> with the "powers that we mathematically derive from those components.

Actually not much care is required at all. Simply calculate/measure the
energy and let the voltages and currents fall out from the boundary
conditions. The voltages and currents MUST satisfy the conservation
of energy principle. There is no other choice.

> It's "safer" to deal only with I and V and leave power out of it.

It is safer (more basic) to deal with energy because of the conservation
of energy principle. 75 joules plus 8.33 joules simply cannot add up to
133.33 joules. Do you disagree? That someone believes 75 joules plus 8.33
joules can equal 133.33 joules is proof that his voltage analysis is
filled with misconception and error.
--
http://www.mindspring.com/~w6rca

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2519. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 12:43:47 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <7ocl6.7010$2_.2644273@news3.rdc1.on.home.com>
Source record: 164464
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

What I mean is that the definition of a ham does is not indicative of
breaking the law ... albeit some do. A freebander by definition is breaking
the law when they operate.

--
Rob St.Denis

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF14C2A.F037A8F2@IEEE.org...
> "Rob St.Denis" wrote:
> > A ham by definition does not break the law ... a freebander does
>
> You mean those ARRL newsletter reports of hams breaking the law
> and being fined are just a hoax?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2520. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 12:55:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF15550.B69F7BA2@IEEE.org>
Source record: 164466

"Peter O. Brackett" wrote:
> Huh? I am surprised by your last comment...
> Why would there be a difference between 60Hz and a transmission line...

The difference between 60Hz and RF is wavelength, Peter. There's not
much phase shift at 60Hz between my house and my neighbor's house.
Of course, if you look at one of Bart's examples, of 60Hz energy
flowing between Hoover Dam and Los Angeles, the picture is different
than from my neighbor's house to my houses.

The reason that 60Hz is different from RF is that the importance of
some terms in the equations depend on the boundary conditions. A term
that is very important with one set of boundary conditions may be
negligible with a different set of boundary conditions.

> Nature does not change the rules of addition of volts and amps, just because
> the voltage and current is on a transmission line!

Then why does nature change the conservation of energy principle for
a transmission line? How can 75 joules plus 8.33 joules equal 133.33
joules in a transmission line but nowhere else?
--
http://www.mindspring.com/~w6rca

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2521. Re: Saturn Station Wagons and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 12:58:00 UTC
From: kb9rpd@arrl.net
Message-ID: <3af15574.71314066@netnews.worldnet.att.net>
Source record: 164467

You are correct. I'm looking at that now to see what's the best thing
to do here. I'm still toying with the idea of designing a wooden
insert of some type that could fit snugly in this center console, be
removable, etc. The insert would be where I could mount the radio.

Ted

On Wed, 02 May 2001 21:08:59 -0400, Sideband <sideband@spam.me.not>
wrote:

>I may be off on this, as I'm not sure if my memory is playing tricks on
>me, but doesn't the Saturn have a small storage bin about 3" tall and 8"
>wide or so at the bottom of the center console where it joins the center
>"hump" that goes between the front seats?
>
>If it is there, couldn't you remove that "bin" and fashion a mounting
>bracket/face to mount a radio in?
>
>Just an idea... of course, I may be way off base.
>
>-SSB
>
>Ted Wagner - KB9RPD wrote:
>>
>> FB Bill,
>>
>> >I am not familiar with Saturns, but I run an HT mobile myself and I
>> >generally put the HT in the center console.
>>
>> I've been looking at that. I'm trying to study this so that I can put
>> something in that's not so cumbersome. My console in the front has no
>> room...the CD player/AM/FM radio that's factory installed takes up the
>> only free room since the heater/air controls are right there as well.
>> However, the center console between the seats may offer a solution.
>> But, it is quite narrow since it is a small car. I may device some
>> sort of "insert" that fits in that opening. It's probably 3 - 3.5"
>> wide and about 12" long or so. I may be able to make an insert that
>> allows the radio to stick up so I can still use the knobs, etc.
>>
>> >That magmount you have is just as good as an equivalent permanent antenna,
>> >except that it is easier to remove. If you have a 1/4 wave, move up to a
>> >5/8ths. That will help some. But I see no real reason to go to a
>> >permanent installation, especially if you ever plan on selling the car.
>>
>> Hmmm. Well, you are right there I think. I have a 5/8ths right now.

>> The reason I was thinking permanent is because of the coax running
>> from the mag base. Right now, the only option I have is to run it
>> through the door. I cringe every time I have to use the door because
>> eventually, that darn coax is going to get damaged.
>>
>> I haven't seen a good way to run the coax (yet) that will prevent rain
>> from getting in the window. I bought a window mount from a hamfest
>> and tried to alter it so the coax would pass through from the antenna.
>> But, probably due to the construction of my car, when it rains, I get
>> a lot of water through the window at the point where the window mount
>> meets the top of the door.
>>
>> >I would go with what you have now, except you might want to get an
>> >amplifier if you really feel the need for more than 5 watts.
>>
>> I may consider an amp. Repeater location here in Indy is a bit
>> odd...and, the areas I travel I tend to have problems reaching the
>> repeater unless I'm traveling east and west. There are a few spots
>> where the signals bounce around and signals can get unreadable.
>>
>> >By the way, used radios aren't that expensive. You can pick up a Kenwood
>> >TS-520 HF rig for $300 or so. I use one as my main HF rig. It takes a
>>
>> hehehe. Well, I wish I could say I have $300. In a couple years, not
>> too much of a problem. I may have to be patient and wait. That's why
>> I may make my car into a mobile shack. My top spending limit (at the
>> moment) is $200 which will get me a very basic mobile 25 watter I
>> think.
>>
>> However, I sometimes do some side-work that will net me some
>> cash...that may allow me to get a better transceiver at some point.
>>
>> I really like my 5/8 mag mount. It's a very fine antenna I got up at
>> the Fort Wayne, Ind. hamfest in 1998. It works splendidly. For field
>> work, however, I believe I'd have to find a good piece of flat metal
>> to use as a ground plane. That shouldn't be TOO awfully difficult I
>> think.
>>
>> I may have to think more on how to run this coax so it's not crimped
>> in the door of my car. I may have to be a bit inventive.
>>
>> Thanks again Bill. I appreciate the advice.
>>
>> 73, Ted KB9RPD

2522. Re: Saturn Station Wagons and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 12:58:56 UTC
From: kb9rpd@arrl.net
Message-ID: <3af155e5.71426781@netnews.worldnet.att.net>
Source record: 164468

Thanks Bob, I'll check this out.

Ted

On Wed, 02 May 2001 19:44:47 GMT, Bob Miller <bamiller@texas.net>
wrote:

>kb9rpd@arrl.net (Ted Wagner - KB9RPD) wrote:
>
>
>>
>>#2 - I want a REAL antenna on my car. Since it's a station wagon, I
>>don't have the luxury of a trunk. I've never installed a "real"
>>antenna....where can I find information on how to properly do this
>>without destorying my car or subjecting it to rust?
>
>A few thoughts, some from a recent thread on drilling holes in cars.
>
>Some car dealers who have been consulted say it is no big deal to drill a hole
>in a car. When you sell it, you can plug it. Or you can simply replace the ham
>antenna with a cell phone antenna, and the car will be "phone-ready" for the
>next owner.
>
>Any antenna you buy should have fairly clear instructions on how to mount it to
>your metal -- how to drill the hole, etcetera, so if you have a power drill,
>that should be no big deal.
>
>If you're drilling into the roof of your car, you want to be careful not to
>punch the headliner inside. One thing you can do is take your car to a place
>that sells and installs business radios in cars. They have special drills that
>will make the hole in your roof without going through the headliner, and they're
>pretty experienced at running the coax to wherever you need it to go. Of couse,
>this will cost a few dollars in labor.
>
>You might want to look at the ARRL's bookstore web site, and see what they have
>on mobiling -- there's all kinds of ins and outs that you can probably get in a
>good book on this subject.
>
>There's also some very good tech info on mobiling at the arrl web site,
>http://www.arrl.org/tis/ regarding antennas, installations, and so forth...
>
>Good luck...
>
>Bob
>k5qwg

>
>

2523. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:01:14 UTC
From: ? & The Mysterians <nospam@clearsail.net>
Message-ID: <3AF1569A.CA7116C@clearsail.net>
Source record: 164369
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

SOME hams may break the law, ALL freebanders break the law. Both need a spanking.

W6RCecilA wrote:

> "Rob St.Denis" wrote:
> > A ham by definition does not break the law ... a freebander does
>
> You mean those ARRL newsletter reports of hams breaking the law
> and being fined are just a hoax?
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2524. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:01:35 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF156AF.BE370705@spam.me.not>
Source record: 164372

Jim:

Comments within.

N2EY wrote:

<snip>

> >The code study is coming slow. I've got a problem (some call it an
> >excuse), in that I'm dyslexic.
>
> I'm not a speech-and-language professional, but the term dyslexia covers a lot
> of ground. Here's a simple "thought experiment":
>
> Suppose you had to listen to someone spelling out words phonetically, and write
> down what was said. For example, you would hear:
> "Tango...hotel....india.....sierra.....india.....sierra.....alpha....tango
> ....echo......sierrra....tango....."
>
> and would write down:
>
> "THIS IS A TEST"
>
> For most people, doing the above for a couple of minutes would be very easy,
> while for some it would be extremely difficult. The basic skill of copyng code
> is no more than this, except that instead of words you hear short and long
> tones.

In fact, this is how I learned the Phonetic alphabet when I was in the
Corps. One of my Corporals saw how I was having trouble with it, and
over a week's time I finally picked it up, to the point I had it Lima
India Charlie Kilo Echo Delta, Over.

>
> > I hear a dit and it's really a dah, or
> >vice versa.
>
> I think you are listening to code that is TOO SLOW. Have you tried the Koch
> method? What speed is your training software set for?

I have the letters set for 20 WPM and the words for 5, and I still miss
a few.

>
> >I've tried the "tricks", etc, such as turning each letter
> >into a cute phrase, etc, but for some reason it doesn't want to work for
> >me.

>
> Those "tricks" add a step to the decoding process - an unnecessary step.
>
> Take a look at these, if you haven't already:
>
> http://www.sdc.org/~finley/
>
> and
>
> http://www.joates.demon.co.uk/megs/N0HFF/contents.htm
>
> > I've been going at it steady for the last two years or so, and the
> >best I've been able to manage is about 2 words/minute, and that's after
> >correcting the "text" post-send.
>
> Try the methods described at the above websites. I do think the slow code may
> be the problem!
>

I'll do that. Thanks for the tips. Hopefully they'll have something that
will help.

> > Honestly, I'm wondering if it would be
> >any easier to learn on the air. The local club here in Livingston County
> >does code study up on 2M weekly, and I've finally found an Elmer who
> >said he'd help me out on the air with it, as well. Honestly, I think the
> >only way I'm going to get it down is to do it on the air.
>
> Good idea! Try it!

I plan on it. It worked for the Phonetic Alphabet.. why not code, too?

> >
> >I'll check out the sets you mentioned for HF, and I'll give serious
> >thought to a 2M only set as well. If there's no use for 440 here in the
> >area, or if repeaters out here bridge across the bands, I'll probably go
> >with just a 2M set and be done with it.
>
> Lotsa good used stuff out there. I'm still using the Heathkit HW-2036 I built
> from a kit in 1977.

I wish they still made those kits, I'd love to build my own radio...
Really the only way to really know how they work, IMHO.

Kindof like Antennas. I built my own 5/8 wave ground plane for my base
station CB when I was still in Southern California. It was a top loaded
coil design.. copper wire wrapped on a non cuprous PVC pipe, with
aluminum tubing salvaged from DRMO (was originally camo-net poles)
sloped down at about 40 degrees from perpendicular to the radiator. Got
a 1.3:1 SWR over all 40 channels, and was heard almost 50 miles away
(past Escondido from Oceanside 3 blocks from the ocean) with 12 watts on
27.385 LSB. I plan on building my own antennas for 2M on both the car

and for the apartment. Maybe I'll try another 5/8 ground plane for the apartment for 2M...

> >
> >As for the HF, I'm really looking forward to the DX.
> >
> Lots of it out there. Good luck!
>
> 73 de Jim, N2EY

Thanks again, and 73's

-SSB

2525. Re: Saturn Station Wagons and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:02:20 UTC
From: Jack <kc8pkn@arrl.net>
Message-ID: <9crkpjtha1@slb2.atl.mindspring.net>
Source record: 164371

I bought a Motorola NMO mount from a radio/communication dealer, it was only 35 bucks for them to install. I felt it was worth it, considering I'd have to mess around with the hole and the coax. It is a good job. I have seen the hole saw they use for the hole one a web site but I can't remember which one. I'm using a 5/8 wave (2 meter), but want to try a 1/4 wave as the car will probably fit in the garage easier.

Jack KC8PKN

"Bob Miller" <bamiller@texas.net> wrote in message
news:OV=wOthx3oHhMYc81aMbWyZhi25x@4ax.com...
> kb9rpd@arrl.net (Ted Wagner - KB9RPD) wrote:
>
>
> >
> >#2 - I want a REAL antenna on my car. Since it's a station wagon, I
> >don't have the luxury of a trunk. I've never installed a "real"
> >antenna....where can I find information on how to properly do this
> >without destorying my car or subjecting it to rust?
>
> A few thoughts, some from a recent thread on drilling holes in cars.
>
> Some car dealers who have been consulted say it is no big deal to drill a
hole
> in a car. When you sell it, you can plug it. Or you can simply replace the
ham
> antenna with a cell phone antenna, and the car will be "phone-ready" for
the
> next owner.
>
> Any antenna you buy should have fairly clear instructions on how to mount
it to
> your metal -- how to drill the hole, etcetera, so if you have a power
drill,
> that should be no big deal.
>
> If you're drilling into the roof of your car, you want to be careful not
to
> punch the headliner inside. One thing you can do is take your car to a
place
> that sells and installs business radios in cars. They have special drills
that
> will make the hole in your roof without going through the headliner, and
they're
> pretty experienced at running the coax to wherever you need it to go. Of

couse,
> this will cost a few dollars in labor.
>
> You might want to look at the ARRL's bookstore web site, and see what they
have
> on mobiling -- there's all kinds of ins and outs that you can probably get
in a
> good book on this subject.
>
> There's also some very good tech info on mobiling at the arrl web site,
> http://www.arrl.org/tis/ regarding antennas, installations, and so
forth...
>
> Good luck...
>
> Bob
> k5qwg
>
>

2526. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:08:09 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF15839.FE40D1AC@spam.me.not>
Source record: 164373
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

So when a freebander is transmitting with legal power levels on the
legal 40 they're still breaking the law?

I'm a CB'er (not for long. I take my written tests early this month),
and I, unfortunately, get sneered at for not having my ticket, simply
because there are those who DO choose to violate FCC rules.

I don't condone violations of FCC rules. However, I would like to see a
sideband only band above channel 40, but below 27.800, with a 50 watt
limit, for CB'ers to DX on... The frequencies allocated for this could
"go around" the currently allocated forestry, etc, frequencies, much in
the same way the CB frequencies skip over the RC freq's.

Just my two cents, here... Of course, your mileage may vary.

-SSB

"Rob St.Denis" wrote:
>
> What I mean is that the definition of a ham does is not indicative of
> breaking the law ... albeit some do. A freebander by definition is breaking
> the law when they operate.
>
> --
> Rob St.Denis
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3AF14C2A.F037A8F2@IEEE.org...
> > "Rob St.Denis" wrote:
> > > A ham by definition does not break the law ... a freebander does
> >
> > You mean those ARRL newsletter reports of hams breaking the law
> > and being fined are just a hoax?
> > --
> > http://www.mindspring.com/~w6rca
> >
> >
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2527. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:19:51 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <XVcI6.7318$2_.2687013@news3.rdc1.on.home.com>
Source record: 164374
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF15839.FE40D1AC@spam.me.not...
> So when a freebander is transmitting with legal power levels on the
> legal 40 they're still breaking the law?

No when you transmit of the 40 channels you are authorised to use you are a cb'er. As soon as you turn up the power passed the 4/12 or go outside those channels you are breaking the law

> I'm a CB'er (not for long. I take my written tests early this month),
> and I, unfortunately, get sneered at for not having my ticket, simply
> because there are those who DO choose to violate FCC rules.

I have no problem with cb'ers ... I was one when I was a kid too ... I do however have problems with people taking what I had to work for.

> I don't condone violations of FCC rules. However, I would like to see a
> sideband only band above channel 40, but below 27.800, with a 50 watt
> limit, for CB'ers to DX on... The frequencies allocated for this could
> "go around" the currently allocated forestry, etc, frequencies, much in
> the same way the CB frequencies skip over the RC freq's.

Why? I regularily work world wide on 10m with as little as 10watts on ssb (min required for the autotuner to work) and that is from the car.

Rob

2528. Re: HF Antenna for apartment bldg?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:21:21 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <5VnxOtkIJM0JBd3M87vJTZ6LK73C@4ax.com>
Source record: 164375

DaveC <anon@example.net> wrote:

>My brother lives in Tucson, AZ in the SW USA. He has a Drake 8 SW receiver
>(about 10 years old). He currently has a whip antenna he puts out on his
>balcony at night for reception of HF (sorry, I'm not which bands).
>
>He has just received permission to put some kind of antenna on the roof of
>his building. He wants to put a sloper type, 25 ft sloping down to 10 ft. The
>problem is that there is no structure on the roof from which he can hang the
>high end of the antenna. Therefore, he is considering leaving it level, as
>high above the roof as he can get (maybe 4 or 6 ft).
>
>I want to counsel him but I am not familiar with radio antennas for this type
>of receiver. Can he get any performance at all out of a "non-sloping" sloper?
>Or is he better off just getting his whip antenna up on the roof?

In the past I've used an Alpha Delta sloper antenna for sw reception, and it was only slightly sloped. I'm sure it would have received just as well if it had been horizontal. The main point is to get it as high as possible. Whether it slopes or not isn't relevant, to my knowledge. It will certainly out-perform the whip antenna. Putting it on top of a building should make for an excellent location.

Bob
k5qwg

>
>He has purchased an RDI White Paper on antennas. (Don't know if this is good
>advice, or if he's thrown away his $$.)
>
>Any observations, comments, or suggestions for other types of antennas would
>be most welcome
>--
>Note that my return address is corrupted in an attempt to reduce spam. If you
>choose to e-mail me, please correct my address as described below.
>
>Thanks,
>Dave

2529. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:29:13 UTC
From: 2w8ji@akorn.net
Message-ID: <3af15acb.690088585@news.accessunited.com>
Source record: 164376

On Wed, 2 May 2001 09:45:06 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Tom, W8JI wrote:
>"The feedline must also be nearly lossless or low loss on the OUTSIDE of
>the braid, and the electrical length must be known."
>
>No super coax is required. Ordinary coax in reasonable condition will
>have a high impedance as a copper insulator if it is near an odd
>multiple of 1/4-wavelength. The v=f(lambda) relationship should be
>memorized by serious students.
>
>The arrangement to produce a high impedance with a tuned line fails in
>multiband operation. Use a balun.

You miss the point.

If the coax is not low loss on the OUTSIDE of the cable, which means the cable must be routed to minimize coupling to other objects and lossy media and must NOT radiate an appreciable amount, then the impedance will not be extremely high at the antenna no matter what length you make the cable.

It also must have a reasonably good ground, and you muyst know the electrical length of the outside of the cable AS IT IS AFFECTED by the environment around the cable.

Certainly a little thought would make us all understand why most people can't predict or measure any of that. Unless the cable drops straight away from the antenna all by itself and is grounded to a resonable ground 1/4 wl away, the of odds of making a high shield impedance at the antenna are nil.

It is a much more simple solution to use a choke balun, and simply route the feeder anyway you like into the house.

Some UHF and VHF antennas DO support the dipole element on a 1/4 wl long rigid feedline that is grounded to a reflector screen, making the type of "feedline length" balun described. But that is obviously a well-controlled situation unlikely to occur in most amateur HF installations.

73 Tom

2530. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:31:36 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF15DB8.DA352212@spam.me.not>
Source record: 164377
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Comments below:

"Rob St.Denis" wrote:

<snip>

>
> Why? I regularily work world wide on 10m with as little as 10watts on ssb
> (min required for the autotuner to work) and that is from the car.
>
> Rob

Because most HAM's know how to run their radios, and MOST CB'ers dont. A majority of CB'ers think that turning the modulation up past 100%, using negative peak modulation compression, and other "tricks" makes them louder. In reality, it makes for a noisy band. I know better... My GrantXL, with the 2 watt carrier, at 99% modulation, sounds better than most of the "export" radios in the trucks out there, and "walks" over them as well. Granted, I run a 5/8 dipole on the car (two 4' Wilson Silver Load antennae, over and under), tuned properly, so I'm probably radiating more than they are, but hey, it works.

At any rate, a band for those who do know how to run a radio would be nice... It's a pipe dream... one I won't have to worry about later this month, hopefully, but still.. it would be nice.

-SSB

2531. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:37:02 UTC
From: Ken Bessler <kg0wx@yahoo.com>
Message-ID: <3AF15EFE.79B9@yahoo.com>
Source record: 164378

Thats all we need - another webtv idiot trolling the newsgroup...sheesh.

--

Ken Bessler, Ham Callsign KGï¿½WX
Design Services Company
http://kg0wx.users.50megs.com/
Smoke free since 9/30/96!
ICQ# 63379650ï¿½

2532. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:37:26 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF15F16.D4399DF1@IEEE.org>
Source record: 164379

VE9SRB wrote:
> The resulting voltage that goes to zero is the total rearward voltage. This
> is the rearward wave cancellation process that causes the steady state
> match. The non-zero voltage at the match point is the remaining forward
> traveling voltage. The total voltage at the match point does not go to
> zero.

Walt is obviously talking about the total voltage reflected back towards
the transmitter going to zero. You guys are saying the same thing about
the rearward wave cancellation. Instead of disagreeing on everything, why
not post your points of agreement? You two agree on the above point.

> There is a partial re-reflection of the reflected waves but not a total
> re-reflection.

In a lossless Z0-matched system, 100% of the reflected energy winds up in
the forward wave. What does it matter if part is technically re-reflected
and part is simply re-routed? What exactly is the point of splitting hairs?
Is technical purity the only reason?

Would you and Walt agree on the following statement?

In a lossless Z0-matched system, 100% of the reflected wave energy joins
the forward wave energy on a trip back to the load.

How about this one?

In a lossless Z0-matched system, (Pr/Pf) of the reflected energy is re-
reflected. The rest of the reflected energy is re-routed. Both the re-
reflected energy and the re-routed energy wind up in exactly the same
state combined and indistinguishable from each other.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2533. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:40:33 UTC
From: 2w8ji@akorn.net
Message-ID: <3af15ecb.691112754@news.accessunited.com>
Source record: 164380

On Wed, 02 May 2001 15:25:30 -0500, "William E. Sabin"
<sabinw@mwci.net> wrote:

>
>In Fig 24, chapter 26, 19th edition, the loop current idea is a loser because in a
perfectly
>symmetrical antenna there is no common mode current. And if there is an asymmetry, the
loop
>idea is not needed in order to account for everything that is going on.

The can indeed be common mode currents on the feedline if the antenna
is perfectly symmetrical.

There is nothing that says currents in each half of the antenna must
be symmetrical just because the antenna is.

The problem is the terminal voltages on the feedline at the feedpoint.

We often make the mistake of assuming a balanced antenna fed with a
unbalanced line will not have common-mode current on the feedline if
the antenna is physically and electrically symmetrical.

73 Tom

2534. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:49:05 UTC
From: K0HB <k0hb@qwest.net>
Message-ID: <lldl6.8274$SZ5.678754@www.newsranger.com>
Source record: 164381
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Sideband says:

>At any rate, a band for those who do know how to run a radio would be
>nice...

There are several bands like that. They're called "Amateur Radio" bands.

73, Hans, K0HB

2535. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:55:26 UTC
From: 2w8ji@akorn.net
Message-ID: <3af160a7.691589076@news.accessunited.com>
Source record: 164382

On Wed, 02 May 2001 20:10:43 GMT, "Peter J. Bertini"
<commquart@home.com> wrote:

>
>"Tom W8JI" <2w8ji@akorn.net> wrote in message
>news:3aef4f6e.556087968@news.accessunited.com...
>>
>> The difference in loss between a L/C trap and a coaxial trap is quite
>> large, even when the L/C trap uses modest components.
>>
>> 73 Tom
>
>Tom
>
>Is this for coaxial trap designs that use the inherent
>center conductor shield capacitance per foot to
>provide the resonating capacitance, or those that
>use an external fixed vacuum or high-voltage RF
>ceramic to resonate the braid? Or, both?
>
>Pete

Normal braided vinal jacket coax makes a very very poor wire when used
to wind an inductor.

It make a less-than-ideal capacitor also, but the major problem is in
the use as an inductor.

Even if you solve the major problem Reg has talked about, not being
able to select the L/C ratio (which IS very important), you are still
stuck with a crappy Q inductor compared to what can be done other
ways.

It certainly is OK for a balun, but NOT a resonant trap at a HV point.
In you care, on the flying F, you could probably use a fixed cap and
find a cable with acceptable performance. Small semi-rigid lines come
to mind, and should produce Q's well into the hundreds.

It also might be possible to improve it dramatically by space winding
the inductor. That is my next step for the Dayton talk, but of course
that would make the L/C ratio even worse!!!

73 Tom

2536. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 13:58:06 UTC
From: Bill Meacham <NOSPAMexray@coqui.net>
Message-ID: <3AF163EE.796F9016@coqui.net>
Source record: 164383
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Sideband wrote:
>

>
> I don't condone violations of FCC rules. However, I would like to see a
> sideband only band above channel 40, but below 27.800, with a 50 watt
> limit, for CB'ers to DX on... The frequencies allocated for this could
> "go around" the currently allocated forestry, etc, frequencies, much in
> the same way the CB frequencies skip over the RC freq's.
>
> Just my two cents, here... Of course, your mileage may vary.

There already is one. 10 meters. You just have to get a
license. Whats the point in creating another special band for
people who don't want to get a license? You already have channels
1-40 and it got messed up. So now you've got FRS...It doesn't
make sense to just creating bands for people to use in a manner
inconsistent with the intent. Any unlicensed band is going to be
bedlam. Do you think if the FCC legislated a "freebander band"
from 27.455 to 27.800 that it would be any different? Would the
guys turn off the lean-yars and start using legitimate callsigns?

Bill Meacham
Vieques, PR

2537. Re: REC.RADIO.AMATEUR.ANTENNA?????

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 14:07:43 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AF1662F.794BDF32@rupert.tds-az.lmco.com>
Source record: 164386

Crazy George wrote:
>
> [Worthless ramblings clipped!!]
>
> I fail to understand how cellular and PCS antenna design discussion fits
> into REC.radio.AMATEUR.antenna. Maybe we need a new NG.
> sci.electronics.rip-off-the-cell-company.
>

Maybe we just need one called

rec.radio.amateur.whine-about-everyone-elses-postings

You could be the moderator.

--
Martin E. Meserve K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore
my responses may not be as timely as you, or I, would like them to
be. If I seem to be ignoring you, send me another E-Mail to jog my
memory. Opinions are my own and do not reflect the opinions of my
employer.

2538. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 14:08:53 UTC
From: 2w8ji@akorn.net
Message-ID: <3af1639e.692348078@news.accessunited.com>
Source record: 164384

On Wed, 02 May 2001 17:13:40 -0400, Denver Braughler
<Braughler@bwcc.com> wrote:

>> Never use braiding for a ground unless you have absolutely no choice
>> (because of flexing).
>Lightning is not that particular about resistance.
>Having just arced 20000 ft, encountering another 20 ohms of resistance won't make a lot of difference.

Very bad advice and logic Denver, especially when dealing with a
safety issue like this.

With current in the thousands of amperes, lightning DOES care above
even small increases in impedance. The function of a grounding strap
is to tie points together with a LOW impeance so the voltage drop
between those points is minimal.

Put bluntly, it is foolish to use braiding for a lightning ground.

>> Dry, clean, tightly packed braid has several times the RF resistance
>> of a smooth conductor the same size. The clean dry shiney briad of
>> RG-8 has about the same RF resistance as a number 12 wire.
>We don't want the lightning to travel end to end freely.
>We want it to dissipate into the ground.
>
>> When it is loosely packed, or if it tarnishes, it is like a resistor
>> for RF. It is terrible.
>And the center of solid conductor is better.
>Are you a non-believer in skin-effect?
>
>I agree that it would be nice if the braid didn't get dirt or water in it.
>But it is not intended to conduct very far or efficiently.

Bad assumption. Bad advice.

Lightning grounds are highly critical for impedance at high
frequencies. Current divides in a direct relationship to path
impedances, and you want the path to earth to be a low impedance.

ALL commercial recommendations prohibit braiding in lightning
suppression systems unless the conductor has to be able to withstand
flexing.

NEVER use braided wire for lightning (or RF) grounds unless the
conductor has to be flexed. If you use braiding, it has to be many
times larger area than a solid smooth conductor to have the same RF
resistance.

If it tarnishes even the slightest amount, the impedance (resistance and reactance) goes way up! This is a fact, not a guess.

73 Tom

2539. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 14:18:48 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF168C8.CF0F913B@IEEE.org>
Source record: 164385

Tom W8JI wrote:
> There can indeed be common mode currents on the feedline if the antenna
> is perfectly symmetrical.

Symmetry tends to reduce inducted common-mode current but it doesn't
do much for conducted common-mode current.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2540. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 14:29:40 UTC
From: w9wi@linux1.localdomain
Message-ID: <slrn9f2nkr.71k.w9wi@linux1.localdomain>
Source record: 164387
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Thu, 03 May 2001 09:31:36 -0400, Sideband <sideband@spam.me.not> wrote:
>them as well. Granted, I run a 5/8 dipole on the car (two 4' Wilson

Uh, 8 feet is not 5/8 wave on 11 meters. A 102" (8-1/2') whip is 1/4 wave,
so a 5/8 wave would be a bit more than 17 feet long.

(you should try a 102" whip, I think you're likely to find it more effective
than the twin four-footers. Because you won't have loading-coil losses.
Mine worked *fantastically* well on 10 meters with a converted SSB CB.)
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

2541. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 14:33:42 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AF16C46.C8C12232@mwci.net>
Source record: 164388

Tom W8JI wrote:

> On Wed, 02 May 2001 15:25:30 -0500, "William E. Sabin"
> <sabinw@mwci.net> wrote:
>
> >
> >In Fig 24, chapter 26, 19th edition, the loop current idea is a loser because in a perfectly
> >symmetrical antenna there is no common mode current. And if there is an asymmetry, the loop
> >idea is not needed in order to account for everything that is going on.
>
> There can indeed be common mode currents on the feedline if the antenna
> is perfectly symmetrical.
>
> There is nothing that says currents in each half of the antenna must
> be symmetrical just because the antenna is.
>
> The problem is the terminal voltages on the feedline at the feedpoint.
>
> We often make the mistake of assuming a balanced antenna fed with a
> unbalanced line will not have common-mode current on the feedline if
> the antenna is physically and electrically symmetrical.

Either it is "perfectly" symmetrical (theoretically) in *all* respects or it is not perfectly
symmetrical (practically). No problem, we know that, and that is why we use baluns. However, the
balance usually can be off a tad with no really big consequences.

Bill W0IYH

2542. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 14:37:29 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9crqab$bm3$1@plutonium.btinternet.com>
Source record: 164389

As you imply Roy, for Litz to be fully effective the diameter of individual strands should not be appreciably greater than the skin depth in copper. So the problems arising at HF are due to the manufacturing impossibility, or the high cost, of drawing wire down to such small diameters and then applying an insulating coat of some kind. Then weaving.

Skin depth in copper = 2.6 / Sqrt(MHz) thousandths of an inch. So matters become really difficult at a few megahertz.

Consider a length of ordinary copper wire. It has inductance and resistance, both proportional to length. Inductive reactance increases directly proportional to frequency but resistance (skin effect) increases only proportional to the squareroot of frequency. And so Q = X / R increases as the squareroot of F.

In general, above a few MHz, coils have small inductance. Small physical sizes of ordinary radio coils, the small number of turns, and the short lengths of wire, permit sufficiently high Q values using cheap solid wire.

Reg, G4FGQ

2543. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 14:38:21 UTC
From: richardharrison@webtv.net
Message-ID: <28173-3AF16D5D-24@storefull-114.iap.bryant.webtv.net>
Source record: 164392

Peter, K1PO wrote:
"Just because power is a scalar doesn`t mean you should add them."

Watts are added for convenience and for honesty. You pay the electric power company for the energy you receive which is the accumulation of power times time during the billing period. The accumulation of current times time would not be fair because the voltage is not always constant, and because the current you receive may be just out of the line on a short-term loan. Voltage times time is meaningless because voltage should be a constant and should be at the customer premise whether he consumes energy or not. A fixed minimum service charge covers this connection.

The customer`s power consumptions add because the wattmeter is sensitive to phase angle and registers the in-phase voltage and current for its power indication.

The customer`s power consumptions add because when he connects (2) 100-watt lamps, the wattmeter registers an increase of 200 watts of consumption instead of the 100-watts of increased consumption it registers when only one 100-watt lamp is added to his load.

The power company`s wattmeter senses both voltage and current to determine the power through the meter. So does the Bird wattmeter used at r-f. But the Bird, as Cecil noted, is designed and calibrated for a voltage to current ratio of 50-ohms, unless specially designed for a different value. The Siemens or whatever wattmeter your power company supplies is confronted with a different voltage to current ratio every time a customer flips a switch.

Peter also wrote:
"Why should there be a difference between 60Hz and a transmission line...?"

First, 60Hz does not carry a transmission line.

Second, the 60Hz wavelength is 5 million meters, or about 3000 miles.

Nature`s rules are indeed the same for 60Hz and 60 million Hz, but the length of transmission lines in terms of wavelength is as different as their frequencies. As practical 60Hz transmission lines are limited to a few hundred miles, their length in terms of wavelength is only a small fraction. Nature tells you that when you know the voltage to current ratio of the power and the phase relation between the volts and amps, you have a simplified way to determine power. Bird tells you to just subtract the reverse from forward power indications to determine the power supplied by the generator and delivered to the load. It works for

me.

Best regards, Richard Harrison, KB5WZI

2544. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 14:39:08 UTC
From: JR <jr@some.net>
Message-ID: <3AF15F1B.CE0AE130@some.net>
Source record: 164390
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Sideband wrote:
>
> So when a freebander is transmitting with legal power levels on the
> legal 40 they're still breaking the law?

That isn't freebanding, that is operating on the cb channels legally.

>
> I don't condone violations of FCC rules. However, I would like to see a
> sideband only band above channel 40, but below 27.800, with a 50 watt
> limit, for CB'ers to DX on... The frequencies allocated for this could
> "go around" the currently allocated forestry, etc, frequencies, much in
> the same way the CB frequencies skip over the RC freq's.
>

Why should there be a need for that? If anyone wants to operate SSB at
50 watts or more and work DX legally, get a ham license.

2545. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 14:40:38 UTC
From: JR <jr@some.net>
Message-ID: <3AF15F7F.D36B7314@some.net>
Source record: 164391
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Try and argue the point all you want, but there will never be any
respect for illegal freebanding except maybe from other illegal
freebanders. If you want respect do something that deserves respect.

Bob wrote:
>
> Ok, Mr. Letter of the Law.
>
> And I bet you ALWAYS obey the maximum posted speed limit. If you wanted to speed,
> you would take the right approach to speeding legally - because, hey man, you do
> EVERYTHING right. You would put your mind to becoming a race car driver and do your
> speeding on the track where it belongs. You would follow the proper steps to
> becoming a race car driver:
>
> 1. Learn to ride a unicycle, because that's how it all started, man. Our
> forefather's rode unicycles before fast cars were around, so must you learn.
> 2. Learn everything there is to know about cars - including memorizing the answers
> to questions about walking, unicycles, horse and carriage, boats, planes, etc.
> 3. If you skip the step on learning to ride a unicycle, prepare to be chastised by
> old-timers that had to learn how to ride it and by some who love the unicycle and
> can ride it at over 20 mph! BTW - learning to ride the unicycle keeps bad people
> from becoming race car drivers.
> 4. Prepare to spend some money. Your standard car won't do - it doesn't fit race
> car specs! And every race track requires a different car and tire combination.
>
> Is becoming a race car driver what you should do because you like to take those 15
> turns of Bear Mountain road at an faster than the posted speed? Well, ham radio IS
> NOT a replacement for the "freeband" either. Ham radio doesn't fit everybody. Maybe
> its a bit of an extreme commitment for some. Hey, I can operate my equipment and
> make sure that it complies with the same rules the FCC mandates for hams. I can
> operate it responsibly. I can operate it courteously . I can use the minimum amount
> of power necessary for a contact.
>
> Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is it immoral? A
> crime against humanity? Absolutely not. To me - speeding in your car is a far more
> worse crime.
>
> BTW, I do not condone operating on ham bands or intentionally interfering with any
> service that I am aware of. Yes, I know there are (very few, non essential)
> services allocated between 27.405 and 28Mhz. I support operations on 27.405 -
> 27.855 Mhz that follow the same regulations that hams follow.
>
> Hopefully this metaphor can crack the thick skull of the "yes, but it's illegal,

> yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't black and
> white.
>
> Bob.
>
> Scott Townley wrote:
>
> > But you *do* have all the respect you deserve...the same respect we
> > all grant to FELONS, which is what you are, buddy...
> >
> > On 30 Apr 2001 21:04:39 GMT, "Twistedhed" <twistedhed@webtv.net>
> > wrote:
> >
> > >
> > > >I am posting here because of some of the nasty things I have read in this
> > > >group and in QRZ discussions regarding freebanders. We who use the frequencies
> > > >from 27.405 to 28.000 have more in common with hams than you might think.
> > > >We are good operators and have knowledge of propagation and skip conditions.
> > > >We use Yasus, Kenwoods and Icomm radios just like you do, so we know technical
> > > >issues as well or better. However, the attitude of some hams toward us is
> > > >rude and condescending. We are treated like 2nd class citizens. This should
> > > >not be. We have the same rights under the constitution as legal hams do.
> > > >For those that do not wish to be under Uncle Sam's thumb, freebanding is
> > > >a viable alternative to getting a ham radio license. What I am saying is
> > > >that maybe the next time you meet a freebander it might be wise to talk with
> > > >him before you condemn him.
> > > >
> > > >I am QRT and standing by. (No flames answered. Please reply via email)
> > > >
> > > >Unit 2711, Florida
> > > >

2546. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 14:48:28 UTC
From: JR <jr@some.net>
Message-ID: <3AF16151.24AD1ECF@some.net>
Source record: 164393
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

These "freeband" morons think that if they listen to a frequency and
they don't hear anyone, it is OK for them to use it. That's why so many
are now moving up to 10 meters. It simply amazes me how anyone can think
that just because they don't hear any communications on a frequency it
must be OK for them to transmit on it. Typical of the cb mentality.

Jerry Oxendine wrote:
>
> Bob,
>
> Yours is the kind of misunderstanding that, try as people might, just
> can't seem to be overcome. I know FIRSTHAND that there are agencies
> that are assigned frequencies above and below the 11 meter CB band.
> Tell me, what is "unessential" about forest rangers. What is "unessen-
> tial" about military comms? The difference is the type and duration of
> commercial and military comms as opposed to civilians who are there just
> to talk, often as much as possible, to as many people as possible. Busi-
> ness or military comms are short and to the point.

> Jerry
> K4KWH
>
> Bob wrote:
> >
> > Ok, Mr. Letter of the Law.
> >
> > And I bet you ALWAYS obey the maximum posted speed limit. If you wanted to speed,
> > you would take the right approach to speeding legally - because, hey man, you do
> > EVERYTHING right. You would put your mind to becoming a race car driver and do your
> > speeding on the track where it belongs. You would follow the proper steps to
> > becoming a race car driver:
> >
> > 1. Learn to ride a unicycle, because that's how it all started, man. Our
> > forefather's rode unicycles before fast cars were around, so must you learn.
> > 2. Learn everything there is to know about cars - including memorizing the answers
> > to questions about walking, unicycles, horse and carriage, boats, planes, etc.
> > 3. If you skip the step on learning to ride a unicycle, prepare to be chastised by
> > old-timers that had to learn how to ride it and by some who love the unicycle and
> > can ride it at over 20 mph! BTW - learning to ride the unicycle keeps bad people
> > from becoming race car drivers.
> > 4. Prepare to spend some money. Your standard car won't do - it doesn't fit race
> > car specs! And every race track requires a different car and tire combination.
> >
> > Is becoming a race car driver what you should do because you like to take those 15

> > turns of Bear Mountain road at an faster than the posted speed? Well, ham radio IS
> > NOT a replacement for the "freeband" either. Ham radio doesn't fit everybody. Maybe
> > its a bit of an extreme commitment for some. Hey, I can operate my equipment and
> > make sure that it complies with the same rules the FCC mandates for hams. I can
> > operate it responsibly. I can operate it courteously . I can use the minimum amount
> > of power necessary for a contact.
> >
> > Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is it immoral? A
> > crime against humanity? Absolutely not. To me - speeding in your car is a far more
> > worse crime.
> >
> > BTW, I do not condone operating on ham bands or intentionally interfering with any
> > service that I am aware of. Yes, I know there are (very few, non essential)
> > services allocated between 27.405 and 28Mhz. I support operations on 27.405 -
> > 27.855 Mhz that follow the same regulations that hams follow.
> >
> > Hopefully this metaphor can crack the thick skull of the "yes, but it's illegal,
> > yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't black and
> > white.
> >
> > Bob.
>
> > > > >

2547. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 14:58:16 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF17208.6E97B535@spam.me.not>
Source record: 164394
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Doug:

Hit Wilson's site and read up on what a Wilson Silver Load is....

Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
top loaded coil antenna. Two of them make 1 1/4 wave. Maybe I should
have said 1 1/4 wave dipole?

-SSB

Doug Smith wrote:
>
> On Thu, 03 May 2001 09:31:36 -0400, Sideband <sideband@spam.me.not> wrote:
> >them as well. Granted, I run a 5/8 dipole on the car (two 4' Wilson
>
> Uh, 8 feet is not 5/8 wave on 11 meters. A 102" (8-1/2') whip is 1/4 wave,
> so a 5/8 wave would be a bit more than 17 feet long.
>
> (you should try a 102" whip, I think you're likely to find it more effective
> than the twin four-footers. Because you won't have loading-coil losses.
> Mine worked *fantastically* well on 10 meters with a converted SSB CB.)
> --
> Doug Smith W9WI
> Pleasant View (Nashville), TN EM66
> http://www.w9wi.com

2548. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 15:00:11 UTC
From: "Dana H. Myers" <dana@dioxine.com>
Message-ID: <3AF17278.D9B33D81@dioxine.com>
Source record: 164395
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Rob St.Denis" wrote:

> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF15839.FE40D1AC@spam.me.not...
> > So when a freebander is transmitting with legal power levels on the
> > legal 40 they're still breaking the law?
>
> No when you transmit of the 40 channels you are authorised to use you are a
> cb'er. As soon as you turn up the power passed the 4/12 or go outside those
> channels you are breaking the law

A technicality overlooked by many is that Part 95 operation on 27MHz,
better known as CB, not only sets a maximum legal power level, it also
requires the use of a 'type accepted' transmitter/transceiver. So, even
if you turn the power down on an amateur transceiver and stick the CB
channels, it's still not legal. The law is that CB radios are used on CB.

Not that it functionally makes that much of a difference, but that's the
law.

Dana

2549. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 15:01:24 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF172C4.E40DD7AE@spam.me.not>
Source record: 164396
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Bill:

Apparently I shouldn't have voiced my opinion. With a few taps of your keycaps I've been crammed in with the freebanders. Perhaps I should go out and get an 800W linear, run at 130% modulation, start calling CQ on 28.085 AM, and forget about taking my Tech and General written exams next week?

What do you think?

-SSB

Bill Meacham wrote:
>
> Sideband wrote:
> >
>
> >
> > I don't condone violations of FCC rules. However, I would like to see a
> > sideband only band above channel 40, but below 27.800, with a 50 watt
> > limit, for CB'ers to DX on... The frequencies allocated for this could
> > "go around" the currently allocated forestry, etc, frequencies, much in
> > the same way the CB frequencies skip over the RC freq's.
> >
> > Just my two cents, here... Of course, your mileage may vary.
>
> There already is one. 10 meters. You just have to get a
> license. Whats the point in creating another special band for
> people who don't want to get a license? You already have channels
> 1-40 and it got messed up. So now you've got FRS...It doesn't
> make sense to just creating bands for people to use in a manner
> inconsistent with the intent. Any unlicensed band is going to be
> bedlam. Do you think if the FCC legislated a "freebander band"
> from 27.455 to 27.800 that it would be any different? Would the
> guys turn off the lean-yars and start using legitimate callsigns?
> ---
> Bill Meacham
> Vieques, PR

2550. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 15:08:21 UTC
From: richardharrison@webtv.net
Message-ID: <28173-3AF17465-27@storefull-114.iap.bryant.webtv.net>
Source record: 164397

Mike Luther wrote:
"In space no one can hear you scream."

That`s better than farting in the echo chamber and never hearing the end of it!

Best regards, Richard Harrison, KB5WZI

2551. Mosley Issue Resolved

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 15:32:01 UTC
From: wa7aw@bentonrea.com
Message-ID: <3af179d6.149536198@news.bentonrea.com>
Source record: 164399

http://users.bentonrea.com/~wa7aw/tower/mosley.html

2552. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 15:35:02 UTC
From: richardharrison@webtv.net
Message-ID: <28174-3AF17AA6-7@storefull-114.iap.bryant.webtv.net>
Source record: 164398

Bill, W0IYH wrote:
"However, the balance usually can be off a tad with no really big consequences."

My experience in erecting many HF 1/2-wave dipoles agrees with that. All were connected directly to coax feedlines without baluns and worked well.
They all had strong signals and no extraordinary r-f in the shack.

Best regards, Richard Harrison, KB5WZI

2553. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 15:40:47 UTC
From: Steve <ai7w@NoSpam.com>
Message-ID: <9cs1ml$208$1@slb3.atl.mindspring.net>
Source record: 164413
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Bob,
Over the years I've discovered that when someone defends an obviously
illegal activity, they usually have some ulterior motive. What is your
motive?
Do you operate outside the amateur bands?
Why in the world would you defend those who flaunt the laws that make
amateur
radio (and the other radio services) possible?
Steve

Bob <bob@bob.com> wrote in message news:3AF183FF.2EB4C568@bob.com...
> Good work, Sherlock - you've pointed out it's illegal, *again*. We've
> established that.
>
> How serious a crime is it? Your assignment - think of all the crimes you
can,
> where does freebanding fit it? Maybe you should go spend your time
protesting
> real crimes (I can provide a list if you need one, where do I start...how
about
> NAFTA).
>
> And, of course you don't speed. You're a decent, upstanding citizen - who
turns
> in your neighbor for digging without a permit - thanks for making the
world a
> better, safer place.
>
> Bob.
>
>
>
> W6DKN wrote:
>
> > No amount of self justification will erase the simple fact that what you
> > are doing is a crime. That makes you a criminal, and therefore not
worthy
> > of respect. You sound like the gang bangers in LA bitching because they
are
> > treated like hoodlums.
> >
> > By the way, I do have a cherry 1974 427 FI ' Vette that I take out to LA
> > County Raceway when I want to speed (it turns low 12's with street

tires).
> > When I am driving my Blazer on city streets, I obey the traffic laws.
> > That's what honest people do...
> >
> > 73 de W6DKN
> >
> > "Bob" <bob@bob.com> wrote in message news:3AF09A1D.1F7C4E45@bob.com...
> > > Ok, Mr. Letter of the Law.
> > >
> > > And I bet you ALWAYS obey the maximum posted speed limit. If you
wanted
> > to speed,
> > > you would take the right approach to speeding legally - because, hey
man,
> > you do
> > > EVERYTHING right. You would put your mind to becoming a race car
driver
> > and do your
> > > speeding on the track where it belongs. You would follow the proper
steps
> > to
> > > becoming a race car driver:
> > >
> > > 1. Learn to ride a unicycle, because that's how it all started, man.
Our
> > > forefather's rode unicycles before fast cars were around, so must you
> > learn.
> > > 2. Learn everything there is to know about cars - including memorizing
> > the answers
> > > to questions about walking, unicycles, horse and carriage, boats,
planes,
> > etc.
> > > 3. If you skip the step on learning to ride a unicycle, prepare to be
> > chastised by
> > > old-timers that had to learn how to ride it and by some who love the
> > unicycle and
> > > can ride it at over 20 mph! BTW - learning to ride the unicycle keeps
bad
> > people
> > > from becoming race car drivers.
> > > 4. Prepare to spend some money. Your standard car won't do - it
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> > fit race
> > > car specs! And every race track requires a different car and tire
> > combination.
> > >
> > > Is becoming a race car driver what you should do because you like to
take
> > those 15
> > > turns of Bear Mountain road at an faster than the posted speed? Well,

ham
> > radio IS
> > > NOT a replacement for the "freeband" either. Ham radio doesn't fit
> > everybody. Maybe
> > > its a bit of an extreme commitment for some. Hey, I can operate my
> > equipment and
> > > make sure that it complies with the same rules the FCC mandates for
hams.
> > I can
> > > operate it responsibly. I can operate it courteously . I can use the
> > minimum amount
> > > of power necessary for a contact.
> > >
> > > Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is
it
> > immoral? A
> > > crime against humanity? Absolutely not. To me - speeding in your car
is a
> > far more
> > > worse crime.
> > >
> > > BTW, I do not condone operating on ham bands or intentionally
interfering
> > with any
> > > service that I am aware of. Yes, I know there are (very few, non
> > essential)
> > > services allocated between 27.405 and 28Mhz. I support operations on
> > 27.405 -
> > > 27.855 Mhz that follow the same regulations that hams follow.
> > >
> > > Hopefully this metaphor can crack the thick skull of the "yes, but
it's
> > illegal,
> > > yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't
> > black and
> > > white.
> > >
> > > Bob.
> > >
> > >
> > > Scott Townley wrote:
> > >
> > > > But you *do* have all the respect you deserve...the same respect we
> > > > all grant to FELONS, which is what you are, buddy...
> > > >
>

2554. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:03:45 UTC
From: kb7qhc@home.com
Message-ID: <3af17e95.588871642@news.seanet.com>
Source record: 164401

On Wed, 2 May 2001 23:50:08 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Richard Clark, KB7QHC wrote:
>"K = 68% which confirms the scrap status."
>
>This is from a formula from Alpha Wire said to give the "percent >coverage". Perhaps this is not the percentage of signal rejection, but >it did incorporate the frequency, so it may be related.
>
>Copper window screen is full of holes but still shields rather well at >h-f. It is the material used in many screened rooms.
>
>We know from Faraday shields that fair sized gaps can exist between >wires or teeth used to terminate the electric field and yet almost all >the electric lines go no farther than the shield. We also know that >shorting the open-circuit ends of the Faraday shield almost completely >kills the magnetic coupling through the shield, too. So is 68% as dire >as it sounds for h-f?
>
>Does Alpha Wire explain the consequences of percentage coverage?
>
>Best regards, Richard Harrison, KB5WZI

Hi Richard,

You are in error, the formula does not include any frequency consideration. This is why I based all discussion of leakage in terms of the individual points of leakage and the separation between them, and their bulk over a significant length, all in terms of wavelength.

The comments of Faraday shield are too highly specialized to answer leakage in the context of this topic. And others should note that cable leakage is un-coordinated at close range due to the mixing products of all the contributing "ports" which is why I specifically mandated that measurement had to attend equal paths from all contributors to the detector load. Close up, this is meaningless, at a distance for a finite cable length, there is some point remote enough to qualify (to within 1 degree or so variation between all contributors).

Further, this reliance of the Faraday shield to answer bulk cable leakage denies the Mutual capacitance exhibited between the "shielded" center conductor and a cable run tray. 0.15 pF per foot may seem trivial until we consider the scale of the number of feet. Cross talk between "shielded" cables is a fact of life with a simple explanation

- cables leak.

For the RF Photon Phans, I would point out that even fiber optics, the optical coax of our generation, exhibits this same "leakage."

73's
Richard Clark, KB7QHC

2555. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:05:08 UTC
From: Bill Meacham <NOSPAMexray@coqui.net>
Message-ID: <3AF181B4.A5E988EF@coqui.net>
Source record: 164400
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Sideband wrote:
>
> Bill:
>
> Apparently I shouldn't have voiced my opinion. With a few taps of your
> keycaps I've been crammed in with the freebanders. Perhaps I should go
> out and get an 800W linear, run at 130% modulation, start calling CQ on
> 28.085 AM, and forget about taking my Tech and General written exams
> next week?
>
> What do you think?
>
> -SSB

I don't know how you extracted that defense out of what I said,
but I have no problem with you voicing your opinion. I just don't
agree with the concept of a special band for illegal operators.
Maybe you were just being sarcastic, I dunno.
I support your studying and taking the exams and upgrading. Thats
very commendable. Check out some antenna theory on the side and
you'll also better understand some of the merchandising
terminology referred to in your other post.
Good luck to you. I hope you accomplish your goals.
>
-BM

2556. Re: REC.RADIO.AMATEUR.ANTENNA?????

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:10:22 UTC
From: kb7qhc@home.com
Message-ID: <3af28220.589778276@news.seanet.com>
Source record: 164402

On 02 May 2001 23:38:28 GMT, fractenna@aol.com (Fractenna) wrote:

>>cell and PCS antennas are manufactured by
>>Antenna Specialists, DB Products (Allen Telecom) Sinclair, Comtelco, Allgon,
>>Antel International, Antenex, Astron Antenna, Celwave, RFS Cablewave,
>>Cushcraft/Signals, EMS Wireless, DAPA, Hustler, Larsen, Maxrad, Mobile Mark,
>>Telewave, and lots of other companies. Try your web browser.
>>
>>I fail to understand how cellular and PCS antenna design discussion fits
>>into REC.radio.AMATEUR.antenna. Maybe we need a new NG.
>>sci.electronics.rip-off-the-cell-company.
>>
>>Flame away!
>>
>
>You certainly left out a key commercial firm. Since you are mentioning them you
>should not play favorites.
>
>** Fractal Antenna Systems, Inc. **
>
>Use your web browser and you will have no problem finding it. Lots of folks
>have.
>
>73
>Phil
>de N1ZKT

herr doktor,

You missed the point, they are not interested in fractal keys from a
key commercial firm, they are interested in antennas. ;-)

Hmmm, fractal keys for fractal locks? A lock-pick would only need one
iterated key to serve every lock! Sounds like a poor business model
to me. Ever thought of starting a dot.com?

73's
Richard Clark, KB7QHC

2557. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:14:56 UTC
From: Bob <bob@bob.com>
Message-ID: <3AF183FF.2EB4C568@bob.com>
Source record: 164403
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Good work, Sherlock - you've pointed out it's illegal, *again*. We've
established that.

How serious a crime is it? Your assignment - think of all the crimes you can,
where does freebanding fit it? Maybe you should go spend your time protesting
real crimes (I can provide a list if you need one, where do I start...how about
NAFTA).

And, of course you don't speed. You're a decent, upstanding citizen - who turns
in your neighbor for digging without a permit - thanks for making the world a
better, safer place.

Bob.

W6DKN wrote:

> No amount of self justification will erase the simple fact that what you
> are doing is a crime. That makes you a criminal, and therefore not worthy
> of respect. You sound like the gang bangers in LA bitching because they are
> treated like hoodlums.
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> By the way, I do have a cherry 1974 427 FI ' Vette that I take out to LA
> County Raceway when I want to speed (it turns low 12's with street tires).
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> "Bob" <bob@bob.com> wrote in message news:3AF09A1D.1F7C4E45@bob.com...
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> > Is becoming a race car driver what you should do because you like to take
> those 15
> > turns of Bear Mountain road at an faster than the posted speed? Well, ham
> radio IS
> > NOT a replacement for the "freeband" either. Ham radio doesn't fit
> everybody. Maybe
> > its a bit of an extreme commitment for some. Hey, I can operate my
> equipment and
> > make sure that it complies with the same rules the FCC mandates for hams.
> I can
> > operate it responsibly. I can operate it courteously . I can use the
> minimum amount
> > of power necessary for a contact.
> >
> > Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is it
> immoral? A
> > crime against humanity? Absolutely not. To me - speeding in your car is a
> far more
> > worse crime.
> >
> > BTW, I do not condone operating on ham bands or intentionally interfering
> with any
> > service that I am aware of. Yes, I know there are (very few, non
> essential)
> > services allocated between 27.405 and 28Mhz. I support operations on
> 27.405 -
> > 27.855 Mhz that follow the same regulations that hams follow.
> >
> > Hopefully this metaphor can crack the thick skull of the "yes, but it's
> illegal,
> > yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't
> black and
> > white.
> >
> > Bob.

> >
> >
> > Scott Townley wrote:
> >
> > > But you *do* have all the respect you deserve...the same respect we
> > > all grant to FELONS, which is what you are, buddy...
> > >

2558. Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:15:51 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <Xufl6.3256$4f7.231516@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164404

This is long. Not interested, don't read or set your kill filter.

Walter Maxwell" <w2du@iag.net> wrote in message
news:HbZH6.6864$c4.513370@e420r-chi1.usenetserver.com...
>
> <snip>
>
> Sorry Steve, they are not incorrect. You apparently still fail to
> understand the concept.
>
> <snip>
>
> Steve, sorry, but you just don't get it, the same as in our previous
> discussions a year ago.
>
> <snip>
>
> Yes Steve, I am challenging you. Allright then, please direct those
several
> question again, but on the newsgroup so all can see. I won't be back on
the
> NG until Friday or later, because we're moving back to Michigan tomorrow
> from Florida, six mo in MI and six mo in FL
>
> Walt, W2DU

Walter:

This is part of my response to your challenge. These questions are different than the ones posted sometime ago because I would like us to consider some very basic concepts.

I will be posting several sets of questions and I will also set up two examples that we can discuss. This first post will describe the first example of a Zo match established with a lossless tuner. I will describe the steady state conditions and I will then summarize your technical opinion of how the match is achieved and how the voltages, currents and power interact and combine within the system (you can correct me if I misstate your technical position). I will also describe my technical opinion of how the match is achieved and how the voltages, currents and power interact. This will establish the basis of our technical disagreement.

Second, I will ask a series of questions that relate to basic circuit and transmission line theory. This may seem ridiculous, but it is necessary for us to agree on the basic concepts so that we can apply them correctly to the examples and to our technical positions. Since you quote Johnson and have

indicated that your concepts are consistent with the material in his text, I will use his text - Transmission Lines and Networks (c) 1950 - as the technical reference. Once we agree on the technical basics, we can discuss the wave mechanics of the two examples in detail.

Example 1.

A ------ 50 ohms ------ B - Tuner - C ------ 50 ohms ------ D

The source is located at point A. It is a voltage source V = 141.422 V. The source impedance is 50 ohms. The impedance seen looking rearward into the source is 50 ohms.

Between points A and B, there is a lossless 50 ohm transmission line, L1. The transmission line is 1 wavelength long.

Point B is the Tuner input. The Tuner is lossless. It is a T-network tuner. The first element is a capacitor, C1, with a value of 67.108 pF. The second element is a parallel inductor, L, with a value of 0.6962 uH. The third element is a series capacitor, C2, with a value of 50.0 pF. Point C is the tuner output.

Between points C and D, there is a lossless 50 ohm transmission line, L2. The transmission line is 1 wavelength long.

At point D there is an antenna with a feedpoint impedance of 150 ohms.

The steady state power levels are as follows: In L1, the forward power is 100 Watts and the reflected power is 0 Watts. In L2, the forward power is 133.33 Watts and the reflected power is 33.33 Watts.

Walter's Technical Opinion: The steady state match that occurs at point B is the result two rearward traveling waves coincident at this point. The voltages associated with these rearward waves are 180 degrees out of phase such that the resulting voltage is zero but the current is maximum. This is a virtual short circuit only to the reflected wave such that the reflected wave is totally re-reflected at point B. The totally re-reflected power of 33.33 Watts adds in phase with the source delivered power of 100 Watts and the two combine to the total forward power of 133.33 Watts in L2.

VE9SRB's technical opinion. The steady state match that occurs at point B is the result of two rearward traveling waves coincident at this point. The voltages and currents associated with these two rearward traveling waves are both 180 degrees out of phase such that the net rearward traveling wave is zero. There is no virtual short circuit created at point B and there is no re-reflection of power at point B. The re-reflection of power only occurs at point C, the tuner output. The total forward power in L2 is a result of the forward source power at point C adding to the re-reflections at point C. The forward source power at point C is 75 Watts and the re-reflected power at point C is 8.33 Watts. These two forward powers combine to the net forward power of 133.33 Watts in L2. Determination of these power levels must be made through a voltage and current analysis of the system.

Now the basics:

1. It is my opinion that wave reflections in a transmission line occur at any impedance discontinuity relative to the transmission line Zo. The reflected voltage is equal to the incident voltage times rho: Vref = rho Vi. The total voltage at the impedance discontinuity is equal to the incident voltage times (1 + rho): Vtot = (1 + rho) Vi. The reflected power at any impedance discontinuity is equal to the incident power time |rho|^2: Pref = |rho|^2 Pi. The power transmitted or delivered to the impedance discontinuity is equal to the incident power times (1 + |rho|^2): Pdel = (1 + |rho|^2) Pi. These concepts are consistent with the discussion in Johnson's text. Do you concur?

2. Johnson clearly indicates that reflections and re-reflections are the direct result of the impedance discontinuity the wave sees when it reaches the *end* of the transmission line. The forward wave will be reflected based on the impedance it sees at the output end of the line and the reflected wave will be re-reflected based upon the impedance it sees at the input end of the line. From page 16 - "Thus, a terminating impedance different from Zo will give rise to a reflected wave which travels away from the termination. The reflection, upon reaching the other end of the line, will itself be reflected if the terminating impedance at that end is different than Zo." From page 19 - "A wave of voltages of this value travels to the receiving end [load end], where it is reflected with the coefficient, Kr. The reflection travels back to the generator end of the line, where it is reflected with the coefficient Kg." These statements are technically correct. Do you concur?

3) You made a recent statement in the NG as follows: "Steve's problem with addition of voltages or powers on a transmission line is that it is NOT the voltages that add, it's power, even though Steve denies that this is true. His misconception on this issue is why his powers don't add up correctly. Everything comes out correctly when powers are added, but never come out correctly by adding voltages."

You clearly state that voltages on a transmission line do not add. You also clearly state that everything does not come out correctly by adding voltages. Emphasis on never come out correctly by adding voltage.

Let's look at Johnson's opinion on the addition of voltages in a transmission line. Pages 98 - 101. Note
that Johnson's entire wave reflection analysis is done with voltage not power. Johnson first defines the initial sending-end voltage: "When the generator is first connected to the line, it sees an impedance equal to Zo until the arrival of the first reflection from the load. Therefore, for the first few moments the sending end voltage of the line will be Eg Zo / (Zo + Zg). This wave, which we will imagine to flow forevermore out of the generator, will be propagated down the line." There are two significant point here. First, the forward driving voltage delivered to the transmission line by the source is a direct function of Zo - nothing else. Johnson also notes that this wave flows forevermore out of the generator. This is the forward driving voltage applied to the transmission line by the transmitter. It, in and of itself, never changes. The only voltage changing the total forward driving voltage at the line input are the

re-reflections created at the line input. Let's continue: "As the wave reaches the load, it will be reflected with the reflection coefficient Kr and will thus give rise to a second wave which will travel back towards the generator. ... This wave reaches the generator ... and is reflected there with the coefficient Kg. The new reflection is propagated to the right [towards the load] ... Continuing in this way, we find an infinite series of reflections, each smaller than the last. The sum is convergent and represents the steady state which is finally established." Apparently Johnson is of the opinion that addng voltages in a transmission line to establish the steady state is correct. You disagree with my addition of voltage, do you disagree with Johnson's?

On determining the total forward power in the transmission line. Johnson defines the total forward voltage traveling in the transmission line as E+, which is "the net incident [forward] wave composed of the sum [he adds voltages] of
all the individual waves that travel towards the load.." To determine the total forward power traveling in the line, Johnson (see pages 149 - 150) uses the expression |E+|^2 / Zo. To determine the total forward power in the line, Johnson first determines the total forward voltage (the net sum of the forward source voltage, determined as the voltage delivered to Zo, and the voltage re-reflections). He does not determine the total forward power through the addition of power. When I determine the total forward power from the addition of forward voltage, you indicate that I have a problem and don't understand the basic concepts. My approach to determining the total forward power is consistent with Johnson's. Is Johnson incorrect as well? Do you concurr with Johnson's approach?

4) If the forward source voltage in a 50 ohm transmission line is 100 V, what is the forward source power?

5) If the re-reflected voltage in a 50 ohm transmission line is 100 V, what is the re-reflected power?

6) If the forward source voltage is 100 V and the re-reflected voltage is 100 V and these voltages are in-phase, what is the total forward voltage? What is the total forward power?

7) If the forward source power is 200 W and the re-reflected power is 200 W, what it the total forward power? What is the total forward voltage?

I think that this pretty much covers the basics for now. After we discuss these issues, we can take a look at the above example and see if our analysis and approach is consistent with Johnson's technical discussions or not.

Steve VE9SRB

2559. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:20:50 UTC
From: W4NTI <w4nti@nospammindspring.com>
Message-ID: <9cs0f8pt1@slb0.atl.mindspring.net>
Source record: 164405
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Why? To accomidate a bunch of LAZY illegal fools? You must be a liberal. I bet you support dropping the standards of a SAT just to accomidate some lazy bum that cant pass it...right?

Dan/W4NTI

"Sideband" <sideband@spam.me.not> wrote in message news:3AF15839.FE40D1AC@spam.me.not...
> I don't condone violations of FCC rules. However, I would like to see a
> sideband only band above channel 40, but below 27.800, with a 50 watt
> limit, for CB'ers to DX on... The frequencies allocated for this could
> "go around" the currently allocated forestry, etc, frequencies, much in
> the same way the CB frequencies skip over the RC freq's.
>
> Just my two cents, here... Of course, your mileage may vary.
>
> -SSB
>

2560. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:30:35 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF187AB.44CC02EB@spam.me.not>
Source record: 164406
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Dan:

I honestly don't know how to respond to this. Your post below is so thick with sarcasm I fail to see your point. Perhaps you could tone it back a few notches and provide some facts (if you can find any) to back up your assertion that (1) I'm a liberal, (2) I'm lazy, (3) that I've operated illegally, and (4) Just what the SAT's have to do with it.

After you've done that, I may consider explaining my reasoning behind my opinion so that you might understand it.

Again, I caution you, do not include me amongst the freebanders; I'm neither one of them, nor do I condone what they do (as I stated in the very first sentence of the quote you so vitriously lambasted.)

-SSB

W4NTI wrote:
>
> Why? To accomidate a bunch of LAZY illegal fools? You must be a liberal. I
> bet you support dropping the standards of a SAT just to accomidate some lazy
> bum that cant pass it...right?
>
> Dan/W4NTI
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF15839.FE40D1AC@spam.me.not...
> > I don't condone violations of FCC rules. However, I would like to see a
> > sideband only band above channel 40, but below 27.800, with a 50 watt
> > limit, for CB'ers to DX on... The frequencies allocated for this could
> > "go around" the currently allocated forestry, etc, frequencies, much in
> > the same way the CB frequencies skip over the RC freq's.
> >
> > Just my two cents, here... Of course, your mileage may vary.
> >
> > -SSB
> >

2561. Re: Respect For Freebanders Response

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:33:00 UTC
From: W4NTI <w4nti@nospammindspring.com>
Message-ID: <9cs163dkb1@slb2.atl.mindspring.net>
Source record: 164407
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Yeah yourn right, I stopped reading yours after the Ge Whiz!...bark bark.

Dan/W4NTI
"Arf! Arf!" <DoggieDaze@Liberal.comz> wrote in message
news:9cr4i5ale0@pita.alt.net...
> Gee whiz! When you guys gonna learn to keep your responses short and to
the
> point? Don't write a darn book....nobody reads past the first two
paragraphs
> anyway.
> If you can't say it in a few sentences, nobody cares.
> Save your editorializing for the New York Times....
>
> <ccom2@socket.net> wrote in message
news:3af0dcb3.3549117@news.socket.net...
> > Preach it Brother
> > It could not have been said any better.
> >
> > FreeBanders are bottom feeding scum.
> > That should have all their equipment taken away.
> > Mike
> > AB0IV
> >
> > Jerry Oxendine <joxendi@bellsouth.net> wrote:
> >
> > >Bob,
> > >
> > >Yours is the kind of misunderstanding that, try as people might, just
> > >can't seem to be overcome. I know FIRSTHAND that there are agencies
> > >that are assigned frequencies above and below the 11 meter CB band.
> > >Tell me, what is "unessential" about forest rangers. What is "unessen-
> > >tial" about military comms? The difference is the type and duration of
> > >commercial and military comms as opposed to civilians who are there
just
> > >to talk, often as much as possible, to as many people as possible.
Busi-
> > >ness or military comms are short and to the point.
> > >
> > >I know the regulars get tired of reading this example, but it is a per-
> > >fect example of why NOT to "freeband". Some years ago, I was acting
> > >as communications officer for Civil Air Patrol on a live search for a
> > >light plane that disappeared during a storm. We planned to use a freq-
> > >uency near 11 meters which is a USAF frequency assigned to CAP. Like

> > >many rescue agencies, both civilian and military, we use our assigned
> > >frequencies so as to separate various kinds of traffic, take advantage
> > >of atmospherics (time of day), and keep from "interfering" with our-
> > >selves--air to ground on one freq., mobile to base on another, and yet
> > >another for "incidental comms" such as flight line, safety, or even
> > >sending out for food for the searchers. Another reason for choosing
the
> > >low power 26 MHZ band was to prevent news hounds, ambulance chasers,
> > >and even possibly the family of the pilot from hearing adverse news via
> > >scanner. *Most* scanners don't deal too well with SSB. We quickly
dis-
> > >covered that there was a "freebander" on that frequency calling,
"BREAK,
> > >BREAK, skipland", etc with a linear that made it difficult or
impossible
> > >to use this frequency forcing a lot of incidental traffic onto VHF. I
> > >was LIVID! There was NO excuse for this person operating on that freq-
> > >uency whatsoever. He was interfering with an active USAF authorized
> > >mission, a real emergency where a life was hanging in the balance. In
> > >the following week after the mission was suspended, I began to DF this
> > >pirate, determined to put a stop to his outlaw operations. One
evening,
> > >I happened to be in a nearby town, and absently switched on one of my
> > >radios in the car not expecting to hear anything. The guy was pegging
> > >my meter and almost busted my speaker. On my way out of town, I made
> > >a screeching U-turn and went back into town, stopping at the town PD to
> > >ask if they recognized that voice. Yup, they knew the fella and where
he
> > >lived. I drove to his house and confirmed the location. Outlaw was
> > >reported to FCC field office, and was busted for out-of-band operation
> > >AND interfering with emergency communications--a serious Federal
> > >offense. Betcha he got tired of eating beans from a .10 can!
> > >
> > >There IS no excuse for operating on unauthorized frequencies. You might
> > >*think* these freqs are unoccupied and that the agencies thereto
assign-
> > >ed are "non-essential". That is not for individuals to decide. Just
> > >because *you* don't hear anyone doesn't mean they aren't there and that
> > >there is no traffic being passed that you could hinder.
> > >
> > >Finally, let's say I, or you, rent/lease a piece of property with a
nice
> > >lake on it. Intending to do a little fishing, you stock that lake with
> > >a variety of game fish--bass, crappy, catfish, perch, or whatever. You
> > >are busy and don't get out to your lake real often, but one day you
> > >decide it would be a good day to go fishing; remember, it's "your" lake
> > >by virtue of your lease to use as you see fit within the guidelines of
> > >your agreement with the owner. When you arrive, you discover a large
> > >group of people on your property, at YOUR lake, catching the fish YOU
> > >stocked--in spite of the fact there are No Trespassing signs all over-

> > >even right where the trespassers are fishing. I'd be angry and I'd
bring
> > >charges against each and every one that trespassed on my land. It
> > >doesn't make any difference if I don't come to the lake every day, it
> > >is STILL property assigned to me by virtue of rent or lease and nobody
> > >has any business on it without permission.
> > >
> > >"Freebanders" don't have "permission" (license) to operate on frequen-
> > >cies outside the 11 meter band. They are trespassing just as surely
> > >as those people I cited in the above paragraph. And when they DO tres-
> > >pass, it pisses off those who are legitimately assigned said
frequencies
> > >for their exclusive use and it don't make ANY difference if they
"visit"
> > >(use) their "property" (frequency) once a minute or once a year--the
> > >"freebanders" are trespassing just as surely as if they just walked
into
> > >your/my house uninvited. There is no respect due, and none forthcoming
> > >for trespassers, "freebanders", or outlaw radio ops.
> > >
> > >Jerry
> > >K4KWH
> > >
> > >
> > >Bob wrote:
> > >>
> > >> Ok, Mr. Letter of the Law.
> > >>
> > >> And I bet you ALWAYS obey the maximum posted speed limit. If you
wanted
> to speed,
> > >> you would take the right approach to speeding legally - because, hey
> man, you do
> > >> EVERYTHING right. You would put your mind to becoming a race car
driver
> and do your
> > >> speeding on the track where it belongs. You would follow the proper
> steps to
> > >> becoming a race car driver:
> > >>
> > >> 1. Learn to ride a unicycle, because that's how it all started, man.
> Our
> > >> forefather's rode unicycles before fast cars were around, so must you
> learn.
> > >> 2. Learn everything there is to know about cars - including
memorizing
> the answers
> > >> to questions about walking, unicycles, horse and carriage, boats,
> planes, etc.
> > >> 3. If you skip the step on learning to ride a unicycle, prepare to be

> chastised by
> > >> old-timers that had to learn how to ride it and by some who love the
> unicycle and
> > >> can ride it at over 20 mph! BTW - learning to ride the unicycle keeps
> bad people
> > >> from becoming race car drivers.
> > >> 4. Prepare to spend some money. Your standard car won't do - it
doesn't
> fit race
> > >> car specs! And every race track requires a different car and tire
> combination.
> > >>
> > >> Is becoming a race car driver what you should do because you like to
> take those 15
> > >> turns of Bear Mountain road at an faster than the posted speed? Well,
> ham radio IS
> > >> NOT a replacement for the "freeband" either. Ham radio doesn't fit
> everybody. Maybe
> > >> its a bit of an extreme commitment for some. Hey, I can operate my
> equipment and
> > >> make sure that it complies with the same rules the FCC mandates for
> hams. I can
> > >> operate it responsibly. I can operate it courteously . I can use the
> minimum amount
> > >> of power necessary for a contact.
> > >>
> > >> Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is
it
> immoral? A
> > >> crime against humanity? Absolutely not. To me - speeding in your car
is
> a far more
> > >> worse crime.
> > >>
> > >> BTW, I do not condone operating on ham bands or intentionally
> interfering with any
> > >> service that I am aware of. Yes, I know there are (very few, non
> essential)
> > >> services allocated between 27.405 and 28Mhz. I support operations on
> 27.405 -
> > >> 27.855 Mhz that follow the same regulations that hams follow.
> > >>
> > >> Hopefully this metaphor can crack the thick skull of the "yes, but
it's
> illegal,
> > >> yes, but it's illegal, yes, but it's illegal" ham. This is issue
isn't
> black and
> > >> white.
> > >>

> > >> Bob.
> > >
> > >> > >
> >
>
>

2562. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:34:03 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <%Lfl6.7806$2_.2901741@news3.rdc1.on.home.com>
Source record: 164409
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

So you are telling me theres no such thing as a pile up on a ham band ...
where there may be hundreds of people talking at the same time ? Happens on
them too ... my 10 does fine ... more is irrelevant.

--
Rob St.Denis

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF15DB8.DA352212@spam.me.not...
> Comments below:
>
> "Rob St.Denis" wrote:
>
> <snip>
>
> >
> > Why? I regularily work world wide on 10m with as little as 10watts on
ssb
> > (min required for the autotuner to work) and that is from the car.
> >
> > Rob
>
> Because most HAM's know how to run their radios, and MOST CB'ers dont. A
> majority of CB'ers think that turning the modulation up past 100%, using
> negative peak modulation compression, and other "tricks" makes them
> louder. In reality, it makes for a noisy band. I know better... My
> GrantXL, with the 2 watt carrier, at 99% modulation, sounds better than
> most of the "export" radios in the trucks out there, and "walks" over
> them as well. Granted, I run a 5/8 dipole on the car (two 4' Wilson
> Silver Load antennae, over and under), tuned properly, so I'm probably
> radiating more than they are, but hey, it works.
>
> At any rate, a band for those who do know how to run a radio would be
> nice... It's a pipe dream... one I won't have to worry about later this
> month, hopefully, but still.. it would be nice.
>
> -SSB

2563. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:34:12 UTC
From: W4NTI <w4nti@nospammindspring.com>
Message-ID: <9cs189$4j1$1@slb2.atl.mindspring.net>
Source record: 164408
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

You heard 20 phone lately? Same mentality.

Dan/W4NTI
"JR" <jr@some.net> wrote in message news:3AF16151.24AD1ECF@some.net...
> These "freeband" morons think that if they listen to a frequency and
> they don't hear anyone, it is OK for them to use it. That's why so many
> are now moving up to 10 meters. It simply amazes me how anyone can think
> that just because they don't hear any communications on a frequency it
> must be OK for them to transmit on it. Typical of the cb mentality.
>
> Jerry Oxendine wrote:
> >
> > Bob,
> >
> > Yours is the kind of misunderstanding that, try as people might, just
> > can't seem to be overcome. I know FIRSTHAND that there are agencies
> > that are assigned frequencies above and below the 11 meter CB band.
> > Tell me, what is "unessential" about forest rangers. What is "unessen-
> > tial" about military comms? The difference is the type and duration of
> > commercial and military comms as opposed to civilians who are there just
> > to talk, often as much as possible, to as many people as possible. Busi-
> > ness or military comms are short and to the point.
>
> > Jerry
> > K4KWH
> >
> > Bob wrote:
> > >
> > > Ok, Mr. Letter of the Law.
> > >
> > > And I bet you ALWAYS obey the maximum posted speed limit. If you
wanted to speed,
> > > you would take the right approach to speeding legally - because, hey
man, you do
> > > EVERYTHING right. You would put your mind to becoming a race car
driver and do your
> > > speeding on the track where it belongs. You would follow the proper
steps to
> > > becoming a race car driver:
> > >
> > > 1. Learn to ride a unicycle, because that's how it all started, man.
Our
> > > forefather's rode unicycles before fast cars were around, so must you

learn.
> > > 2. Learn everything there is to know about cars - including memorizing
the answers
> > > to questions about walking, unicycles, horse and carriage, boats,
planes, etc.
> > > 3. If you skip the step on learning to ride a unicycle, prepare to be
chastised by
> > > old-timers that had to learn how to ride it and by some who love the
unicycle and
> > > can ride it at over 20 mph! BTW - learning to ride the unicycle keeps
bad people
> > > from becoming race car drivers.
> > > 4. Prepare to spend some money. Your standard car won't do - it
doesn't fit race
> > > car specs! And every race track requires a different car and tire
combination.
> > >
> > > Is becoming a race car driver what you should do because you like to
take those 15
> > > turns of Bear Mountain road at an faster than the posted speed? Well,
ham radio IS
> > > NOT a replacement for the "freeband" either. Ham radio doesn't fit
everybody. Maybe
> > > its a bit of an extreme commitment for some. Hey, I can operate my
equipment and
> > > make sure that it complies with the same rules the FCC mandates for
hams. I can
> > > operate it responsibly. I can operate it courteously . I can use the
minimum amount
> > > of power necessary for a contact.
> > >
> > > Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is
it immoral? A
> > > crime against humanity? Absolutely not. To me - speeding in your car
is a far more
> > > worse crime.
> > >
> > > BTW, I do not condone operating on ham bands or intentionally
interfering with any
> > > service that I am aware of. Yes, I know there are (very few, non
essential)
> > > services allocated between 27.405 and 28Mhz. I support operations on
27.405 -
> > > 27.855 Mhz that follow the same regulations that hams follow.
> > >
> > > Hopefully this metaphor can crack the thick skull of the "yes, but
it's illegal,
> > > yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't
black and
> > > white.

> > >
> > > Bob.
> >
> > > > >

2564. Re: Addition of Power

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:35:33 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <pNfI6.3287$4f7.232748@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164410

Thank you Larry. I appreciate the comment.

Steve

"Larry Benko" <benko@aztek-eng.com> wrote in message
news:3AF02006.4764C2D0@aztek-eng.com...
> Steve,
>
> Very logical explanation. It is a pleasure reading your posts.
>
> Larry, W0QE
>
> VE9SRB wrote:
>
>
> > The issue here is the addition of two scalar powers traveling in the
same
> > direction in a transmission line to arrive at the total power traveling
in
> > the transmission line. Walt Maxwell recently posted in this thread that
it
> > is incorrect to add the two voltages together and that to determine the
> > total power you must add the powers together.
> >
> > The specific issue is whether or not two forward waves, one having a
power
> > of 75 Watts and the other having a power of 8.33 Watts combine to a
total
> > power of 133.33 Watts. Walt and Cecil would say that the two must
combine
> > to 83.33 Watts, because 75 + 8.33 = 83.33.
> >
> > My position is that it is fundamentally incorrect to add power in this
> > manner. In order to correctly determine the true total forward power,
you
> > must add the two forward voltages together to determine the total
forward
> > voltage and then determine the total forward power. The reason that
> > voltages must be added is because power is a scalar quantity and the
phase
> > relationship between the two voltages is lost when adding scalar power.
> >
> > Let's consider that the two forward traveling waves have individual
powers
> > of 75 Watts and 75 Watts. What is the total forward traveling power?

> > Knowing only the power levels you cannot answer this question. If the
two
> > powers are 180 degrees out of phase, the total forward power will be 0
> > Watts. What if the two powers are in-phase? Is the total forward power
> > equal to 150 Watts (75 + 75)? No it is not, the correct answer is 300
> > Watts. Note that adding 75 W + 75 W to get 150 Watts implies that two
> > in-phase signals of the same power, traveling in the same direction,
combine
> > with a power gain of 3 dB. Adding 75 W + 75 W to get 300 Watts implies
that
> > two in-phase signals traveling in the same direction, combine with a
power
> > gain of 6 dB. This is consistent with the fact that when you double the
> > voltage (Vtotal = 2 V), you quadruple the power (Ptotal = 4 P).
Remember
> > that we must add voltages, not powers.
> >
> > Adding powers does not give the correct answer. Why? Because two powers
> > traveling in the same direction in space add with the following
> > relationship:
> >
> > Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) Cos(theta),
> >
> > where theta is the relative phase difference between the two waves. If
P1
> > equals P2, then the equation can be written as
> >
> > Ptotal = 2P1 + 2P1 Cos(theta)
> >
> > When the two waves are 180 degrees out of phase, Cos(theta) = -1 and the
> > total power is 0. When the two waves are in-phase, Cos(theta) = 1 and
the
> > total power is 4 P1 (6 dB power gain)
> >
> > Lets consider an example outside of the transmission line problem that
> > illustrates power addition in this manner. Lets consider a horizontal
> > dipole over a perfect ground plane.
> >
> > The dipole in free space has a gain of 2.1 dBi (a dimensionless factor
of
> > approximately 1.63). If the power delivered to the dipole is 1 Watt,
the
> > effective radiated power will be 1.63 Watts.
> >
> > Now lets place a perfect reflector 1/2 wavelength behind the dipole.
Here
> > the total forward wave will be equal to the sum of the dipole wave plus
the
> > reflected wave. In this case, the two waves are 180 degrees out of
phase at

> > the dipole and the total forward traveling wave in this direction will
be 0.
> > The dipole over the ground plane will exhibit a null in its radiation
> > pattern in the normal direction off of the reflector. This "wave
> > cancellation" process is identical to the rearward wave cancellation
process
> > that occurs at the Zo match. Two waves traveling in the same direction
are
> > 180 degrees out of phase and the net rearward traveling wave is 0. This
is
> > equivalent to a null in the dipole radiation pattern.
> >
> > Now let's place a perfect reflector 1/4 WL behind the dipole. In this
case,
> > the two waves are in-phase at the dipole and the total forward traveling
> > wave in this direction will be approximately 6.5 larger (1.63 x 4). In
this
> > case, the power gain in this direction will increase by 6 dB. The power
> > gain increase for two equal in-phase waves traveling in the same
direction
> > is 6 dB not 3 dB. In this case, the effective power radiated by the
dipole
> > is not 3.26 Watts (1.63 + 1.63), it is 6.52 Watts (4 x 1.63). This is
> > exactly the same principle that applies with the re-reflections at a
tuner
> > or Zo match point.
> >
> > 75 W added in phase with 8.33 Watts results in a total forward power of
> > 133.33 Watts. 100 Watts added in phase with 33.33 Watts is simply not
equal
> > to 133.33 Watts.
> >
> > Steve VE9SRB

2565. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:36:16 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <4OfI6.3289$4f7.234095@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164411

"Walter Maxwell" <w2du@iag.net> wrote in message
news:HbZH6.6864$c4.513370@e420r-chi1.usenetserver.com...
>
>
> Yes Steve, I am challenging you. Allright then, please direct those
several
> question again, but on the newsgroup so all can see. I won't be back on
the
> NG until Friday or later, because we're moving back to Michigan tomorrow
> from Florida, six mo in MI and six mo in FL
>
> Walt, W2DU
>

Please see the thread titled "reflections"

Steve

2566. Re: HF Antenna for apartment bldg?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:39:30 UTC
From: W4NTI <w4nti@nospammindspring.com>
Message-ID: <9cs1ip$27i$1@slb4.atl.mindspring.net>
Source record: 164412
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.shortwave

Dave,

Any hunk of wire in the clear will do well. If he is just into listening it is not critical on any particular length. Of course if he is interested in a particular band then a resonate wire would probably help.

Also be aware that he may pick up more noise when he instals the wire. Hang it and see what happens.

Dan/W4NTI

"DaveC" <anon@example.net> wrote in message news:01HW.B716374C00EFAE5905F4AA70@news.dnai.com...
> My brother lives in Tucson, AZ in the SW USA. He has a Drake 8 SW receiver
> (about 10 years old). He currently has a whip antenna he puts out on his
> balcony at night for reception of HF (sorry, I'm not which bands).
>
> He has just received permission to put some kind of antenna on the roof of
> his building. He wants to put a sloper type, 25 ft sloping down to 10 ft. The
> problem is that there is no structure on the roof from which he can hang the
> high end of the antenna. Therefore, he is considering leaving it level, as
> high above the roof as he can get (maybe 4 or 6 ft).
>
> I want to counsel him but I am not familiar with radio antennas for this type
> of receiver. Can he get any performance at all out of a "non-sloping" sloper?
> Or is he better off just getting his whip antenna up on the roof?
>
> He has purchased an RDI White Paper on antennas. (Don't know if this is good
> advice, or if he's thrown away his $$.)
>
> Any observations, comments, or suggestions for other types of antennas would
> be most welcome
> --
> Note that my return address is corrupted in an attempt to reduce spam. If you
> choose to e-mail me, please correct my address as described below.
>
> Thanks,

> Dave
> --
> Dave Carpenter
> Sound Logic
>
> Decode to email: voicebox-at-dnai-dot-com
>

2567. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 16:54:49 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF18D59.70E3DCBD@spam.me.not>
Source record: 164414
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Bill Meacham wrote:

<snip>

> I just don't
> agree with the concept of a special band for illegal operators.

The point I was trying to make, Bill, is this: If the frequencies get "thick" on a particular HAM band, HAMs have a multitude of other frequencies and bands to go to. Not to mention the fact that if the FCC would allocate a sideband-only band in the area I suggested for unlicensed CB, the people running on that band wouldn't be illegals. They would be transmitting in accordance with FCC rules.

> Maybe you were just being sarcastic, I dunno.

Only a little. I suggested the FCC allocate a new band for CB for sideband transmissions. Yes, it would be thick, but it would make the regular 40 less crowded, and give a spot for sidebanders to transmit without (hopefully) being interfered with by AM carriers and the like.

I did not suggest this to help support freebanding; quite the opposite. I suggested it as a way to give those CBers who enjoy transmitting on sideband (like I do) to do so with less interference from the riffraff who run dirty, over-modulated, noise-toy filled, echo-boxed, over-reverb'ed, export trash radios.

> I support your studying and taking the exams and upgrading. Thats
> very commendable. Check out some antenna theory on the side and
> you'll also better understand some of the merchandising
> terminology referred to in your other post.
> Good luck to you. I hope you accomplish your goals.
> >
> -BM

-SSB

2568. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 17:06:11 UTC
From: richardharrison@webtv.net
Message-ID: <4810-3AF19003-51@storefull-118.iap.bryant.webtv.net>
Source record: 164416

Richard Clark wrote:
"You are in error, the formula does not include any frequency consideration."

My mistake. Then the percent coverage of the shield is a physical specification, not an electrical specification.

Radio Shack`s ads for RG-8 with "super coverage (95%) shield may be for something rather ordinary.

Despite poor shield coverage, coax should give off little radiation and accept little externally induced radiation due to its similarity to parallel-wire transmission line, and to the fact that the shield is grounded and tends to reduce electric field coupling.

Best regards, Richard Harrison, KB5WZI

2569. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 17:08:56 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF190A8.F319F677@IEEE.org>
Source record: 164415
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Bob wrote:
> How serious a crime is it? Your assignment - think of all the crimes you can,
> where does freebanding fit it?

That's a pretty good question. Unless I'm missing something, I would
rank it right up there with driving on the shoulder of the road where
such is illegal.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2570. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 17:29:37 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3AF19581.8E84CD40@uci.edu>
Source record: 164418
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

W6RCecilA wrote:

> Bob wrote:
> > How serious a crime is it? Your assignment - think of all the crimes you can,
> > where does freebanding fit it?

> That's a pretty good question. Unless I'm missing something, I would
> rank it right up there with driving on the shoulder of the road where
> such is illegal.

That's pretty good. Or maybe it's like throwing beer bottles and
McDonalds wrappers out the window on the highway, or driving really slow
in the ultrafast lane, or parking in handicapped spaces. Ya know,
something Dennis Leary would sing about.

ac6xg

2571. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 17:31:43 UTC
From: Bill Meacham <NOSPAMexray@coqui.net>
Message-ID: <3AF195FE.1EE44C4E@coqui.net>
Source record: 164417
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

SSB-
I think I'm giving you the same answer that the FCC would. If you want radio communications as a hobby, get an amateur license. Allocating HF spectrum is an international concern, and really the FCC can't arbitrarily choose to do that. The only reason CB was able to be implemented back in the 50's, is because that spectrum was taken away from hams. The intent was "personal communications" for small business or those who had personal needs, and had no other good two-way radio option at the time. It never was intended to be a band for radio hobbyists and AFAIK, the FCC still looks at it that way.
They gave up trying to license operators on the Citizens Band many years ago, which to a lot of minds, was like throwing their hands up at the problem...and future concerns. To dodge the fact that their 27 Mhz creation became hopelessly useless for what it was intended for, they set up FRS to continue giving back the desired basic two-way service to the public.
I don't think they would be interested in cycling backwards. They have a place for hobbyists, and they have a place for 'personal business' communications. Nothing more is justifiable.

-Bill WX4A

Sideband wrote:
>
> Bill Meacham wrote:
>
> <snip>
>
> > I just don't
> > agree with the concept of a special band for illegal operators.
>
> The point I was trying to make, Bill, is this: If the frequencies get
> "thick" on a particular HAM band, HAMs have a multitude of other
> frequencies and bands to go to. Not to mention the fact that if the FCC
> would allocate a sideband-only band in the area I suggested for
> unlicensed CB, the people running on that band wouldn't be illegals.
> They would be transmitting in accordance with FCC rules.
>
> > Maybe you were just being sarcastic, I dunno.
>
> Only a little. I suggested the FCC allocate a new band for CB for
> sideband transmissions. Yes, it would be thick, but it would make the
> regular 40 less crowded, and give a spot for sidebanders to transmit

> without (hopefully) being interfered with by AM carriers and the like.
>
> I did not suggest this to help support freebanding; quite the opposite.
> I suggested it as a way to give those CBers who enjoy transmitting on
> sideband (like I do) to do so with less interference from the riffraff
> who run dirty, over-modulated, noise-toy filled, echo-boxed,
> over-reverb'ed, export trash radios.
>
> > I support your studying and taking the exams and upgrading. Thats
> > very commendable. Check out some antenna theory on the side and
> > you'll also better understand some of the merchandising
> > terminology referred to in your other post.
> > Good luck to you. I hope you accomplish your goals.
> > >
> > -BM
>
> -SSB

2572. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 17:32:03 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <3AF19612.2DD4@bellsouth.net>
Source record: 164319
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

SSB,

I'm not arguing with your points here, but there is something that many
people are not aware of. Quite a bit of that spectrum, either above or
below, is not within FCC's power to give or even regulate--except in
the cases of unlicensed operators. Much of those areas are under
an agency called NTIA--National Telecommunications Information Agency.
They have more "pull" than FCC, and that spectrum is mainly under their
jurisdiction. NTIA assigns and regulates US Gov't frequencies includ-
ing US Forestry, and military, for example. The remainder IS assigned
to forest products and various state forestry/fire agencies. IOW, there
is no spectrum for FCC to give because what areas they do control are
assigned, the rest isn't theirs to "give". I hope that sheds light on
your proposal.

73

Jerry
K4KWH

Sideband wrote:
>
> Bill Meacham wrote:
>
> <snip>
>
> > I just don't
> > agree with the concept of a special band for illegal operators.
>
> The point I was trying to make, Bill, is this: If the frequencies get
> "thick" on a particular HAM band, HAMs have a multitude of other
> frequencies and bands to go to. Not to mention the fact that if the FCC
> would allocate a sideband-only band in the area I suggested for
> unlicensed CB, the people running on that band wouldn't be illegals.
> They would be transmitting in accordance with FCC rules.
>
> > Maybe you were just being sarcastic, I dunno.
>
> Only a little. I suggested the FCC allocate a new band for CB for
> sideband transmissions. Yes, it would be thick, but it would make the
> regular 40 less crowded, and give a spot for sidebanders to transmit
> without (hopefully) being interfered with by AM carriers and the like.
>
> I did not suggest this to help support freebanding; quite the opposite.

> I suggested it as a way to give those CBers who enjoy transmitting on
> sideband (like I do) to do so with less interference from the riffraff
> who run dirty, over-modulated, noise-toy filled, echo-boxed,
> over-reverb'ed, export trash radios.
>
> > I support your studying and taking the exams and upgrading. Thats
> > very commendable. Check out some antenna theory on the side and
> > you'll also better understand some of the merchandising
> > terminology referred to in your other post.
> > Good luck to you. I hope you accomplish your goals.
> > >
> > -BM
>
> -SSB

2573. Re: Mosley Issue Resolved

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 17:45:51 UTC
From: Irv Finkleman <finkirvNOSPAM@home.com>
Message-ID: <3AF19932.B71645B1@home.com>
Source record: 164320

wa7aw@bentonrea.com wrote:

> http://users.bentonrea.com/~wa7aw/tower/mosley.html

John,
Glad to see the situation resolved. You went
through something that
nobody's customer should be subjected to. The stress alone
was enough.

P.S. How did that Matchbox cap work for you? Hope it did
the
trick!

--

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

Please delete NOSPAM from my e-mail address when replying.
Thanks!

2574. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 17:51:23 UTC
From: Eamon Skelton <Xnospam@oceanfree.net>
Message-ID: <rq5sc9.68e.ln@localhost.localdomain>
Source record: 164341
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Bob wrote:

> Ok, Mr. Letter of the Law.
>
> And I bet you ALWAYS obey the maximum posted speed limit..........

Do we really need this on r.r.a.homebrew? Please don't cross-post
this to a 'homebrew' discussion group.

Followup set to: rec.radio.amateur.misc

73, Ed. EI9GQ.

--
Remove 'X' to reply.

Linux 2.4.4
http://www.qsl.net/ei9gq

2575. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 17:54:59 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <TXgI6.44266$Ce4.3331522@news1.rdc1.ct.home.com>
Source record: 164321

Tom

I was thinking of using teflon RG142 for the trap coil with ceramic
transmitting caps for resonating.

But, the more I read, the more I am leaning more towards individual L
elements for each band.

Pete
"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3af160a7.691589076@news.accessunited.com...
> On Wed, 02 May 2001 20:10:43 GMT, "Peter J. Bertini"
> <commquart@home.com> wrote:
>
> >
> >"Tom W8JI" <2w8ji@akorn.net> wrote in message
> >news:3aef4f6e.556087968@news.accessunited.com...
> >>
> >> The difference in loss between a L/C trap and a coaxial trap is quite
> >> large, even when the L/C trap uses modest components.
> >>
> >> 73 Tom
> >
> >Tom
> >
> >Is this for coaxial trap designs that use the inherent
> >center conductor shield capacitance per foot to
> >provide the resonating capacitance, or those that
> >use an external fixed vacuum or high-voltage RF
> >ceramic to resonate the braid? Or, both?
> >
> >Pete
>
> Normal braided vinal jacket coax makes a very very poor wire when used
> to wind an inductor.
>
> It make a less-than-ideal capacitor also, but the major problem is in
> the use as an inductor.
>
> Even if you solve the major problem Reg has talked about, not being
> able to select the L/C ratio (which IS very important), you are still
> stuck with a crappy Q inductor compared to what can be done other
> ways.
>
> It certainly is OK for a balun, but NOT a resonant trap at a HV point.

> In you care, on the flying F, you could probably use a fixed cap and
> find a cable with acceptable performance. Small semi-rigid lines come
> to mind, and should produce Q's well into the hundreds.
>
> It also might be possible to improve it dramatically by space winding
> the inductor. That is my next step for the Dayton talk, but of course
> that would make the L/C ratio even worse!!!
>
> 73 Tom

2576. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 18:10:21 UTC
From: kelly@nospam.dvol.com
Message-ID: <3af19c6f.79380617@news2.dvol.com>
Source record: 164322
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Wed, 02 May 2001 23:50:48 -0400, Jerry Oxendine
<joxendi@bellsouth.net> wrote:

>
>THAT is the potential harm. That is the reason it is illegal--not be-
>cause FCC is trying to mess up somebody's fun.
>
Right on the button Jerry. What we're dealing with here is a severly
underfunded federal regulatory agency who has lost it's teeth and
would rather roll over and play dead and surrender to anarchy rather
than make a stink. Some day somewhere some people will die, there will
be CYA "congressional investigations", yeah, right: Too late as usual.

>
>73
>
>Jerry
>K4KWH
>
w3rv

2577. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 18:31:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF1A402.17D81340@eznec.com>
Source record: 164323

The circuit used in my experiment should be representative of a balanced antenna. And it had no significant mutual coupling from the "elements" to the "feedline". Yet there was substantial common mode current. The balance was perfect only to the extent of the resistor tolerance, but I'd be willing to bet the amount of your choice that it would take much more than a 5% adjustment of the resistor values to eliminate the common mode current.

Roy Lewallen, W7EL

"William E. Sabin" wrote:
>
> Tom W8JI wrote:
>
> > On Wed, 02 May 2001 15:25:30 -0500, "William E. Sabin"
> > <sabinw@mwci.net> wrote:
> >
> > >
> > > >In Fig 24, chapter 26, 19th edition, the loop current idea is a loser because in a perfectly
> > > >symmetrical antenna there is no common mode current. And if there is an asymmetry, the loop
> > > >idea is not needed in order to account for everything that is going on.
> > >
> > > There can indeed be common mode currents on the feedline if the antenna
> > > is perfectly symmetrical.
> > >
> > > There is nothing that says currents in each half of the antenna must
> > > be symmetrical just because the antenna is.
> > >
> > > The problem is the terminal voltages on the feedline at the feedpoint.
> > >
> > > We often make the mistake of assuming a balanced antenna fed with a
> > > unbalanced line will not have common-mode current on the feedline if
> > > the antenna is physically and electrically symmetrical.
>
> Either it is "perfectly" symmetrical (theoretically) in *all* respects or it is not perfectly
> symmetrical (practically). No problem, we know that, and that is why we use baluns. However, the
> balance usually can be off a tad with no really big consequences.
>
> Bill W0IYH

2578. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 18:34:55 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF1A4CE.86436160@IEEE.org>
Source record: 164326

VE9SRB wrote:
> Walter's Technical Opinion: The steady state match that occurs at point B
> is the result two rearward traveling waves coincident at this point. The
> voltages associated with these rearward waves are 180 degrees out of phase
> such that the resulting voltage is zero but the current is maximum.

Nope Steve, Walt knows that the current also goes to zero. It is actually like a short to voltage and an open to current. Here's what he says in "Reflections". "... the matching is accomplished by the nondissipative mismatch at the match point, which produces a complementary reflection that compensates and cancels the waves reflected from the mismatched load." Note that he says the "waves" are canceled, i.e. both voltage and current.

Walt is well aware that is not what happens at a true short. You are taking his "virtual short" much too literally.

> This is
> a virtual short circuit only to the reflected wave such that the reflected
> wave is totally re-reflected at point B. The totally re-reflected power of
> 33.33 Watts adds in phase with the source delivered power of 100 Watts and
> the two combine to the total forward power of 133.33 Watts in L2.

Walt realizes that the phasors don't add up to the technical requirements of an actual short circuit. However, the entire amount of reflected energy changes direction and joins the forward wave. The two components of that energy direction reversal are re-reflection and destructive interference as indicated in the "Reflections" quote above and apparently also in Walt's QEX article. The end result for those two energy components is the same state embedded in the forward wave energy and indistinguishable from each other. You are taking Walt's "virtual short" much too literally.

> VE9SRB's technical opinion. The steady state match that occurs at point B
> is the result of two rearward traveling waves coincident at this point. The
> voltages and currents associated with these two rearward traveling waves are
> both 180 degrees out of phase such that the net rearward traveling wave is
> zero.

That is exactly what Walt said in "Reflections" and presumably in his QEX article. I'm off to read his QEX article and will post any errors I recognize.

> There is no virtual short circuit created at point B and there is no
> re-reflection of power at point B. The re-reflection of power only occurs
> at point C, the tuner output.

This would be true if the tuner had lumped constants but it doesn't in
reality. You statement cannot possibly be true in reality. But whether
power is re-reflected at the tuner output or not is not germane to
this basic discussion. Putting a tuner in the circuit just muddies
the waters. A tuner is simply not needed for this basic discussion.
Why not omit the tuner distraction and talk about the following
lossless Z0-matched antenna system?

100w XMTR--50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load

> The total forward power in L2 is a result of
> the forward source power at point C adding to the re-reflections at point C.
> The forward source power at point C is 75 Watts and the re-reflected power
> at point C is 8.33 Watts. These two forward powers combine to the net
> forward power of 133.33 Watts in L2.

This is obviously a violation of the conservation of energy principle. 75
joules/sec cannot possibly combine with 8.33 joules/sec to obtain 133.33
joules/sec. These are all scalar values so the premise is obviously false.

You have neglected the energy associated with the destructive interference
pattern. That energy is 50 joules/sec which is *exactly* the energy needed
to balance the energy equation. It's not going out the tuner input so it
must be going out the tuner output. There's nowhere else for it to go.

> 1. It is my opinion that wave reflections in a transmission line occur at
> any impedance discontinuity relative to the transmission line Zo. The
> reflected voltage is equal to the incident voltage times rho: Vref = rho Vi.
> The total voltage at the impedance discontinuity is equal to the incident
> voltage times (1 + rho): Vtot = (1 + rho) Vi. The reflected power at any
> impedance discontinuity is equal to the incident power time |rho|^2: Pref =
> |rho|^2 Pi. The power transmitted or delivered to the impedance
> discontinuity is equal to the incident power times (1 + |rho|^2): Pdel = (1
> + |rho|^2) Pi. These concepts are consistent with the discussion in
> Johnson's text. Do you concur?

I do.

> 2. Johnson clearly indicates that reflections and re-reflections are the
> direct result of the impedance discontinuity the wave sees when it reaches
> the *end* of the transmission line. The forward wave will be reflected
> based on the impedance it sees at the output end of the line and the
> reflected wave will be re-reflected based upon the impedance it sees at the
> input end of the line. From page 16 - "Thus, a terminating impedance
> different from Zo will give rise to a reflected wave which travels away from
> the termination. The reflection, upon reaching the other end of the line,
> will itself be reflected if the terminating impedance at that end is
> different than Zo." From page 19 - "A wave of voltages of this value
> travels to the receiving end [load end], where it is reflected with the
> coefficient, Kr. The reflection travels back to the generator end of the
> line, where it is reflected with the coefficient Kg." These statements are
> technically correct. Do you concur?

I do.

> You clearly state that voltages on a transmission line do not add. You also
> clearly state that everything does not come out correctly by adding
> voltages. Emphasis on never come out correctly by adding voltage.

Pretty much proven by your insistence that 75 joules plus 8.33 joules
equals 133.33 joules. You are forgetting to account for the energy
associated with the destructive interference pattern. I agree with
Walt that your problem is trying to add voltages directly. You should
be adding the electric fields and then determining the resulting total
voltage from the new total electric field. That's got to be where your
conservation of energy problem is coming from.

> You disagree with my addition of voltage, do you disagree with Johnson's?

I'll have to take a closer look at Johnson, but again he doesn't say that
75 joules plus 8.33 joules equals 133.33 joules.

> Do you concurr with Johnson's approach?

Again, Johnson didn't say that 75 joules plus 8.33 joules equals 133.33 joules.

> 4) If the forward source voltage in a 50 ohm transmission line is 100 V,
> what is the forward source power?

Assuming you're talking about the generated power in a 50 ohm T-line,
((100v)^2)/50=200 watts.

> 5) If the re-reflected voltage in a 50 ohm transmission line is 100 V, what
> is the re-reflected power?

200 watts, same as above.

> 6) If the forward source voltage is 100 V and the re-reflected voltage is
> 100 V and these voltages are in-phase, what is the total forward voltage?

Assuming a lossless 50 ohm Z0-match, 200w of generated power add to the 200w
of reflected power to give 400w of forward power with a voltage of 141.4v.
THESE VOLTAGES DON'T ADD DIRECTLY. It is their electric fields that add
and they are not allowed to violate the conservation of energy principle.
Because the current is related by V/I=50, the magnetic field must
increase by a similar factor, causing an increase in current from 2a for
200w to 2.83a for 400w. And whatta ya know? 141.4v * 2.83a = 400 watts

> 7) If the forward source power is 200 W and the re-reflected power is 200 W,
> what it the total forward power? What is the total forward voltage?

400 watts and 141.4v for 50 ohm T-line with a current of 2.83a. Again, it
is not the voltages that add directly - it is the electric fields that
add to create a new voltage. It is not the currents that add directly -
it is the magnetic fields that add to create a new current. The electric
field produced by the destructive interference pattern must be added to
the total electric field and the magnetic field produced by the destructive
interference pattern must be added to the total magnetic field.

The equations for doubling the power while keeping Z0 constant are:

Vtot = sqrt(V1^2 + V2^2) and Itot = sqrt(I1^2 + I2^2)

Whatta ya know? It's our old friend, the square root of the sum of the
squares which is definitely not the same thing as simple addition.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2579. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 18:35:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF1A504.6791246D@eznec.com>
Source record: 164324

Yes, that's correct.

Roy Lewallen, W7EL

W6RCecilA wrote:
>
> Tom W8JI wrote:
> > There can indeed be common mode currents on the feedline if the antenna
> > is perfectly symmetrical.
>
> Symmetry tends to reduce inducted common-mode current but it doesn't
> do much for conducted common-mode current.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2580. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 18:35:59 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <jyhI6.4387$O71.254545@paloalto-snr1.gtei.net>
Source record: 164325
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF15839.FE40D1AC@spam.me.not...
> So when a freebander is transmitting with legal power levels on the
> legal 40 they're still breaking the law?
>

No, by definition this is not "free banding". There is no "legal" anything if freebanding. If you are operating properly as a CB'er on the allocated frequencies using authorized equipment and power levels, your not breaking the law.

If your asking if your only a criminal while operating in the "free band", I would ask is a person only a bank robber while committing the act, or are they still a bank robber afterwards?

73 de W6DKN

2581. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 18:38:34 UTC
From: dennis@wawa.juniper.net
Message-ID: <9cs8ja$2j2b$1@heap.juniper.net>
Source record: 164332

Roger Sparks <sparksrc@home.com> wrote:
>surface). As a result of this geometry, a current flowing on the inside
>surface (of the coax braid)
>would have to flow
>from the top to bottom of each weave overlay to stay on the bottom, and
>visa-versa for any outside surface current.

You've convinced me for DC current, where the current actually flows somewhere, but what about for AC? For the latter the time-averaged current flowing anywhere is within a half cycle of zero, the charges move one way for a while and then turn around and go the other way, ending up about where they started. We already know that charges don't move very fast in a conductor, and the time they spend moving in any particular direction decreases with increasing frequency (this is skin effect), so it seems like AC current at high frequency isn't flowing anywhere very far at all. In fact, if I had to guess, the distance the charges move longitudinally is probably on the same order of magitude as the skin depth, since we're talking about two aspects of the same phenomenon. Energy is of course travelling down the transmission line like a bat out of hell, but it is actually carried by the co-dependent EM field in the dielectric (which is why the velocity factor is a property of the dielectric), and that EM field only interacts with the conductor immediately adjacent to the dielectric (because of skin effect).

So it seems like it doesn't really matter that the braid conductors swap sides of the braid every inch or two if the charges only ever move a small fraction of that distance before turning around and going back where they came from.

>You will want to look for your selves to see how the braid is actually made.
>I think you will have to agree that a separation of the inside and outside
>currents is absolutely impossible.

Is it? If charges never move more than a tiny distance from where they started before turning around and going back, they won't be moving far enough to make it from the inside of the braid to the outside even if the conductors are wired that way. Is there some other mechanism by which charges on the outside of the braid can come to know that charges on the inside of the braid, from which they are separated by a relatively thick chunk of conductor, are moving small distances back and forth?

Dennis Ferguson

2582. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 18:41:05 UTC
From: kb7qhc@home.com
Message-ID: <3af1a3c1.598387896@news.seanet.com>
Source record: 164327

On Thu, 3 May 2001 12:06:11 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Richard Clark wrote:
>"You are in error, the formula does not include any frequency
>consideration."
>
>My mistake. Then the percent coverage of the shield is a physical
>specification, not an electrical specification.
>
>Radio Shack`s ads for RG-8 with "super coverage (95%) shield may be for
>something rather ordinary.
>
>Despite poor shield coverage, coax should give off little radiation and
>accept little externally induced radiation due to its similarity to
>parallel-wire transmission line, and to the fact that the shield is
>grounded and tends to reduce electric field coupling.
>
>Best regards, Richard Harrison, KB5WZI

Hi Richard,

>coax should give off little radiation
"Should," perhaps, but "does" is not the case with a rich history of obvious instances of "does not." The lack of definition for "little" is the bone of contention, but that is answered simply by the shield coverage formula.

Double shielded coax (RG-62 I think) runs about 99% coverage which would present us with a coupling factor of -20dB (in the far field, so to speak for large geometries wrt wavelength).

The point of the matter is that debates that hinge on the notion of skin depth, Z, current weave, or choking that ignore this sieve are in jeopardy of being academic masturbation.

73's
Richard Clark, KB7QHC

2583. Re: Respect For Freebanders Response

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 18:47:50 UTC
From: kelly@nospam.dvol.com
Message-ID: <3af1a5de.81796205@news2.dvol.com>
Source record: 164329
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Thu, 3 May 2001 03:23:38 -0500, "Arf! Arf!"
<DoggieDaze@Liberal.comz> wrote:

>Gee whiz! When you guys gonna learn to keep your responses short and to the
>point? Don't write a darn book....nobody reads past the first two paragraphs
>anyway.
>If you can't say it in a few sentences, nobody cares.
>Save your editorializing for the New York Times....
>
We all know about your lame attention spans and lack of intellectual
acuity so to make it simple enough for you dullard outlaws to perhaps
understand be advised that Riley wants your ass on his platter tonite.
>
Billy the Kid had an IQ of around 75. You're next.
>
w3rv
Licensed . . .

2584. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 18:47:56 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF1A7DC.50433EE7@eznec.com>
Source record: 164328

Richard Harrison wrote:
>
> Richard Clark wrote:
> "You are in error, the formula does not include any frequency
> consideration."
>
> My mistake. Then the percent coverage of the shield is a physical
> specification, not an electrical specification.
>
> Radio Shack`s ads for RG-8 with "super coverage (95%) shield may be for
> something rather ordinary.
>
> Despite poor shield coverage, coax should give off little radiation and
> accept little externally induced radiation due to its similarity to
> parallel-wire transmission line, and to the fact that the shield is
> grounded and tends to reduce electric field coupling.
>
> Best regards, Richard Harrison, KB5WZI

You're right about coax and shield coverage. The problem is that the meaning of "little" is much like the proverbial blind men's description of the elephant. I'd be very surprised if any amateur with a typically poorly shielded transceiver and HF atmospheric noise would ever be able to see any negative consequences of using cable with even very poor shield coverage. Others on this group, though, have described having to deal with crosstalk between long runs of coax sharing the same conduit (although I don't recall it being in amateur installations). I personally have had trouble with even good quality single shielded cable and had to use double shielded cable when looking for low level spurs on a well-shielded spectrum analyzer. The single shielded cable let in a measurable amount of RF from the local FM stations. The difference between cables wouldn't have been noticeable if the system hadn't been very well shielded or if the noise level were higher. And certainly not if one end had been connected to an antenna.

Roy Lewallen, W7EL

2585. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 18:59:45 UTC
From: "Leland C. Scott" <no-spam@junk-mail.net>
Message-ID: <tf3al3maot952a@corp.supernews.com>
Source record: 164331
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF15839.FE40D1AC@spam.me.not...
>
> I don't condone violations of FCC rules. However, I would like to see a
> sideband only band above channel 40, but below 27.800, with a 50 watt
> limit, for CB'ers to DX on...

Yeah, they are call Ham Radio Bands, and all they need is a Ham Radio License like the one your getting. If CBers want to shoot skip, then let them get a license too. I doubt you had any big problem getting your license. The written exams up to a General are easy, and for those who want H.F. the 5 wpm code test is a reasonable speed until the requirement is eliminated.

What you propose to do is if the FCC can't enforce the rules, then heck, lets just make it legal, just like the folks who want to legalize drugs. The only problem with that is where does it stop? Today 26.965 -27.405, tomorrow 26.965 - 27.800, ? 26.965 -29.700, 12m - 10m, ..., you get the idea. 8-))

--
Leland C. Scott
KC8LDO

Saw this on a Tee-shirt:

"I am a bomb technician. If you see
me running, try to keep up. "

2586. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 19:00:24 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF1AAC8.4FC8466@eznec.com>
Source record: 164330

Readers of this thread might want to take a look at a brief study I did some time back of the effect of L/C ratio on trap loss. It's a little dated but still instructive. The study uses EZNEC models (which can be run with the demo version if desired) to illustrate the effects. The current version of EZNEC, 3.0, has a "trap" load type which would enhance the accuracy a bit but I haven't had time to update the study. You can download TRAPS.ZIP from ftp://eznec.com/pub.

Roy Lewallen, W7EL

2587. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 19:21:14 UTC
From: 2w8ji@akorn.net
Message-ID: <3af1ad63.5038854@news.accessunited.com>
Source record: 164333
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Thu, 03 May 2001 10:29:37 -0700, Jim Kelley <jwkelley@uci.edu>
wrote:

>W6RCecilA wrote:
>
>> Bob wrote:
>> > How serious a crime is it? Your assignment - think of all the crimes you can,
>> > where does freebanding fit it?
>
>> That's a pretty good question. Unless I'm missing something, I would
>> rank it right up there with driving on the shoulder of the road where
>> such is illegal.
>
>That's pretty good. Or maybe it's like throwing beer bottles and
>McDonalds wrappers out the window on the highway, or driving really slow
>in the ultrafast lane, or parking in handicapped spaces. Ya know,
>something Dennis Leary would sing about.
>
>ac6xg

There is a major difference between something that is simply
unsightly, and something that is dangerous.

Freebanding is closer to the example of driving on the shoulder of the
road...or the wrong way on a one-way street....or driving without a
license...than it is to littering.

If you don't think it has caused problems, look at virtually ALL of
the HF amateur bands and many commercial bands. The free-band idiots
have ruined commercial services above and below 27 MHz, and are now
working on all other frequencies. It ranges from 160 meters up into
the two-way land mobile bands.

This is where enforcement come in. What we need to do, is catch a few
of them and fine them. If we find a few who fail to comply after
repeated warnings, we need to send them to jail. If that fails, we
need to execute them...and if that fails, we need to force them to
live with N1IR for a week. Eventually they will get the message.

2588. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 20:02:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF1B948.960D9E11@IEEE.org>
Source record: 164334

W6RCecilA wrote:
> That is exactly what Walt said in "Reflections" and presumably in his QEX
> article. I'm off to read his QEX article and will post any errors I
> recognize.

I just read the QEX article and it is true that Walt glosses over the
energy involved in the destructive interference pattern and treats
that energy the same as the re-reflected energy, presumably because
both energies wind up in exactly the same state. I've sent Walt an
email about it. I don't know when he will receive it.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2589. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 20:09:10 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <GVil6.3518$4f7.245432@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164335

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF1A4CE.86436160@IEEE.org...
> VE9SRB wrote:
> > Walter's Technical Opinion: The steady state match that occurs at point
B
> > is the result two rearward traveling waves coincident at this point.
The
> > voltages associated with these rearward waves are 180 degrees out of
phase
> > such that the resulting voltage is zero but the current is maximum.
>
> Nope Steve, Walt knows that the current also goes to zero. It is actually
> like a short to voltage and an open to current. Here's what he says in
> "Reflections". "... the matching is accomplished by the nondissipative
> mismatch at the match point, which produces a complementary reflection
> that compensates and cancels the waves reflected from the mismatched
> load." Note that he says the "waves" are canceled, i.e. both voltage
> and current.
>

Here's what Walt said a couple of days ago on this newsgroup regarding the
current going to zero:

"Steve, sorry, but you just don't get it, the same as in our previous
discussions a year ago. You are not appreciating the resultant effect of TWO
sets of REARWARD traveling waves. When the voltages of these two sets are of
equal magnitude and opposite phase the resultant is zero voltage and max
current"

I read "current max" as "current max". Maybe "current max" means zero
current to you and Walt.

He also said this:

"The same occurs when two rearward-traveling
voltages are 180 degrees out of phase and their respective currents are in
phase. The result is a virtual short circuit to the reflected waves, but
which is transparent to the forward waves from the source."

Does this mean that when voltages add 180 degrees out of phase they go to
zero and when currents add in-phase they go to zero?

> Walt is well aware that is not what happens at a true short. You
> are taking his "virtual short" much too literally.
>
> > This is

> > a virtual short circuit only to the reflected wave such that the
reflected
> > wave is totally re-reflected at point B. The totally re-reflected power
of
> > 33.33 Watts adds in phase with the source delivered power of 100 Watts
and
> > the two combine to the total forward power of 133.33 Watts in L2.
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> Walt realizes that the phasors don't add up to the technical requirements
> of an actual short circuit. However, the entire amount of reflected energy
> changes direction and joins the forward wave. The two components of that
> energy direction reversal are re-reflection and destructive interference
> as indicated in the "Reflections" quote above and apparently also in
Walt's
> QEX article. The end result for those two energy components is the same
> state embedded in the forward wave energy and indistinguishable from each
> other. You are taking Walt's "virtual short" much too literally.
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Here's what Walt said a couple of days ago on this newsgroup:

"The same occurs when two rearward-traveling
voltages are 180 degrees out of phase and their respective currents are in
phase. The result is a virtual short circuit to the reflected waves, but
which is transparent to the forward waves from the source."

"My virtual short is only a short to the rearward traveling
waves that establish the virtual short, which is totally transparent to the
forward waves from the source. This is why there is a match at the point
where the two sets of rearward traveling waves join. The rearward traveling
waves are totally re-reflected"

He said the rearward traveling waves are totally re-reflected. I interpret
this to imply that Walter believes that the rearward traveling waves are
totally re-reflected. Maybe I am taking this statement too literally, but
that's what he said.

> > VE9SRB's technical opinion. The steady state match that occurs at point
B
> > is the result of two rearward traveling waves coincident at this point.
The
> > voltages and currents associated with these two rearward traveling waves
are
> > both 180 degrees out of phase such that the net rearward traveling wave
is
> > zero.
>
> That is exactly what Walt said in "Reflections" and presumably in his QEX
> article. I'm off to read his QEX article and will post any errors I
> recognize.
>

That's not at all what he said to me or to this newsgroup.

> > There is no virtual short circuit created at point B and there is no
> > re-reflection of power at point B. The re-reflection of power only
occurs
> > at point C, the tuner output.
>
> This would be true if the tuner had lumped constants but it doesn't in
> reality. You statement cannot possibly be true in reality.

Why not? At some point the transmission line ends. There is an effective impedance termination or transition at this point. Wave reflections occur at the end of the transmission line. All that matters to the traveling wave is the effective impedance terminating the line.

>But whether
> power is re-reflected at the tuner output or not is not germane to
> this basic discussion. Putting a tuner in the circuit just muddies
> the waters. A tuner is simply not needed for this basic discussion.
> Why not omit the tuner distraction and talk about the following
> lossless Z0-matched antenna system?
>

Muddies the waters for who?

> 100w XMTR--50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load
>
> > The total forward power in L2 is a result of
> > the forward source power at point C adding to the re-reflections at
point C.
> > The forward source power at point C is 75 Watts and the re-reflected
power
> > at point C is 8.33 Watts. These two forward powers combine to the net
> > forward power of 133.33 Watts in L2.
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> This is obviously a violation of the conservation of energy principle. 75
> joules/sec cannot possibly combine with 8.33 joules/sec to obtain 133.33
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>
> You have neglected the energy associated with the destructive interference
> pattern. That energy is 50 joules/sec which is *exactly* the energy needed
> to balance the energy equation. It's not going out the tuner input so it
> must be going out the tuner output. There's nowhere else for it to go.
>
> > 1. It is my opinion that wave reflections in a transmission line occur
at
> > any impedance discontinuity relative to the transmission line Zo. The
> > reflected voltage is equal to the incident voltage times rho: Vref = rho
Vi.
> > The total voltage at the impedance discontinuity is equal to the
incident
> > voltage times (1 + rho): Vtot = (1 + rho) Vi. The reflected power at
any

> > impedance discontinuity is equal to the incident power time |rho|^2:
Pref =
> > |rho|^2 Pi. The power transmitted or delivered to the impedance
> > discontinuity is equal to the incident power times (1 + |rho|^2): Pdel
= (1
> > + |rho|^2) Pi. These concepts are consistent with the discussion in
> > Johnson's text. Do you concur?
>
> I do.
>
> > 2. Johnson clearly indicates that reflections and re-reflections are
the
> > direct result of the impedance discontinuity the wave sees when it
reaches
> > the *end* of the transmission line. The forward wave will be reflected
> > based on the impedance it sees at the output end of the line and the
> > reflected wave will be re-reflected based upon the impedance it sees at
the
> > input end of the line. From page 16 - "Thus, a terminating impedance
> > different from Zo will give rise to a reflected wave which travels away
from
> > the termination. The reflection, upon reaching the other end of the
line,
> > will itself be reflected if the terminating impedance at that end is
> > different than Zo." From page 19 - "A wave of voltages of this value
> > travels to the receiving end [load end], where it is reflected with the
> > coefficient, Kr. The reflection travels back to the generator end of
the
> > line, where it is reflected with the coefficient Kg." These statements
are
> > technically correct. Do you concur?
>
> I do.
>
> > You clearly state that voltages on a transmission line do not add. You
also
> > clearly state that everything does not come out correctly by adding
> > voltages. Emphasis on never come out correctly by adding voltage.
>
> Pretty much proven by your insistence that 75 joules plus 8.33 joules
> equals 133.33 joules. You are forgetting to account for the energy
> associated with the destructive interference pattern. I agree with
> Walt that your problem is trying to add voltages directly. You should
> be adding the electric fields and then determining the resulting total
> voltage from the new total electric field. That's got to be where your
> conservation of energy problem is coming from.
>
> > You disagree with my addition of voltage, do you disagree with
Johnson's?
>

> I'll have to take a closer look at Johnson, but again he doesn't say that
> 75 joules plus 8.33 joules equals 133.33 joules.
>

Take a very close look. Read pages 98 through 101. Johnson adds forward
and re-reflected voltages. Funny but I didn't see anywhere in the
discussion where he said that it was incorrect to add voltages together and
that Joules should be added directly.

BTW - Johnson never said that 100 Watts forward plus 33.33 Watts forward
equals 133.33 Watts forward either. Johnson knew that the calculations must
be performed with vector voltage summation. Johnson summed all of the
voltage components and then determined total forward power from total
forward voltage.

Walt specifically stated that this is an incorrect approach.

> > Do you concurr with Johnson's approach?
>
> Again, Johnson didn't say that 75 joules plus 8.33 joules equals 133.33
joules.
>

Johnson never said that 100 Watts plus 33.33 Watts equals 133.33 Watts
either.

> > 4) If the forward source voltage in a 50 ohm transmission line is 100
V,
> > what is the forward source power?
>
> Assuming you're talking about the generated power in a 50 ohm T-line,
> ((100v)^2)/50=200 watts.
>

Correct

> > 5) If the re-reflected voltage in a 50 ohm transmission line is 100 V,
what
> > is the re-reflected power?
>
> 200 watts, same as above.
>

Correct

> > 6) If the forward source voltage is 100 V and the re-reflected voltage
is
> > 100 V and these voltages are in-phase, what is the total forward
voltage?
>
> Assuming a lossless 50 ohm Z0-match, 200w of generated power add to the
200w
> of reflected power to give 400w of forward power with a voltage of 141.4v.

> THESE VOLTAGES DON'T ADD DIRECTLY. It is their electric fields that add
> and they are not allowed to violate the conservation of energy principle.
> Because the current is related by V/I=50, the magnetic field must
> increase by a similar factor, causing an increase in current from 2a for
> 200w to 2.83a for 400w. And whatta ya know? 141.4v * 2.83a = 400 watts
>
> > 7) If the forward source power is 200 W and the re-reflected power is
200 W,
> > what it the total forward power? What is the total forward voltage?
>
> 400 watts and 141.4v for 50 ohm T-line with a current of 2.83a. Again, it
> is not the voltages that add directly - it is the electric fields that
> add to create a new voltage. It is not the currents that add directly -
> it is the magnetic fields that add to create a new current. The electric
> field produced by the destructive interference pattern must be added to
> the total electric field and the magnetic field produced by the
destructive
> interference pattern must be added to the total magnetic field.
>

Cecil, your getting caught in the same trap that Walter did when I talked to
him about the addition of voltage and current.

To support the hypothesis of the virtual short circuit and a total
re-reflection of power, you first *assume* that the total power must be sum
of the forward and re-reflected power. I guess if you start with the answer
you want, you can't go wrong. I prefer to start the problem analysis at the
beginning and then arrive at the answer.

You first assume a total forward power and then manipulate the voltage and
current relationships to arrive at the answer you want.

>
> The equations for doubling the power while keeping Z0 constant are:
>
> Vtot = sqrt(V1^2 + V2^2) and Itot = sqrt(I1^2 + I2^2)
>

When V1 and V2 are of equal amplitude and 90 degrees out of phase, these two
statements together are absolutely correct. You are, unfortunately, first
starting with the assumption of doubling the power and then working
backwards to establish the phase relationship between V1 and V2 that would
make this a correct assumption.

> Whatta ya know? It's our old friend, the square root of the sum of the
> squares which is definitely not the same thing as simple addition.
> --

We are not talking about simple addition. We are taking about vector
addition of complex numbers. When voltage and current add in the manner you
describe above (90 degrees out of phase), the total power IS equal to the
sum of the two powers. You have discovered the secret to vector addition of

voltage and current.

Lets assume that we do have two forward voltages V1 and V2. Consistent with sound EE principles, the total forward voltage is the vector sum of V1 + V2.

When V1 and V2 are 180 degrees the total forward voltage is 0 V. The total forward power is 0 W.

When V1 and V2 are in-phase, the total forward voltage magnitude is |V1| + |V2|. Total power is equal to |Vtotal|^2 / Zo. |Vtotal|^2 is equal to (|V1| + |V2|)^2. The total power is equal to P1 + P2 + 2 Sqrt(P1) Sqrt(P2).

When V1 and V2 are 90 degrees out of phase, the total voltage magnitude is Sqrt(|V1|^2 + |V2|^2). The total power is equal to P1 + P2.

Remember the power formula Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) Cos(theta), where theta is the phase angle difference between V1 and V2. Set theta equal to 90 degrees.

In order for you to convince yourself that the total forward power is equal to the algebraic sum of P1 + P2, you had to manipulate the voltage and current addition as if they were being added 90 degrees out of phase. Unfortunately, the voltages in our Zo match examples are being added in phase.

Cecil, if you are serious about understanding this, read Johnson, pages 98 - 101 and we can apply his discussion to the Zo-match problem you describe above. We can then apply it to a non-Zo match problem. Looking at both together, the technical truth is evident. Would you be willing to do this?

Steve VE9SRB

2590. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 20:24:43 UTC
From: CW <cmagers@sprynet.com>
Message-ID: <9csf6h$h25$1@slb6.atl.mindspring.net>
Source record: 164336
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

So you're saying that its up to each individual to decide which laws they
should obay?
If you can't see a problem with that then a jail cell is probably going to
be your next place of residence.
--
CW
KC7NOD
"Bob" <bob@bob.com> wrote in message news:3AF183FF.2EB4C568@bob.com...
> Good work, Sherlock - you've pointed out it's illegal, *again*. We've
> established that.
>
> How serious a crime is it? Your assignment - think of all the crimes you
can,
> where does freebanding fit it? Maybe you should go spend your time
protesting
> real crimes (I can provide a list if you need one, where do I start...how
about
> NAFTA).
>
> And, of course you don't speed. You're a decent, upstanding citizen - who
turns
> in your neighbor for digging without a permit - thanks for making the
world a
> better, safer place.
>
> Bob.
>
>
>
> W6DKN wrote:
>
> > No amount of self justification will erase the simple fact that what you
> > are doing is a crime. That makes you a criminal, and therefore not
worthy
> > of respect. You sound like the gang bangers in LA bitching because they
are
> > treated like hoodlums.
> >
> > By the way, I do have a cherry 1974 427 FI ' Vette that I take out to LA
> > County Raceway when I want to speed (it turns low 12's with street
tires).
> > When I am driving my Blazer on city streets, I obey the traffic laws.
> > That's what honest people do...

> >
> > 73 de W6DKN
> >
> > "Bob" <bob@bob.com> wrote in message news:3AF09A1D.1F7C4E45@bob.com...
> > > Ok, Mr. Letter of the Law.
> > >
> > > And I bet you ALWAYS obey the maximum posted speed limit. If you
wanted
> > to speed,
> > > you would take the right approach to speeding legally - because, hey
man,
> > you do
> > > EVERYTHING right. You would put your mind to becoming a race car
driver
> > and do your
> > > speeding on the track where it belongs. You would follow the proper
steps
> > to
> > > becoming a race car driver:
> > >
> > > 1. Learn to ride a unicycle, because that's how it all started, man.
Our
> > > forefather's rode unicycles before fast cars were around, so must you
> > learn.
> > > 2. Learn everything there is to know about cars - including memorizing
> > the answers
> > > to questions about walking, unicycles, horse and carriage, boats,
planes,
> > etc.
> > > 3. If you skip the step on learning to ride a unicycle, prepare to be
> > chastised by
> > > old-timers that had to learn how to ride it and by some who love the
> > unicycle and
> > > can ride it at over 20 mph! BTW - learning to ride the unicycle keeps
bad
> > people
> > > from becoming race car drivers.
> > > 4. Prepare to spend some money. Your standard car won't do - it
doesn't
> > fit race
> > > car specs! And every race track requires a different car and tire
> > combination.
> > >
> > > Is becoming a race car driver what you should do because you like to
take
> > those 15
> > > turns of Bear Mountain road at an faster than the posted speed? Well,
ham
> > radio IS
> > > NOT a replacement for the "freeband" either. Ham radio doesn't fit

> > everybody. Maybe
> > > its a bit of an extreme commitment for some. Hey, I can operate my
> > equipment and
> > > make sure that it complies with the same rules the FCC mandates for
hams.
> > I can
> > > operate it responsibly. I can operate it courteously . I can use the
> > minimum amount
> > > of power necessary for a contact.
> > >
> > > Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is
it
> > immoral? A
> > > crime against humanity? Absolutely not. To me - speeding in your car
is a
> > far more
> > > worse crime.
> > >
> > > BTW, I do not condone operating on ham bands or intentionally
interfering
> > with any
> > > service that I am aware of. Yes, I know there are (very few, non
> > essential)
> > > services allocated between 27.405 and 28Mhz. I support operations on
> > 27.405 -
> > > 27.855 Mhz that follow the same regulations that hams follow.
> > >
> > > Hopefully this metaphor can crack the thick skull of the "yes, but
it's
> > illegal,
> > > yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't
> > black and
> > > white.
> > >
> > > Bob.
> > >
> > >
> > > Scott Townley wrote:
> > >
> > > > But you *do* have all the respect you deserve...the same respect we
> > > > all grant to FELONS, which is what you are, buddy...
> > > >
>

2591. Re: Antenna Systems Design for Cellphones?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 20:37:33 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9csfdn$3sf$1@neptunium.btinternet.com>
Source record: 164337

Tom Puffett wrote
> I have a career opportunity in the UK for someone with a good
working
> knowledge of cellphone antenna design. If anyone is interested in
finding
> out more information, please email me.
==========
Tom, why don't you do the job yourself ? Are you lacking in self
confidence ?

But look no further. I am just the fellow you want. 60 years engineering experience. Can you afford to pay me 250,000 £UK per annum plus pension contributions. Forget the company car and any other freebies. Can start next Monday. e-mail me requirements of your current project.

Reg.

2592. di-pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 20:37:37 UTC
From: pws <p.grace@ntlworld.com>
Message-ID: <hmjI6.19374$wO6.2993347@news2-win.server.ntlworld.com>
Source record: 164338

hi,
is anyone using the 80 plus 2 di pole from w+s in the uk ?
if so what sort of results are you getting and what have you used before and
how does it compare?
cheers
paul mw0dct

2593. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 20:52:22 UTC
From: GG <nbc_red@mailcity.com>
Message-ID: <3AF1B69C.4A28673E@mailcity.com>
Source record: 164339
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

You live in town but you purchased 20 acres of land out in the boonies with the idea of maybe moving there when you retire in the future. I come along and see your land and I don't see a house or anyone using the land. I observe this for a short while and come to the conclusion that no one is using this land. So I build a little shack there, plant my garden, run a cow or two. Is that OK with you? Don't I have a right to do that? After all, you aren't using it. Maybe I am doing something illegal, but after all, why should you object, you aren't using the land and I am apparently hurting no one and there are others committing much more horrendous crimes. Maybe instead of coming out and trying to get me off your land that you aren't using, you should spend you time protesting real crimes.

Bob wrote:
>
> Good work, Sherlock - you've pointed out it's illegal, *again*. We've
> established that.
>
> How serious a crime is it? Your assignment - think of all the crimes you can,
> where does freebanding fit it? Maybe you should go spend your time protesting
> real crimes (I can provide a list if you need one, where do I start...how about
> NAFTA).
>
> And, of course you don't speed. You're a decent, upstanding citizen - who turns
> in your neighbor for digging without a permit - thanks for making the world a
> better, safer place.
>
> Bob.
>

2594. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 20:53:17 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AF1C53D.C887BD3E@mwci.net>
Source record: 164340

Roy Lewallen wrote:

> The circuit used in my experiment should be representative of a balanced
> antenna. And it had no significant mutual coupling from the "elements"
> to the "feedline". Yet there was substantial common mode current. The
> balance was perfect only to the extent of the resistor tolerance, but
> I'd be willing to bet the amount of your choice that it would take much
> more than a 5% adjustment of the resistor values to eliminate the common
> mode current.

It is well known (see Sevick) that grounding the resistor junction causes CM. But the ideal dipole does
not do this because it has no return path to the generator for common mode. I believe this is well
known also. It is like the single resistor with no ground.

Bill W0IYH

2595. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 21:10:18 UTC
From: GG <nbc_red@mailcity.com>
Message-ID: <3AF1BAD4.AA7CD86D@mailcity.com>
Source record: 164342
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

As Charlie Brown would say, "good grief". There is always someone who spouts this to try to compare the ham bands to cb. Have you listened to such and such band, such and such frequency? No one argues that there are morons on the ham bands who act like cbers and on certain frequencies you can find them, but on 99.99 percent of the other frequencies you find hams obeying the rules and engaging in courteous communication. Even with the few morons on the ham bands, there is no comparison between ham radio and cb. It's like comparing apples to a sewer pit.

W4NTI wrote:
>
> You heard 20 phone lately? Same mentality.
>
>

2596. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 21:39:03 UTC
From: richardharrison@webtv.net
Message-ID: <33-3AF1CFF7-22@storefull-112.iap.bryant.webtv.net>
Source record: 164343

Roy, W7EL wrote:
"And certainly not if one end had been connected to an antenna (would cable shield leakage be noticeable)."

Yes, unless the antenna were very bad indeed. I`m no coax expert except for one principle learned from hard experience: If Andrew makes it, buy it from them!

In hundreds of VHF mobile installations with and without "extenders" (noise blankers), I`ve never seen a proper antenna installation where there was noticeable noise pick up attributable to leakage through the RG-8 shield. I know I`ve seen a ton or more of RG-8 used in these installations. This coax usually came from Belden.

Best regards, Richard Harrison, KB5WZI

2597. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 22:21:10 UTC
From: Phil Kane <Phil.Kane@nospam.spam>
Message-ID: <cuvyxnansvbet.gcrx3b2.pminews@or.news.verio.net>
Source record: 164345
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

On Thu, 03 May 2001 19:21:14 GMT, Tom W8JI wrote:

>This is where enforcement come in. What we need to do, is catch a few
>of them and fine them. If we find a few who fail to comply after
>repeated warnings, we need to send them to jail.

El Presidente has announced that he intends to split the INS into
two agencies - one that deals with immigration and naturalization
paperwork and the other that does enforcement (the Border Patrol).

Those of us in FCC field enforcement have advocated that sort
of split for the FCC for decades. Once freed from the "who gets
a license and which non-technical rules apply to whom" political
mess (which is the only "FCC" that The Congress can comprehend),
real enforcement can be done when the technical standards and
enforcement functions and people are absorbed into NTIA which has
scads of funds. The Canadians did that several years back when the
functions of the Ministry of Communications were split between
Industry Canada (the equivalentof the Department of Commerce, home
of NTIA) and the Canadian Radio and Television Commission (CRTC).

>If that fails, we need to execute them...

You are certainly making the jest, eh????

>and if that fails, we need to force them to
>live with N1IR for a week. Eventually they will get the message.

Hey, Richard Burton in Southern Cal has been prosecuted six
times, spent time in jail three times, and still operates on
ham radio without a license whenever he gets out.

When is HE going to learn?

--
73 de Phil Kane - K2ASP

2598. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 22:25:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF1DABF.697182A8@eznec.com>
Source record: 164346

Let's try a couple of thought experiments to test this hypothesis.

Begin with a dipole lying on the ground. Are you saying that there is no current path from either of the wires to ground? (Of course I'm talking primarily about displacement current.) Now raise the antenna a foot above the ground. Is there now no current path from each side of the antenna to ground? If not, why is the feedpoint impedance different than it is when the antenna is in free space?

Now let's think of a dipole in free space. Bend the two dipole legs upward 30 degrees so that the included angle between legs is 120 degrees. Feed it with a half wavelength of coax hanging straight down, with a battery powered transmitter dangling from the end. At the feedpoint, current from the inside of the coax shield has two possible paths: down the outside of the coax, and into the dipole leg it's connected to. Both are a half wavelength long. Both have the same orientation relative to the other dipole half so would have equal coupling to it. Are you saying that all the current will flow into the dipole half connected to the shield and none will flow on the outside of the coax?

Can you point me to the place in Sevick where he explains the cause of the common mode current? I'd like to see if it agrees with or contradicts the analysis I've presented. I assume you're talking about _Transmission Line Transformers_. The book sadly lacks an index, and a brief search didn't prove fruitful.

Roy Lewallen, W7EL

"William E. Sabin" wrote:
>
> Roy Lewallen wrote:
>
> > The circuit used in my experiment should be representative of a balanced
> > antenna. And it had no significant mutual coupling from the "elements"
> > to the "feedline". Yet there was substantial common mode current. The
> > balance was perfect only to the extent of the resistor tolerance, but
> > I'd be willing to bet the amount of your choice that it would take much
> > more than a 5% adjustment of the resistor values to eliminate the common
> > mode current.
>
> It is well known (see Sevick) that grounding the resistor junction causes CM. But the ideal dipole does
> not do this because it has no return path to the generator for common mode. I believe this is well
> known also. It is like the single resistor with no ground.

>
> Bill W0IYH

2599. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 22:30:04 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3AF1DBEC.FF7BB77@uci.edu>
Source record: 164347
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Tom W8JI wrote:

> Freebanding is closer to the example of driving on the shoulder of the
> road...or the wrong way on a one-way street....or driving without a
> license...than it is to littering.

I take it you haven't heard the Dennis Leary song. It's called "The
A$$hole Song."

ac6xg

2600. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 22:38:23 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF1DDDF.DA3BDA7@bwcc.com>
Source record: 164348

Tom W8JI wrote:
> Denver Braughler wrote:
> > Tom W8JI wrote:
> >> Never use braiding for a ground unless you have absolutely no choice
> >> (because of flexing).
> >Lightning is not that particular about resistance.
> >Having just arced 20000 ft, encountering another 20 ohms
> >of resistance won't make a lot of difference.
>
> Very bad advice and logic Denver, especially when dealing with a
> safety issue like this.
This remains to be seen.
I appreciate the peer review.

> With current in the thousands of amperes, lightning DOES care above
> even small increases in impedance.
Lightning doesn't care about anything.
I don't believe that what you are saying is borne out in reality.
Lightning follows a path that has a huge random component.
It does not follow the path of least resistance.
Lightning will "ignore" a perfectly good steel tower to strike a dead tree.

> The function of a grounding strap is to tie points
> together with a LOW impeance so the voltage drop
> between those points is minimal.
Yeah, yeah, you say that as if lightning strikes my antenna I should want it to have a low impedance path to my house 10 meters away.

> Put bluntly, it is foolish to use braiding for a lightning ground.
Frankly, I think you are mistaken.
Now there has been a lot of debate about skin-effect.

I think I could probably find more sources supporting braid.
I have never seen anyone except you suggest solid conductors for lightning.
I've never seen lightning rods (air terminals) installed connected to anything but braid (copper or aluminum).

Lightning seems to travel over the outside of the conductor.

> >> Dry, clean, tightly packed braid has several times the RF resistance
> >> of a smooth conductor the same size. The clean dry shiney briad of
> >> RG-8 has about the same RF resistance as a number 12 wire.
> >We don't want the lightning to travel end to end freely.
> >We want it to dissipate into the ground.
> >
> >> When it is loosely packed, or if it tarnishes, it is like a resistor

> >> for RF. It is terrible.
> >And the center of solid conductor is better?
> >Are you a non-believer in skin-effect?
> >
> >I agree that it would be nice if the braid didn't get dirt or water in it.
> >But it is not intended to conduct very far or efficiently.
> Bad assumption. Bad advice.
I maintain that it is correct.
Lightning won't follow a wire just because you want it to.

> Lightning grounds are highly critical for impedance at high
> frequencies.
Right. And the point is to get the lightning into earth, not have it following your wire for 10 metres.

> Current divides in a direct relationship to path
> impedances, and you want the path to earth to be a low impedance.
Absolutely! I never said otherwise!

I don't care to make the path from the antenna to my house low impedance, however!

> ALL commercial recommendations prohibit braiding in lightning
> suppression systems unless the conductor has to be able to withstand
> flexing.
Would you mind citing a source to educate us?

> NEVER use braided wire for lightning (or RF) grounds unless the
> conductor has to be flexed. If you use braiding, it has to be many
> times larger area than a solid smooth conductor to have the same RF
> resistance.
Is this if you assume that there is no skin-effect?
I asked before and you didn't comment.

> If it tarnishes even the slightest amount, the impedance (resistance
> and reactance) goes way up! This is a fact, not a guess.
As high as the coax?

I will maintain that lightning has sufficient voltage to breakdown 300 V PVC, air, wood, many other dielectrics, and even wet tarnished copper.

The resistance at 100 V may have little to do with the resistance at 20000 V.

I have a little piezoelectric generator.
It will spark through the air to a metallic object with no reasonable return path -- it appears to work off capacitance.
It readily travels through my body.
Tarnished copper seems to work as well as shiny copper.
The point is that the high voltage like lightning is not going to be impeded.
It is a constant-current source.
If it encounters higher impedance, it raises the voltage to whatever it takes to overcome.

However, I recommend the #4 solid copper to haul 120 V 60 Hz fault current and neutral current.

I don't envision HF penetrating a #4 very deeply.

2601. Re: REC.RADIO.AMATEUR.ANTENNA?????

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 22:39:35 UTC
From: tdonaly@cs.com
Message-ID: <20010503183935.20735.00002025@ng-mi1.news.cs.com>
Source record: 164349

>
>herr doktor,
>
>You missed the point, they are not interested in fractal keys from a
>key commercial firm, they are interested in antennas. ;-)
>
>Hmmm, fractal keys for fractal locks? A lock-pick would only need one
>iterated key to serve every lock! Sounds like a poor business model
>to me. Ever thought of starting a dot.com?
>
>73's
>Richard Clark, KB7QHC
>

Starting a dot.com? That's hitting below the belt, Richard.

Tom Donaly Ka6ruh

2602. Re: Respect for Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 22:47:52 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF1E018.4B47CFE@bwcc.com>
Source record: 164350

Denver Braughler wrote:
> Tom W8JI wrote:
> > Very bad advice and logic Denver, especially when dealing with a
> > safety issue like this.
I figured perhaps if I changed the subject someone else might comment on this thread.

2603. Re: REC.RADIO.AMATEUR.ANTENNA?????

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 22:56:02 UTC
From: kb7qhc@home.com
Message-ID: <3af2e0d7.614025371@news.seanet.com>
Source record: 164351

On 03 May 2001 22:39:35 GMT, tdonaly@cs.com (Tdonaly) wrote:

>
>
>>
>>herr doktor,
>>
>>You missed the point, they are not interested in fractal keys from a
>>key commercial firm, they are interested in antennas. ;-)
>>
>>Hmmm, fractal keys for fractal locks? A lock-pick would only need one
>>iterated key to serve every lock! Sounds like a poor business model
>>to me. Ever thought of starting a dot.com?
>>
>>73's
>>Richard Clark, KB7QHC
>>
>
>Starting a dot.com? That's hitting below the belt, Richard.
>
>Tom Donaly Ka6ruh

Hi Tom,

Perhaps for those with little experiance. I go to work at one every
day! (and yes, each day is the first day of a new career)

73's
Richard Clark, KB7QHC

2604. DC Power supply question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 23:13:53 UTC
From: Sycho_Graphics <Sycho_Graphics@msn.com>
Message-ID: <O6erGbC1AHA.302@cpmsnbbsa07>
Source record: 163804
Cross-posted to: alt.radio.scanner,rec.radio.amateur.antenna,rec.radio.scanner,rec.radio.shortwave

I am tired of all the wall warts and want to power my radios with a DC power supply my question is how many amps is enough? What I want to power is the following (AOR 8000, BC 780xlt, RadioShack DX-398, two Cobra CB radio's {one base, one portable}), but I want some room for future expansion.

Sorry for the newbie question, but I am a newbie :)

2605. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 23:23:12 UTC
From: W4NTI <w4nti@nospammindspring.com>
Message-ID: <9csp7imvu1@slb5.atl.mindspring.net>
Source record: 164352
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Did you not suggest a band be set aside just for the illegal idiots? They
you should be able to figure out my response.

The SATs having to do with it is....the lowering of the bar. The reduction
of standards to accomidate some person and/or group that is unable, too
ignorant, or just STUPID. See my point?

Also there ALREADY exists plenty of places to work DX and have fun. Its
called Amateur Radio. Unfortunatly without a valid callsign you will be
attacked much worse than here.

Dan/W4NTI

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF187AB.44CC02EB@spam.me.not...
> Dan:
>
> I honestly don't know how to respond to this. Your post below is so
> thick with sarcasm I fail to see your point. Perhaps you could tone it
> back a few notches and provide some facts (if you can find any) to back
> up your assertion that (1) I'm a liberal, (2) I'm lazy, (3) that I've
> operated illegally, and (4) Just what the SAT's have to do with it.
>
> After you've done that, I may consider explaining my reasoning behind my
> opinion so that you might understand it.
>
> Again, I caution you, do not include me amongst the freebanders; I'm
> neither one of them, nor do I condone what they do (as I stated in the
> very first sentence of the quote you so vitriously lambasted.)
>
> -SSB
>
> W4NTI wrote:
> >
> > Why? To accomidate a bunch of LAZY illegal fools? You must be a
liberal. I
> > bet you support dropping the standards of a SAT just to accomidate some
lazy
> > bum that cant pass it...right?
> >
> > Dan/W4NTI
> >
> > "Sideband" <sideband@spam.me.not> wrote in message
> > news:3AF15839.FE40D1AC@spam.me.not...

> > > I don't condone violations of FCC rules. However, I would like to see
a
> > > sideband only band above channel 40, but below 27.800, with a 50 watt
> > > limit, for CB'ers to DX on... The frequencies allocated for this could
> > > "go around" the currently allocated forestry, etc, frequencies, much
in
> > > the same way the CB frequencies skip over the RC freq's.
> > >
> > > Just my two cents, here... Of course, your mileage may vary.
> > >
> > > -SSB
> > >

2606. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 23:33:15 UTC
From: "Dennis P. Stahr" <irfutures@earthlink.net>
Message-ID: <%UII6.6071$Cq3.588332@newsread1.prod.itd.earthlink.net>
Source record: 164353
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

People like you still suck!!!!

You are the "gimme" generation and have no respect for what others have worked for.

What you are to stupid or lazy to earn, you take for free...

I proudly repeat.... People like you still suck!

Dennis Stahr

--

****
Investment Reference

Phone - 858.538.6345 Fax - 858.484.3484
Sites: http://www.irfutures.com or if the ISP is down:
http://home.earthlink.net/~irfutures

email: irfutures@earthlink.net

"Teacher and Consultant to the futures Industry since 1983"
****
"Bob" <bob@bob.com> wrote in message news:3AF09A1D.1F7C4E45@bob.com...
> Ok, Mr. Letter of the Law.
>
> And I bet you ALWAYS obey the maximum posted speed limit. If you wanted to speed,
> you would take the right approach to speeding legally - because, hey man, you do
> EVERYTHING right. You would put your mind to becoming a race car driver and do your
> speeding on the track where it belongs. You would follow the proper steps to
> becoming a race car driver:
>
> 1. Learn to ride a unicycle, because that's how it all started, man. Our
> forefather's rode unicycles before fast cars were around, so must you learn.
> 2. Learn everything there is to know about cars - including memorizing the answers
> to questions about walking, unicycles, horse and carriage, boats, planes, etc.
> 3. If you skip the step on learning to ride a unicycle, prepare to be chastised by

> old-timers that had to learn how to ride it and by some who love the
unicycle and
> can ride it at over 20 mph! BTW - learning to ride the unicycle keeps bad
people
> from becoming race car drivers.
> 4. Prepare to spend some money. Your standard car won't do - it doesn't
fit race
> car specs! And every race track requires a different car and tire
combination.
>
> Is becoming a race car driver what you should do because you like to take
those 15
> turns of Bear Mountain road at an faster than the posted speed? Well, ham
radio IS
> NOT a replacement for the "freeband" either. Ham radio doesn't fit
everybody. Maybe
> its a bit of an extreme commitment for some. Hey, I can operate my
equipment and
> make sure that it complies with the same rules the FCC mandates for hams.
I can
> operate it responsibly. I can operate it courteously . I can use the
minimum amount
> of power necessary for a contact.
>
> Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is it
immoral? A
> crime against humanity? Absolutely not. To me - speeding in your car is a
far more
> worse crime.
>
> BTW, I do not condone operating on ham bands or intentionally interfering
with any
> service that I am aware of. Yes, I know there are (very few, non
essential)
> services allocated between 27.405 and 28Mhz. I support operations on
27.405 -
> 27.855 Mhz that follow the same regulations that hams follow.
>
> Hopefully this metaphor can crack the thick skull of the "yes, but it's
illegal,
> yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't
black and
> white.
>
> Bob.
>
>
> Scott Townley wrote:
>
> > But you *do* have all the respect you deserve...the same respect we

> > all grant to FELONS, which is what you are, buddy...
> >
> > On 30 Apr 2001 21:04:39 GMT, "Twistedhed" <twistedhed@webtv.net>
> > wrote:
> >
> > >
> > > >I am posting here because of some of the nasty things I have read in
this
> > > >group and in QRZ discussions regarding freebanders. We who use the
frequencies
> > > >from 27.405 to 28.000 have more in common with hams than you might
think.
> > > >We are good operators and have knowledge of propagation and skip
conditions.
> > > >We use Yasus, Kenwoods and Icomm radios just like you do, so we know
technical
> > > >issues as well or better. However, the attitude of some hams toward us
is
> > > >rude and condescending. We are treated like 2nd class citizens. This
should
> > > >not be. We have the same rights under the constitution as legal hams
do.
> > > >For those that do not wish to be under Uncle Sam's thumb, freebanding
is
> > > >a viable alternative to getting a ham radio license. What I am saying
is
> > > >that maybe the next time you meet a freebander it might be wise to talk
with
> > > >him before you condemn him.
> > > >
> > > >I am QRT and standing by. (No flames answered. Please reply via email)
> > > >
> > > >Unit 2711, Florida
> > > >
>
>

2607. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 23:34:35 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF1EB0B.A0C35093@IEEE.org>
Source record: 164354
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

CW wrote:
> So you're saying that its up to each individual to decide which laws they
> should obey?

That's exactly the way it is. Everyone decides which laws they should obey.
Lot's of people decide to obey them all assuming they know about them all.
Some people decide that they shouldn't obey the speed laws. Have you
ever driven faster than the speed limit? I personally don't like and
rarely wear a seat belt even though it is illegal to do so. Technically,
I am also in violation of the Texas motorcycle helmet law.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2608. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 23:38:21 UTC
From: 2w8ji@akorn.net
Message-ID: <3af1ea5f.20653068@news.accessunited.com>
Source record: 164355

On Thu, 03 May 2001 15:53:17 -0500, "William E. Sabin"
<sabinw@mwci.net> wrote:

>It is well known (see Sevick) that grounding the resistor junction causes CM. But the ideal dipole does
>not do this because it has no return path to the generator for common mode. I believe this is well
>known also. It is like the single resistor with no ground.

The dipole certainly does have a return path to the feedline and other parts of the system.

The feedline, because the center conductor is shielded from the antenna and the shield isn't, has a path right there that allows or induces common mode current. The balanced voltage across the ceneter insulator is what drives the shield.

Even if we floated a generator in space, and coupled it to a perfectly symmetrical conventional dipole fed with a coaxial line (and no balun), there would common mode currents.

To avoid common mode currents the antenna has to be perfectly unbalanced when fed with unbalanced lines, or you have to use some type of compensating device.

73 Tom

2609. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 23:40:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF1EC7E.D997F2B6@IEEE.org>
Source record: 164357
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

GG wrote:
> You live in town but you purchased 20 acres of land out in the boonies
> with the idea of maybe moving there when you retire in the future. I
> come along and see your land and I don't see a house or anyone using the
> land. I observe this for a short while and come to the conclusion that
> no one is using this land. So I build a little shack there, plant my
> garden, run a cow or two. Is that OK with you? Don't I have a right to
> do that? After all, you aren't using it.

You picked a bad analogy. A person did just that on some land in my
home county of Madison in Texas. Nobody noticed him living there.
After N number of years he was discovered. The case went to court
and the trespasser was awarded the property under the Texas homestead
laws. So you better keep an eye on your property or some homesteader
will wind up owning it. Homesteading is a good description of what the
freebanders have done between the CB band and the ham band. Time was
when amateur radio operators homesteaded the radio frequencies.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2610. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 23:41:17 UTC
From: "Dennis P. Stahr" <irfutures@earthlink.net>
Message-ID: <x0mI6.6098$Cq3.602311@newsread1.prod.itd.earthlink.net>
Source record: 164356

Pretty bold of a coward not to post your name here or on your article.

You are a thug and to stupid to pass the exam, so quit trying to get a pat on the back for being some sort of hero and see in the mirror the stupid, lazy coward that you really are.

Why not earn something rather than just take what you want? Your "handle" appears to properly fit your personality and perspective.

--

Dennis Stahr

"Twistedhed" <twistedhed@webtv.net> wrote in message news:3af07498$1@news2.mibx.net...
>
> I am posting here because of some of the nasty things I have read in this
> group and in QRZ discussions regarding freebanders. We who use the frequencies
> from 27.405 to 28.000 have more in common with hams than you might think.
> We are good operators and have knowledge of propagation and skip conditions.
> We use Yasus, Kenwoods and Icomm radios just like you do, so we know technical
> issues as well or better. However, the attitude of some hams toward us is
> rude and condescending. We are treated like 2nd class citizens. This should
> not be. We have the same rights under the constitution as legal hams do.
> For those that do not wish to be under Uncle Sam's thumb, freebanding is
> a viable alternative to getting a ham radio license. What I am saying is
> that maybe the next time you meet a freebander it might be wise to talk with
> him before you condemn him.
>
> This article ought to clarify things, as I am the author:
http://sporadic1.tripod.com/page7.html
>
> I am QRT and standing by. (No flames answered. Please reply via email)
>
> Unit 2711, Florida
>
>
>

2611. Re: HF Antenna for apartment bldg?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 23:42:57 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <f+zxOs3OVyx53ibZG4XEdvjXKCHw@4ax.com>
Source record: 164358

DaveC <anon@example.net> wrote:

>Also, what kind of directionality will a sloper (sloping or not) experience?

Very little directionality that I could hear. It should pick up more or less
okay from all directions.

Bob
k5qwg

>--
>Note that my return address is corrupted in an attempt to reduce spam. If you
>choose to e-mail me, please correct my address as described below.
>
>Thanks,
>Dave

2612. Re: Saturn Station Wagons and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 23:44:36 UTC
From: Richard Miller <k1rdm@mediaone.net>
Message-ID: <E3ml6.10573$e85.4388632@typhoon.ne.mediaone.net>
Source record: 164359

Ted,

I didn't see what year Saturn you have. Tis may make a difference in
my response since between 95 and 96 or so, they had a rounded
dashboard. However, I have an 98 wagon and a 97 sedan. Both
have a flat pocket right in the middle of the dashboard. I placed wide
"medical grade" Velcro in that area and on the bottom of the mobile
mounting bracket. This turned out to be a good location since I don't
have to divert my attention very far from the road. I ran the power
and coax down the side of the console and dressed it up with spiral
cable wrap.

As for the antenna, I use a dualband Valor thru the glass antenna. It works
okay, but it could be better. I have a Comet 5/8 lambda mag mount on order.

Good luck,

Rick
K1RDM
"Ted Wagner - KB9RPD" <kb9rpd@arrl.net> wrote in message
news:3aefffb2.1197062503@netnews.worldnet.att.net...
> I'm a closet ham. Beat me with an old yagi as they say.
>
> I've been a bit inactive since I got my ticket in 1997. In June, I
> will begin studying to upgrade to General.
>
> Here's my quandry. All I was able to afford was a RadioShack HTX-202
> back in 1998. I have that and that's all I've used for my radio. My
> wife and I are building a house. But, to be a good ambassador to
> amateur radio and to stay on the good graces of my neighbors, I won't
> challenge the community doctrines/rules by erecting an antenna on my
> property. And, the other reason is I don't have a lot of money to
> spend on a nice rig at home. Perhaps in 5 or 6 years, I'll have money
> enough to buy a nice rig with a nice small antenna farm at home.
>
> But, for now, I'm pretty much settled on using my car as a mobile
> shack. Here's my quandry. I've ONLY used magentic mount antennas (2
> Meters with my HT). Right now, I'm max at 5 watts. Does the job, but
> I want something better.
>
> Since I still don't have a lot of money, I may purchase an Alinco
> mobile 6 Meter that I can use with my current licnese.
>
> Here's my problem. If anyone knows much about Saturns, they'll
> understand my quandry with the space in the car.

>
> #1 - I have no clue as to where to put the radio in the car. I want
> to put it someplace that doesn't get in my way or the front passenger.
> I want to put it someplace I can easily remove it for security.
>
> #2 - I want a REAL antenna on my car. Since it's a station wagon, I
> don't have the luxury of a trunk. I've never installed a "real"
> antenna....where can I find information on how to properly do this
> without destorying my car or subjecting it to rust?
>
> #3 - has anyone any experience installing radios in small cars that
> may be able to offer advice or would someone know of some links on the
> internet to point me in the right direction?
>
> #4 - Because of #1, this setup will be portable as well as mobile. I
> want to be able to remove my radio and use it for field day with a
> "portable" setup...power supply, antenna, etc. What would anyone
> recommend for "in-line" connectors for the power harness on the radio?
>
> Any information would be GREATLY appreciated. I haven't had much luck
> finding anything on the internet.
>
> Thanks
>
> 73, Ted KB9RPD

2613. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 23:49:15 UTC
From: 2w8ji@akorn.net
Message-ID: <3af1ebe2.21040919@news.accessunited.com>
Source record: 164360

On Thu, 03 May 2001 18:38:23 -0400, Denver Braughler
<Braughler@bwcc.com> wrote:

>I appreciate the peer review.

Advice that can personal harm or property damage deserves peer review.

>> With current in the thousands of amperes, lightning DOES care above
>> even small increases in impedance.
>Lightning doesn't care about anything.
>I don't believe that what you are saying is borne out in reality

You are free to believe Ohms law is a suggestion if you like, but it
works for me.

The current in a lightning strikes divides by the impoedances of
alternative paths, just like any other current source does.
.
>Lightning follows a path that has a huge random component.
>It does not follow the path of least resistance.
>Lightning will "ignore" a perfectly good steel tower to strike a dead tree.

It all has to do with voltage gradients. It works that way in any
spark gap, be it ten thousands of an inch or ten thousand inches of
gap.

>> Put bluntly, it is foolish to use braiding for a lightning ground.
>Frankly, I think you are mistaken.
>Now there has been a lot of debate about skin-effect.

Why not search the Polyphasor web site? Why not visit you local BC
staion and see what THEY use? Why not grab a copy of the NAB Hanbook
and see what it says? Why not check NASA's rules on grounding? Why not
look at the National Electric Code?

Are they mistaken also?

>I think I could probably find more sources supporting braid.
>I have never seen anyone except you suggest solid conductors for lightning.
>I've never seen lightning rods (air terminals) installed connected to anything but braid
(copper or aluminum).

Well, then I guess that makes it correct!

>Lightning seems to travel over the outside of the conductor.

Right. That's why the conductor should not be woven or braided. That's
why smooth and wide is better.

It is always a good idea to not assume things when safety is an issue.

73 Tom

2614. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 23:55:35 UTC
From: 2w8ji@akorn.net
Message-ID: <3af1ee63.21682008@news.accessunited.com>
Source record: 164361
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

On Thu, 03 May 2001 22:21:10 GMT, "Phil Kane" <Phil.Kane@nospam.spam>
wrote:
>
>>If that fails, we need to execute them...
>
> You are certainly making the jest, eh????
>
>>and if that fails, we need to force them to
>>live with N1IR for a week. Eventually they will get the message.
>
> Hey, Richard Burton in Southern Cal has been prosecuted six
> times, spent time in jail three times, and still operates on
> ham radio without a license whenever he gets out.
>
> When is HE going to learn?

Some people like jail. For those people, we send them to Boston and
let them build Fractal antennas under the direct supervision of Dr.
Nathan Cohen, pHd.

2615. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-03 23:56:21 UTC
From: 2w8ji@akorn.net
Message-ID: <3af1efce.22044118@news.accessunited.com>
Source record: 164362
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Thu, 03 May 2001 15:30:04 -0700, Jim Kelley <jwkelley@uci.edu>
wrote:

>Tom W8JI wrote:
>
>> Freebanding is closer to the example of driving on the shoulder of the
>> road...or the wrong way on a one-way street....or driving without a
>> license...than it is to littering.
>
>I take it you haven't heard the Dennis Leary song. It's called "The
>A$$hole Song."
>
>ac6xg

Never heard it. Is he related to Tim Leary?

2616. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 00:00:26 UTC
From: 2w8ji@akorn.net
Message-ID: <3af1f030.22142745@news.accessunited.com>
Source record: 164363
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Thu, 03 May 2001 20:52:22 GMT, GG <nbc_red@mailcity.com> wrote:

>You live in town but you purchased 20 acres of land out in the boonies
>with the idea of maybe moving there when you retire in the future. I
>come along and see your land and I don't see a house or anyone using the
>land. I observe this for a short while and come to the conclusion that
>no one is using this land. So I build a little shack there, plant my
>garden, run a cow or two. Is that OK with you? Don't I have a right to
>do that? After all, you aren't using it. Maybe I am doing something
>illegal, but after all, why should you object, you aren't using the land
>and I am apparently hurting no one and there are others committing much
>more horrendous crimes. Maybe instead of coming out and trying to get me
>off your land that you aren't using, you should spend you time
>protesting real crimes.

The problem with your logic is you are using land that is being used.
Freebanders are screwing things up for licensed services, and have
been for years.

They are just to stupid or uneducated to understand that.

Sorta like the mentality that thinks it is OK to "borrow" things, like
someone's property or land, without asking because "they aren't using
it".

2617. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 00:04:32 UTC
From: kb7qhc@home.com
Message-ID: <3af1f186.618296633@news.seanet.com>
Source record: 164364

On Thu, 03 May 2001 18:40:46 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>GG wrote:
>> You live in town but you purchased 20 acres of land out in the boonies
>> with the idea of maybe moving there when you retire in the future. I
>> come along and see your land and I don't see a house or anyone using the
>> land. I observe this for a short while and come to the conclusion that
>> no one is using this land. So I build a little shack there, plant my
>> garden, run a cow or two. Is that OK with you? Don't I have a right to
>> do that? After all, you aren't using it.
>
>You picked a bad analogy. A person did just that on some land in my
>home county of Madison in Texas. Nobody noticed him living there.
>After N number of years he was discovered. The case went to court
>and the trespasser was awarded the property under the Texas homestead
>laws. So you better keep an eye on your property or some homesteader
>will wind up owning it. Homesteading is a good description of what the
>freebanders have done between the CB band and the ham band. Time was
>when amateur radio operators homesteaded the radio frequencies.

Hi Cecil,

You don't have to live in the outback to capture land. Simply
maintaining your neighbor's property for a number of years allows you
to claim it through a "silent easement."

73's
Richard Clark, KB7QHC

2618. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 00:05:59 UTC
From: kb7qhc@home.com
Message-ID: <3af2f241.618483442@news.seanet.com>
Source record: 164365

On Thu, 03 May 2001 23:56:21 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:

>On Thu, 03 May 2001 15:30:04 -0700, Jim Kelley <jwkelley@uci.edu>
>wrote:
>
>>Tom W8JI wrote:
>>
>>> Freebanding is closer to the example of driving on the shoulder of the
>>> road...or the wrong way on a one-way street....or driving without a
>>> license...than it is to littering.
>>
>>I take it you haven't heard the Dennis Leary song. It's called "The
>>A$$hole Song."
>>
>>ac6xg
>
>Never heard it. Is he related to Tim Leary?

Is he outside looking in? (Moody Blues)

73's
Richard Clark, KB7QHC

2619. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 00:29:36 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF1F7F0.BF834C01@eznec.com>
Source record: 164366

I want to make a correction. The experimental circuit isn't really a good representation of a balanced antenna, as I stated. A balanced antenna would best be represented by a pi network, with about 70 ohms between the conductors, then another impedance (not necessarily purely resistive) from each conductor to ground. These impedances to ground would depend on the antenna height. My model lacked the resistor between the conductors, and the resistors from each leg to ground were probably smaller in value than would be realistic for an antenna at a reasonable height. Increasing the values of the two resistors in the experimental circuit and adding a third would tend to reduce the common mode current (by providing a third path for the shield current) but not eliminate it. The same analysis could be done and the same conclusions drawn. Of course, the "feedline" was also unrealistically short. But a half wavelength line grounded at the bottom would show a similarly low impedance to common mode current.

Roy Lewallen, W7EL

2620. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 00:35:58 UTC
From: n2ey@aol.com
Message-ID: <20010503203558.18977.00000725@nso-fa.aol.com>
Source record: 164367

In article <3AF156AF.BE370705@spam.me.not>, Sideband <sideband@spam.me.not>
writes:

(N2EY wrote):

>>Here's a simple "thought experiment":
>>
>> Suppose you had to listen to someone spelling out words phonetically, and
>write
>> down what was said. For example, you would hear:
>> "Tango...hotel....india.....sierra.....india.....sierra.....alpha....tango
>> ....echo......sierrra....tango....."
>>
>> and would write down:
>>
>> "THIS IS A TEST"
>>
>> For most people, doing the above for a couple of minutes would be very
>easy,
>> while for some it would be extremely difficult. The basic skill of copyng
>code
>> is no more than this, except that instead of words you hear short and long
>> tones.
>
>In fact, this is how I learned the Phonetic alphabet when I was in the
>Corps. One of my Corporals saw how I was having trouble with it, and
>over a week's time I finally picked it up, to the point I had it Lima
>India Charlie Kilo Echo Delta, Over.

There you go! I bet that you reached the point where, when you hear the word
"sierra", you don't think "s", you just write the letter - almost
automatically. The fact that you learned to do it means you have a very good
shot at learning code, too, because it's a very similar skill. Just replace
"sierra" with "dididit".
>>
>> > I hear a dit and it's really a dah, or
>> >vice versa.
>>
>> I think you are listening to code that is TOO SLOW. Have you tried the Koch
>> method? What speed is your training software set for?
>
>I have the letters set for 20 WPM and the words for 5, and I still miss
>a few.
>
Ahhh - perhaps the letter speed (20 wpm) is too fast, and the word speed (5

wpm) is too slow. Too much time between letters means your brain has too much time to forget. Try, say, 18/7 or so.
>>
>> >I've tried the "tricks", etc, such as turning each letter
>> >into a cute phrase, etc, but for some reason it doesn't want to work for
>> >me.
>>
>> Those "tricks" add a step to the decoding process - an unnecessary step.
>>
>> Take a look at these, if you haven't already:
>>
>> http://www.sdc.org/~finley/
>>
>> and
>>
>> http://www.joates.demon.co.uk/megs/N0HFF/contents.htm
>>
>> > I've been going at it steady for the last two years or so, and the
>> >best I've been able to manage is about 2 words/minute, and that's after
>> >correcting the "text" post-send.
>>
>> Try the methods described at the above websites. I do think the slow code
>may
>> be the problem!
>
>I'll do that. Thanks for the tips. Hopefully they'll have something that
>will help.

I thought I had posted these URLs earlier, but upon checking it doesn't look like I did. Sorry - should have led off with them.

Another tip: Even though you know most of the alphabet, try the Koch method anyway. This method basically consists of starting out with just two characters, learning them to 90-95% proficiency, then adding just ONE more character, practicing those three to 90-95% proficiency, etc. This method has gotten little publicity until recently because it was not easy to implement without computers. It was developed by a German psychologist in 1936, which probably also contributed to its lack of publicity.

The first URL gives lots of details about this method.
>
>> > Honestly, I'm wondering if it would be
>> >any easier to learn on the air. The local club here in Livingston County
>> >does code study up on 2M weekly, and I've finally found an Elmer who
>> >said he'd help me out on the air with it, as well. Honestly, I think the
>> >only way I'm going to get it down is to do it on the air.
>>
>> Good idea! Try it!
>
>I plan on it. It worked for the Phonetic Alphabet.. why not code, too?

Basically the same skill, when you think of it.
>> >
>> >I'll check out the sets you mentioned for HF, and I'll give serious
>> >thought to a 2M only set as well. If there's no use for 440 here in the
>> >area, or if repeaters out here bridge across the bands, I'll probably go
>> >with just a 2M set and be done with it.
>>
>> Lotsa good used stuff out there. I'm still using the Heathkit HW-2036 I
>built
>> from a kit in 1977.
>
>I wish they still made those kits, I'd love to build my own radio...
>Really the only way to really know how they work, IMHO.

Ten Tec makes a 2 meter transceiver kit. Looks pretty decent - I may get one to replace/complement my aging Heath. 24 years of mobile and home service is a long time, yet all I've ever had to fix on the '2036 was a bad mike and the occasional realignment.
>
>Kindof like Antennas. I built my own 5/8 wave ground plane for my base
>station CB when I was still in Southern California. It was a top loaded
>coil design.. copper wire wrapped on a non cuprous PVC pipe, with
>aluminum tubing salvaged from DRMO (was originally camo-net poles)
>sloped down at about 40 degrees from perpendicular to the radiator. Got
>a 1.3:1 SWR over all 40 channels, and was heard almost 50 miles away
>(past Escondido from Oceanside 3 blocks from the ocean) with 12 watts on
>27.385 LSB. I plan on building my own antennas for 2M on both the car
>and for the apartment. Maybe I'll try another 5/8 ground plane for the
>apartment for 2M...
>
Cool! Lots of good designs out there. My entire HF station is homebrew and home-designed. 100 watt transmitter/receiver combo (it transceives), power supplies, antenna tuner, antenna, even the tables and shelves. The clock is one of those old Tymeter mechanical digital ones that was made from the remains of three junkers. Only thing I didn't build is the telegraph keys. Now I want to build an Elecraft.
>> >
>> >As for the HF, I'm really looking forward to the DX.
>> >
>> Lots of it out there. Good luck!
>>
>> 73 de Jim, N2EY
>
>Thanks again, and 73's
>
Keep plugging away at it, and keep asking the questions

73 de Jim, N2EY

2621. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 00:37:54 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AF1F9E2.FDCCEA82@mwci.net>
Source record: 164368

Roy Lewallen wrote:

> Can you point me to the place in Sevick where he explains the cause of
> the common mode current? I'd like to see if it agrees with or
> contradicts the analysis I've presented. I assume you're talking about
> _Transmission Line Transformers_. The book sadly lacks an index, and a
> brief search didn't prove fruitful.

I have a copy of Sevick's article in Communications Quarterly for Summer of 1992. On page 14 he shows a
current balun with a ground at the input and equal resistors at the output with a ground at the center. The
output is still balanced but the CM voltage on each coil of the balun is 1/2 of the balun input voltage. This
is obvious by inspection. The CM current is the CM voltage divided by the CM impedance.

Your experiment, with the center tap resistors, was the same situation. With just a single 50 ohm resistor
your CM should be zero.

For an ideal dipole well above perfect ground, if everything is "ideally" symmetrical, the coupling to
ground from one half would be out of phase with the coupling to ground from the other half, so that the
common mode loop from ground to coax to antenna to space to ground is "ideally" an open circuit. There would
be no CM because the CM loop path must include the space from antenna to ground. This refers, of course, to
just one source of CM creation.

For a practical setup the CM would be there but it would be reduced by partial cancellation and by a fairly
high CM path impedance from dipole to ground.

This CM loop path subject was discussed several years ago, by yourself and Rauch and others.

P.S. I have just seen your correction post. I agree.

Bill W0IYH

2622. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 00:41:05 UTC
From: k1bqt@aol.com
Message-ID: <20010503204105.19130.00000893@ng-cr1.aol.com>
Source record: 164269

Hi Bill and Richard--

Here's an exercise. Take a perfectly balanced dipole. Connect a (physical) 1/4-wave length of coax routed away at exactly 90 degrees and connect it to a hand-held analyzer isolated from ground. Now, place one sensitive RF current meter on the shield side half element and another on the coaxial shield and compare the current distribution between the two.

Next, install a choke balun at the feedpoint and re-read the meters. After you've done that, present the data you've gathered and use it to build the case that physical balance alone will prevent common-mode current from flowing on coaxial feedline.

After that, play around with some lossy earth grounds and various cable lengths. See if you can find a condition where the common mode on the feed drops more than 15-20 dB down from the common mode on the element. Let me know what you find out.

73

Rick K1BQT

2623. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 00:42:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cstt8$b8u$1@slb0.atl.mindspring.net>
Source record: 164270

Cecil:

I agree with you.

I agree with you.

I agree with you.

All what I was trying to say is that... if one starts with an assumed V and I... and then rather arbitrarily resolves them into sums... as I claim many seem to be doing in the analysis of reflections, then one cannot infer linear relationships with the "powers" derived from those components of said sums.

If you start with "powers" as in your examples, then go ahead and derive volts and amps from those powers.

All I am saying is that apart from your "thought experiments" or "made up" examples which begin with powers. Such as x watts of reflected power are added to y watts of incident power, then.... etc... such are "model problems".

And... I maintain that since "almost" all known amateur power meters are NOT measuring power, but rather are measuring voltages a = V + IR and b = V - IR, and then only "indicating" powers on a meter face, that one must be careful about adding those "pseudo" er... "ficticious" powers. For they are really voltages that you are adding.

I now believe that most on this NG or thread have completely missed my, perhaps subtle, point.

I'll make it again.

Here's a perfect match. With no reflected power.

A 50 Ohm resistance 141.4 volt DC battery is connected to a 50 Ohm load.

The current that flows is I = 141.4/100 = 1.414 Amps. A

nd the power in the 50 Ohm load is P = IV = 1.414 * 141.4/2 = 100 Watts.

Sort of like your 100 Watt 50 Ohm output ham transmitter delivering 100 Watts to a 50 Ohm antenna. No difference.

Now using a directional coupler/wattmeter/reflected voltmeter, what ever you want to call it with an internal reference impedance R = 50 Ohms, just to make things simple connected at the load point.

The directional coupler will indicated "a" on forward and "b" on reflected.

Where:

a = V + IR = 141.4/2 + 1.414*50 = 70.7 + 70.7 = 141.4 Volts. "The incident or forward voltage".

and

b = V - IR = 141.4/2 - 1.414*50 = 0 Volts. "The reflected voltage".

And so all the "theory" of reflections also works for DC!

Now set the load to something other than 50 Ohms, i.e. create a mismatch...

Then calculate a and b again.

Now try to identify where the reflected power is sourced and sunk!

It simply isn't... it is "ficticious". A perhaps useful artifice to help with visualizations, nothing more nothing less.

How is this DC analysis any different from AC or RF? It simply isn't!

If your transmitter had a VFO that went all the way down to zero frequency (DC) and if your Bird wattmeter worked all the way down to zero frequency (DC) this is exactly what they would indicate. Go ahead, turn the crank on that VFO all the way down to zero...

I have done it... albiet not with a ham transmitter, and with a very accurate reflectometer which operates effectively from MF all the way down to DC... and as I crank the frequency down to DC... guess what...

I have done this in the lab, I have put such equipment into productions. What?

Why all the mystery about "reflections" at RF? There is no mystery, it's no different than a mismatch in a DC circuit.

I believe that folks get confused about mis-matches, simply because of the "impedance transformation" effects of transmission lines. But the best way of viewing that is that a piece of transmission line is simply a transformer with a complex turns ratio. It can be easily modeled with usually 2 imaginary resistors or at most 3.

In the "steady state", there is no energy sloshing back and forth and bouncing off virtual shorts etc... those are all fictions. Transmission lines act as transformers because they "string" out voltage and current waveforms over space and so they allow you to "tap" into voltages and currents at various places on their waveforms. In doing so the transmission lines "store" energy, but not power.

Replacing the transmission lines by their imaginary resistor equivalents, and then running the frequency down to zero, you will note that the meter indications for reflected power never change as you approach zero frequency! Of course if you are modeling a transmission line with imaginary resistors, the imaginary resistors (jR) also store energy just as the transmission lines do, and they do it at DC as well as at AC.

What is wrong with this analogy?

It works every time. It always gives the correct answers.

I believe that ya'll are making reflections far more complicated than they need to be.

Food for thought in your visualization attempts.

-Peter K1po

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF1524D.EE357446@IEEE.org...
> "Peter O. Brackett" wrote:
> > Voltages and currents are "added" by mother nature, but powers are not.
>
> That's funny, Peter. When I screw in an extra light bulb, sure seems
> like mother nature makes the room brighter. Is that not power being
> added to make the room warmer and brighter?
>
> > Especially since power and voltage are related non-linearly [P = I*V] by a
> > product, then one cannot simply assume that linearity follows across the
> > great power divide, from volts to power...heh, heh.
>
> Nobody assumes that "linearity follows across the great power divide".
> The very basic principle behind voltage, current, and power is that
> energy cannot be created or destroyed (by ordinary means). The energy
> is the cause. The voltages and currents are the effects. If you double
> the energy, you do NOT double the voltage AND current. When someone
> claims that 75 joules plus 8.33 joules is equal to 133.33 joules
> because of the voltages involved, that is more than enough reason to
> distrust the voltage analysis.
>
> > This kind of little error alone is one of the largest sources of confusion
> > in the debates on "reflected" power. One must take great care with
> > voltages and currents in handling the components into which we claim to be
> > able to "resolve" those voltages and currents. And especially subsequently
> > with the "powers that we mathematically derive from those components.
>
> Actually not much care is required at all. Simply calculate/measure the
> energy and let the voltages and currents fall out from the boundary
> conditions. The voltages and currents MUST satisfy the conservation
> of energy principle. There is no other choice.
>
> > It's "safer" to deal only with I and V and leave power out of it.
>
> It is safer (more basic) to deal with energy because of the conservation
> of energy principle. 75 joules plus 8.33 joules simply cannot add up to
> 133.33 joules. Do you disagree? That someone believes 75 joules plus 8.33

> joules can equal 133.33 joules is proof that his voltage analysis is
> filled with misconception and error.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2624. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 00:55:14 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AF1FDF2.DFEBDF11@hiwaay.net>
Source record: 164272
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Tom W8JI wrote:

> need to execute them...and if that fails, we need to force them to
> live with N1IR for a week. Eventually they will get the message.

Tom- that's going TOO far- making one live with N1IR is Sadism, and
"cruel and Unusual" punishment.
How could you?

2625. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 00:55:38 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AF1FE0A.68A54BA0@mwci.net>
Source record: 164271

Tom W8JI wrote:

> To avoid common mode currents the antenna has to be perfectly
> unbalanced when fed with unbalanced lines, or you have to use some
> type of compensating device.

The coax itself is just such a compensating device. It is a well proven fact that there is a fairly strong
electromagnetic coupling from braid to center wire. And this includes the *outside* of the braid. You told
us yourself a few days ago that you tested a piece of coax as a transformer from braid to center wire, and
it worked quite well. And I believed it because I have done that many, many times.

One folklore that does not seem to go away is the belief that what happens on the outside of the braid is in
total isolation from the center conductor. It most assuredly is not.

Bill W0IYH

2626. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 00:55:38 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9csull$8kl$1@slb7.atl.mindspring.net>
Source record: 164273

Richard:

In the Bird wattmeter, the places where the meter measures I and V, [or Pf and Pr] if you will, are not spread out along a transmission line, rather they are within a very tiny fraction of a wavelength of each other, i.e. essentially at a point.

In other words the "sample" of the transmission line or of the "wave" that the Bird looks at is infinitesimal for all practical purposes, and is no different than the 60 Hz case on regular power transmission lines. A very small fraction of an inch at 20 MHz is the equivalent of miles at 60 Hz.

I don't see the difference with the 20 MHz or 60 Hz metrology.

I do see a difference in transmission lines that are "long" with respect to a wavelength and thus have the ability to transform impedances, i.e. can be a transformer or some other kind of lossless impedance transformer.

Other than that effect, i.e. the impedance transformation effects of transmission lines, where's the mystery or difference with the 60 Hz case when it comes to impedance mis-matches. If there is a mismatch, then if you believer there really is a reflected power then you must believe it's there at 60 Hz or at DC. It's no different, you can't have it both ways, there either is reflected power whenever you have a mismatch or there is not, you can't have it both ways... if you really believe in reflected power.

As they say in the marketplace... I believe I gotcha.

What?

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:28173-3AF16D5D-24@storefull-114.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "Just because power is a scalar doesn`t mean you should add them."
>
> Watts are added for convenience and for honesty. You pay the electric
> power company for the energy you receive which is the accumulation of
> power times time during the billing period. The accumulation of current
> times time would not be fair because the voltage is not always constant,
> and because the current you receive may be just out of the line on a
> short-term loan. Voltage times time is meaningless because voltage
> should be a constant and should be at the customer premise whether he
> consumes energy or not. A fixed minimum service charge covers this
> connection.
>

> The customer`s power consumptions add because the wattmeter is sensitive
> to phase angle and registers the in-phase voltage and current for its
> power indication.
>
> The customer`s power consumptions add because when he connects (2)
> 100-watt lamps, the wattmeter registers an increase of 200 watts of
> consumption instead of the 100-watts of increased consumption it
> registers when only one 100-watt lamp is added to his load.
>
> The power company`s wattmeter senses both voltage and current to
> determine the power through the meter. So does the Bird wattmeter used
> at r-f. But the Bird, as Cecil noted, is designed and calibrated for a
> voltage to current ratio of 50-ohms, unless specially designed for a
> different value. The Siemens or whatever wattmeter your power company
> supplies is confronted with a different voltage to current ratio every
> time a customer flips a switch.
>
> Peter also wrote:
> "Why should there be a difference between 60Hz and a transmission
> line...?"
>
> First, 60Hz does not carry a transmission line.
>
> Second, the 60Hz wavelength is 5 million meters, or about 3000 miles.
>
> Nature`s rules are indeed the same for 60Hz and 60 million Hz, but the
> length of transmission lines in terms of wavelength is as different as
> their frequencies. As practical 60Hz transmission lines are limited to a
> few hundred miles, their length in terms of wavelength is only a small
> fraction. Nature tells you that when you know the voltage to current
> ratio of the power and the phase relation between the volts and amps,
> you have a simplified way to determine power. Bird tells you to just
> subtract the reverse from forward power indications to determine the
> power supplied by the generator and delivered to the load. It works for
> me.
>
> Best regards, Richard Harrison, KB5WZI
>

2627. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 01:13:26 UTC
From: GG <nbc_red@mailcity.com>
Message-ID: <3AF1F3C9.19DF1A6C@mailcity.com>
Source record: 164274
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Tom W8JI wrote:
>>
> The problem with your logic is you are using land that is being used.
>
>
Read it again, I said I did not observe the land being used, so assumed
it would be OK if I used it.

> They are just to stupid or uneducated to understand that.
>
> Sorta like the mentality that thinks it is OK to "borrow" things, like
> someone's property or land, without asking because "they aren't using
> it".

The logic of my post, I assumed I could "borrow" the property without
asking because it was apparent that "they aren't using it".

2628. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 01:17:06 UTC
From: GG <nbc_red@mailcity.com>
Message-ID: <3AF1F495.4387880D@mailcity.com>
Source record: 164275
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

I picked a good analogy, I have no right to use his property just
because I observe it does not appear to be in use by the owner.

W6RCecilA wrote:
>
>
> You picked a bad analogy. A person did just that on some land in my
> home county of Madison in Texas. Nobody noticed him living there.
> After N number of years he was discovered. The case went to court
> and the trespasser was awarded the property under the Texas homestead
> laws. So you better keep an eye on your property or some homesteader
> will wind up owning it. Homesteading is a good description of what the
> freebanders have done between the CB band and the ham band. Time was
> when amateur radio operators homesteaded the radio frequencies.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2629. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 01:18:22 UTC
From: 2w8ji@akorn.net
Message-ID: <3af202f0.26943688@news.accessunited.com>
Source record: 164277

On Thu, 03 May 2001 19:55:38 -0500, "William E. Sabin"
<sabinw@mwci.net> wrote:

>One folklore that does not seem to go away is the belief that what happens on the outside of the braid is in
>total isolation from the center conductor. It most assuredly is not.

We will just have to disagree on this one Bill.

73 Tom

2630. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 01:26:04 UTC
From: 2w8ji@akorn.net
Message-ID: <3af203ab.27130215@news.accessunited.com>
Source record: 164278
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Fri, 04 May 2001 01:13:26 GMT, GG <nbc_red@mailcity.com> wrote:

>The logic of my post, I assumed I could "borrow" the property without
>asking because it was apparent that "they aren't using it".

Borrowing something that isn't yours without asking the owner is
called "theft", but I guess we all have different morals.

Take a listen to ten meters, and tell me freebanders haven't cause a
big problem. Not only have they driven legitiment users off the
commercial areas around 27 MHz, and ruiened things for the R/C people
who used to use adjacent-to-CB channel frequencies, they are now
ruining ten meters.

They are also spreading to all other frequencies in the HF spectrum.

2631. A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 01:35:22 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF2075A.A566FBDB@spam.me.not>
Source record: 164279
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Dan:

Well, apparently you missed the point; or is it that you choose to ignore it? Either way, your attitude towards me on this is a bit disconcerting. I'll state this again just in case it didn't get through the first time" I'm not a freebander, nor do I encourage ANYONE to violate FCC rules.

I'm sorry to hear about your mood disorder.

The point was this: Set aside another band for sideband transmissions only, to help alleviate some of the congestion on CM (they have no other place to go), and perhaps the encroachment on 10M frequencies would tone down; perhaps those frequencies between 27.405 and 28.000 that are allocated to other services won't be interfered with people calling CQ, and perhaps sideband operators on CB's won't get interfered with as much by AM carriers.

I'm not proposing a reduction in standards. Personally, I feel when the FCC removed the licensing requirement from CB they made a BIG mistake. I'm proposing a broadening of bandwidth to help alleviate the congestion on CB that causes people who don't know any better to venture onto the HAM bands and interfere with licensed operators. If the bands weren't so congested, CB'ers might not feel the need to run an amp, because they'd be able to make contacts on much less power.

If you're so shortsighted that you don't see the potential good this could do, then I'm sorry you feel that way.

Will some idiots out there still run illegal power? Probably. Will people who don't know any better still venture out onto bands and frequencies where they don't belong? Probably. Unfortunately, without a licensing requirement, the lack of knowledge by CB'ers helps cause this problem.

This is just my opinion. Your mileage may vary

W4NTI wrote:
>
> Did you not suggest a band be set aside just for the illegal idiots? They
> you should be able to figure out my response.
>
> The SATs having to do with it is....the lowering of the bar. The reduction
> of standards to accomidate some person and/or group that is unable, too
> ignorant, or just STUPID. See my point?
>

> Also there ALREADY exists plenty of places to work DX and have fun. Its
> called Amateur Radio. Unfortunatly without a valid callsign you will be
> attacked much worse than here.
>
> Dan/W4NTI
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF187AB.44CC02EB@spam.me.not...
> > Dan:
> >
> > I honestly don't know how to respond to this. Your post below is so
> > thick with sarcasm I fail to see your point. Perhaps you could tone it
> > back a few notches and provide some facts (if you can find any) to back
> > up your assertion that (1) I'm a liberal, (2) I'm lazy, (3) that I've
> > operated illegally, and (4) Just what the SAT's have to do with it.
> >
> > After you've done that, I may consider explaining my reasoning behind my
> > opinion so that you might understand it.
> >
> > Again, I caution you, do not include me amongst the freebanders; I'm
> > neither one of them, nor do I condone what they do (as I stated in the
> > very first sentence of the quote you so vitriously lambasted.)
> >
> > -SSB
> >
> > W4NTI wrote:
> > >
> > > Why? To accomidate a bunch of LAZY illegal fools? You must be a
> liberal. I
> > > bet you support dropping the standards of a SAT just to accomidate some
> lazy
> > > bum that cant pass it...right?
> > >
> > > Dan/W4NTI
> > >
> > > "Sideband" <sideband@spam.me.not> wrote in message
> > > news:3AF15839.FE40D1AC@spam.me.not...
> > > > I don't condone violations of FCC rules. However, I would like to see
> a
> > > > sideband only band above channel 40, but below 27.800, with a 50 watt
> > > > limit, for CB'ers to DX on... The frequencies allocated for this could
> > > > "go around" the currently allocated forestry, etc, frequencies, much
> in
> > > > the same way the CB frequencies skip over the RC freq's.
> > > >
> > > > Just my two cents, here... Of course, your mileage may vary.
> > > >
> > > > -SSB
> > > >

2632. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 01:42:36 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF2090C.2C9DD715@spam.me.not>
Source record: 164280
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Leland:

"Leland C. Scott" wrote:
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF15839.FE40D1AC@spam.me.not...
> >
> > I don't condone violations of FCC rules. However, I would like to see a
> > sideband only band above channel 40, but below 27.800, with a 50 watt
> > limit, for CB'ers to DX on...
>
> Yeah, they are call Ham Radio Bands, and all they need is a Ham Radio
> License like the one your getting. If CBers want to shoot skip, then let
> them get a license too.

So you're saying that HAMs are licensed to operate between 27.405 and
28.000? Wow! When did that happen? News to me. ::grimace::

> I doubt you had any big problem getting your
> license. The written exams up to a General are easy, and for those who want
> H.F. the 5 wpm code test is a reasonable speed until the requirement is
> eliminated.

Actually, I don't have my license yet. I go for my written tests next
week. I've been studying code for over two years (see the other thread:
Ticket test suggestions for more info on this) without much result. I
won't go into that rigmarole again here. It's already in that other
thread.

> What you propose to do is if the FCC can't enforce the rules, then heck,
> lets just make it legal, just like the folks who want to legalize drugs. The
> only problem with that is where does it stop? Today 26.965 -27.405, tomorrow
> 26.965 - 27.800, ? 26.965 -29.700, 12m - 10m, ..., you get the idea. 8-))
>

That's a bit reactionary, Leland. I don't think legalizing drugs is an
option. I don't see the connection between the two.

I'm proposing additional bandwidth for a particular mode of operation in
order to help alleviate some of the congestion on an already overtaxed
and overused band, which may just help to reduce the encroachment by
unlicensed radio operators on HAM bands.
> --
> Leland C. Scott
> KC8LDO

>
> Saw this on a Tee-shirt:
>
> "I am a bomb technician. If you see
> me running, try to keep up. "

Again, It's just my opinion. Your mileage may vary.

-SSB

2633. Re: Antenna Systems Design for Cellphones?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 02:02:28 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ct2iv$r85$1@slb6.atl.mindspring.net>
Source record: 164281

Reg:

Pssstt... a word to the wise... don't tell him about your WWW site.

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9csfdn$3sf$1@neptunium.btinternet.com...
>
> Tom Puffett wrote
> > I have a career opportunity in the UK for someone with a good
> working
> > knowledge of cellphone antenna design. If anyone is interested in
> finding
> > out more information, please email me.
> ==========
> Tom, why don't you do the job yourself ? Are you lacking in self
> confidence ?
>
> But look no further. I am just the fellow you want. 60 years
> engineering experience. Can you afford to pay me 250,000 £UK per
> annum plus pension contributions. Forget the company car and any
> other freebies. Can start next Monday. e-mail me requirements of
> your current project.
> ----
> Reg.
>
>

2634. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 02:08:46 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ct2uo$3c6$1@nntp9.atl.mindspring.net>
Source record: 164282

Cecil:

[snip]
"> we have accounted for only 4.5% of the mass in the universe. Maybe
> empty space is not empty?
[snip]

Wow... Still a long way to go.

Did they say... Who "we" is? And...

How will "we" know when "we" have counted it all?

Douglas Adams said the answer was 42? But that was after he forgot what the question was.

-Peter K1PO

2635. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 02:23:10 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3af212aa$0$18886$1dc6e903@news.corecomm.net>
Source record: 164283
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Someone transmitting with legal power levels on the legal 40 are not
breaking the law they are also not freebanding. They are operating in a
proper and legal manner as prescribed in the regulations. Any other
operation is illegal without FCC/NTIA authorization. No more no less.

Dave WD9BDZ

Sideband wrote:
>
> So when a freebander is transmitting with legal power levels on the
> legal 40 they're still breaking the law?
>
> I'm a CB'er (not for long. I take my written tests early this month),
> and I, unfortunately, get sneered at for not having my ticket, simply
> because there are those who DO choose to violate FCC rules.
>
> I don't condone violations of FCC rules. However, I would like to see a
> sideband only band above channel 40, but below 27.800, with a 50 watt
> limit, for CB'ers to DX on... The frequencies allocated for this could
> "go around" the currently allocated forestry, etc, frequencies, much in
> the same way the CB frequencies skip over the RC freq's.
>
> Just my two cents, here... Of course, your mileage may vary.
>
> -SSB
>
> "Rob St.Denis" wrote:
> >
> > What I mean is that the definition of a ham does is not indicative of
> > breaking the law ... albeit some do. A freebander by definition is breaking
> > the law when they operate.
> >
> > --
> > Rob St.Denis
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > news:3AF14C2A.F037A8F2@IEEE.org...
> > > "Rob St.Denis" wrote:
> > > > A ham by definition does not break the law ... a freebander does
> > >
> > > You mean those ARRL newsletter reports of hams breaking the law
> > > and being fined are just a hoax?
> > > --
> > > http://www.mindspring.com/~w6rca

> > >
> > >
> > > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2636. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 02:29:28 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3af21425$0$18886$1dc6e903@news.corecomm.net>
Source record: 164284
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

One of the objectives of the creation of the GMRS Class D (i.e. Citizens Band) radio service was to provide low cost licensed radio communications for small businesses and family communications. This service was to be limited to 50 miles from the transmitting station and to a maximum power input of 5 watts. This was later changed to, I believe, 3 watts output. Modulation started out as AM phone only and changed to include SSB. For a special channel to be assigned which allows the use of more than 3/5 watts would be in violation of this principle.

Dave WD9BDZ

Bill Meacham wrote:
>
> Sideband wrote:
> >
>
> >
> > I don't condone violations of FCC rules. However, I would like to see a
> > sideband only band above channel 40, but below 27.800, with a 50 watt
> > limit, for CB'ers to DX on... The frequencies allocated for this could
> > "go around" the currently allocated forestry, etc, frequencies, much in
> > the same way the CB frequencies skip over the RC freq's.
> >
> > Just my two cents, here... Of course, your mileage may vary.
>
> There already is one. 10 meters. You just have to get a
> license. Whats the point in creating another special band for
> people who don't want to get a license? You already have channels
> 1-40 and it got messed up. So now you've got FRS...It doesn't
> make sense to just creating bands for people to use in a manner
> inconsistent with the intent. Any unlicensed band is going to be
> bedlam. Do you think if the FCC legislated a "freebander band"
> from 27.455 to 27.800 that it would be any different? Would the
> guys turn off the lean-yars and start using legitimate callsigns?
> ---
> Bill Meacham
> Vieques, PR

2637. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 02:31:30 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF21482.4DA30E6D@bwcc.com>
Source record: 164285

Tom W8JI wrote:
> Denver Braughler wrote:
> >I appreciate the peer review.
> Advice that can personal harm or property damage deserves peer review.
We are in total agreement on that.
I just wish more peers would comment on it.

> >> With current in the thousands of amperes, lightning DOES care above
> >> even small increases in impedance.
> >Lightning doesn't care about anything.
> >I don't believe that what you are saying is borne out in reality
> You are free to believe Ohms law is a suggestion if you like, but it
> works for me.
Actually, it doesn't work for you.
What is the resistance of 240000 inches of air?

How many ohms through PVC insulation?

> The current in a lightning strikes divides by the impedances of
> alternative paths, just like any other current source does.
That is untrue.
By virtue of following a path, the lightning lowers or raises the impedance.

> >Lightning follows a path that has a huge random component.
> >It does not follow the path of least resistance.
> >Lightning will "ignore" a perfectly good steel tower to strike a dead tree.
>
> It all has to do with voltage gradients. It works that way in any
> spark gap, be it ten thousands of an inch or ten thousand inches of
> gap.

But lightning is seeking a large area of earth, not a tiny wire.

> >> Put bluntly, it is foolish to use braiding for a lightning ground.
> >Frankly, I think you are mistaken.
> >Now there has been a lot of debate about skin-effect.
> Why not search the Polyphasor web site?
Please feel free to provide an URL that supports your position.
Such support would be truly welcomed.

> Why not visit you local BC station and see what THEY use?
That is not residential.
I do not want the lightning to come into my house.

> Why not grab a copy of the NAB Hanbook
> and see what it says?
Is it on-line?

> Why not check NASA's rules on grounding?
Is it on-line?
That is not residential either.

> Why not look at the National Electric Code?
Please cite an article.

> Are they mistaken also?
Who can tell?
You imply that they support you.
I can't tell whether what you describe is even relevant.

> >I think I could probably find more sources supporting braid.
> >I have never seen anyone except you suggest solid conductors for lightning.
> >I've never seen lightning rods (air terminals) installed connected
> > to anything but braid (copper or aluminum).
> Well, then I guess that makes it correct!
No, it just makes it customary.

> >Lightning seems to travel over the outside of the conductor.
> Right. That's why the conductor should not be woven or braided. That's
> why smooth and wide is better.
But what about shiny?
How are you going to keep it shiny?

> It is always a good idea to not assume things when safety is an issue.
No argument there either.

2638. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 02:31:46 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF21492.23260143@spam.me.not>
Source record: 164286
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Sheesh! I should probably have two cups of coffee before I start posting
after waking up... a few typo's in here:

Sideband wrote:
>
> Dan:
>
> Well, apparently you missed the point; or is it that you choose to
> ignore it? Either way, your attitude towards me on this is a bit
> disconcerting. I'll state this again just in case it didn't get through
> the first time" I'm not a freebander, nor do I encourage ANYONE to

s/"/:

> violate FCC rules.
>
> I'm sorry to hear about your mood disorder.
>
> The point was this: Set aside another band for sideband transmissions
> only, to help alleviate some of the congestion on CM (they have no other

s/CM/CB

> place to go), and perhaps the encroachment on 10M frequencies would tone
> down; perhaps those frequencies between 27.405 and 28.000 that are
> allocated to other services won't be interfered with people calling CQ,
> and perhaps sideband operators on CB's won't get interfered with as much
> by AM carriers.
>
> I'm not proposing a reduction in standards. Personally, I feel when the
> FCC removed the licensing requirement from CB they made a BIG mistake.
> I'm proposing a broadening of bandwidth to help alleviate the congestion
> on CB that causes people who don't know any better to venture onto the
> HAM bands and interfere with licensed operators. If the bands weren't so
> congested, CB'ers might not feel the need to run an amp, because they'd
> be able to make contacts on much less power.
>
> If you're so shortsighted that you don't see the potential good this
> could do, then I'm sorry you feel that way.
>
> Will some idiots out there still run illegal power? Probably. Will
> people who don't know any better still venture out onto bands and
> frequencies where they don't belong? Probably. Unfortunately, without a
> licensing requirement, the lack of knowledge by CB'ers helps cause this
> problem.

>
> This is just my opinion. Your mileage may vary
>
> W4NTI wrote:
> >
> > Did you not suggest a band be set aside just for the illegal idiots? They
> > you should be able to figure out my response.
> >
> > The SATs having to do with it is....the lowering of the bar. The reduction
> > of standards to accomidate some person and/or group that is unable, too
> > ignorant, or just STUPID. See my point?
> >
> > Also there ALREADY exists plenty of places to work DX and have fun. Its
> > called Amateur Radio. Unfortunatly without a valid callsign you will be
> > attacked much worse than here.
> >

Additional comment:

Will a tester come out to an invalid's house in order to test them? If not, how would someone who cannot leave the house get tested to attain their license?

I've heard the "if you want to DX and run power, get a license" argument ad nauseum. Some people are incapable of passing a code test due to dyslexia or other disorders. Some people are incapable of even leaving their house. How do those people attain their license?

-SSB

2639. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 02:34:34 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3af21556$0$18896$1dc6e903@news.corecomm.net>
Source record: 164287
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

No. Two 5/8 wave loaded antenna's do not make a 1 1/4 wave dipole. They make a dipole composed of two 5/8 wave loaded antenna's. This configuration will not make a truly efficient antenna. Read up on collinear antenna's and dipole antenna's. You will see that what you have is nothing. However for you sake I do hope it works to your satisfaction. I prefer something else...

Dave WD9BDZ

Sideband wrote:
>
> Doug:
>
> Hit Wilson's site and read up on what a Wilson Silver Load is....
>
> Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
> top loaded coil antenna. Two of them make 1 1/4 wave. Maybe I should
> have said 1 1/4 wave dipole?
>
> -SSB
>
> Doug Smith wrote:
> >
> > On Thu, 03 May 2001 09:31:36 -0400, Sideband <sideband@spam.me.not> wrote:
> > >them as well. Granted, I run a 5/8 dipole on the car (two 4' Wilson
> >
> > Uh, 8 feet is not 5/8 wave on 11 meters. A 102" (8-1/2') whip is 1/4 wave,
> > so a 5/8 wave would be a bit more than 17 feet long.
> >
> > (you should try a 102" whip, I think you're likely to find it more effective
> > than the twin four-footers. Because you won't have loading-coil losses.
> > Mine worked *fantastically* well on 10 meters with a converted SSB CB.)
> > --
> > Doug Smith W9WI
> > Pleasant View (Nashville), TN EM66
> > http://www.w9wi.com

2640. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:01:01 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF21B6D.3EDFC387@bwcc.com>
Source record: 164288

Tom W8JI wrote:
> The current in a lightning strikes divides by the impoedances of
> alternative paths, just like any other current source does.
I don't have to go into great detail about how lightning works.
But it should be obvious to anyone who has seen lightning that it follows a rather finite number of paths.

What isn't so obvious is that lightning begins following many paths toward the earth initially.
But most of those paths *never* reach the earth.
Instead, when one or two paths do reach the earth, all those paths that didn't make it drain their charge back into the main trunk and down the successful path(s).

The *reverse course* is very much out of the ordinary compared to most current sources.

Another difference is that lightning is a discharge of current in which zillions of tiny electrons actually make the trip from the sky to the ground.

This is a HUGE distinction from normal electrical current which need a conductor to supply some electrons to carry the energy.

I think that lightning is not comparable to conventional current for these reasons.

> >Lightning seems to travel over the outside of the conductor.
> Right. That's why the conductor should not be woven or braided. That's
> why smooth and wide is better.
A braid is certainly wider.

Again, I have yet to see an air terminal that uses solid copper or aluminum wires.

Polyphaser <http://www.polyphaser.com/ppc_technical.asp> recommends copper strap over circular copper.
<http://www.polyphaser.com/pdf/PTD1014.pdf>:
Copper strap has lower inductance and more
surface area in contact with conductive soil
than the equivalent amount of copper in a
circular conductor.

I certainly agree with them on that.

<http://www.polyphaser.com/pdf/PTD1020.pdf> explains lightning pretty well in a nutshell consistent with what I think science currently accepts.

I know there are alternative theories.
I guess they haven't passed muster by peer review.

2641. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:04:01 UTC
From: Phil Kane <Phil.Kane@nospam.spam>
Message-ID: <cuvyxnansvbet.gcsaki0.pminews@or.news.verio.net>
Source record: 164289
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

On Thu, 03 May 2001 18:40:46 -0500, W6RCecilA wrote:

>GG wrote:
>> You live in town but you purchased 20 acres of land out in the boonies
>> with the idea of maybe moving there when you retire in the future. I
>> come along and see your land and I don't see a house or anyone using the
>> land. I observe this for a short while and come to the conclusion that
>> no one is using this land. So I build a little shack there, plant my
>> garden, run a cow or two. Is that OK with you? Don't I have a right to
>> do that? After all, you aren't using it.
>
>You picked a bad analogy. A person did just that on some land in my
>home county of Madison in Texas. Nobody noticed him living there.
>After N number of years he was discovered. The case went to court
>and the trespasser was awarded the property under the Texas homestead
>laws. So you better keep an eye on your property or some homesteader
>will wind up owning it. Homesteading is a good description of what the
>freebanders have done between the CB band and the ham band. Time was
>when amateur radio operators homesteaded the radio frequencies.

This is a classic case of "adverse possession", a gem of
Anglo-American real property law. After X number of years of
use of the property without the owner objecting or otherwise
attempting to oust them, the user gains ownership of the
property. The number of years varies from state to state, and
there's a bunch of loopholes if the owner is unable to inspect
the property for a number of reasons.

"Homesteading" is something else, starting with lawful
occupancy.

--
73 de Phil Kane - K2ASP

2642. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:04:03 UTC
From: Phil Kane <Phil.Kane@nospam.spam>
Message-ID: <cuvyxnansvbet.gcsarb1.pminews@or.news.verio.net>
Source record: 164290
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

On Fri, 04 May 2001 01:26:04 GMT, Tom W8JI wrote:

>Borrowing something that isn't yours without asking the owner is
>called "theft", but I guess we all have different morals.

In Anglo-American common law, theft requires an intent on the
part of the thief to deprive the rightful owner of the
property in question. If there's no such intent, it's called
misappropriation or unlawful possession.

--
73 de Phil Kane - K2ASP

2643. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:04:04 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AF21C24.78CF3506@hiwaay.net>
Source record: 164291

Until this reply to Toms position- I thought Denver had a fair grasp on the lightning situation. I do not, now, think so. I do not completely agree with Tom, in regard to a few things, but- the success he has , with a HUMONGOUS amount of wire in use, and in the air, is impressive. I, personally have been the recipient of a couple of close hits. The last one was a direct hit on the transformer feeding my house. It fried, making noise heard in a heavy rain over 150 ft. The same bolt followed the guy wire down to the water pipe (PVC) and made an exit over 300 feet away, blowing two holes in the PVC, and creating two waterspouts. Nothing in the house was hurt, even though I had a dipole (135 ft, fed with ladder line) and a 10M quad in the air. Both were grounded, and disconnected from the rig. (Tom disagrees with this.)
On Other hits, I had equipment damage, but only where there was a faulty ground in the phone line. That one, had a hit over a mile away, and fried my computer through a mile of underground phone line.

The simple fact is- without having to know whether lightning followes a particular choice of path, the very large gradients in charge that are created while it dissipates, will** WILL** create large voltage distributions within any conductor in the area. The problem of survival is to allow for these, and make sure their path to a balance is not through anything you value.

Simple- it does NOT take a direct hit, or anything leading the charge into the house to do damage. the charge is there, even if the hit was a tree. Any conductor in the field of that charge has flow induced in it.

Bill-W4BSG

Denver Braughler wrote:
>
> Tom W8JI wrote:
> > Denver Braughler wrote:
> > >I appreciate the peer review.
> > Advice that can personal harm or property damage deserves peer review.
> We are in total agreement on that.
> I just wish more peers would comment on it.
>
> > >> With current in the thousands of amperes, lightning DOES care above
> > >> even small increases in impedance.
> > >Lightning doesn't care about anything.
> > >I don't believe that what you are saying is borne out in reality
> > You are free to believe Ohms law is a suggestion if you like, but it
> > works for me.
> Actually, it doesn't work for you.

> What is the resistance of 240000 inches of air?
>
> How many ohms through PVC insulation?
>
> > The current in a lightning strikes divides by the impedances of
> > alternative paths, just like any other current source does.
> That is untrue.
> By virtue of following a path, the lightning lowers or raises the impedance.
>
> > >Lightning follows a path that has a huge random component.
> > >It does not follow the path of least resistance.
> > >Lightning will "ignore" a perfectly good steel tower to strike a dead tree.
> >
> > It all has to do with voltage gradients. It works that way in any
> > spark gap, be it ten thousands of an inch or ten thousand inches of
> > gap.
>
> But lightning is seeking a large area of earth, not a tiny wire.
>
> > >> Put bluntly, it is foolish to use braiding for a lightning ground.
> > >Frankly, I think you are mistaken.
> > >Now there has been a lot of debate about skin-effect.
> > Why not search the Polyphasor web site?
> Please feel free to provide an URL that supports your position.
> Such support would be truly welcomed.
>
> > Why not visit you local BC station and see what THEY use?
> That is not residential.
> I do not want the lightning to come into my house.
>
> > Why not grab a copy of the NAB Hanbook
> > and see what it says?
> Is it on-line?
>
> > Why not check NASA's rules on grounding?
> Is it on-line?
> That is not residential either.
>
> > Why not look at the National Electric Code?
> Please cite an article.
>
> > Are they mistaken also?
> Who can tell?
> You imply that they support you.
> I can't tell whether what you describe is even relevant.
>
> > >I think I could probably find more sources supporting braid.
> > >I have never seen anyone except you suggest solid conductors for lightning.
> > >I've never seen lightning rods (air terminals) installed connected
> > > to anything but braid (copper or aluminum).

> > Well, then I guess that makes it correct!
> No, it just makes it customary.
>
> > >Lightning seems to travel over the outside of the conductor.
> > Right. That's why the conductor should not be woven or braided. That's
> > why smooth and wide is better.
> But what about shiny?
> How are you going to keep it shiny?
>
> > It is always a good idea to not assume things when safety is an issue.
> No argument there either.

2644. Re: Wow! GAP Super C

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:14:32 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3AF21E98.65638445@netdoor.com>
Source record: 164292

Email them for more info on the super C antenna. They will mail you the new brochure, photos, how it works etc.

Bill Aycock wrote:

> can you spell 'CFA" ? this has been on their site for a LONG time- with
> no further info.
>
> Bill-W4BSG
>
> Butch Magee wrote:
> >
> > Take a peek at GAP'S new antenna. I'm told the technology has been
> > around awhile, so why hasn't someone come up with a nearly 100 %
> > efficiency antenna before now. I want one. I'm gonna put mine over the
> > chimney. We don''t bake logs in our fireplace so no problem with
> > heat/smoke/ashes. I love the new look of the thing.
> >
> > Butch Magee KF5DE

2645. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:15:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF21EBA.25225B14@IEEE.org>
Source record: 164293
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

GG wrote:
> I picked a good analogy, I have no right to use his property just
> because I observe it does not appear to be in use by the owner.

Don't know about other states, but in Texas you have every right
to use property that does not appear to be in use by the owner.
If you use it long enough, it legally belongs to you.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2646. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:23:10 UTC
From: GG <nbc_red@mailcity.com>
Message-ID: <3AF220B5.AA57121D@mailcity.com>
Source record: 164294
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Tom W8JI wrote:

> On Fri, 04 May 2001 01:13:26 GMT, GG <nbc_red@mailcity.com> wrote:
>
> >The logic of my post, I assumed I could "borrow" the property without
> >asking because it was apparent that "they aren't using it".
>
> Borrowing something that isn't yours without asking the owner is

> called "theft", but I guess we all have different morals.
>
.

Exactly, my "borrowing" would be nothing more than theft. Just like the freebanders "steal" what they called unused frequencies. It is beyond me how they can expect anyone to have respect for what they do..

>
>
>
> Take a listen to ten meters, and tell me freebanders haven't cause a
> big problem. Not only have they driven legitiment users off the
> commercial areas around 27 MHz, and ruiened things for the R/C people
> who used to use adjacent-to-CB channel frequencies, they are now
> ruining ten meters.
>
> They are also spreading to all other frequencies in the HF spectrum.

Yep, freebanders (illegal operators) have intruded into the 10 meter band, and other frequencies, and are causing problems. I on occasion have caught an illegal operator on 10 and when challenged often the response is, "well, we didn't hear anyone on this channel so what does it hurt?" Typical of my analogy... no one is using it so I guess I have a right to take it.

2647. Re: Wow! GAP Super C

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:28:45 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AF221ED.D59D1F63@hiwaay.net>
Source record: 164297

Butch- it's real simple- I dont believe it, and I wont believe it until
I see results from an indpendant test. I am not impressed enough to take
the trouble to follow up on the possibility that a new brochure has the
magic data. I tried to do that with the Fractal fraud, but I'm tired of
being lied to by PR* types that dont even know how to use a camera very
well. One of our house mottoes is TANSTAAFL.

*(PR some times means psychologically retarded)

Bill-W4BSG

Butch Magee wrote:
>
> Email them for more info on the super C antenna. They will mail you the new
> brochure, photos, how it works etc.
>
> Bill Aycock wrote:
>
> > can you spell 'CFA" ? this has been on their site for a LONG time- with
> > no further info.
> >
> > Bill-W4BSG
> >
> > Butch Magee wrote:
> > >
> > > Take a peek at GAP'S new antenna. I'm told the technology has been
> > > around awhile, so why hasn't someone come up with a nearly 100 %
> > > efficiency antenna before now. I want one. I'm gonna put mine over the
> > > chimney. We don''t bake logs in our fireplace so no problem with
> > > heat/smoke/ashes. I love the new look of the thing.
> > >
> > > Butch Magee KF5DE

2648. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:29:11 UTC
From: Phil Kane <Phil.Kane@nospam.spam>
Message-ID: <cuvyxnansvbet.gcsb872.pminews@or.news.verio.net>
Source record: 164296
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

On Thu, 03 May 2001 21:29:28 -0500, David G. Nagel wrote:

>One of the objectives of the creation of the GMRS Class D (i.e. Citizens
>Band) radio service was to provide low cost licensed radio
>communications for small businesses and family communications. This
>service was to be limited to 50 miles from the transmitting station and
>to a maximum power input of 5 watts. This was later changed to, I
>believe, 3 watts output.

"Close" only counts in hand grenades and horseshoes.

The maximum distance figure was (and for all intents and
purposes still is) 150 miles.

The transmitter power was originally defined as 5 watts DC
input (AM). This was later redefined to 4 watts carrier
output (AM), 12 watts PEP (SSB). No change for all intents
and purposes.

--
73 de Phil Kane - K2ASP

2649. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:29:12 UTC
From: Phil Kane <Phil.Kane@nospam.spam>
Message-ID: <cuvyxnansvbet.gcsbum4.pminews@or.news.verio.net>
Source record: 164295
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

On Thu, 03 May 2001 22:31:46 -0400, Sideband wrote:

>Will a tester come out to an invalid's house in order to test them? If
>not, how would someone who cannot leave the house get tested to attain
>their license?

The answer is yes. Even back when the tests were only given
at FCC examination points, special arrangements were always
made for folks who could not travel or who were blind or
partially deaf.

--
73 de Phil Kane - K2ASP

2650. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:29:16 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF2220C.91621BB@bwcc.com>
Source record: 164298

Bill Aycock wrote:
> Until this reply to Toms position- I thought Denver had a fair grasp on
> the lightning situation. I do not, now, think so.
Because I admitted that I could be wrong or because I was too arrogant?

> I, personally have been the recipient of a couple of close hits. The
> last one was a direct hit on the transformer feeding my house. It fried,
> making noise heard in a heavy rain over 150 ft. The same bolt followed
> the guy wire down to the water pipe (PVC) and made an exit over 300 feet
> away, blowing two holes in the PVC, and creating two waterspouts.
Electricity that can penetrate PVC, in my opinion,
won't must a little tarnish on the copper.

> Nothing in the house was hurt
Right, the lightning was looking for earth, not to move in upstairs.

> On Other hits, I had equipment damage, but only where there was a faulty
> ground in the phone line. That one, had a hit over a mile away, and
> fried my computer through a mile of underground phone line.
Now had that phone wire been bare in the dirt, the lightning
would have had a little more trouble finding your house.

> The simple fact is- without having to know whether lightning followes a
> particular choice of path, the very large gradients in charge that are
> created while it dissipates, will** WILL** create large voltage
> distributions within any conductor in the area.
Yep. Right through corrosion and insulation.

> The problem of survival is to allow for these,
> and make sure their path to a balance is not
> through anything you value.
Dirt is a good choice.

> Simple- it does NOT take a direct hit, or anything leading the charge
> into the house to do damage.
Ah, you thought that I was deliberately trying to avoid this by using
"high impedance" copper?
No, I was merely arguing that trying to have a low impedance path from the antenna to the house is a silly goal.

I agree that the lightning is going anyway, low impedance, high impedance, no ground wire at all.

But the idea of the copper strap is to get lightning into the earth where it belongs.

I didn't figure out anything else specific on which you disagreed with me.

> the charge is there, even if the hit was a tree.
The electrons are seeking their water molecules from which they have been stripped.

> Any conductor in the field of that charge has flow induced in it.
It is a fact that the strap in the same trench with the coax will induce a current in the coax
and more so at the end at which it enters.
At issue is how to avoid having it be harmful relative to the current that the coax is carrying anyway from the lightning strike.
I think that having these conductors not be perfectly parallel with some physical separation (some sand) is a good mitigation strategy.

What do you recommend?

2651. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:35:22 UTC
From: richardharrison@webtv.net
Message-ID: <4811-3AF2237A-24@storefull-118.iap.bryant.webtv.net>
Source record: 164303

Peeter, K1PO wrote:
"I believe I gotcha>"

I believe there is still an element of the Bird wattmeter operation Peter doesn`t appreciate. It can`t work with d-c.

First, its samples are coupled through capacitance and mutual inductance for the voltage and current samples, respectively.

Once d-c reaches a steady state, the sampling ends; a-c, on the other hand, continues to have regular alternations which provide samples of voltage and current. Output of the samples would normally be proportional; to frequency, but Bird has cleverly divided the spectrum into ranges and compensated the frequency response to make an individual element flat in response over its intended range of operation.

Second, is the vital role of Zo in the power determination of the Bird wattmeter. This locked relation between voltage and current permits samples produced by voltage and current to be exactly balanced against each other so that one direction of power flow cancels while the other is measured.

In a perfect line, the characteristic impedance is equal to the square root of L over C. A pulse or alternating signal applied to the line must charge the line`s capacitance through the line`s inductance. This square root of L over C forces energy traveling through a substantial length of line to obey the voltage to current ratio it imposes. L and C are simply results of the line`s construction. Line L and C simply can`t do much with d-c.

I don`t have the patience for lengthy explanations. I`ve about hit my limit here. I am a lowly retired electrical engineer, not a teacher, but if you would like a little more on the subject, look ar page 24-4 of the 19th edition of the ARRL Antenna Book, or for yet more see Terman`s "Radio Engineering" or any of his more recent books.

Best regards, Richard Harrison, KB5WZI

2652. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:38:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF22441.F92E27B6@IEEE.org>
Source record: 164299

"Peter O. Brackett" wrote:
>
> Cecil wrote:
> "> we have accounted for only 4.5% of the mass in the universe. Maybe
> > empty space is not empty?

> How will "we" know when "we" have counted it all?

When we locate the other 95.5%? It has always been disconcerting
to me that there was only ever one big bang. With enough mass,
we might have that oscillating universe after all, the one that
makes me feel warm and fuzzy. I'm wondering if anti-matter might
be invisible to instruments made out of matter.
--
http://www.mindspring.com/~w6rca

2653. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:41:09 UTC
From: Bob <bob@bob.com>
Message-ID: <3AF224D5.15801421@bob.com>
Source record: 164300
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Tom W8JI wrote:

>
> They are just to stupid or uneducated to understand that.

You mean "too stupid"?

2654. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:42:30 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3af2252c$0$14451$1dc6e903@news.corecomm.net>
Source record: 164302
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

If you really want to know the answer. Yes the Examiners will be more
than happy to go to an invalids house to administer an Amateur exam.
This is what amateur radio is also about. Helping anyone become a Ham.
Ham's will even go to the invalid's house and give them instruction in
order to gain the knowledge needed to pass the tests and become Ham's.
I should qualify the above to state that I would require the invalid to
be a long term invalid and not just have a cold.
Dave WD9BDZ
>
> Additional comment:
>
> Will a tester come out to an invalid's house in order to test them? If
> not, how would someone who cannot leave the house get tested to attain
> their license?
>
> I've heard the "if you want to DX and run power, get a license" argument
> ad nauseum. Some people are incapable of passing a code test due to
> dyslexia or other disorders. Some people are incapable of even leaving
> their house. How do those people attain their license?
>
> -SSB

2655. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:45:02 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF225BE.19C4D723@eznec.com>
Source record: 164301

Today I ran another experiment. I strung 50 FT37B-73 cores along the outside of the 2 foot cable, leaving the rest of the test circuit as before. Five of these cores strung on a wire were measured on an impedance bridge as 114 + j10.8 ohms at 10 MHz. The string of 50 cores was about 9-1/2 inches long, and was about midway along the cable. The currents were:

I1i = 0.373 /_0 deg. = 0.373 + j0
I2i = 0.369 /_-183 deg. = -0.368 + j0.019
I3i = 0.0068 /_-43 deg. = 0.0050 - j0.0046
I1o = 0.378 /_-15 deg. = 0.365 - j0.098
I2o = 0.372 /_-196 deg. = -0.358 + j0.103
I3o = 0.0082 /_-21 deg. = 0.0077 - j0.0029

Notice how I3 has been greatly reduced (from about 0.27 to 0.006). Also, I1o and I2o, the currents in the two load resistors, are now in the ratio of 1.02:1 instead of 1.38:1, and their phase angle is now 181 degrees instead of the previous angle of 138 degrees. In short, the currents to the two load resistors have been "balanced", that is, made very nearly equal and opposite. The common mode current (I3) has been reduced to nearly zero. The cores make up a W2DU type current balun, and this is exactly the result we expect from a current balun. Other methods can be used to construct a current balun, but all should produce the same effect providing the impedance is high enough.

What the "balun" -- the cores -- do is to increase the impedance of the path along the outside of the coax shield. Remember, the current on the inside of the shield has its choice of two paths when it reaches the load end: through its resistor, or along the outside of the shield. The ratio of currents going each way is the inverse of the ratio of impedances of the two paths. In the first experiment, the impedance along the outside of the cable was about +j29 ohms, due to the reactance of the shield viewed as a single wire, so a sizable fraction of the current went that way. Based on the measurement of five cores, we'd expect 50 to have an impedance of 1140 + j108 ohms. The impedance along the outside of the shield can be calculated as before, as 25.5 * I2o / (-I3o) = 1152 + j101. This is actually closer to the impedance of the 50 beads than you could reliably expect given the potential measurement errors, so the apparent startling accuracy was pure luck. (Honest -- none of these numbers were "cooked". All were honestly measured and recorded.) However, it does show with certainty that the impedance along the outside of the cable is indeed just about that of the beads, and that viewing the output as a simple current divider is adequate to fully explain how much current is going where.

Incidentally, I went back and checked the phase of the current probe output with respect to the input voltage reference. Within my ability to measure it, they're in phase. So the phase angles reported in this and the previous experiment are with respect to the input voltage. In the first experiment, the phase of I1 was -25 degrees, indicating that the source saw a substantial amount of reactance. With the cores added, the phase of I1 is zero, indicating that it now sees a resistive load. The input voltage was measured as 3.94 volts for this experiment. The actual value of I1i = 0.373/4.83 A = 77.2 mA. (4.83 is the current probe sensitivity factor, as explained in the first posting.) So the resistance seen at the input is 3.94/.0772 = 51.0 ohms. Once again, this is closer than you could reliably expect considering all the possible error sources. But it's based on honest measurements. (If I were cooking a lab report, I'd be careful to make sure the numbers *didn't* come out this close!)

Roy Lewallen, W7EL

2656. Re: B&K Folded dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:53:30 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3af227bf$0$14452$1dc6e903@news.corecomm.net>
Source record: 164305

Kelly:
I am using the B&K in a NVIS configuration and am very satisfied with
with it. I first used it with a TS-430 with out a tuner. My first
contact was with a station near DC, I live near Chicago.
You will have several people comment to you that you can do better with
tuned half wave dipole antenna's. To their comments I say "Yes you will
but the B&K gives satisfactory service without the need for tuning the
system each time you make a large change in frequency/bank." I now use a
TS-440AT and get the same results. The auto tuner does see a difference
in swr when I make a large band change (75 to say 20 meters) but the
antenna still performs the same. I say go with what you got and have
fun. You should know that the antenna works by burning up the swr in a
600 ohm resistor in the center of the fold. This may affect your signal
at QRP levels. My advise is try it and form your own opinion.

Dave WD9BDZ

btw: The current price is $220.

test wrote:
>
> I just picked up a B&K 1.8-30mhz folded dipole, brand new in the box from a
> ham estate sale. It's several years old but never been out of the box. The
> receipt in the box says $169. I picked it up for $50. I plan to mount it
> as an inverted VEE with the center at the 50 foot level on my self
> supporting tower. This should be great for QRP on my TS-430S. Anyone
> had/have this antenna or any experience with it? Any input would be greatly
> appreciated.
>
> 73 & Thanks
> Kelly
> K7SU

2657. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:54:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF227EA.7B2B2CE2@eznec.com>
Source record: 164304

If a piece of coax acts as a transformer from the center conductor to the braid, consider the following:

Take a quarter electrical wavelength of 50 ohm semi-rigid coax (the kind with a solid shield). Wind the coax into a coil and dunk the whole thing into a solder pot. (Or cast the whole thing into a block of metal.) I hope you'll agree that there's no drop from one end of the shield to the other, or from any point along the shield to any other.

Excite one end with a one volt generator and terminate the other end with a 500 ohm resistor. The voltage across the resistor (assuming negligible cable loss) will be 10 volts, lagging the source by 90 degrees. The voltage from one end of the center conductor to the other (Vout - Vin) = -1 - j10 which is a magnitude of 10.5 volts. So it seems that we've created a transformer with 10.5 volts across one "winding" and zero across the other. How do you explain this?

Roy Lewallen, W7EL

"William E. Sabin" wrote:
>
> Tom W8JI wrote:
>
> > To avoid common mode currents the antenna has to be perfectly
> > unbalanced when fed with unbalanced lines, or you have to use some
> > type of compensating device.
>
> The coax itself is just such a compensating device. It is a well proven fact that there is a fairly strong
> electromagnetic coupling from braid to center wire. And this includes the *outside* of the braid. You told
> us yourself a few days ago that you tested a piece of coax as a transformer from braid to center wire, and
> it worked quite well. And I believed it because I have done that many, many times.
>
> One folklore that does not seem to go away is the belief that what happens on the outside of the braid is in
> total isolation from the center conductor. It most assuredly is not.
>
> Bill W0IYH

2658. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 03:58:09 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <INpI6.103540$xN4.6978467@news1.sttls1.wa.home.com>
Source record: 164307

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9cstt8$b8u$1@slb0.atl.mindspring.net...

(snip some)
> And... I maintain that since "almost" all known amateur power meters are
NOT
> measuring power, but rather are measuring voltages a = V + IR and b = V -
> IR, and then only "indicating" powers on a meter face, that one must be
> careful about adding those "pseudo" er... "ficticious" powers. For they
are
> really voltages that you are adding.
>
(snip the rest)

Hi Peter,

Why do you maintain that most SWR meters read only voltage? All of the SWR meters I am familiar with read both voltage and current to properly sample energy from both parts of the electromagnetic wave.

Part of the energy of each wave is carried as electrostatic energy measured as voltage, and part in the magetic field measured as current. Both must be sampled to measure the total energy in the wave.

You are using the term IR which is the voltage drop across a resistance. A properly designed SWR meter will actually measure the current strength in the wire based on the direction from which the wave front came.

I think I must better understand the origin of your formulas before I can comment on your results.

73, Roger, W7WKB

2659. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 04:01:08 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF22984.BEB2F27A@eznec.com>
Source record: 164306

This wasn't directed to me, but I haven't seen an answer, so I'll comment.

Electrons move slowly, but charge travels at near the speed of light. A very crude analogy is a bunch of billiard balls lined up and touching. A "charge" in the form of a moving ball hits one end, causing a corresponding "charge" to exit the other very rapidly. I won't go beyond this, since I'm not really conversent with quantum theory.

For an explanation of skin effect and why it happens, I recommend looking at any book on electromagnetic field theory. If separation of inside and outside currents can't happen, then a shield can't effect shielding. But it does.

Roy Lewallen, W7EL

Dennis Ferguson wrote:
>
> Roger Sparks <sparksrc@home.com> wrote:
> >surface). As a result of this geometry, a current flowing on the inside
> >surface (of the coax braid)
> >would have to flow
> >from the top to bottom of each weave overlay to stay on the bottom, and
> >visa-versa for any outside surface current.
>
> You've convinced me for DC current, where the current actually flows
> somewhere, but what about for AC? For the latter the time-averaged
> current flowing anywhere is within a half cycle of zero, the charges
> move one way for a while and then turn around and go the other way,
> ending up about where they started. We already know that charges
> don't move very fast in a conductor, and the time they spend moving
> in any particular direction decreases with increasing frequency (this
> is skin effect), so it seems like AC current at high frequency isn't
> flowing anywhere very far at all. In fact, if I had to guess, the
> distance the charges move longitudinally is probably on the same order
> of magitude as the skin depth, since we're talking about two aspects
> of the same phenomenon. Energy is of course travelling down the
> transmission line like a bat out of hell, but it is actually carried
> by the co-dependent EM field in the dielectric (which is why the
> velocity factor is a property of the dielectric), and that EM field
> only interacts with the conductor immediately adjacent to the dielectric
> (because of skin effect).
>
> So it seems like it doesn't really matter that the braid conductors
> swap sides of the braid every inch or two if the charges only ever

> move a small fraction of that distance before turning around and going
> back where they came from.
>
> >You will want to look for your selves to see how the braid is actually made.
> >I think you will have to agree that a separation of the inside and outside
> >currents is absolutely impossible.
>
> Is it? If charges never move more than a tiny distance from where they
> started before turning around and going back, they won't be moving far
> enough to make it from the inside of the braid to the outside even if
> the conductors are wired that way. Is there some other mechanism
> by which charges on the outside of the braid can come to know
> that charges on the inside of the braid, from which they are separated
> by a relatively thick chunk of conductor, are moving small distances
> back and forth?
>
> Dennis Ferguson

2660. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 04:01:36 UTC
From: Bob <bob@bob.com>
Message-ID: <3AF2299F.AD0CFBF0@bob.com>
Source record: 164308
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Dennis P. Stahr" wrote:

> What you are to stupid

You mean "too stupid"? Sounds like you and Tom, W8JI, shouldn't be calling anybody stupid. I can understand taking cheap swings when you really have nothing to say, though.

2661. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 04:03:13 UTC
From: HelmutSweenie <helmutsweenie@youranus.com>
Message-ID: <5Spl6.46277$B22.11646129@news1.rdc2.pa.home.com>
Source record: 164309
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

What you are saying Sideband is You are asking for a band that is set aside
for SSB only use, between certain freqs And you think this might help the
congestion, well this band already exists(27.405-27.999)and people are using
hundreds of watts with rules and regulations already in place and they are
not respected and are ignored, They already have this band yet they still
come on 10m. What will be any different then. We should be thankful the FCC
hasn't pulled the plug on 11m it is more trouble than what its worth. One
day they will cut their losses and axe 11m.
"Sideband" <sideband@spam.me.not> wrote in message
news:3AF2075A.A566FBDB@spam.me.not...
> Dan:
>
> Well, apparently you missed the point; or is it that you choose to
> ignore it? Either way, your attitude towards me on this is a bit
> disconcerting. I'll state this again just in case it didn't get through
> the first time" I'm not a freebander, nor do I encourage ANYONE to
> violate FCC rules.
>
> I'm sorry to hear about your mood disorder.
>
> The point was this: Set aside another band for sideband transmissions
> only, to help alleviate some of the congestion on CM (they have no other
> place to go), and perhaps the encroachment on 10M frequencies would tone
> down; perhaps those frequencies between 27.405 and 28.000 that are
> allocated to other services won't be interfered with people calling CQ,
> and perhaps sideband operators on CB's won't get interfered with as much
> by AM carriers.
>
> I'm not proposing a reduction in standards. Personally, I feel when the
> FCC removed the licensing requirement from CB they made a BIG mistake.
> I'm proposing a broadening of bandwidth to help alleviate the congestion
> on CB that causes people who don't know any better to venture onto the
> HAM bands and interfere with licensed operators. If the bands weren't so
> congested, CB'ers might not feel the need to run an amp, because they'd
> be able to make contacts on much less power.
>
> If you're so shortsighted that you don't see the potential good this
> could do, then I'm sorry you feel that way.
>
> Will some idiots out there still run illegal power? Probably. Will
> people who don't know any better still venture out onto bands and
> frequencies where they don't belong? Probably. Unfortunately, without a
> licensing requirement, the lack of knowledge by CB'ers helps cause this

> problem.
>
> This is just my opinion. Your mileage may vary
>
> W4NTI wrote:
> >
> > Did you not suggest a band be set aside just for the illegal idiots?
They
> > you should be able to figure out my response.
> >
> > The SATs having to do with it is....the lowering of the bar. The
reduction
> > of standards to accomidate some person and/or group that is unable, too
> > ignorant, or just STUPID. See my point?
> >
> > Also there ALREADY exists plenty of places to work DX and have fun. Its
> > called Amateur Radio. Unfortunatly without a valid callsign you will be
> > attacked much worse than here.
> >
> > Dan/W4NTI
> >
> > "Sideband" <sideband@spam.me.not> wrote in message
> > news:3AF187AB.44CC02EB@spam.me.not...
> > > Dan:
> > >
> > > I honestly don't know how to respond to this. Your post below is so
> > > thick with sarcasm I fail to see your point. Perhaps you could tone it
> > > back a few notches and provide some facts (if you can find any) to
back
> > > up your assertion that (1) I'm a liberal, (2) I'm lazy, (3) that I've
> > > operated illegally, and (4) Just what the SAT's have to do with it.
> > >
> > > After you've done that, I may consider explaining my reasoning behind
my
> > > opinion so that you might understand it.
> > >
> > > Again, I caution you, do not include me amongst the freebanders; I'm
> > > neither one of them, nor do I condone what they do (as I stated in the
> > > very first sentence of the quote you so vitriously lambasted.)
> > >
> > > -SSB
> > >
> > > W4NTI wrote:
> > > >
> > > > Why? To accomidate a bunch of LAZY illegal fools? You must be a
> > liberal. I
> > > > bet you support dropping the standards of a SAT just to accomidate
some
> > lazy
> > > > bum that cant pass it...right?

> > > >
> > > > Dan/W4NTI
> > > >
> > > > "Sideband" <sideband@spam.me.not> wrote in message
> > > > news:3AF15839.FE40D1AC@spam.me.not...
> > > > > I don't condone violations of FCC rules. However, I would like to
see
> > a
> > > > > sideband only band above channel 40, but below 27.800, with a 50
watt
> > > > > limit, for CB'ers to DX on... The frequencies allocated for this
could
> > > > > "go around" the currently allocated forestry, etc, frequencies,
much
> > in
> > > > > the same way the CB frequencies skip over the RC freq's.
> > > > >
> > > > > Just my two cents, here... Of course, your mileage may vary.
> > > > >
> > > > > -SSB
> > > > >

2662. Re: Radio Shack Antenna Rotors?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 04:08:56 UTC
From: ehsjr@bellatlantic.net
Message-ID: <3AF22C27.E9DA85F0@bellatlantic.net>
Source record: 164310

My Radio Shack rotor has been happily rotating my 3 element
10 meter yagi for the last 20 years without a glitch.

John Sicotte wrote:

> I know. I know. No REAL ham would ever buy anything from Radio Shack -
> right? But put your prejudice aside for just one moment. All I have is an
> 11-element 2-Meter beam. So do I really need anything bigger or stronger
> than a Radio Shack TV antenna rotor? Let's be honest now!
>
> Thanks,
> John
> N7MTB

2663. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 04:40:53 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <ppqI6.103633$xN4.6985074@news1.sttls1.wa.home.com>
Source record: 164312

Hi Roy, and Dennis,

I have not seen the response from Dennis until you commented Roy. Thanks for picking up on this.

Apparently all the postings are not relayed to every news group. I have noticed before that comments were made to postings I have not seen, so I just assumed that the missing postings were actually private email comments. I don't know how to fix this problem.

Both of your comments deserve real answers that I need to reflect upon before responding. So I will think about it over night and get a posting response soon. Besides, I had a beer tonight and who knows what might come out if I respond now?

73, Roger, W7WKB

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:3AF22984.BEB2F27A@eznec.com...
> This wasn't directed to me, but I haven't seen an answer, so I'll
> comment.
>
> Electrons move slowly, but charge travels at near the speed of light. A
> very crude analogy is a bunch of billiard balls lined up and touching. A
> "charge" in the form of a moving ball hits one end, causing a
> corresponding "charge" to exit the other very rapidly. I won't go beyond
> this, since I'm not really conversent with quantum theory.
>
> For an explanation of skin effect and why it happens, I recommend
> looking at any book on electromagnetic field theory. If separation of
> inside and outside currents can't happen, then a shield can't effect
> shielding. But it does.
>
> Roy Lewallen, W7EL
>
> Dennis Ferguson wrote:
> >
> > Roger Sparks <sparksrc@home.com> wrote:
> > >surface). As a result of this geometry, a current flowing on the
inside
> > >surface (of the coax braid)
> > >would have to flow
> > >from the top to bottom of each weave overlay to stay on the bottom, and
> > >visa-versa for any outside surface current.
> >
> > You've convinced me for DC current, where the current actually flows

> > somewhere, but what about for AC? For the latter the time-averaged
> > current flowing anywhere is within a half cycle of zero, the charges
> > move one way for a while and then turn around and go the other way,
> > ending up about where they started. We already know that charges
> > don't move very fast in a conductor, and the time they spend moving
> > in any particular direction decreases with increasing frequency (this
> > is skin effect), so it seems like AC current at high frequency isn't
> > flowing anywhere very far at all. In fact, if I had to guess, the
> > distance the charges move longitudinally is probably on the same order
> > of magitude as the skin depth, since we're talking about two aspects
> > of the same phenomenon. Energy is of course travelling down the
> > transmission line like a bat out of hell, but it is actually carried
> > by the co-dependent EM field in the dielectric (which is why the
> > velocity factor is a property of the dielectric), and that EM field
> > only interacts with the conductor immediately adjacent to the dielectric
> > (because of skin effect).
> >
> > So it seems like it doesn't really matter that the braid conductors
> > swap sides of the braid every inch or two if the charges only ever
> > move a small fraction of that distance before turning around and going
> > back where they came from.
> >
> > >You will want to look for your selves to see how the braid is actually
made.
> > >I think you will have to agree that a separation of the inside and
outside
> > >currents is absolutely impossible.
> >
> > Is it? If charges never move more than a tiny distance from where they
> > started before turning around and going back, they won't be moving far
> > enough to make it from the inside of the braid to the outside even if
> > the conductors are wired that way. Is there some other mechanism
> > by which charges on the outside of the braid can come to know
> > that charges on the inside of the braid, from which they are separated
> > by a relatively thick chunk of conductor, are moving small distances
> > back and forth?
> >
> > Dennis Ferguson

2664. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 04:40:54 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <qpqI6.103634$xN4.6985074@news1.sttls1.wa.home.com>
Source record: 164311

Roy, I can not find your original circuit posting. Could you post it again?

Thanks, Roger, W7WKB

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:3AF1F7F0.BF834C01@eznec.com...
> I want to make a correction. The experimental circuit isn't really a
> good representation of a balanced antenna, as I stated. A balanced
> antenna would best be represented by a pi network, with about 70 ohms
> between the conductors, then another impedance (not necessarily purely
> resistive) from each conductor to ground. These impedances to ground
> would depend on the antenna height. My model lacked the resistor between
> the conductors, and the resistors from each leg to ground were probably
> smaller in value than would be realistic for an antenna at a reasonable
> height. Increasing the values of the two resistors in the experimental
> circuit and adding a third would tend to reduce the common mode current
> (by providing a third path for the shield current) but not eliminate it.
> The same analysis could be done and the same conclusions drawn. Of
> course, the "feedline" was also unrealistically short. But a half
> wavelength line grounded at the bottom would show a similarly low
> impedance to common mode current.
>
> Roy Lewallen, W7EL

2665. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 05:00:12 UTC
From: w9wi@linux1.localdomain
Message-ID: <slrn9f4al2.phd.w9wi@linux1.localdomain>
Source record: 164313
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

>Sideband wrote:
>>
>> Doug:
>>
>> Hit Wilson's site and read up on what a Wilson Silver Load is....
>>
>> Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
>> top loaded coil antenna. Two of them make 1 1/4 wave. Maybe I should
>> have said 1 1/4 wave dipole?

Be careful how seriously you take claims on an antenna manufacturer's site.
The major ham magazine QST no longer accepts claims of antenna gain in
advertising, as there were too many attempts to compare apples & oranges.

We may have a difference in definitions.

In amateur radio, loading coils don't count when explaining how long an
antenna is. It's the whip that actually does the radiating; loading coils
serve to make the impedance of the antenna reasonably close to 50 ohms
resistive, to keep the transmitter happy. (an important function certainly,
but a very different one from that of the whip. If you redesigned the
transmitter and feedline to accomodate the non-resonant load, the loading
coil would be completely unnecessary and the antenna would radiate exactly
as well and in the same directions.)

Amateurs often use 5/8 wavelength antennas for the 2-meter VHF band. 5/8 of
a wavelength at 2 meters is approximately 125cm, or roughly 50". I just
measured the one on my truck, it's 47" long. (well within the tolerance of
my non-calculator-enhanced math!) There is a coil in the bottom of the
antenna, but its sole purpose is to match the antenna to the transmitter.
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

2666. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 05:03:43 UTC
From: Bob <bob@bob.com>
Message-ID: <3AF2382E.28F357EC@bob.com>
Source record: 164314
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Your statement is unoriginal and weak.

So, you base your respect for people on whether or not they follow the laws that your local, state and federal government imposes on them?

Let me ask you this then, if you were around during prohibition (were you?), would you have disrespected bootleggers and consumers of alcoholic beverages up until the very point where the 18th amendment was repealed?

Good thing all those amendments came along abolishing slavery and granting women the right to vote or you still wouldn't have respect for women or Negroes.

http://pages.prodigy.net/krtq73aa/reed2.htm

Bob.

Charles Johnston wrote:

>
> There is - NO RESPECT - for freebanders because - CRIMINALS - deserve
> none!
>
> --
>
> Charles Johnston
> charles@ab7sl.com
>
> AB7SL - Ham Radio Pages
> http://www.ab7sl.com

2667. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 05:25:08 UTC
From: GG <nbc_red@mailcity.com>
Message-ID: <3AF23D4F.161058C@mailcity.com>
Source record: 164315
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Sorry, but in Texas if the owner is paying the taxes on the property, it doesn't matter if he never uses it, it still belongs to him and no one can claim ownership by just using it. I have some pasture land in west Texas that hasn't been used in some years, but I pay the taxes on it every year. You go and try to use it and claim it as yours and see how far you get. If however I fail to pay the taxes for a period of time and you come along and pay the taxes for a number of years (I don't off hand recall just how many years are required), then you may have claim.

W6RCecilA wrote:

> GG wrote:
> > I picked a good analogy, I have no right to use his property just
> > because I observe it does not appear to be in use by the owner.
>
> Don't know about other states, but in Texas you have every right
> to use property that does not appear to be in use by the owner.
> If you use it long enough, it legally belongs to you.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2668. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 05:36:46 UTC
From: Dwight Stewart <stewartx@sccoast.net>
Message-ID: <3AF23FA5.9DDDC691@sccoast.net>
Source record: 164316
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

W6RCecilA wrote:
>
> Bob wrote:
> > How serious a crime is it? Your assignment -
> > think of all the crimes you can, where does
> > freebanding fit it?
>
> That's a pretty good question. Unless I'm
> missing something, I would rank it right up
> there with driving on the shoulder of the
> road where such is illegal.

Can I move next door to you and operate an illegal CB radio with an old 250 watt tube linear? After about a week of hearing me on your television, stereo, telephone, and who knows what else, I doubt you will consider it such a minor problem. But, don't get excited, I'm only going to be your neighbor for the rest of your life (or until you're forced to move).

And don't think for a moment you're going to filter your equipment to get rid of the problem - my over modulated radio, and my old tube type linear, are so dirty it will take a dozen filters just to cut some of the problem on your television (after that you can worry about all the other stuff you own). Besides, don't waste your effort - a friend has a 600 watt tube type linear that I want and it is in even worse shape then the one I have now.

Cecil, only a person who has never lived next door to one of these "freebanders," or a person running an illegal setup himself, would attempt to minimize the problem like you did above. Since I don't believe you're running an illegal setup, I can only assume that you've never lived next door to one of these fools.

Dwight Stewart (W5NET)

http://www.qsl.net/w5net

2669. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 05:53:22 UTC
From: JA <jungleandy@hotmail.com>
Message-ID: <3AF243D2.9DBB0365@hotmail.com>
Source record: 164180
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Ditto for me, too !!! --- W4OAH

****

Ron in NC wrote:
>
> > I don't believe you, Rob,
>
> You may not believe him, but there's one I believe,
> (no make that KNOW) and that is that most of
> the folks on this NG, like me are not interested
> in your BS and wish you would do it by private email.
>
> Ron KC4YOY

2670. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 06:04:01 UTC
From: Dwight Stewart <stewartx@sccoast.net>
Message-ID: <3AF245FF.D57915AF@sccoast.net>
Source record: 164317
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Sideband wrote:
>
> So when a freebander is transmitting with
> legal power levels on the legal 40 they're
> still breaking the law?

If they're using the same radio they use to "freeband" with, yes.
The radio is either not approved for CB use or has been illegally
modified to operate outside the CB frequencies.

> I don't condone violations of FCC rules.
> However, I would like to see a sideband
> only band above channel 40, but below
> 27.800, with a 50 watt limit, for CB'ers
> to DX on... The frequencies allocated
> for this could "go around" the currently
> allocated forestry, etc, frequencies,
> much in the same way the CB frequencies
> skip over the RC freq's.

And what are you going to do with all of the users those frequencies
are already assigned to? I've seen a list of government frequencies
(especially military) and there is very little free space available
between the CB band and the 10-meter ham band. They all seem to be
special use (used under specific circumstances), but they are assigned
none the less.

Dwight Stewart (W5NET)

http://www.qsl.net/w5net

2671. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 06:19:57 UTC
From: Bob <bob@bob.com>
Message-ID: <3AF24A0D.156C452C@bob.com>
Source record: 164219
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Tom W8JI wrote:

> They are also spreading to all other frequencies in the HF spectrum.

You really are "out of the know". Do you really think Freebanding CBers are getting smarter and they are all spreading out over the entire HF band? 99% don't even know anything other than "40 below" and "40 above". HF? Multiband antennas? Yeah right.

Most of the interference I hear on HF is cause by spanish speaking stations from Central and South America. I have no problem working around interference, with DSP and my highly tuned directional antennas. Perhaps you should upgrade from that G5RV and maybe come up with some ways to deal with interference, you know try to advance the technology or your operating skills. Nahhh....I would rather listen to you bitch on this newsgroup.

Bob.

2672. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 06:20:42 UTC
From: sparky@cet.com
Message-ID: <3af2410a.21171500@news.cet.com>
Source record: 164318
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Fri, 04 May 2001 01:03:43 -0400, Bob <bob@bob.com> wrote:

>Your statement is unoriginal and weak.
>
>So, you base your respect for people on whether or not they follow the laws
>that your local, state and federal government imposes on them?

Well, just take a look at Bill Clinton ....

>Let me ask you this then, if you were around during prohibition (were you?),
>would you have disrespected bootleggers and consumers of alcoholic beverages
>up until the very point where the 18th amendment was repealed?

Probably not. However I do respect the values of H.D.T. At least he
broke the law for much better reasons than to get drunk or to make an
easy buck.

>Good thing all those amendments came along abolishing slavery and granting
>women the right to vote or you still wouldn't have respect for women or
>Negroes.

You are way off base, here. Many people gave their lives in order to
abolish slavery, and many of those that died weren't slaves. The right
for women to vote wasn't granted because the government gave up
chasing women out of the toll booths. These examples don't even
compare to the actions of most radio pirates. There are right ways and
wrong ways to change the law, but radio pirates don't even try.

In fact, freebanders do NOTHING to try and change the law except to
whine about the FCC. I haven't seen anyone in rec.radio.cb, or
anywhere else for that matter, make even a half-assed effort to try
and change the laws regarding CB radio. That's because the collective
mentality for freebanders is to "do what you want and fuck the law, at
least until you get caught." They, like most criminals, want something
for nothing at the expense of others. I'm sorry, Bob, but that just
isn't an attitude that deserves ANY respect.

posted from rec.radio.cb

2673. Re: HF Antenna for apartment bldg?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 06:22:12 UTC
From: Rik van Riel <riel@conectiva.com.br>
Message-ID: <9cthqk$mr0$2@imladris.rielhome.conectiva>
Source record: 164222
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.shortwave

W4NTI wrote:

> Any hunk of wire in the clear will do well. If he is just
> into listening it
> is not critical on any particular length. Of course if he is
> interested in a particular band then a resonate wire would
> probably help.
>
> Also be aware that he may pick up more noise when he instals
> the wire. Hang it and see what happens.

My main shortwave listening problem inside cities has been
noise. For me it seems like a loop antenna works well. It picks
up less signal than longwires, but also far less noise. I don't
have experience with dipoles though, so maybe those are better.

Damn, I guess I need to go and buy some wires to experiment
with some antenna types ;)

--
Rik
--
Virtual memory is like a game you can't win;
However, without VM there's truly nothing to lose...

http://www.surriel.com/ http://distro.conectiva.com/

Send all your spam to aardvark@nl.linux.org (spam digging piggy)

2674. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 06:26:08 UTC
From: Dwight Stewart <stewartx@sccoast.net>
Message-ID: <3AF24B28.8139C70@sccoast.net>
Source record: 164220
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Sideband wrote:
>
> I honestly don't know how to respond to
> this. Your post below is so thick with
> sarcasm I fail to see your point. Perhaps
> you could tone it back a few notches and
> provide some facts (if you can find any)
> to back up your assertion that (1) I'm a
> liberal, (2) I'm lazy, (3) that I've
> operated illegally, and (4) Just what
> the SAT's have to do with it.

Sideband, since Dan was talking about your suggestion of a new band for "freebanders," I think he was referring to "freebanders" when he said "a bunch of LAZY illegal fools." Since you insist you're not a "freebander," why would you get so offended by that? And he said you "must" be a liberal, not that you "are" a liberal. There is a slight difference.

Take the chip off your shoulder and you might not be so offended by what others are saying. You've raised a touchy issue in the ham radio community, so you should not be overly surprised that you're hearing a lot of strong opinions on the matter.

Dwight Stewart (W5NET)

http://www.qsl.net/w5net

2675. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 06:40:44 UTC
From: Dwight Stewart <stewartx@sccoast.net>
Message-ID: <3AF24E92.F1F20B41@sccoast.net>
Source record: 164221
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

GG wrote:
>
> W4NTI wrote:
> >
> > You heard 20 phone lately? Same mentality.
>
>
> As Charlie Brown would say, "good grief".
> There is always someone who spouts this to
> try to compare the ham bands to cb. Have you
> listened to such and such band, such and such
> frequency? No one argues that there are morons
on the ham bands who act like cbers and on certain
> frequencies you can find them, but on 99.99
> percent of the other frequencies you find hams
> obeying the rules and engaging in courteous
> communication. Even with the few morons on the
> ham bands, there is no comparison between ham
> radio and cb. It's like comparing apples to a
> sewer pit.

Hear! Hear! I've listened to 20 meters many times and have never
heard anything close to the garbage I hear all the time on the local
CB frequencies. I have the obligatory CB radio in my SUV and I'm
actually embarrassed to even turn it on while passengers are in the
vehicle. Even the worst of ham radio does not compare to CB.

Dwight Stewart (W5NET)

http://www.qsl.net/w5net

2676. construction details for TET TE-23M?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 06:44:19 UTC
From: marc@laradio.co.za
Message-ID: <3af24f6f.89330271@news.megaweb.co.za>
Source record: 164223

Hello,

Does anyone know where I can get the construction details for the TET
/ Emtron TE-23M antenna?

I have e-mailed Emona in Australia, but they don't reply.

Regards,

Marc, ZS6HZ

2677. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 07:17:27 UTC
From: Arf! Arf! <DoggieDaze@Liberal.comz>
Message-ID: <9ctl1vle0@pita.alt.net>
Source record: 164224
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Dwight Stewart" <stewartx@sccoast.net> wrote in message
news:3AF24E92.F1F20B41@sccoast.net...
> GG wrote:
> >
> > W4NTI wrote:
> > >
> > > You heard 20 phone lately? Same mentality.

The bottom line here is that "freebanders" are running illegally. No ifs, no ands, and no buts about it. Illegal is just that....illegal. Now go take on the day.

2678. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 07:50:15 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF25F37.669914B6@spam.me.not>
Source record: 164225
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Well, I'm heard with a 2 watt carrier over 20 miles away straight shot,
so I must have done something right.

::shrug::

-SSB

"David G. Nagel" wrote:
>
> No. Two 5/8 wave loaded antenna's do not make a 1 1/4 wave dipole. They
> make a dipole composed of two 5/8 wave loaded antenna's. This
> configuration will not make a truly efficient antenna. Read up on
> collinear antenna's and dipole antenna's. You will see that what you
> have is nothing. However for you sake I do hope it works to your
> satisfaction. I prefer something else...
>
> Dave WD9BDZ
>
> Sideband wrote:
> >
> > Doug:
> >
> > Hit Wilson's site and read up on what a Wilson Silver Load is....
> >
> > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
> > top loaded coil antenna. Two of them make 1 1/4 wave. Maybe I should
> > have said 1 1/4 wave dipole?
> >
> > -SSB
> >
> > Doug Smith wrote:
> > >
> > > On Thu, 03 May 2001 09:31:36 -0400, Sideband <sideband@spam.me.not> wrote:
> > > >them as well. Granted, I run a 5/8 dipole on the car (two 4' Wilson
> > >
> > > Uh, 8 feet is not 5/8 wave on 11 meters. A 102" (8-1/2') whip is 1/4 wave,
> > > so a 5/8 wave would be a bit more than 17 feet long.
> > >
> > > (you should try a 102" whip, I think you're likely to find it more effective
> > > than the twin four-footers. Because you won't have loading-coil losses.
> > > Mine worked *fantastically* well on 10 meters with a converted SSB CB.)
> > > --
> > > Doug Smith W9WI
> > > Pleasant View (Nashville), TN EM66

> > > http://www.w9wi.com

2679. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 09:53:59 UTC
From: Richard McCollum <rmccollOMA@worldnet.att.net>
Message-ID: <X_ul6.4415$4f7.313003@bgtnsc06-news.ops.worldnet.att.net>
Source record: 164226
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF21492.23260143@spam.me.not...
> Will a tester come out to an invalid's house in order to test them? If
> not, how would someone who cannot leave the house get tested to attain
> their license?
>
> I've heard the "if you want to DX and run power, get a license" argument
> ad nauseum. Some people are incapable of passing a code test due to
> dyslexia or other disorders. Some people are incapable of even leaving
> their house. How do those people attain their license?
>
> -SSB

For what it is worth, in my VE days in Wausau WI I went up to Merrill to administer an exam to a housebound man who for reasons known only unto him wanted DXCC before he died. I and my partners read an Extra to a blind man after a regular testing session in Wisconsin Rapids at about -35 degrees costing me a few bucks to get moving again.

I have a friend of many years standing who tried to learn code as both a left and right-handed activity at the same time and ran into a brutal 'hump' at about 6wpm. We had to literally tie his left hand in his belt, pump code into the right ear only, and such things to get him to do it only one way. As he holds an Advanced, it must have worked. This is not dyslexia by any means but 5wpm can be worked around.

I have long advocated the eventual outlawing of AM on CB freqs simply because it is nitro in the hands of children. To do this, it would seem that setting up a truckers band (FM, PL, the whole enchilada) to prevent these 'opinion leaders' into ownership mode instead of wandering farther afield would make sense. Adding a sideband segment might fit into this. Marine freqs are also plagued by this sort of thing. The early phone companies did not view pointless babbling and time wasting as valid activities either and lived to regret it. If your point is that we are making the same mistake I tend to agree.

Some years ago a university I happened to be attending built a new library. They installed a few paved paths in obvious places to get to it and waited a few years to pave the paths the students made. This was a simple and practical approach as opposed to putting them in right away and planting landmines to keep the students on the paths. As Flaubert, a French poobah, once said of taxation, the object of plucking a goose is maximum feathers with minimum hissing.

Dick N&#65533;BK

2680. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 09:54:08 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9ctu2u$i29$1@uranium.btinternet.com>
Source record: 164227

Matter and anti-matter have one essential factor in common -
GRAVITY.

Isn't it obvious the 95.6% of matter which is "missing" is in the
form of black holes. The dinasaurs were aware of that in their
bones. And today, somewhere in the universe, on planets revolving
around stars in distant galaxies, there are intelligent creatures
who had it all sorted out before our insignificant tiny Earth came
into existence.

Even now, I have at the tip of my right-hand index finger a tiny
black hole. I cannot see it but its presence is necessary to
account for the gravitational field which actually exists in my
immediate vicinity, which cannot be accounted for by the remainder
of the visible or otherwise detectable mass of the universe.

Then there are the vastly superior intelligences evolved during the
eons by the countless galaxies themselves. Each galaxy is but an
atom in the brain of an unimaginable (to us) intelligence. To them,
the human race along with jelly fish and the Aids virus have been
relegated to the realm of quarks.

But I'm sure, just like us, they all have their little problems and
regularly pray to God for assistance.

Reg

****

Cecil wrote .
> "Peter O. Brackett" wrote:
> >
> > Cecil wrote:
> > "> we have accounted for only 4.5% of the mass in the universe.
Maybe
> > > empty space is not empty?
>
> > How will "we" know when "we" have counted it all?
>
> When we locate the other 95.5%? It has always been disconcerting
> to me that there was only ever one big bang. With enough mass,
> we might have that oscillating universe after all, the one that
> makes me feel warm and fuzzy. I'm wondering if anti-matter might
> be invisible to instruments made out of matter.
> --
> http://www.mindspring.com/~w6rca

2681. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 10:09:40 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9ctv03ioq1@uranium.btinternet.com>
Source record: 164228

The conventional forward/reflected power (SWR) meter responds to
volts and amps. It is incapable of performing a multiplication sum.

It indicates watts merely on the ASSUMPTION of a particular value
of resistance Ro.

That's not what I would call a watt-meter.

Reg

2682. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 10:27:08 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cu00r$jh1$1@uranium.btinternet.com>
Source record: 164229

Balun cores increase the impedance of the INNER coaxial conductor
to precisely the same extent as the outer.

To prove this just wind some coax around a ferrite core and measure
the inductance between the ends of the inner conductor with the
outer disconnected. It will have the same inductance as the outer
all by itself. Connecting the inner and outer conductors in
parallel will again have the same inductance.

Reg

2683. Need Portable, Lightweight, and Shortened 20 Meter Antenna for PSK31

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 10:30:15 UTC
From: Les Kramer <wa3sgz@mindspring.com>
Message-ID: <9cu061$4bs$1@nntp9.atl.mindspring.net>
Source record: 164230

This request is a repost from about 2 weeks ago. My request for help netted only one response.
Surely with all the brainpower on this NG, someone else can give me additional ideas!!

I operate PSK31 most of the time because of the ability to reliabily communicate at low power. Due to the narrow bandwidth of PSK31 (31.5 Hz), most operation occurs within 3KHz above the defacto PSK31 calling frequency (i.e., for 20 meters, that frequency is 14.070 MHz). Thus, for monoband operation, a narrow bandwidth antenna is an acceptable compromise. I have seen over 30 signals within the PSK 3KHz passband on 20 meters.

I intend to purchase a Small Wonders Laboratory 20M PSK31 QRP kit later in the year and use it exclusively when I travel with my laptop (it will fit in the laptop case). My problem is that I need a short, highly portable, light weight antenna cut for 14.070 MHz. This antenna needs to be small enough to fit in a small suitcase (20 inch) with normal travel stuff. I also have two folding, bungy corded fiberglass tent poles of about 10 feet in length that I intend to support the antenna with from a hotel window (hopefully three stories or higher but depends on the hotel layout).

CAN SOMEBODY SUGGEST THE BEST COMPROMISE ANTENNA FOR THIS KIND OF OPERATION? I have thought of helical dipoles, shortened loops, a fractal monopole, possibly a vertical delta loop for some applications, etc.) Obviously, a wire antenna is the preferred solution. Sketches or references to sketches and other information would also be appreciated.

73,

de WA3SGZ Les

2684. Re: Saturn Station Wagons and Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 10:59:28 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <3AF28B90.77B34DBD@bloomer.net>
Source record: 164231

I use the Radio Shack 2 pin Molex connectors for power (the larger one
that is good to 20 Amps). I use the female pins on the power leads that
come from the battery or power supply and the male pins on the power
leads coming from the radio. I make the pin at the pointed end of the
connector Positive since it's easy to remember (point=positive...both
start with "P"). I use the same setup on all my rigs and my power
supply in the house as well, so my rig can travel between home and car.
If your ham club would adopt this "standard" it makes it nice during
Field Day or during an actual emergency....anyone can hook anyones power
supply or radio together without re-wiring anything and it goes a lot
faster. I will attempt a drawing of what I mean...

```
- +
|--------\
| O O \
| /
|--------/
```

Hope this helps you!

Scott
N0EDV

Richard Miller wrote:
>
> Ted,
>
> I didn't see what year Saturn you have. Tis may make a difference in
> my response since between 95 and 96 or so, they had a rounded
> dashboard. However, I have an 98 wagon and a 97 sedan. Both
> have a flat pocket right in the middle of the dashboard. I placed wide
> "medical grade" Velcro in that area and on the bottom of the mobile
> mounting bracket. This turned out to be a good location since I don't
> have to divert my attention very far from the road. I ran the power
> and coax down the side of the console and dressed it up with spiral
> cable wrap.
>
> As for the antenna, I use a dualband Valor thru the glass antenna. It works
> okay, but it could be better. I have a Comet 5/8 lambda mag mount on order.
>
> Good luck,
>
> Rick
> K1RDM
> "Ted Wagner - KB9RPD" <kb9rpd@arrl.net> wrote in message

> news:3aefffb2.1197062503@netnews.worldnet.att.net...
> > I'm a closet ham. Beat me with an old yagi as they say.
> >
> > I've been a bit inactive since I got my ticket in 1997. In June, I
> > will begin studying to upgrade to General.
> >
> > Here's my quandry. All I was able to afford was a RadioShack HTX-202
> > back in 1998. I have that and that's all I've used for my radio. My
> > wife and I are building a house. But, to be a good ambassador to
> > amateur radio and to stay on the good graces of my neighbors, I won't
> > challenge the community doctrines/rules by erecting an antenna on my
> > property. And, the other reason is I don't have a lot of money to
> > spend on a nice rig at home. Perhaps in 5 or 6 years, I'll have money
> > enough to buy a nice rig with a nice small antenna farm at home.
> >
> > But, for now, I'm pretty much settled on using my car as a mobile
> > shack. Here's my quandry. I've ONLY used magentic mount antennas (2
> > Meters with my HT). Right now, I'm max at 5 watts. Does the job, but
> > I want something better.
> >
> > Since I still don't have a lot of money, I may purchase an Alinco
> > mobile 6 Meter that I can use with my current licnese.
> >
> > Here's my problem. If anyone knows much about Saturns, they'll
> > understand my quandry with the space in the car.
> >
> > #1 - I have no clue as to where to put the radio in the car. I want
> > to put it someplace that doesn't get in my way or the front passenger.
> > I want to put it someplace I can easily remove it for security.
> >
> > #2 - I want a REAL antenna on my car. Since it's a station wagon, I
> > don't have the luxury of a trunk. I've never installed a "real"
> > antenna....where can I find information on how to properly do this
> > without destorying my car or subjecting it to rust?
> >
> > #3 - has anyone any experience installing radios in small cars that
> > may be able to offer advice or would someone know of some links on the
> > internet to point me in the right direction?
> >
> > #4 - Because of #1, this setup will be portable as well as mobile. I
> > want to be able to remove my radio and use it for field day with a
> > "portable" setup...power supply, antenna, etc. What would anyone
> > recommend for "in-line" connectors for the power harness on the radio?
> >
> > Any information would be GREATLY appreciated. I haven't had much luck
> > finding anything on the internet.
> >
> > Thanks
> >
> > 73, Ted KB9RPD

--
--Scott--
1986 Corben Junior Ace N3642
http://corbenflyer.tripod.com/
RV-4 under construction (tail feathers)

Gotta Fly or Gonna Die!

2685. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 10:59:33 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <pYvl6.13260$2_.4726857@news3.rdc1.on.home.com>
Source record: 164232
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

Not to mention most ve's did testing at thte testee's (that doesn't sound
quite right ...) house ...

--
Rob St.Denis

"Phil Kane" <Phil.Kane@nospam.spam> wrote in message
news:cuvyxnansvbet.gcsbum4.pminews@or.news.verio.net...
> On Thu, 03 May 2001 22:31:46 -0400, Sideband wrote:
>
> >Will a tester come out to an invalid's house in order to test them? If
> >not, how would someone who cannot leave the house get tested to attain
> >their license?
>
> The answer is yes. Even back when the tests were only given
> at FCC examination points, special arrangements were always
> made for folks who could not travel or who were blind or
> partially deaf.
>
> --
> 73 de Phil Kane - K2ASP
>
>
>
>
>
>

2686. Re: REC.RADIO.AMATEUR.ANTENNA?????

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 10:59:50 UTC
From: oh8mfh <oh8mfh@hotmail.com>
Message-ID: <9cu240cbg1@news.kolumbus.fi>
Source record: 164233

"Crazy George" <munschNO@attglobal.net.SPAM> wrote in
news:3af09807_3@news3.prserv.net...
> This newsgroup section is recreation(al). The specific category is
amateur
> (radio antennas). However, we regularly see postings which are
essentially
> requesting design engineering information for commercial facilities. Just
> yesterday there were two questions relating to cell sites. Do I
> misunderstand the NG purpose?
>
> OK, so there are two ends to the cell circuit. The provider and the
> customer. Simple business arrangement. Business of providing telephone
> service. Recreational? Maybe. Amateur? If it's not free, it's not
> amateur. Now, I submit this is not the forum for a cellular company
> (employee) to solicit engineering services for cellular system antenna
> design (for free). I suspect the various communications engineering
> companies would agree. As for the customer, if his service is not
> satisfactory, he should complain to his provider and make them fix it, and
> complain to his PUC if satisfaction is not obtained.
>
> As for antenna specifics, they are (generally) specialized wide band
> directional arrays developed using NEC (see Roy L.) and a lot of
proprietary
> testing and corporate experience based on the same (Maxwell's) principles
> which are widely discussed in Kraus, Johnson and Jasik, and many other
> excellent electromagnetics texts. Most ham UHF antennas have higher gain
> over a narrower bandwidth which fits the bandwidth of the amateur
frequency
> allocation, so not much place for application of cell antenna design
there.
>
> Pandering to the transgressors, cell and PCS antennas are manufactured by
> Antenna Specialists, DB Products (Allen Telecom) Sinclair, Comtelco,
Allgon,
> Antel International, Antenex, Astron Antenna, Celwave, RFS Cablewave,
> Cushcraft/Signals, EMS Wireless, DAPA, Hustler, Larsen, Maxrad, Mobile
Mark,
> Telewave, and lots of other companies. Try your web browser.
>
> I fail to understand how cellular and PCS antenna design discussion fits
> into REC.radio.AMATEUR.antenna. Maybe we need a new NG.
> sci.electronics.rip-off-the-cell-company.
>
> Flame away!

>
> --
> Crazy George
> The opinions expressed are mine, and do not necessarily reflect those of
any
> purportedly sane person or other entity.
>

George,

The reason that many hams ask questions about commercial stuff might be the endless curiosity that at least I suffer from: any time I see any antenna, for example, I start thinking "How does it work? Is it an efficient antenna? Could I use the idea for any ham stuff? Could I learn anything from it?"

Anyone else as crazy as I am? :-)

73, Kari

2687. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 11:11:03 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <b7wl6.13313$2_.4739984@news3.rdc1.on.home.com>
Source record: 164234
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

"Bob" <bob@bob.com> wrote in message news:3AF2382E.28F357EC@bob.com...
> Your statement is unoriginal and weak.

You mean short and to the point ...

>
> So, you base your respect for people on whether or not they follow the
laws
> that your local, state and federal government imposes on them?

It's a simple law that you choose to disobey, you obviously think yourself grandiose enough to decide which law should be followed and which shouldn't. If you choose to disobey those laws what about others?

>
> Let me ask you this then, if you were around during prohibition (were
you?),
> would you have disrespected bootleggers and consumers of alcoholic
beverages
> up until the very point where the 18th amendment was repealed?

You are getting the idea ... why respect criminals ??? I'm pretty sure you don't go to local penn's to drop off stuff for the criminals inside (as you would call them ... "good buddy")

> Good thing all those amendments came along abolishing slavery and granting
> women the right to vote or you still wouldn't have respect for women or
> Negroes.

If a law is wrong lobby to change it ... don't sit back in your homes breaking it every chance you get ... and please don't ever compare yourself to women and african americans of back then ... you are not oppressed.

The test is a joke ... I did mine when I was 11 with a grand total of about 2 weeks of studying for it (on my own I might add) ... its 100 questions multiple choice (up here anyways) and is general knowledge any operator should know.

The only thing stopping you from operating legally on the ham bands is your ignorance and your spite for rules and regs.

>
> http://pages.prodigy.net/krtq73aa/reed2.htm
>
>

> Bob.

--
Rob St.Denis

2688. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 11:18:26 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF29002.97AB689C@spam.me.not>
Source record: 164235
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Comments within:

Richard McCollum wrote:
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF21492.23260143@spam.me.not...
> > Will a tester come out to an invalid's house in order to test them? If
> > not, how would someone who cannot leave the house get tested to attain
> > their license?
> >
> > I've heard the "if you want to DX and run power, get a license" argument
> > ad nauseum. Some people are incapable of passing a code test due to
> > dyslexia or other disorders. Some people are incapable of even leaving
> > their house. How do those people attain their license?
> >
> > -SSB
>
> For what it is worth, in my VE days in Wausau WI I went up to Merrill to
> administer an exam to a housebound man who for reasons known only unto him
> wanted DXCC before he died. I and my partners read an Extra to a blind man
> after a regular testing session in Wisconsin Rapids at about -35 degrees
> costing me a few bucks to get moving again.

I didn't know this went on. Kudos to you, Dick. Highly commendable.

> I have a friend of many years standing who tried to learn code as both a
> left and right-handed activity at the same time and ran into a brutal 'hump'
> at about 6wpm. We had to literally tie his left hand in his belt, pump code
> into the right ear only, and such things to get him to do it only one way.
> As he holds an Advanced, it must have worked. This is not dyslexia by any
> means but 5wpm can be worked around.

And I'm still trying to work around it, only my "hump" is right at about
2 WPM.

> I have long advocated the eventual outlawing of AM on CB freqs simply
> because it is nitro in the hands of children. To do this, it would seem
> that setting up a truckers band (FM, PL, the whole enchilada) to prevent
> these 'opinion leaders' into ownership mode instead of wandering farther
> afield would make sense. Adding a sideband segment might fit into this.
> Marine freqs are also plagued by this sort of thing. The early phone
> companies did not view pointless babbling and time wasting as valid
> activities either and lived to regret it. If your point is that we are
> making the same mistake I tend to agree.

Actually, Dick, you just reminded me of this precise point, which I had wanted to make, yet had forgotten to.

AM is a volatile emission mode, IMHO. Of course, FM isn't much better; if the deviation is turned up too high, it "bleeds over" just as badly as over modulation and carrier instabilities bleed over on AM. I prefer sideband for a multitude of reasons. This is one of them.

> Some years ago a university I happened to be attending built a new library.
> They installed a few paved paths in obvious places to get to it and waited a
> few years to pave the paths the students made. This was a simple and
> practical approach as opposed to putting them in right away and planting
> landmines to keep the students on the paths. As Flaubert, a French poobah,
> once said of taxation, the object of plucking a goose is maximum feathers
> with minimum hissing.

If you're speaking of Calvin College, in Grand Rapids, MI, I attended the same School. Escher started this trend when the school was designed and first built, in keeping with his ideals of letting his buildings flow with nature as much as possible.

>
> Dick Nï¿½BK

Basically, CB needs to be revamped. CB'ers need to be educated about what's "loud" and what causes interference, what "gets out" and what bleeds over. Modes need to change, and bandwidth needs to be reallocated. Leave 1-40 for the AM'ers, and set aside a band for FM and a band for SSB either above 40 or below 1. There are some unallocated frequencies there, I'm sure. I DO NOT want to make HAMs give up any more bandwidth, and I don't want to take seldom used emergency frequencies from other services, but the whole of 27.405-27.800 can't be allocated.... at least I've never seen a chart that shows anything allocated in that area. (Maybe someone has a URL to a chart/page that lists all allocated frequencies?)

-SSB

2689. Re: B&K Folded dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 11:40:47 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AF2953F.4412F16C@oio.net>
Source record: 164236

Kelly,
Having been a B&K folded dipole user, I think the best
advice is to try it and see for your self. That antenna is
not one of the 'best' you could find on any band. If you
are looking for a comparable 'no tune' antenna, Heathkit
made hundreds of them called a CanTenna. Over all, it's a
very disapointing antenna.
'Doc
PS - At least you saved $119.00...

2690. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 11:58:39 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AF2996F.2E33E93@hiwaay.net>
Source record: 164237

Denver- see my comments following yours, below

Denver Braughler wrote:
>
> Bill Aycock wrote:
> > Until this reply to Toms position- I thought Denver had a fair grasp on
> > the lightning situation. I do not, now, think so.
> Because I admitted that I could be wrong or because I was too arrogant?
>
Now,what gave you the idea it was a personality issue? - I dont care at
ALL if you are arrogant or not. If that bothered me, I would delete
stuff from over half the people here. My questions are technical, and
also have to do with the logic of the situation.

> > I, personally have been the recipient of a couple of close hits. The
> > last one was a direct hit on the transformer feeding my house. It fried,
> > making noise heard in a heavy rain over 150 ft. The same bolt followed
> > the guy wire down to the water pipe (PVC) and made an exit over 300 feet
> > away, blowing two holes in the PVC, and creating two waterspouts.
> Electricity that can penetrate PVC, in my opinion,
> won't must a little tarnish on the copper.
>
Right. At low amperage, like normal RF, it may matter. I worked in an
explosives plant for 38 years. We had no buildings hit, and the
grounding system was heavy, woven, copper rope, and it was as black as
the ace of spades, after a short time.

> > Nothing in the house was hurt
> Right, the lightning was looking for earth, not to move in upstairs.
>
> > On Other hits, I had equipment damage, but only where there was a faulty
> > ground in the phone line. That one, had a hit over a mile away, and
> > fried my computer through a mile of underground phone line.
> Now had that phone wire been bare in the dirt, the lightning
> would have had a little more trouble finding your house.
>
> > The simple fact is- without having to know whether lightning followes a
> > particular choice of path, the very large gradients in charge that are
> > created while it dissipates, will** WILL** create large voltage
> > distributions within any conductor in the area.
> Yep. Right through corrosion and insulation.

Yep- it's the EM fields, and they dont "see" insulation.
>
> > The problem of survival is to allow for these,

> > and make sure their path to a balance is not
> > through anything you value.
> Dirt is a good choice.

Again- yes- but, since dirt is not a good conductor, you have to give
the charge paths to move into lots of dirt.
>
> > Simple- it does NOT take a direct hit, or anything leading the charge
> > into the house to do damage.
> Ah, you thought that I was deliberately trying to avoid this by using
> "high impedance" copper?
> No, I was merely arguing that trying to have a low impedance path from the antenna to the
house is a silly goal.

Ithink you have missed a point- it is not 'trying to have' such a path-
the paths are there already. The only thing you are doing is either
providing more paths an/or better paths to places where the charge
doesn't hurt.
>
> I agree that the lightning is going anyway, low impedance, high impedance, no ground wire
at all.

The relative impedance DOES matter- however, the current levels are so
high, even with the low impedence paths taking most of the charge, the
high impedence paths still have a significant level.
>
> But the idea of the copper strap is to get lightning into the earth where it belongs.
>
> I didn't figure out anything else specific on which you disagreed with me.
>
> > the charge is there, even if the hit was a tree.
> The electrons are seeking their water molecules from which they have been stripped.

I have been near an Oak tree that was hit- the inner bark layer expanded
till it looked like yellow styrofoam, from the steam expansion, and it
'snowed' all around.
>
> > Any conductor in the field of that charge has flow induced in it.
> It is a fact that the strap in the same trench with the coax will induce a current in the
coax
> and more so at the end at which it enters.

This description bothers me- is the current in the coax induced from the
current in the strap, or from the same cause that put the current into
the strap. It seems to me that both are being hit by the same thing, and
the strap is probably taking some of it away from the coax. (Not that I
think a strap is a good idea, I just dont like the logic of what you
said)

> At issue is how to avoid having it be harmful relative to the current that the coax is
carrying anyway from the lightning strike.
> I think that having these conductors not be perfectly parallel with some physical

separation (some sand) is a good mitigation strategy.
>
> What do you recommend?

Right or wrong- I think putting all leads in the ground, and disconnecting those that can be, from expensive circuits is good. I personally think that a constant bleed-off of charge (as from a grounded antenna, or "lightning rod" is a help. I used to watch lightning storms 'walk' across the 1000 acres of our plant, and the only hits were on trees, never the buildings. The only hit I remember, was to a lab that had had some roofing work done, and the roofers did not reconnect the "grounding" copper rope from the roof peak to the trenched distribution system.

2691. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 12:01:55 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AF29A33.EE76463F@mwci.net>
Source record: 164238

Roy Lewallen wrote:

> If a piece of coax acts as a transformer from the center conductor to
> the braid, consider the following:
>
> Take a quarter electrical wavelength of 50 ohm semi-rigid coax (the kind
> with a solid shield). Wind the coax into a coil and dunk the whole thing
> into a solder pot. (Or cast the whole thing into a block of metal.) I
> hope you'll agree that there's no drop from one end of the shield to the
> other, or from any point along the shield to any other.
>
> Excite one end with a one volt generator and terminate the other end
> with a 500 ohm resistor. The voltage across the resistor (assuming
> negligible cable loss) will be 10 volts, lagging the source by 90
> degrees. The voltage from one end of the center conductor to the other
> (Vout - Vin) = -1 - j10 which is a magnitude of 10.5 volts. So it seems
> that we've created a transformer with 10.5 volts across one "winding"
> and zero across the other. How do you explain this?

It's like any other impedance transformer. If you ground one end of the input side and one end of the output side
you still have an impedance transformer. And you still have a common mode voltage increase, but it is all along
the center wire. To prove it, just add up the rms voltages around the four terminals.

If the braid output is floating, this common mode voltage is shared between center wire and braid, according ot
their respective common mode impedances.

Keep in mind that the actual impedance transformation is occurring in the differential mode.

I am sure you know all of this as well as I do, and you don't need my help.

Bill W0IYH

2692. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 12:03:22 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AF29A89.67482AA4@mwci.net>
Source record: 164239

Reg Edwards wrote:

> Balun cores increase the impedance of the INNER coaxial conductor
> to precisely the same extent as the outer.
>
> To prove this just wind some coax around a ferrite core and measure
> the inductance between the ends of the inner conductor with the
> outer disconnected. It will have the same inductance as the outer
> all by itself. Connecting the inner and outer conductors in
> parallel will again have the same inductance.

Thanks, Reg, you are exactly correct (as usual).

Bill W0IYH

2693. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 12:09:43 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <b_wl6.13720$2_.4816958@news3.rdc1.on.home.com>
Source record: 164240
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

I regularily do simplex on the bike from more than that with a 2m ht with 1/2 watt out ... big deal. I drive to the fiancee's place 50miles from where I sit and chit chat back and forth with my father on 10m with 10w output on ssb ... so what? I use a 1/4 wave antenna mounted on the trunk of my car ...

--
Rob St.Denis

"Sideband" <sideband@spam.me.not> wrote in message news:3AF25F37.669914B6@spam.me.not...
> Well, I'm heard with a 2 watt carrier over 20 miles away straight shot,
> so I must have done something right.
>
> ::shrug::
>
> -SSB

2694. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 12:27:59 UTC
From: 2w8ji@akorn.net
Message-ID: <3af292cf.63779711@news.accessunited.com>
Source record: 164241

On Thu, 03 May 2001 23:29:16 -0400, Denver Braughler
<Braughler@bwcc.com> wrote:

>Electricity that can penetrate PVC, in my opinion,
>won't must a little tarnish on the copper.

You miss the main point Denver.

Once lightning is in the system of conductors, it can be treated as a normal current. It follows all electrical laws, including Kirchhoff's and Ohm's laws.

Lighting has considerable energy between a few hundred megahertz and near dc. It has as much or more energy at 100kHz as it does at 1kHz. (try looking at "Lightning signal amplitude vs Frequency" NAB Handbook, Section 2, antennas and towers)

The problem isn't that the braid has a "little tarnish". The problem is the conductor is woven. Woven conductors that are insulated at the overlays "force" the current to the inside surface of the braid. Since the flux density is higher, the impedance of the wire is higher as it passes through the weave. This increases the path length, and the impedance of the path. Both resistance and reactance go UP as a woven conductor tarnishes.

As a matter of record, this is the primary reason loss increases in coaxial cables that have become moist inside. The loss remains high even if all moisture is removed! The loss increase can be amazingly high.

At the same time, cables with solid shields can be wet, and then dry out, with no major changes in characteristics over the lower frequencies! As an example, look at old open wire line that is exposed to weather. It can be green with oxide, and not have significant change in loss at lower frequencies. If it is made from woven conductors, it becomes next to useless after exposure to weather!

Now consider this. Even if DRY and clean, and compacted with external pressure, braided conductors have several times the RF resistance of smooth conductors the same surface area and physical shape. (From Electronic Designers Handbook, page 8-25 where they discuss transmission lines. "When the outer conductor is not solid but is braided to give greater flexibility, the attenuation due to the outer conductors is multiplied by a factor of approximately 2.75"

This makes sense. It shows us why the lowest-loss cables have a smooth solid foil or use a solid shield. It tells us that even when clean

and compacted, the impedance (and resistance) of a given length of the same size conductor is much higher.

The loss increase in coaxial cables (and open wire lines) made from braided conductors after exposure to moisture shows us that things get MUCH worse after the braid starts to tarnish, and that if the conductor is solid there is very lttle change.

Since the goal in a lightning protection system is to have minimal impedance on grounding conductors (current will divide according to impedances of the path, and we want it all to flow to and from ground and NOT through the equipment), any suggestion that increases the impedance of the ground path is a bad suggestion. Factually, we want a wide, smooth conductor for as much as the path as possible. The impedance is much lower than the same size braiding, and the life is longer (unless the conductor is flexed).

IF we didn't care about the impedance of the ground path, as you imply, we wouldn't need the ground path in the first place!!!

Note that this is all different in a conductor with parallel strands and no weave. In that case, there is much less negative effect on impedance with tarnish. That is because the conductor does not weave in and out. So don't confuse a gently twisted conductor with a woven braided conductor!

It is bad advice to tell others to use braided conductors for lightning protection (or RF grounds) unless the comnnection needs to be flexed repeatedly. The impedance is higher, the life is shorter, and any tarnish causes the impedance to skyrocket.

Any suggestion that decreases the life of the grounding conductor (like burying braiding) is also poor advice.

Braiding should NEVER be directly buried in soil. The individual strands are too thin to last long. By the time they fully develop a protective layer of copper oxide, they will be almost eaten completely through. The effect is much like the braid "rots".

It is just plain silly to bury braiding in soil, it will eventually "rot" in most soils..

The best alternative is a stranded wire with a flat lay or gradual twist, if you need moderate flexability. If you must have repeated flexing, then use a very wide braid. Remember the braid from RG-8 has about the same RF impedance as a small solid wire like #12 or #14....and quickly gets worse with age. Never directly bury the braid or any thin-strand conductors in soil!!!

Let's not perpetuate the long-time amateur radio myth that braiding makes a good ground conductor. It does not. If someone is going to go through all the work to ground his equipment, let's help then do it right. Let's not guess when it comes to safety.

73 Tom

2695. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 12:38:04 UTC
From: 2w8ji@akorn.net
Message-ID: <3af2a15c.67505698@news.accessunited.com>
Source record: 164242
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Fri, 04 May 2001 04:03:13 GMT, "HelmutSweenie"
<helmutsweenie@youranus.com> wrote:

>What you are saying Sideband is You are asking for a band that is set aside
>for SSB only use, between certain freqs And you think this might help the
>congestion, well this band already exists(27.405-27.999)and people are using
>hundreds of watts with rules and regulations already in place and they are
>not respected and are ignored, They already have this band yet they still
>come on 10m. What will be any different then. We should be thankful the FCC
>hasn't pulled the plug on 11m it is more trouble than what its worth. One
>day they will cut their losses and axe 11m.

Ten emeters is already ruined, for the most part. There are SSB
operators and truck drivers all over the low end.

It is happening on 160 meters through ten meters, and even in the
two-way land mobile bands.

We don't need to reduce code requirements, or expand bands. The idiots
operating "freeband" are taking care of it all on their own. They have
no respect for anyone else, and demand we accept them and respect them
for ruining whatever frquencies they choose. And the SSB ops are the
worse of the lot.

What a joke.

2696. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 12:38:23 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cu7rv$6ar$0@208.207.71.168>
Source record: 164243
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Brian Kelly, w3rv" wrote:
>
> On Wed, 02 May 2001 23:50:48 -0400, Jerry Oxendine
> <joxendi@bellsouth.net> wrote:
>
> >
> >THAT is the potential harm. That is the reason it is illegal--not be-
> >cause FCC is trying to mess up somebody's fun.
> >
> Right on the button Jerry. What we're dealing with here is a severly
> underfunded federal regulatory agency who has lost it's teeth and
> would rather roll over and play dead and surrender to anarchy rather
> than make a stink.

Reality is that they don't have much choice, other than to incurr the
wrath of the people holding not only the purse but also the
hammer....Yell, and you flush your carreer...

> Some day somewhere some people will die, there will
> be CYA "congressional investigations", yeah, right: Too late as usual.

Yet again...

2697. Re: B&K Folded dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 12:44:58 UTC
From: 2w8ji@akorn.net
Message-ID: <3af2a2c6.67867250@news.accessunited.com>
Source record: 164244

On Thu, 03 May 2001 22:53:30 -0500, "David G. Nagel" <nagel@core.com>
wrote:

>Kelly:
>I am using the B&K in a NVIS configuration and am very satisfied with
>with it. I first used it with a TS-430 with out a tuner. My first
>contact was with a station near DC, I live near Chicago.
>You will have several people comment to you that you can do better with
>tuned half wave dipole antenna's. To their comments I say "Yes you will
>but the B&K gives satisfactory service without the need for tuning the
>system each time you make a large change in frequency/bank." I now use a
>TS-440AT and get the same results. The auto tuner does see a difference
>in swr when I make a large band change (75 to say 20 meters) but the
>antenna still performs the same. I say go with what you got and have
>fun. You should know that the antenna works by burning up the swr in a
>600 ohm resistor in the center of the fold. This may affect your signal
>at QRP levels. My advise is try it and form your own opinion.

The antenna is a B&W, not a B&K...isn't it?

The B&W antenna has an efficiency of about 10% on some bands, and
about 50% or so on the best bands. On bands where it is shorter than
1/2 wl long, it can be down around 1% efficiency or less.

You can certainly make contacts with it, but it is nothing special. It
is basically a dipole with a loading resistance at the feedpoint to
make it broad banded. The fact the resistance is on the non-fed
conductors of the folded dipole is minor. It is still a dummy load in
parallel with an antenna.

If you run 100 watts, on some bands it will be like running 50 watts
and on some like running ten watts or less.

73 Tom

2698. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 12:58:34 UTC
From: 2w8ji@akorn.net
Message-ID: <3af2a5cd.68642498@news.accessunited.com>
Source record: 164245
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Fri, 04 May 2001 02:19:57 -0400, Bob <bob@bob.com> wrote:

T
>Most of the interference I hear on HF is cause by spanish speaking
>stations from Central and South America. I have no problem working around
>interference, with DSP and my highly tuned directional antennas. Perhaps
>you should upgrade from that G5RV and maybe come up with some ways to deal
>with interference, you know try to advance the technology or your
>operating skills. Nahhh....I would rather listen to you bitch on this
>newsgroup.
>
>Bob.

What a laugh. You think a DSP filter will remove SSB or AM from over
CW?

Get a clue about how filters work.

A narrow signal can be removed from a wide one without affecting the
wide signal much, so a very strong CW signal can be removed from a
weak SSB signal with little ill effect on the SSB . The converse is
not true.

As for your "higly directive antennas" that doesn't work unless the
direction of the signals is quite diferent.

The point is the free banders are causing problems, and it is getting
worse year by year. Most people who operate HF legally, especially CW,
know that.

BTW, what is you callsign?

73 Tom

2699. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 12:59:36 UTC
From: 2w8ji@akorn.net
Message-ID: <3af2a75b.69041133@news.accessunited.com>
Source record: 164246
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Thu, 03 May 2001 23:41:09 -0400, Bob <bob@bob.com> wrote:

>
>
>Tom W8JI wrote:
>
>>
>> They are just to stupid or uneducated to understand that.
>
>You mean "too stupid"?
Yes, like you. Also or more
than enough.

2700. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 13:00:24 UTC
From: 2w8ji@akorn.net
Message-ID: <3af2a79d.69106999@news.accessunited.com>
Source record: 164247
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Fri, 04 May 2001 00:01:36 -0400, Bob <bob@bob.com> wrote:

>
>
>"Dennis P. Stahr" wrote:
>
>> What you are to stupid
>
>You mean "too stupid"? Sounds like you and Tom, W8JI, shouldn't be calling
>anybody stupid. I can understand taking cheap swings when you really have
>nothing to say, though.
Like you do Bob?

2701. Re: Need Portable, Lightweight, and Shortened 20 Meter Antenna for PSK31

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 13:04:09 UTC
From: w9vhe1@email.msn.com
Message-ID: <3af2a7fe.81708644@netnews.msn.com>
Source record: 163720

I believe there was an article in QST about this, using zip cord for
the antenna. It used small insulators, 'gator clips to change length.
Could be adapted for your use. Speaker cord can be used for this as
well, if you know someone with an antenna analyzer it would be a great
help on getting it more accurately cut to your desired frequency.

On Fri, 4 May 2001 06:30:15 -0400, "Les Kramer"
<wa3sgz@mindspring.com> wrote:

>This request is a repost from about 2 weeks ago. My request for help netted
>only one response.
>Surely with all the brainpower on this NG, someone else can give me
>additional ideas!!
>
>I operate PSK31 most of the time because of the ability to reliabily
>communicate at low power. Due to the narrow bandwidth of PSK31 (31.5 Hz),
>most operation occurs within 3KHz above the defacto PSK31 calling frequency
>(i.e., for 20 meters, that frequency is 14.070 MHz). Thus, for monoband
>operation, a narrow bandwidth antenna is an acceptable compromise. I have
>seen over 30 signals within the PSK 3KHz passband on 20 meters.
>
>I intend to purchase a Small Wonders Laboratory 20M PSK31 QRP kit later in
>the year and use it exclusively when I travel with my laptop (it will fit in
>the laptop case). My problem is that I need a short, highly portable, light
>weight antenna cut for 14.070 MHz. This antenna needs to be small enough to
>fit in a small suitcase (20 inch) with normal travel stuff. I also have two
>folding, bungy corded fiberglass tent poles of about 10 feet in length that
>I intend to support the antenna with from a hotel window (hopefully three
>stories or higher but depends on the hotel layout).
>
>CAN SOMEBODY SUGGEST THE BEST COMPROMISE ANTENNA FOR THIS KIND OF OPERATION?
>I have thought of helical dipoles, shortened loops, a fractal monopole,
>possibly a vertical delta loop for some applications, etc.) Obviously, a
>wire antenna is the preferred solution. Sketches or references to sketches
>and other information would also be appreciated.
>
>73,
>
>de WA3SGZ Les
>

2702. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 13:10:53 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <xTxI6.105982$xN4.7081777@news1.sttls1.wa.home.com>
Source record: 164248

I have observed the same thing. Any slight difference in readings can be explained
by surface capacity differences because the conductors have a slightly different relationship to the far field.

Thanks for the post.

73, Roger, W7WKB

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:9cu00r$jh1$1@uranium.btinternet.com...
> Balun cores increase the impedance of the INNER coaxial conductor
> to precisely the same extent as the outer.
>
> To prove this just wind some coax around a ferrite core and measure
> the inductance between the ends of the inner conductor with the
> outer disconnected. It will have the same inductance as the outer
> all by itself. Connecting the inner and outer conductors in
> parallel will again have the same inductance.
> ---
> Reg
>
>
>
>

2703. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 13:17:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF2AC01.4571819B@IEEE.org>
Source record: 164249

Roger Sparks wrote:
> Apparently all the postings are not relayed to every news group. I have
> noticed before that comments were made to postings I have not seen, so I
> just assumed that the missing postings were actually private email comments.
> I don't know how to fix this problem.

The most common problem is the delay among news servers. A reply to a
posting can arrive before the posting itself which usually shows up
sooner or later.

There are also unreliable news servers where the posting doesn't arrive
for hours or days or sometimes never.
--
http://www.mindspring.com/~w6rca

2704. Re: Radio Shack Antenna Rotors?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 13:23:34 UTC
From: Bob <ride8427@ride.ri.net>
Message-ID: <9cuage$feeqg$1@ID-84760.news.dfncis.de>
Source record: 164250

I used a radio shack rotor for an 11 element beam for 2 meters. The only thing i did'nt like was it would go out of calibration ALWAYS! There was mentioned in the instructions to re-calibrate, turn it all the way to one direction, then all the way to other direction. But it seemd to always be off. bob

2705. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 13:25:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF2ADC2.1A363751@IEEE.org>
Source record: 164251
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

GG wrote:
> Sorry, but in Texas if the owner is paying the taxes on the property,
> it doesn't matter if he never uses it, it still belongs to him and no
> one can claim ownership by just using it. I have some pasture land in
> west Texas that hasn't been used in some years, but I pay the taxes on
> it every year. You go and try to use it and claim it as yours and see
> how far you get.

If you allow me to nest for a certain number of years without protest,
and it is I and not you who does improvements to the property, I can
go to court and obtain ownership of the property. Certain conditions
must be meet and your property becomes mine.
--
http://www.mindspring.com/~w6rca

2706. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 13:30:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF2AEF1.6223EC9D@IEEE.org>
Source record: 164252
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

"Rob St.Denis" wrote:
> It's a simple law that you choose to disobey, you obviously think yourself
> grandiose enough to decide which law should be followed and which shouldn't.

You are implying that you have never driven above the speed limit, Rob.
Will you swear that you have never broken a traffic law? Have you never
gotten a traffic ticket or a parking ticket?
--
http://www.mindspring.com/~w6rca

2707. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 13:41:54 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF2B1A2.4F40AE5E@IEEE.org>
Source record: 164253
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Dwight Stewart wrote:
>
> W6RCecilA wrote:
> > That's a pretty good question. Unless I'm
> > missing something, I would rank it right up
> > there with driving on the shoulder of the
> > road where such is illegal.
>
> Can I move next door to you and operate an illegal CB radio with an
> old 250 watt tube linear? After about a week of hearing me on your
> television, stereo, telephone, and who knows what else, I doubt you
> will consider it such a minor problem.

What gave you the idea that I consider it a minor problem? I don't
consider illegally driving on the shoulder of the road to be a minor
problem, do you? Bicyclists can die because of that problem. Do you
care about the RF emissions of freebanders more than the lives of
bicyclists?

> Cecil, only a person who has never lived next door to one of these
> "freebanders," or a person running an illegal setup himself, would
> attempt to minimize the problem like you did above.

On a scale of crimes, is freebanding a minimum offense compared to
rape and murder? If you shoot the freebander, who would be in the
worst trouble? I am not attempting to minimize the problem, Dwight.
I am attempting to put it in perspective.

Seems you are the one who has minimized the problem of people illegally
driving on the shoulders of roads, putting bicyclists' lives at risk.
--
http://www.mindspring.com/~w6rca

2708. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 13:50:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF2B3AF.E1C0200F@IEEE.org>
Source record: 164254

Reg Edwards wrote:
> Isn't it obvious the 95.6% of matter which is "missing" is in the
> form of black holes.

Not as "black holes" are defined presently. The black hole defined
at the center of our galaxy is not big enough to account for the
gravity in our galaxy. Our definition of a "black hole" may need
to be expanded.
--
http://www.mindspring.com/~w6rca

2709. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 13:54:17 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <dwyl6.14009$2_.4965037@news3.rdc1.on.home.com>
Source record: 164255
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> You are implying that you have never driven above the speed limit, Rob.
> Will you swear that you have never broken a traffic law? Have you never
> gotten a traffic ticket or a parking ticket?

I have never received a speeding or any other traffic infraction. I have never received a warning. I never speed. I always use my turn signals/mirrors/shoulder check when turning and changing lanes. There is no need to. I always give myself ample time to get anywhere. I have never received a parking ticket either. Speeding is stupid AND illegal.

--
Rob St.Denis

2710. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 14:05:56 UTC
From: "Dennis P. Stahr" <irfutures@earthlink.net>
Message-ID: <8Hyl6.205$M6.37643@newsread1.prod.itd.earthlink.net>
Source record: 164256
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

I stand corrected. Thanks for the cheap swing Bob.

Dennis

>
>
> "Dennis P. Stahr" wrote:
>
> > What you are to stupid
>
> You mean "too stupid"? Sounds like you and Tom, W8JI, shouldn't be calling
> anybody stupid. I can understand taking cheap swings when you really have
> nothing to say, though.
>
>

2711. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 14:07:23 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF2B79B.1F7EA7FB@IEEE.org>
Source record: 164257
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

"Rob St.Denis" wrote:
> I have never received a speeding or any other traffic infraction. I have
> never received a warning. I never speed. I always use my turn
> signals/mirrors/shoulder check when turning and changing lanes. There is no
> need to. I always give myself ample time to get anywhere. I have never
> received a parking ticket either. Speeding is stupid AND illegal.

I don't believe you, Rob, but if you are telling the truth, you are
abnormal and among an insignificant number of citizens.
--
http://www.mindspring.com/~w6rca

2712. Re: B&K Folded dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 14:08:34 UTC
From: John O'Flaherty <oflahert@roast.net>
Message-ID: <3AF2B7E2.DBE61206@roast.net>
Source record: 164258

Tom W8JI wrote:

> On Thu, 03 May 2001 22:53:30 -0500, "David G. Nagel" <nagel@core.com>
> wrote:
>
> >Kelly:
> >I am using the B&K in a NVIS configuration and am very satisfied with
> >with it. I first used it with a TS-430 with out a tuner. My first
> >contact was with a station near DC, I live near Chicago.
> >You will have several people comment to you that you can do better with
> >tuned half wave dipole antenna's. To their comments I say "Yes you will
> >but the B&K gives satisfactory service without the need for tuning the
> >system each time you make a large change in frequency/bank." I now use a
> >TS-440AT and get the same results. The auto tuner does see a difference
> >in swr when I make a large band change (75 to say 20 meters) but the
> >antenna still performs the same. I say go with what you got and have
> >fun. You should know that the antenna works by burning up the swr in a
> >600 ohm resistor in the center of the fold. This may affect your signal
> >at QRP levels. My advise is try it and form your own opinion.
>
> The antenna is a B&W, not a B&K...isn't it?
>
> The B&W antenna has an efficiency of about 10% on some bands, and
> about 50% or so on the best bands. On bands where it is shorter than
> 1/2 wl long, it can be down around 1% efficiency or less.
>
> You can certainly make contacts with it, but it is nothing special. It
> is basically a dipole with a loading resistance at the feedpoint to
> make it broad banded. The fact the resistance is on the non-fed
> conductors of the folded dipole is minor. It is still a dummy load in
> parallel with an antenna.
>
> If you run 100 watts, on some bands it will be like running 50 watts
> and on some like running ten watts or less.
>
> 73 Tom

The load resistor at the feedpoint to make it broad-banded- would that work only by reducing performance at the better frequencies, or could it increase performance at that not-so-better frequencies?

john

--
john

change roast to burnt bread to reply

2713. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 14:14:42 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3af2b88d.62735306@news.aepnet.com>
Source record: 164259

On Fri, 04 May 2001 08:17:53 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Roger Sparks wrote:
>> Apparently all the postings are not relayed to every news group. I have
>> noticed before that comments were made to postings I have not seen, so I
>> just assumed that the missing postings were actually private email comments.
>> I don't know how to fix this problem.
>
>The most common problem is the delay among news servers. A reply to a
>posting can arrive before the posting itself which usually shows up
>sooner or later.
>
>There are also unreliable news servers where the posting doesn't arrive
>for hours or days or sometimes never.

That's for sure. You can sometimes come off looking like an idiot for posting
something that appears to mimic something already said. The fact might be that
you said it first but it didn't show up first.

Wes Stewart N7WS

>--
>http://www.mindspring.com/~w6rca

2714. Re: B&K Folded dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 14:41:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF2BF89.AE44AE3A@IEEE.org>
Source record: 164260

John O'Flaherty wrote:
> The load resistor at the feedpoint to make it broad-banded- would that work
> only by reducing performance at the better frequencies, or could it increase
> performance at that not-so-better frequencies?

The resistor soaks up power to keep the coax SWR low. That is a problem
that wouldn't exist if the dipole were fed with open-wire feedline.
Get rid of the resistor AND the coax and solve both problems.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2715. FS: Ham IV Rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 14:42:34 UTC
From: Chuck Costa <cvc@bigfoot.com>
Message-ID: <udzl6.38212$Jh5.35321542@news1.rdc1.sfba.home.com>
Source record: 164261
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna

Ham IV Rotator and control box. Excellent condition, Mast bracket and all hardware included. No rust, Control panel is clean, no scratches or dents.

$275 plus shipping

Chuck
k6cvc@home.com

2716. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 14:53:47 UTC
From: k3bu@aol.com
Message-ID: <20010504105347.26506.00001989@ng-fv1.aol.com>
Source record: 164262

```
>
>Mike Luther wrote:
>"In space no one can hear you scream."
>
>That`s better than farting in the echo chamber and never hearing the end
>of it!
>
>Best regards, Richard Harrison, KB5WZI
>
>

Sounds like that that Frectal stuff on NG?
```

2717. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 15:17:20 UTC
From: Ron in NC <kc4yoy@pop.trellis.net>
Message-ID: <01c0d4ad$00c64b40$6d4c96d0@ron>
Source record: 164263
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> I don't believe you, Rob,

You may not believe him, but there's one I believe,
(no make that KNOW) and that is that most of
the folks on this NG, like me are not interested
in your BS and wish you would do it by private email.

Ron KC4YOY

2718. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 15:22:08 UTC
From: richardharrison@webtv.net
Message-ID: <28174-3AF2C920-48@storefull-114.iap.bryant.webtv.net>
Source record: 164267

Peter, K1PO wrote:
"I believe I gotcha."

D-C power determination is simple. Steady-state power is the product of load volts times amps flowing, or volts across the load times current through the load. These products are equal, so the IEEE definitions for power work for d-c.

Power may be determined by the "voltmeter-ammeter method" or by using an instrument such as the Siemens dynamometer. This meter can be arrangted for one of two coils to be excited by voltage and the other to be excited by current. It also can be adapted for use with either a-c or d-c.

Watthour meters measure power supplied to a load and accumulate its duration. Watthour meters take the form of tiny motors which drive a mechanical accumulator to register the watthours of energy passed through the meter. For accuracy, the watthour meter, like the Bird Wattmeter is specific for its task. One mounted on the customer`s premises may have printed on its face: "75 A, 240 Volts, 3-Wire. 60 Cycles, Single Phase Wattmeter". These meters are carefully designed so that their variable speed represents the power being taken at any time.

Best regards, Richard Harrison, KB5WZI

2719. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 15:24:29 UTC
From: kelly@nospam.dvol.com
Message-ID: <3af2c890.156220179@news2.dvol.com>
Source record: 164264
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Fri, 04 May 2001 04:03:13 GMT, "HelmutSweenie"
<helmutsweenie@youranus.com> wrote:

>We should be thankful the FCC
>hasn't pulled the plug on 11m it is more trouble than what its worth. One
>day they will cut their losses and axe 11m.
>
Wait until maybe five years from now when the spots are down, Mother
Nature will do a much better job of shutting 11m down than the FCC
can.
>
w3rv

2720. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 15:35:55 UTC
From: W4NTI <w4nti@nospammindspring.com>
Message-ID: <9cui70tng1@slb6.atl.mindspring.net>
Source record: 164265
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

I see you say you don't support a position, then go on to do just that. In anycase this will be my last on this one......you can not reward outlaw behavior by giving them more frequencies.

Based on the obvious dis-regard and dis-respect for regulations, already in effect, I see no possibility that the rag tag bunch you refere to would obey any new ones.

End of discussion.

Dan/W4NTI

"Sideband" <sideband@spam.me.not> wrote in message news:3AF2075A.A566FBDB@spam.me.not...
> Dan:
>
> Well, apparently you missed the point; or is it that you choose to
> ignore it? Either way, your attitude towards me on this is a bit
> disconcerting. I'll state this again just in case it didn't get through
> the first time" I'm not a freebander, nor do I encourage ANYONE to
> violate FCC rules.
>
> I'm sorry to hear about your mood disorder.
>
> The point was this: Set aside another band for sideband transmissions
> only, to help alleviate some of the congestion on CM (they have no other
> place to go), and perhaps the encroachment on 10M frequencies would tone
> down; perhaps those frequencies between 27.405 and 28.000 that are
> allocated to other services won't be interfered with people calling CQ,
> and perhaps sideband operators on CB's won't get interfered with as much
> by AM carriers.
>
> I'm not proposing a reduction in standards. Personally, I feel when the
> FCC removed the licensing requirement from CB they made a BIG mistake.
> I'm proposing a broadening of bandwidth to help alleviate the congestion
> on CB that causes people who don't know any better to venture onto the
> HAM bands and interfere with licensed operators. If the bands weren't so
> congested, CB'ers might not feel the need to run an amp, because they'd
> be able to make contacts on much less power.
>
> If you're so shortsighted that you don't see the potential good this
> could do, then I'm sorry you feel that way.
>
> Will some idiots out there still run illegal power? Probably. Will

> people who don't know any better still venture out onto bands and
> frequencies where they don't belong? Probably. Unfortunately, without a
> licensing requirement, the lack of knowledge by CB'ers helps cause this
> problem.
>
> This is just my opinion. Your mileage may vary
>
> W4NTI wrote:
> >
> > Did you not suggest a band be set aside just for the illegal idiots?
They
> > you should be able to figure out my response.
> >
> > The SATs having to do with it is....the lowering of the bar. The
reduction
> > of standards to accomidate some person and/or group that is unable, too
> > ignorant, or just STUPID. See my point?
> >
> > Also there ALREADY exists plenty of places to work DX and have fun. Its
> > called Amateur Radio. Unfortunatly without a valid callsign you will be
> > attacked much worse than here.
> >
> > Dan/W4NTI
> >
> > "Sideband" <sideband@spam.me.not> wrote in message
> > news:3AF187AB.44CC02EB@spam.me.not...
> > > Dan:
> > >
> > > I honestly don't know how to respond to this. Your post below is so
> > > thick with sarcasm I fail to see your point. Perhaps you could tone it
> > > back a few notches and provide some facts (if you can find any) to
back
> > > up your assertion that (1) I'm a liberal, (2) I'm lazy, (3) that I've
> > > operated illegally, and (4) Just what the SAT's have to do with it.
> > >
> > > After you've done that, I may consider explaining my reasoning behind
my
> > > opinion so that you might understand it.
> > >
> > > Again, I caution you, do not include me amongst the freebanders; I'm
> > > neither one of them, nor do I condone what they do (as I stated in the
> > > very first sentence of the quote you so vitriously lambasted.)
> > >
> > > -SSB
> > >
> > > W4NTI wrote:
> > > >
> > > > Why? To accomidate a bunch of LAZY illegal fools? You must be a
> > liberal. I
> > > > bet you support dropping the standards of a SAT just to accomidate

some
> > lazy
> > > > bum that cant pass it...right?
> > > >
> > > > Dan/W4NTI
> > > >
> > > > "Sideband" <sideband@spam.me.not> wrote in message
> > > > news:3AF15839.FE40D1AC@spam.me.not...
> > > > > I don't condone violations of FCC rules. However, I would like to
see
> > a
> > > > > sideband only band above channel 40, but below 27.800, with a 50
watt
> > > > > limit, for CB'ers to DX on... The frequencies allocated for this
could
> > > > > "go around" the currently allocated forestry, etc, frequencies,
much
> > in
> > > > > the same way the CB frequencies skip over the RC freq's.
> > > > >
> > > > > Just my two cents, here... Of course, your mileage may vary.
> > > > >
> > > > > -SSB
> > > > >

2721. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 15:43:33 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3af2ce42$0$18887$1dc6e903@news.corecomm.net>
Source record: 164266
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

Phil:
Thank you for correcting my mistakes. You are correct in you numbers. It
has been a very long time since I have visited Part 19.
Dave

Phil Kane wrote:
>
> On Thu, 03 May 2001 21:29:28 -0500, David G. Nagel wrote:
>
> >One of the objectives of the creation of the GMRS Class D (i.e. Citizens
> >Band) radio service was to provide low cost licensed radio
> >communications for small businesses and family communications. This
> >service was to be limited to 50 miles from the transmitting station and
> >to a maximum power input of 5 watts. This was later changed to, I
> >believe, 3 watts output.
>
> "Close" only counts in hand grenades and horseshoes.
>
> The maximum distance figure was (and for all intents and
> purposes still is) 150 miles.
>
> The transmitter power was originally defined as 5 watts DC
> input (AM). This was later redefined to 4 watts carrier
> output (AM), 12 watts PEP (SSB). No change for all intents
> and purposes.
>
> --
> 73 de Phil Kane - K2ASP

2722. Re: HF Antenna for apartment bldg?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 15:47:31 UTC
From: W4NTI <w4nti@nospammindspring.com>
Message-ID: <9cuisn$vp9$1@slb6.atl.mindspring.net>
Source record: 164268

Yes go ahead and experiment. And you already have hit on a good compromise...the loop antenna. Have you considered a loop with a wide band amplifier on it? Then you may can drop the noise and peak the desired signal.

Just a thought.

Dan/W4NTI

"Rik van Riel" <riel@conectiva.com.br> wrote in message news:9cthqk$mr0$2@imladris.rielhome.conectiva...
> W4NTI wrote:
>
> > Any hunk of wire in the clear will do well. If he is just
> > into listening it
> > is not critical on any particular length. Of course if he is
> > interested in a particular band then a resonate wire would
> > probably help.
> >
> > Also be aware that he may pick up more noise when he instals
> > the wire. Hang it and see what happens.
>
> My main shortwave listening problem inside cities has been
> noise. For me it seems like a loop antenna works well. It picks
> up less signal than longwires, but also far less noise. I don't
> have experience with dipoles though, so maybe those are better.
>
> Damn, I guess I need to go and buy some wires to experiment
> with some antenna types ;)
>
> --
> Rik
> --
> Virtual memory is like a game you can't win;
> However, without VM there's truly nothing to lose...
>
> http://www.surriel.com/ http://distro.conectiva.com/
>
> Send all your spam to aardvark@nl.linux.org (spam digging piggy)
>

2723. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 15:53:18 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <OfAI6.14508$2_.5137771@news3.rdc1.on.home.com>
Source record: 164169
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> I don't believe you, Rob, but if you are telling the truth, you are
> abnormal and among an insignificant number of citizens.

Well it certainly is hard to find people with the courage of their own convictions today. The way I figure it, those laws are there for a reason. Who am I to contest them or break them. The way I look at it is a criminal is a criminal regardless of his crime. I can't stand criminals of any sort, so, why would I lump myself in the same group as them? As for speeding is concerned, I don't see a point to it. The farthest I go on a daily basis is 110kms. Speed limit's 80kmh ... if I tossed on say 15kmh to that (2 points off my licence if I get caught too) it will take me 1hr 9mins, if I do the speed limit it will take 1hr 23mins. 14 extra minutes is no big deal with me. And is certainly not worth the trouble if I get caught.

As for the signals and such, using them is very important, kind of a good idea to keep the other drivers on the road informed of my intentions.
--
Rob St.Denis

2724. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 15:56:11 UTC
From: kb7qhc@home.com
Message-ID: <3af2d101.675507398@news.seanet.com>
Source record: 164170

On Thu, 3 May 2001 22:35:22 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Peeter, K1PO wrote:
>"I believe I gotcha>"
>
>I believe there is still an element of the Bird wattmeter operation
>Peter doesn`t appreciate. It can`t work with d-c.
>

Hi Richard,

That's called a backatcha.

73's
Richard Clark, KB7QHC

2725. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 16:15:36 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <IAAI6.106947$xN4.7122945@news1.sttls1.wa.home.com>
Source record: 164171

Hi Dennis,

Thanks again to Roy Lewallen for forwarding your posting to me. It has still not showed up on the @home.com news group.

You pointed out that the charges (electrons) move very slowly in the conductor and move very small distances in each AC cycle, returning to nearly a "home" position at the end of the cycle. You are wondering since movement is so small, can a mixing of inside and outside coax braid currents can really occur.

Hmm, let's begin by observing that the braid weave in my sample of RG-8 is shorter than the 2 inches you mention. The measurement here was a little less than 1/4 inch on top, 1/4 on the bottom. I think it is helpful to notice that each braid wire spirals around the center at about a 30 degree angle from parallel. One group of 8 wires spirals to the right, another group of 8 spirals to the left, with a crossing pattern of two on top, two on the bottom.

Each braid wire is spiraling around the center so the length of the wire is longer that the length of the cable. This important because the shortest path between the ends of the cable is not along the braid wires, but from wire to wire in the straightest possible path between the ends. This provides a reason why the current will move between wires. It is also the reason why the resistance increases (as Tom pointed out) when the wires become tarnished so that the contact between adjacent wires fails.

AC current is just DC for short time periods (a fact we are taking increasing advantage of with digital circuits) so there is some charge movement, and some of it must be from wire to wire following the shortest distance, least impedance path. The contact paths are not subject to field effect because they are surface contacts, so the inside and outside currents must mix as they pass through common contact points.

I think it helps our understanding to ask how much voltage might occur between inside and outside currents if they actually existed. Thinking about the drawing in the ARRL Antenna Book showing current looping back down the coax braid at the antenna connection, I think of how similar this circuit is to a section of shorted transmission line. Comparing the inside and outside of the braid to the conductors of a quarter wave open wire transmission line (by taking a 1/4 wave long section through the wall of the braid), the voltages between the conductors would become very high. I do not see how any voltage difference can be supported at the contact points.

Based on this interpretation of the physical geometry and current flow, I must conclude that no true current separation between inside and outside

braid paths is possible.

You also make the point that the traveling EM field is confined to a region near the dielectric, which holds the current near the inside of the shield. The reverse is true for any outside flowing current, meaning it will want to flow on the surface. The forces causing this are balanced with the internal forces within the wires (such as resistance) which cause a spreading of the charges to the largest possible volume of conductor, giving the lowest possible resistance from end to end of the coax. The time of wave travel from the surface to the center of each wire is slow which causes the 'skin effect'. The spreading velocity near the surface of each wire is near the maximum speed of light which allows a very rapid surface current spreading to a least energy distribution. The contact points on the braid are still the contact points however, so the exact distribution of the moving charges should be of less consequence that the potential forces causing a movement of current through the contact points.

Please take a look at the braid of the coax with a magnifying glass yourself to see how inside and outside currents would have to flow past the contact points.

73, Roger, W7WKB

> Dennis Ferguson wrote:
> >
> > Roger Sparks <sparksrc@home.com> wrote:
> > >surface). As a result of this geometry, a current flowing on the
inside
> > >surface (of the coax braid)
> > >would have to flow
> > >from the top to bottom of each weave overlay to stay on the bottom, and
> > >visa-versa for any outside surface current.
> >
> > You've convinced me for DC current, where the current actually flows
> > somewhere, but what about for AC? For the latter the time-averaged
> > current flowing anywhere is within a half cycle of zero, the charges
> > move one way for a while and then turn around and go the other way,
> > ending up about where they started. We already know that charges
> > don't move very fast in a conductor, and the time they spend moving
> > in any particular direction decreases with increasing frequency (this
> > is skin effect), so it seems like AC current at high frequency isn't
> > flowing anywhere very far at all. In fact, if I had to guess, the
> > distance the charges move longitudinally is probably on the same order
> > of magitude as the skin depth, since we're talking about two aspects
> > of the same phenomenon. Energy is of course travelling down the
> > transmission line like a bat out of hell, but it is actually carried
> > by the co-dependent EM field in the dielectric (which is why the
> > velocity factor is a property of the dielectric), and that EM field
> > only interacts with the conductor immediately adjacent to the dielectric
> > (because of skin effect).
> >

> > So it seems like it doesn't really matter that the braid conductors
> > swap sides of the braid every inch or two if the charges only ever
> > move a small fraction of that distance before turning around and going
> > back where they came from.
> >
> > >You will want to look for your selves to see how the braid is actually
made.
> > >I think you will have to agree that a separation of the inside and
outside
> > >currents is absolutely impossible.
> >
> > Is it? If charges never move more than a tiny distance from where they
> > started before turning around and going back, they won't be moving far
> > enough to make it from the inside of the braid to the outside even if
> > the conductors are wired that way. Is there some other mechanism
> > by which charges on the outside of the braid can come to know
> > that charges on the inside of the braid, from which they are separated
> > by a relatively thick chunk of conductor, are moving small distances
> > back and forth?
> >
> > Dennis Ferguson

2726. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 16:17:08 UTC
From: kb7qhc@home.com
Message-ID: <3af3d530.676578959@news.seanet.com>
Source record: 164172

On Fri, 04 May 2001 08:17:53 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>There are also unreliable news servers where the posting doesn't arrive
>for hours or days or sometimes never.

Hi Cecil,

It's not the server's fault it is the feed's fault (which is still the
responsibility of your news server's sys-admin to maintain).

For instance, your feed is:
Path:
sn-us!sn-xit-03!supernews.com!logbridge.uoregon.edu!news.maxwell.syr.edu!news.mindspring.n
et!not-for-mail

You need only turn on headers to observe this and if you browse enough
postings this way, you can generally drill down to the culprit. Pass
that information along to your sys-admin.

73's
Richard Clark, KB7QHC

2727. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 16:19:18 UTC
From: kb7qhc@home.com
Message-ID: <3af4d63f.676849468@news.seanet.com>
Source record: 164173

On Thu, 3 May 2001 22:08:46 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Cecil:
>
>[snip]
>"> we have accounted for only 4.5% of the mass in the universe. Maybe
>> empty space is not empty?
>[snip]
>
>Wow... Still a long way to go.
>
>Did they say... Who "we" is? And...
>
>How will "we" know when "we" have counted it all?
>
>Douglas Adams said the answer was 42? But that was after he forgot what the
>question was.
>
>-Peter K1PO
>

Hi Peter,

"What do you get when you multiply 6 times 7?"

The ultimate question of life, the universe, and everything.

73's
Richard Clark, KB7QHC

2728. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 16:22:11 UTC
From: kb7qhc@home.com
Message-ID: <3af5d6ab.676957082@news.seanet.com>
Source record: 164174

On Fri, 04 May 2001 08:50:39 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Reg Edwards wrote:
>> Isn't it obvious the 95.6% of matter which is "missing" is in the
>> form of black holes.
>
>Not as "black holes" are defined presently. The black hole defined
>at the center of our galaxy is not big enough to account for the
>gravity in our galaxy. Our definition of a "black hole" may need
>to be expanded.

Hi All,

You are still stuck in a question settled a year ago by cosmology.

And black holes, that was settled 20 years ago with a disney movie of
the same name.

The more important question these days is what accounts for black
energy?

73's
Richard Clark, KB7QHC

2729. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 17:11:20 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3AF2E2B8.79908566@uci.edu>
Source record: 164175
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Tom W8JI wrote:
>
> On Thu, 03 May 2001 15:30:04 -0700, Jim Kelley <jwkelley@uci.edu>
> wrote:
>
> >Tom W8JI wrote:

> >> Freebanding is closer to the example of driving on the shoulder of the
> >> road...or the wrong way on a one-way street....or driving without a
> >> license...than it is to littering.

> >I take it you haven't heard the Dennis Leary song. It's called "The
> >A$$hole Song."

> Never heard it. Is he related to Tim Leary?

I have no idea. He does have a prime time television show on ABC
however.
It's a JOKE Tom. Go buy a sense of humor.

2730. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 17:20:36 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF2E4E4.9DE2B40F@IEEE.org>
Source record: 164176

Richard Clark wrote:
> You are still stuck in a question settled a year ago by cosmology.

The question is: Where is the missing mass that explains the observable
gravitational forces. Just saying there must be "dark matter" out
there doesn't explain much. What is the nature of the "dark matter"?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2731. Re: B&W Folded dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 17:22:48 UTC
From: Roger Leone <arleone@inreach.com>
Message-ID: <8BBI6.528$ca.2220@news.inreach.com>
Source record: 164177

I think we should stop criticizing this antenna and focus on its best feature: If more hams used it there would be a lot less QRM on our bands...

Roger K6XQ

2732. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 17:37:20 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF2E8D0.C63B6346@IEEE.org>
Source record: 164178
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Ron in NC wrote:
> You may not believe him, but there's one I believe,
> (no make that KNOW) and that is that most of
> the folks on this NG, like me are not interested
> in your BS and wish you would do it by private email.

Compared to the other BS on this rec.radio.amateur.policy
NG, this one is minor.
--
http://www.mindspring.com/~w6rca

2733. Re: B&W Folded dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 17:42:12 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF2E9F4.17DAD14A@IEEE.org>
Source record: 164179

Roger Leone wrote:
>
> I think we should stop criticizing this antenna and focus on its best
> feature: If more hams used it there would be a lot less QRM on our bands...

And a lot more global warming. :-)
--
http://www.mindspring.com/~w6rca

2734. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 17:54:13 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <91CI6.206$B%4.118512@dfiatx1-snr1.gtei.net>
Source record: 164181
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF2B79B.1F7EA7FB@IEEE.org...
> "Rob St.Denis" wrote:
> > I have never received a speeding or any other traffic infraction. I
have
> > never received a warning. I never speed. I always use my turn
> > signals/mirrors/shoulder check when turning and changing lanes. There
is no
> > need to. I always give myself ample time to get anywhere. I have
never
> > received a parking ticket either. Speeding is stupid AND illegal.
>
> I don't believe you, Rob, but if you are telling the truth, you are
> abnormal and among an insignificant number of citizens.
> --

I don't know about that. I have been driving on the Los Angeles area freeways and city streets for 32 years and I have never received a traffic ticket either. I don't think this is as rare as you think - I know of several other people who have also never been cited for a moving violation.

I have, however, received a parking ticket from a city that did not allow overnight street parking in residential neighborhoods, and "forgot" to post any warning signs. A new twist on the old "speed traps" ? :>)

Anyway, I challenged the citation on the basis of 1) the violation was not done intentionally, and 2) the violation was a direct result of the city's failure to post adequate signage informing the public of the ordinance. The judge concurred and dismissed the citation.

73 de W6DKN

2735. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 18:06:52 UTC
From: arrow146@aol.com
Message-ID: <20010504140652.00142.00001242@ng-mn1.aol.com>
Source record: 164182

>Sideband wrote:

> Hit Wilson's site and read up on what a Wilson Silver Load is....
> Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)

A 5/8 wave antenna for 11 meters is 255 inches or 21.27 feet.

Just because Wilson says it, don't make it so.
But I guess CBers will believe most anything.

73 Al Lowe N0IMW
ArrowAntenna.com

2736. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 18:10:42 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AF2F0A2.4ABE3192@mwci.net>
Source record: 164183

William E. Sabin wrote:

> Roy Lewallen wrote:
>
> > If a piece of coax acts as a transformer from the center conductor to
> > the braid, consider the following:
> >
> > Take a quarter electrical wavelength of 50 ohm semi-rigid coax (the kind
> > with a solid shield). Wind the coax into a coil and dunk the whole thing
> > into a solder pot. (Or cast the whole thing into a block of metal.) I
> > hope you'll agree that there's no drop from one end of the shield to the
> > other, or from any point along the shield to any other.
> >
> > Excite one end with a one volt generator and terminate the other end
> > with a 500 ohm resistor. The voltage across the resistor (assuming
> > negligible cable loss) will be 10 volts, lagging the source by 90
> > degrees. The voltage from one end of the center conductor to the other
> > (Vout - Vin) = -1 - j10 which is a magnitude of 10.5 volts. So it seems
> > that we've created a transformer with 10.5 volts across one "winding"
> > and zero across the other. How do you explain this?
>
> It's like any other impedance transformer. If you ground one end of the input side and
one end of the output side
> you still have an impedance transformer. And you still have a common mode voltage
increase, but it is all along
> the center wire. To prove it, just add up the rms voltages around the four terminals.
>
> If the braid output is floating, this common mode voltage is shared between center wire
and braid, according to
> their respective common mode impedances.
>
> Keep in mind that the actual impedance transformation is occurring in the differential
mode.
>
> I am sure you know all of this as well as I do, and you don't need my help.
>
> Bill W0IYH

There is something else that improves the perspective a little. Because the impedance
transformation inside the coax
is in a differential mode, the usual cancellation of H fields from the center wire and the
inside of the braid occurs
quite well in the this mode, and very little radiation occurs outside the coax. This is
what we expect in a
differential mode transmission line that has a standing wave. And this means that the CM

voltage on the outside is
small.

I did the following test:

I connected a 470 ohm resistor to the end of a 12 foot RG58 at 10 MHZ. Using a diode detector and a battery operated
10 Megohm DVM, I measured 8.1 V directly across the 470 ohm resistor. I then moved the ground lead of the detector to
the sig gen ground of the coax and the voltage was almost identical. The drop measured along the length of the braid
was only about 25 mV, which was probably not very accurate. A high Z balun added to the coax produced negligible
change.

The internal differential fields are very well canceled inside the coax when the load is across the output, with no
ground tap on the resistor.

Bill W0IYH

2737. proof

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 18:20:56 UTC
From: Serafini <nerva4@mywebpages.com>
Message-ID: <3AF2F307.20B52388@mywebpages.com>
Source record: 164184

proof

2738. Re: Two current braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 18:39:49 UTC
From: richardharrison@webtv.net
Message-ID: <2975-3AF2F775-170@storefull-117.iap.bryant.webtv.net>
Source record: 164185

Roger Sparks wrote:
"Thinking about the drawing in the ARRL Antenna Book showing current looping back down the coax braid at the antenna connection, I think of how similar this is to a section of shorted transmission line."

The "drawing" mentioned in this thread has been Fig 24, page 26-16, of edition 19 of the "Antenna Book". There is a generator on one end, and an antenna on the other end. No short except around the butt-ends of the cable shield at the top, and bottom. There is also no mention of braid, and from the appearances, the cable shield is solid. The leaky shield phenomenon would have nothing to do with the around end run of the r-f current. Anyone can divert a thread for any purpose and that makes them interesting. This one is titled two current braid, so a leakage discussion is perhaps implied in the title, but the leakage through the braid is not a part of the ARRL figure, as I see it.

I like Fig 24, and think the text is exactly correct.

Best regards, Richard Harrison, KB5WZI

2739. Re: proof

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 18:49:01 UTC
From: jimmy john <jj@sandwitch.org>
Message-ID: <4A8A59F2BDCDD311BFC800508BA36AC8087EA29A@www.premiersi.com>
Source record: 164189

pudding

"Serafini" <nerva4@mywebpages.com> wrote in message
news:3AF2F307.20B52388@mywebpages.com...
> proof

2740. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 18:53:34 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <OUCI6.15396$2_.5427521@news3.rdc1.on.home.com>
Source record: 164186
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Plus on a rather hedonistic point of view ... it annoys the hell out of those drivers who are in such a hurry to get nowhere as to risk their and others lives. I have to bring the camera one of these days to catch their expressions =)

--
Rob St.Denis

"W6DKN" <w6dkn@qsl.net> wrote in message news:91CI6.206$B%4.118512@dfiatx1-snr1.gtei.net...
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3AF2B79B.1F7EA7FB@IEEE.org...
> > "Rob St.Denis" wrote:
> > > I have never received a speeding or any other traffic infraction. I
> have
> > > never received a warning. I never speed. I always use my turn
> > > signals/mirrors/shoulder check when turning and changing lanes. There
> is no
> > > need to. I always give myself ample time to get anywhere. I have
> never
> > > received a parking ticket either. Speeding is stupid AND illegal.
> >
> > I don't believe you, Rob, but if you are telling the truth, you are
> > abnormal and among an insignificant number of citizens.
> > --
>
> I don't know about that. I have been driving on the Los Angeles area
> freeways and city streets for 32 years and I have never received a traffic
> ticket either. I don't think this is as rare as you think - I know of
> several other people who have also never been cited for a moving violation.
>
> I have, however, received a parking ticket from a city that did not allow
> overnight street parking in residential neighborhoods, and "forgot" to post
> any warning signs. A new twist on the old "speed traps" ? :>)
>
> Anyway, I challenged the citation on the basis of 1) the violation was not
> done intentionally, and 2) the violation was a direct result of the city's
> failure to post adequate signage informing the public of the ordinance. The
> judge concurred and dismissed the citation.
>

>
> 73 de W6DKN
>
>

2741. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 18:54:58 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <6WCI6.15400$2_.5429459@news3.rdc1.on.home.com>
Source record: 164187

if ya readclearly it says it performs as well as a 5/8ths ... but ...
performance is a shady area good buddy (i kill me hehehehe)

--
Rob St.Denis

"Arrow146" <arrow146@aol.com> wrote in message
news:20010504140652.00142.00001242@ng-mn1.aol.com...
> >Sideband wrote:
>
> > Hit Wilson's site and read up on what a Wilson Silver Load is....
> > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
>
> A 5/8 wave antenna for 11 meters is 255 inches or 21.27 feet.
>
> Just because Wilson says it, don't make it so.
> But I guess CBers will believe most anything.
>
> 73 Al Lowe N0IMW
> ArrowAntenna.com

2742. hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 19:00:56 UTC
From: N3VST <not@chance.com>
Message-ID: <c%CI6.9215$R2.7157648@newsrump.sjc.telocity.net>
Source record: 164188

11 meters was once a ham band. Hams can still go there, use your callsign and follow all the rules. Of course do not use you ham gear there, buy a cheap CB. If we hams again populate this band maybe we can win it back, for sole amateur use. If would be great to have another digital band.. Just some thoughts. One thing I have found is that the freeband cb'ers do not like be associated with hams and our rules and practices. I think it is time to take back the bands.

73, N3VST

2743. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 19:12:24 UTC
From: kb7qhc@home.com
Message-ID: <3af2fe0c.687038559@news.seanet.com>
Source record: 164190

On Fri, 04 May 2001 12:20:36 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> You are still stuck in a question settled a year ago by cosmology.
>
>The question is: Where is the missing mass that explains the observable
>gravitational forces. Just saying there must be "dark matter" out
>there doesn't explain much. What is the nature of the "dark matter"?

Hi Cecil,

Can't explain it because I didn't say it. You still appear to be
stuck on an old topic.

I said "Dark Energy." Dark Matter has been settled by Cosmologists
about a year ago, the more significant issue is Dark Energy.

73's
Richard Clark, KB7QHC

2744. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 19:21:17 UTC
From: ? & The Mysterians <nospam@clearsail.net>
Message-ID: <3AF3012D.11E1429E@clearsail.net>
Source record: 164191

Nice thought, but that's like trying to win the drug war with slingshots.
You're outgunned if you play by the rules! If you don't, they moan to the feds.

N3VST wrote:

> 11 meters was once a ham band. Hams can still go there, use your callsign
> and follow all the rules. Of course do not use you ham gear there, buy a
> cheap CB. If we hams again populate this band maybe we can win it back, for
> sole amateur use. If would be great to have another digital band.. Just
> some thoughts. One thing I have found is that the freeband cb'ers do not
> like be associated with hams and our rules and practices. I think it is
> time to take back the bands.
>
> 73, N3VST

2745. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 19:29:55 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <TqDI6.15583$2_.5480291@news3.rdc1.on.home.com>
Source record: 164192

Would never work ... too many cb'ers out there to butt heads with ...better
off sending out an oscilatting tone at a few kilowatts in major cities
accross north america for a couple years to annoy the heck out of them ...
then they will lose interest and then we can take it back

--
Rob St.Denis

"N3VST" <not@chance.com> wrote in message
news:c%CI6.9215$R2.7157648@newsrump.sjc.telocity.net...
> 11 meters was once a ham band. Hams can still go there, use your callsign
> and follow all the rules. Of course do not use you ham gear there, buy a
> cheap CB. If we hams again populate this band maybe we can win it back,
for
> sole amateur use. If would be great to have another digital band.. Just
> some thoughts. One thing I have found is that the freeband cb'ers do not
> like be associated with hams and our rules and practices. I think it is
> time to take back the bands.
>
>
> 73, N3VST
>
>

2746. Problem with "skin effect theory"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 19:44:10 UTC
From: Serafini <nerva4@mywebpages.com>
Message-ID: <3AF30689.F40234CD@mywebpages.com>
Source record: 164193

I have a problem about ï¿½skin effect theoryï¿½

In a past discussions I found the following comments about ï¿½skin effectï¿½
:

ï¿½ï¿½ï¿½Ramo, Whinnery and Van Duzer in "Fields and Waves in Communication
Electronics", section 5.13 to 5.20 discuss skin effect.
In section 5.18 they present a general formula for impedance of
a round wire as a function of skin depth.
In section 5.17 they present approximations for low and high
frequencies as follows:

With ro = radius of the round wire (meters)
del = skin depth (meters)
= 1/(pi*f*mu*sigma)^.5
f = frequency
mu = material permeability (henrys/meter)
(4*pi*10^-7 for good conductors)
sigma = material conductivity (mhos/meter)
(5.8*10^7 for copper, for example)
Ro = 1/(pi*sigma*ro^2) (DC resistance)

O ro/del < 2 (low frequencies)

R/Ro = 1 + (1/48)*(ro/del)^4

(approx. 6% error at ro/del = 2)

O ro/del > 2 (high frequencies)

R/Ro = ro/(2*del)

By the way, in section 5.16 they present an equation for current
as:
| Iz/Io | = e^[-(ro-r)/del]

where r is the distance measured from the center of the wire

(So it looks to me that at 2*del from the conductor edge,
the current has decreased to e^(-2) of its value at the edge.)
ï¿½ï¿½ï¿½ï¿½ï¿½
and
ï¿½ï¿½ï¿½..(at a certain frequency)
at 1 skin depth there is about 63% of current density
at 2 skin depth there is about 86% of current density
at 3 skin depth there is about 95% of current density
at 4.6 skin depth there is about 99% of current densityï¿½ï¿½ï¿½

Now I ask if it is possible to say that the formula of skin effect migh depend too from the power of the current, i.e. material permeability is not the same for every flow of current for the fact that the material of the antenna must have its hysteresis curve at every annulus area.
So increasing the power , at constant ro , f and sigma , the distribution of the current density for magnetic field ,for diamagnetic conductors, must increase as increase skin depth , for the fact that the external annulus area need to have a greather DECREASE of hysteresis of lower annulus areas in a manner that : (for example)
at 1 skin depth there might be about 62% of current density
at 2 skin depth might be about 87% of current density
at 3 skin depth might be about 96% of current density ï¿½ï¿½ï¿½
The opposite for current density it seem to me that might happen for ferromagnetic conductors the external annulus area need to have a greather POSITIVE hysteresis of lower annulus areas
In such hypothesis clearly I donï¿½t evaluate a decrease of conductivity as density current increase

Antonio

2747. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 19:52:27 UTC
From: sparky@cet.com
Message-ID: <3af307b4.357836@news.cet.com>
Source record: 164194
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Fri, 04 May 2001 08:30:25 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>"Rob St.Denis" wrote:
>> It's a simple law that you choose to disobey, you obviously think yourself
>> grandiose enough to decide which law should be followed and which shouldn't.
>
>You are implying that you have never driven above the speed limit, Rob.
>Will you swear that you have never broken a traffic law? Have you never
>gotten a traffic ticket or a parking ticket?
>--

The vast majority of speeders don't purchase and install special
equipment (linear amps) and modify their rigs (frequency mods) with
the sole intention of breaking the law.

2748. Re: proof

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 19:58:00 UTC
From: kd1jt@arrl.net
Message-ID: <3af30a03.22493440@news.mybizz.net>
Source record: 164195

On Fri, 04 May 2001 20:20:56 +0200, Serafini <nerva4@mywebpages.com>
wrote:

>proof

pud<proof>ding

2749. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 19:59:54 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <_SDI6.15713$2_.5522308@news3.rdc1.on.home.com>
Source record: 164196
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

No their equipment (cars) are capable of breaking laws without any
modification at all.

--
Rob St.Denis

"Sparky" <sparky@cet.com> wrote in message
news:3af307b4.357836@news.cet.com...
> On Fri, 04 May 2001 08:30:25 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >"Rob St.Denis" wrote:
> >> It's a simple law that you choose to disobey, you obviously think
yourself
> >> grandiose enough to decide which law should be followed and which
shouldn't.
> >
> >You are implying that you have never driven above the speed limit, Rob.
> >Will you swear that you have never broken a traffic law? Have you never
> >gotten a traffic ticket or a parking ticket?
> >--
>
> The vast majority of speeders don't purchase and install special
> equipment (linear amps) and modify their rigs (frequency mods) with
> the sole intention of breaking the law.

2750. Re: proof

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 20:02:11 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <7VDI6.47503$Ce4.3522526@news1.rdc1.ct.home.com>
Source record: 164197

Proof, the magic dragon, lived by the sea...
in a magic land, called....

never mind..

"Dennis Collin" <kd1jt@arrl.net> wrote in message
news:3af30a03.22493440@news.mybizz.net...
> On Fri, 04 May 2001 20:20:56 +0200, Serafini <nerva4@mywebpages.com>
> wrote:
>
> >proof
>
> pud<proof>ding

2751. Re: REC.RADIO.AMATEUR.ANTENNA?????

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 20:12:09 UTC
From: la8ak@online.no
Message-ID: <3af30aeb.695437528@news.online.no>
Source record: 164198

On Fri, 4 May 2001 13:59:50 +0300, "OH8MFH" <oh8mfh@hotmail.com>
wrote:

>The reason that many hams ask questions about commercial stuff might be the
>endless curiosity that at least I suffer from: any time I see any antenna,
>for example, I start thinking "How does it work? Is it an efficient antenna?
>Could I use the idea for any ham stuff? Could I learn anything from it?"
>
>Anyone else as crazy as I am? :-)
>
> 73, Kari

Kari, sure you have learnt something important, on this side of the
ocean we have Halgon and Kathrein, and I see no reason not to spy on
their techniques instead of trying to invent it by oneself

seems to be a lot of persons considering inventing the so-called gun
powder here...

73
Jan-Martin
LA8AK

2752. New links today !

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 20:31:07 UTC
From: F5lcy <f5lcy@wanadoo.fr>
Message-ID: <9cv3um$5hq$7@wanadoo.fr>
Source record: 164199

F6KEH amateur radio resources site has been yet updated !

Site in french, english and spanish
Visit it !
http://f6keh.free.fr/index_r

2753. X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 20:37:12 UTC
From: Helge Dommarsnes <hdom@online.no>
Message-ID: <NzEI6.6301$gX3.339655@news3.oke.nextra.no>
Source record: 164202

Hi
Does anyone have experience with these types of antennas?
I'm considering to test one of these antennas on my very "limited space QTH". Some vendors claim very high performance close to, or better than supergain performance, but I can't say that I have reached such high performance in simulation with MININEC. Anyone that have practical experience they want to share?

--
Helge LA1DGA

2754. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 20:43:15 UTC
From: sparky@cet.com
Message-ID: <3af311f1.2978637@news.cet.com>
Source record: 164200
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Fri, 04 May 2001 19:59:54 GMT, "Rob St.Denis"
<tstdenis3160@home.com> wrote:

>No their equipment (cars) are capable of breaking laws without any
>modification at all.

My point exactly. 'Freebanding' is a deliberate act, carefully planned and executed. But just for the sake of argument, suppose you live on a street where the speed limit is posted at 4mph. How long until you get fed up with people cruising past your house at 1000mph? More realistically, your street is probably 25mph, and that would clock those speeders at 6250MPH!!!! Not just that, but these speeders hold drag races, don't use any mufflers, and drive off-road right through private property. When these speeders are caught, the fines are typically more than ten times that of speeders on the highway. So how do you compare radio pirates to speeding?

>Rob St.Denis

BTW, any relation to Bill St.Denis in Spokane?

2755. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 20:47:45 UTC
From: wa9mzt@arrl.net
Message-ID: <3af31230.83137946@news.fuse.net>
Source record: 164201

Wouldn't the copper strap mentioned by polyphase be another solution
to using braid or solid?? It offers more surface area and would
allow for more skin effect, but I think it is significantly more
money.

I can't leave the conductor that connects the ground rods on top of
the ground, so I need to bury it at least somewhat.

Thanks,

Steve

What would the world be without different opinions and therories? I
think we all want what is the best and safest!

On Thu, 03 May 2001 14:08:53 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:

>On Wed, 02 May 2001 17:13:40 -0400, Denver Braughler
><Braughler@bwcc.com> wrote:
>
>>> Never use braiding for a ground unless you have absolutely no choice
>>> (because of flexing).
>>Lightning is not that particular about resistance.
>>Having just arced 20000 ft, encountering another 20 ohms of resistance won't make a lot
of difference.
>
>Very bad advice and logic Denver, especially when dealing with a
>safety issue like this.
>
>With current in the thousands of amperes, lightning DOES care above
>even small increases in impedance. The function of a grounding strap
>is to tie points together with a LOW impeance so the voltage drop
>between those points is minimal.
>
>Put bluntly, it is foolish to use braiding for a lightning ground.
>
>>> Dry, clean, tightly packed braid has several times the RF resistance
>>> of a smooth conductor the same size. The clean dry shiney briad of
>>> RG-8 has about the same RF resistance as a number 12 wire.
>>We don't want the lightning to travel end to end freely.
>>We want it to dissipate into the ground.
>>
>>> When it is loosely packed, or if it tarnishes, it is like a resistor
>>> for RF. It is terrible.
>>And the center of solid conductor is better.
>>Are you a non-believer in skin-effect?

>>
>>I agree that it would be nice if the braid didn't get dirt or water in it.
>>But it is not intended to conduct very far or efficiently.
>
>Bad assumption. Bad advice.
>
>Lightning grounds are highly critical for impedance at high
>frequencies. Current divides in a direct relationship to path
>impedances, and you want the path to earth to be a low impedance.
>
>ALL commercial recommendations prohibit braiding in lightning
>suppression systems unless the conductor has to be able to withstand
>flexing.
>
>NEVER use braided wire for lightning (or RF) grounds unless the
>conductor has to be flexed. If you use braiding, it has to be many
>times larger area than a solid smooth conductor to have the same RF
>resistance.
>
>If it tarnishes even the slightest amount, the impedance (resistance
>and reactance) goes way up! This is a fact, not a guess.
>
>73 Tom

2756. Re: Need Portable, Lightweight, and Shortened 20 Meter Antenna for PSK31

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 20:56:05 UTC
From: Jon M0BQQ <jon.m0bqq@ntlworld.com>
Message-ID: <VHEI6.22368$Kt2.2483778@news6-win.server.ntlworld.com>
Source record: 164204

Les

There is a design which I'm sure that you can modify for portability at:
http://www.g3ycc.karoo.net/shorty.htm

I have built one for SSB and it works great.

Jon M0BQQ

2757. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 20:56:27 UTC
From: "Leland C. Scott" <no-spam@junk-mail.net>
Message-ID: <tf65rusmrlfnda@corp.supernews.com>
Source record: 164203
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF2090C.2C9DD715@spam.me.not...
> Actually, I don't have my license yet. I go for my written tests next
> week.

I wish you good luck and hope you make it!!! You have any equipment yet? If not what are you looking at getting?

> I've been studying code for over two years (see the other thread:
> Ticket test suggestions for more info on this) without much result. I
> won't go into that rigmarole again here. It's already in that other
> thread.

Yeah, I know what you mean there.

> That's a bit reactionary, Leland. I don't think legalizing drugs is an
> option. I don't see the connection between the two.

To a point true, but I think you get my drift however. Until somebody makes a stand and says "NO MORE" they will just keep taking what is not theirs to take.

> I'm proposing additional bandwidth for a particular mode of operation in
> order to help alleviate some of the congestion on an already overtaxed
> and overused band, which may just help to reduce the encroachment by
> unlicensed radio operators on HAM bands.

You have to stop and think about the mechanics a little bit. If a new band was created, as you suggest, then there will appear commercial rigs to operate on the new band. Once that happens then hordes of other CBers, looking for a clear channel to talk on, will show up over running the operators there now. Now we have the same situation all over again. SSB operators looking for the open band. They have to learn to be happy with what they already "legally" have.

Ham Radio is not going to be any different either once you get your ticket. Sometimes the bands get crowed so you either put up with it, move, or turn the rig off. We don't just spin the VFO knob looking for an open frequency outside of our legal bands like the freebanders currently do on 11m. Hams seem to have much more respect for their privileges than freeband CBers do. I think Hams have more sense of respect for others rights to radio spectrum than the freebanders do. If there is any spectrum use disagreement it is taken up with the FCC, and let them decide. Hams don't just "occupy" spectrum outside of our bands because we feel we have a "right" to it.

--
--
73 de,

Leland C. Scott
KC8LDO

ARRL member
NCI member

"You ask what Morse Code is good for? I'll tell you. Morse
Code is used exclusively by Electronics Based life forms to
communicate amongst themselves using advanced Organic
Digital Signal Processors, running state of the art Artificial
Intelligence Software, to perform the highly complex
transmit encryption, receive decryption and error correction
functions."

2758. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 21:05:45 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <JQEI6.16016$2_.5622874@news3.rdc1.on.home.com>
Source record: 164205
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

"Sparky" <sparky@cet.com> wrote in message
news:3af311f1.2978637@news.cet.com...
> On Fri, 04 May 2001 19:59:54 GMT, "Rob St.Denis"
> <tstdenis3160@home.com> wrote:
>
> >No their equipment (cars) are capable of breaking laws without any
> >modification at all.
>
> My point exactly. 'Freebanding' is a deliberate act, carefully planned

so is speeding, I'm not talking touching the accelerator a little too much off a light or anything I'm talking hitting the highway at 120kmh ... people do it and say well its not that much ... when that can land a hefty fine and 2 points on your licence ...

> and executed. But just for the sake of argument, suppose you live on a
> street where the speed limit is posted at 4mph. How long until you get
> fed up with people cruising past your house at 1000mph? More
> realistically, your street is probably 25mph, and that would clock
> those speeders at 6250MPH!!!! Not just that, but these speeders hold
> drag races, don't use any mufflers, and drive off-road right through
> private property. When these speeders are caught, the fines are
> typically more than ten times that of speeders on the highway. So how
> do you compare radio pirates to speeding?

They both willfully break the law. They both know that they did it (although ignorance is no excuse), heck "freebanders" have a term for their crime, "freebanding". They use a portion of the spectra reserved for other services, which in turn can lead to prolonging those services and in the case of millitary and SAR that could mean someones life the same as doing +20% on the high way makes you more of a danger to other drivers.

> BTW, any relation to Bill St.Denis in Spokane?

Nope ... I'm a canuck.

--
Rob St.Denis

2759. Re: Need Portable, Lightweight, and Shortened 20 Meter Antenna for PSK31

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 21:06:45 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <FREI6.16021$2_.5623670@news3.rdc1.on.home.com>
Source record: 164206

Dipoles are nice and durable not to mention light weight.

--
Rob St.Denis

"Jon M0BQQ" <jon.m0bqq@ntlworld.com> wrote in message
news:VHEI6.22368$Kt2.2483778@news6-win.server.ntlworld.com...
> Les
>
> There is a design which I'm sure that you can modify for portability at:
> http://www.g3ycc.karoo.net/shorty.htm
>
> I have built one for SSB and it works great.
>
> Jon M0BQQ
>
>

2760. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 21:38:48 UTC
From: sparky@cet.com
Message-ID: <3af31ea3.6228165@news.cet.com>
Source record: 164207
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Fri, 04 May 2001 21:05:45 GMT, "Rob St.Denis"
<tstdenis3160@home.com> wrote:

>> My point exactly. 'Freebanding' is a deliberate act, carefully planned
>
>so is speeding, I'm not talking touching the accelerator a little too much
>off a light or anything I'm talking hitting the highway at 120kmh ... people
>do it and say well its not that much ... when that can land a hefty fine and
>2 points on your licence ...

The difference is that when you run a kilowatt amp, you do it with the
sole intent of breaking the law -- you purchased the amp in order to
break the law and nothing else. Not true with a car, unless your car
can only operate above the speed limit.

>> and executed. But just for the sake of argument, suppose you live on a
>> street where the speed limit is posted at 4mph. How long until you get
>> fed up with people cruising past your house at 1000mph? More
>> realistically, your street is probably 25mph, and that would clock
>> those speeders at 6250MPH!!!! Not just that, but these speeders hold
>> drag races, don't use any mufflers, and drive off-road right through
>> private property. When these speeders are caught, the fines are
>> typically more than ten times that of speeders on the highway. So how
>> do you compare radio pirates to speeding?
>
>They both willfully break the law. They both know that they did it
>(although ignorance is no excuse), heck "freebanders" have a term for their
>crime, "freebanding". They use a portion of the spectra reserved for other
>services, which in turn can lead to prolonging those services and in the
>case of millitary and SAR that could mean someones life the same as doing
>+20% on the high way makes you more of a danger to other drivers.

I agree with you there, as it is yet another reason against pirate
radio.

>> BTW, any relation to Bill St.Denis in Spokane?
>
>Nope ... I'm a canuck.

He family is from Quebec, but he just told me that just about every
other person there is a St.Denis ;-)

2761. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 21:50:06 UTC
From: GG <nbc_red@mailcity.com>
Message-ID: <3AF315A0.CB0F1A8B@mailcity.com>
Source record: 164208
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

That might hold only if I know you are there and don't protest or make
an effort to have you removed. If you are using the land without my
knowledge, and you have made no effort to contact me, not only will I
retain the property but your improvements as well.

W6RCecilA wrote:
>
> GG wrote:
> > Sorry, but in Texas if the owner is paying the taxes on the property,
> > it doesn't matter if he never uses it, it still belongs to him and no
> > one can claim ownership by just using it. I have some pasture land in
> > west Texas that hasn't been used in some years, but I pay the taxes on
> > it every year. You go and try to use it and claim it as yours and see
> > how far you get.
>
> If you allow me to nest for a certain number of years without protest,
> and it is I and not you who does improvements to the property, I can
> go to court and obtain ownership of the property. Certain conditions
> must be meet and your property becomes mine.
> --
> http://www.mindspring.com/~w6rca

2762. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 22:50:41 UTC
From: HelmutSweenie <helmutsweenie@youranus.com>
Message-ID: <5nGI6.47666$B22.11940850@news1.rdc2.pa.home.com>
Source record: 164210
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

A 2 watt carrier? do you just sit there and throw dead keys or do you talk.
If you do talk I am sure it is more than 2 watts so your deadkey figure is
irrelavent.

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF25F37.669914B6@spam.me.not...
> Well, I'm heard with a 2 watt carrier over 20 miles away straight shot,
> so I must have done something right.
>
> ::shrug::
>
> -SSB
>
> "David G. Nagel" wrote:
> >
> > No. Two 5/8 wave loaded antenna's do not make a 1 1/4 wave dipole. They
> > make a dipole composed of two 5/8 wave loaded antenna's. This
> > configuration will not make a truly efficient antenna. Read up on
> > collinear antenna's and dipole antenna's. You will see that what you
> > have is nothing. However for you sake I do hope it works to your
> > satisfaction. I prefer something else...
> >
> > Dave WD9BDZ
> >
> > Sideband wrote:
> > >
> > > Doug:
> > >
> > > Hit Wilson's site and read up on what a Wilson Silver Load is....
> > >
> > > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
> > > top loaded coil antenna. Two of them make 1 1/4 wave. Maybe I should
> > > have said 1 1/4 wave dipole?
> > >
> > > -SSB
> > >
> > > Doug Smith wrote:
> > > >
> > > > On Thu, 03 May 2001 09:31:36 -0400, Sideband <sideband@spam.me.not>
wrote:
> > > > >them as well. Granted, I run a 5/8 dipole on the car (two 4' Wilson
> > > > >
> > > > Uh, 8 feet is not 5/8 wave on 11 meters. A 102" (8-1/2') whip is

1/4 wave,
> > > > so a 5/8 wave would be a bit more than 17 feet long.
> > > >
> > > > (you should try a 102" whip, I think you're likely to find it more
effective
> > > > than the twin four-footers. Because you won't have loading-coil
losses.
> > > > Mine worked *fantastically* well on 10 meters with a converted SSB
CB.)
> > > > --
> > > > Doug Smith W9WI
> > > > Pleasant View (Nashville), TN EM66
> > > > http://www.w9wi.com

2763. Re: B&W Folded dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 22:54:28 UTC
From: on4caf@qsl.net
Message-ID: <d8c6ft4euektrt45oig7fl4r08eg8pl9ol@4ax.com>
Source record: 164212

On Fri, 04 May 2001 12:42:12 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Roger Leone wrote:
>>
>> I think we should stop criticizing this antenna and focus on its best
>> feature: If more hams used it there would be a lot less QRM on our bands...
>
>And a lot more global warming. :-)

Not true.
Exept what is radiated into space, all radiated power will end up in heat on
earth. ;-)

2764. Lightning conductors.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 22:56:27 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cvbtv$kq8$1@neptunium.btinternet.com>
Source record: 164211

Tom wrote -
> It is bad advice to tell others to use braided conductors for
> lightning protection (or RF grounds) unless the comnnection needs
to
> be flexed repeatedly. The impedance is higher, the life is
shorter,
> and any tarnish causes the impedance to skyrocket.
==========
Tom, your frightening description of what happens to tarnished braid is reasonable and believable. But when it is quantified it doesn't matter all that much.

Take the case of coax. In 50-ohm solid polyethylene coax the attenuation due to the outer conductor is only 22% of the total attentuation. The other 78% is due to the inner conductor because of its much smaller diameter. In 75-ohm coax only 13% of attenuation is due to the outer conductor. Conclusion, coax attenuation is relatively insensitive to outer conductor resistance. And its not very high anyway.

While it may be true that a tarnished braid can have a small effect on internal inductance and reactance of a coaxial outer conductor, the internal inductance itself is only a tiny fraction of the total line inductance which is a function of the ratio of the conductor diameters.

In the case of a braided lightning conductor the resistance and internal reactance of the conductor has nothing to do with what happens during a lightning strike. Tarnished or not, the conductor behaves as a low-loss transmission line. Its inductance and capacitance to its surroundings determine its impedance Zo.

L and C and Zo and Velocity are functions only of the spacing between the conductor and its surrounding and of the width of the conductor. Zo and V will remain the same whether it is braided or not. So what happens during a strike will remain unchanged..

Before lightning hits, the electric field will not be influenced by conductor resistance unless the conductor is broken at some point and becomes fully insulated from ground.

If the lightning has a choice of paths from where it strikes down to the ground, it is Zo which influences that choice - not the resistance between that point and ground which is nearly all in the soil. There is also the velocity and propagation time to consider.

Once current starts to flow energy begins to be dumped in the soil resistance. Only a small fraction heats up the conductor R. Current is limited by Zo not R. If the soil resistance does not match Zo (it never does) then the leading edge of the downcoming pulse is reflected back up the conductor. There is then a damped oscillation up and down the line, depending on its length, until the energy has been dissipated in the soil with a little to spare in the line resistance.

The whole business can be crudely modelled. Assume the lightning to be applied from a constant current source. If the current is 10,000 amps and Zo is 400 ohms then the input voltage is 4 million olts - until the reflected voltage of opposite polarity comes back from the ground rod . . . . . and so on. That should give you reflection wizards something to get your teeth into.

Phew! Reg.

2765. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 22:57:53 UTC
From: graham dyer <grahamva3gjb@sympatico.ca>
Message-ID: <9hGI6.15668$nC6.1870418@news20.bellglobal.com>
Source record: 164209
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

hey you got a ticket or you don't there is no in betweens
goofball!!!!!!!!!!!!!

graham va3gjb

"W4NTI" <w4nti@nospammindspring.com> wrote in message
news:9cq7onqpr1@slb4.atl.mindspring.net...
> Look dumbass...you ain't going to convince the people that have a license.
> So quite trying to explain what you think is alright. The bottom line is
> YOU ARE ILLEGAL. PERIOD.
>
> Dan/W4NTI
>
> "Bob" <bob@bob.com> wrote in message news:3AF09A1D.1F7C4E45@bob.com...
> > Ok, Mr. Letter of the Law.
> >
> > And I bet you ALWAYS obey the maximum posted speed limit. If you wanted
to
> speed,
> > you would take the right approach to speeding legally - because, hey
man,
> you do
> > EVERYTHING right. You would put your mind to becoming a race car driver
> and do your
> > speeding on the track where it belongs. You would follow the proper
steps
> to
> > becoming a race car driver:
> >
> > 1. Learn to ride a unicycle, because that's how it all started, man. Our
> > forefather's rode unicycles before fast cars were around, so must you
> learn.
> > 2. Learn everything there is to know about cars - including memorizing
the
> answers
> > to questions about walking, unicycles, horse and carriage, boats,
planes,
> etc.
> > 3. If you skip the step on learning to ride a unicycle, prepare to be
> chastised by
> > old-timers that had to learn how to ride it and by some who love the
> unicycle and
> > can ride it at over 20 mph! BTW - learning to ride the unicycle keeps
bad

> people
> > from becoming race car drivers.
> > 4. Prepare to spend some money. Your standard car won't do - it doesn't
> fit race
> > car specs! And every race track requires a different car and tire
> combination.
> >
> > Is becoming a race car driver what you should do because you like to
take
> those 15
> > turns of Bear Mountain road at an faster than the posted speed? Well,
ham
> radio IS
> > NOT a replacement for the "freeband" either. Ham radio doesn't fit
> everybody. Maybe
> > its a bit of an extreme commitment for some. Hey, I can operate my
> equipment and
> > make sure that it complies with the same rules the FCC mandates for
hams.
> I can
> > operate it responsibly. I can operate it courteously . I can use the
> minimum amount
> > of power necessary for a contact.
> >
> > Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is it
> immoral? A
> > crime against humanity? Absolutely not. To me - speeding in your car is
a
> far more
> > worse crime.
> >
> > BTW, I do not condone operating on ham bands or intentionally
interfering
> with any
> > service that I am aware of. Yes, I know there are (very few, non
> essential)
> > services allocated between 27.405 and 28Mhz. I support operations on
> 27.405 -
> > 27.855 Mhz that follow the same regulations that hams follow.
> >
> > Hopefully this metaphor can crack the thick skull of the "yes, but it's
> illegal,
> > yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't
> black and
> > white.
> >
> > Bob.
> >
> >
> > Scott Townley wrote:

> >
> > > But you *do* have all the respect you deserve...the same respect we
> > > all grant to FELONS, which is what you are, buddy...
> > >
> > > On 30 Apr 2001 21:04:39 GMT, "Twistedhed" <twistedhed@webtv.net>
> > > wrote:
> > >
> > > >
> > > >I am posting here because of some of the nasty things I have read in
> this
> > > >group and in QRZ discussions regarding freebanders. We who use the
> frequencies
> > > >from 27.405 to 28.000 have more in common with hams than you might
> think.
> > > >We are good operators and have knowledge of propagation and skip
> conditions.
> > > >We use Yasus, Kenwoods and Icomm radios just like you do, so we know
> technical
> > > >issues as well or better. However, the attitude of some hams toward
us
> is
> > > >rude and condescending. We are treated like 2nd class citizens.
This
> should
> > > >not be. We have the same rights under the constitution as legal hams
> do.
> > > >For those that do not wish to be under Uncle Sam's thumb, freebanding
> is
> > > >a viable alternative to getting a ham radio license. What I am saying
> is
> > > >that maybe the next time you meet a freebander it might be wise to
talk
> with
> > > >him before you condemn him.
> > > >
> > > >I am QRT and standing by. (No flames answered. Please reply via
email)
> > > >
> > > >Unit 2711, Florida
> > > >
> >
>
>

2766. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 23:13:25 UTC
From: w_tom <w_tom1@usa.net>
Message-ID: <3AF3378A.2A95FB41@usa.net>
Source record: 164214

Denver has a correct idea, but some recommendations are flawed. First, lightning is an ideal current source; not an ideal voltage source
- an EE101 engineering principal necesary to understand why lightning acts as it does. As long as lightning has a low impedance (not
resistance) connection to earth ground, then lightning has near no voltage. IOW that impedance is so ciritcal that a sharp bend in a ground
wire can actually cause arcing by increasing wire impedance. Lightning encounterd increased impedance at the bend, builds up a voltage, and
arc around the bend. Wire is not a conductor when talking of lightning. Even wire is an electronic component in the lightning strike
circuit.

Some excellent examples of earth grounding are in this .pdf file:
http://www.leminstruments.com/pdf/LEGP.pdf but you may have to get there via
http://leminstruments.com/application_notes/grounding_techniques.shtml

Ground must be buried at least 18" deep - NEC spec forgotten. That is for safety. Additionally earth ground must be below the frost line
to remain functional. Frosted earth becomes 'no earth ground'. (Also the only coax that can be buried is the more expensive stuff designed
for burial - most coax wire cannot be buied despite what so many CATV companies have done in the past 20 years.).

A lightning earth ground wire must be the solid type as properly noted. Buried must be something like 4 AWG. Connections to this earth
ground network vary - at least 10 AWG for CATV and telephone. Although a better earth ground embeds the ground metal in concrete. Yes, to
surge protection, concrete is an excellent connection to earth ground. However, the concrete rebar (and earth ground rods connected to a
buried ground cable) are cadwelded. See these Ufer ground testimonials:
http://scott-inc.com/html/ufer.htm and
http://lists.contesting.com/_towertalk/199909/0143.html .

We ground better to make a low impedance connection to earth ground - for surge protection (not addressed by the National Electrical code)
AND for human safety (NEC requirements). NEC wants 25 ohms BUT does not define how to measure it AND makes no requirements if the second rod
still does not achieve it. Surge protection wants a "Central Earth Ground" that is the best connect to earth - regardless of what the NEC
says. Since we never achieve a good earth ground, we also attempt to equialize voltage potential under / around the building. Since we
never achieve equal-potential under the building, we also want the earth ground to be lower impedance. That grounding is demonstrate in the
Lem Instruments .pdf application notes - espeically the cell phone tower earth ground network

Critical is central earth ground - not distributed grounds. This is demonstrated by Montandon and Rubinstein in IEEE Transactions on
Electromagnetic Compatibility 4 Nov 1998. Also all connected to earth ground should be short (less than 10 feet), direct (no bends or
splices), and independent (earth surge protector must have its own earth ground conneciton - no sharing). The NEC wants all earth grounds to
interconnect - for human safety. Surge protection wants that common connection to meet at the central earth ground - also called the MGB.

Lightning is not capricious as Denver would have you believe. It is statiscially predicable. When lightning does not do as predicted,
then the human must return to learn where the human has failed. Effective surge protection shunts lightning away from humans and
transistors. When surge protection fails to do that, lightning has found a better earth ground on the other side of the damaged items - a
human failure.

For example, lightning bypassed a 40 foot tree to strike earth some 60 feet away. Why? The human then returned to discover a limestone
outcropping underneath the strike location; the tree was located in unconductive sandy soil. Lightning is statisically predictable. But
since the human often fails to understand what is 'lightning conductive' and what lightning seeks, then the misinformed human assumes
lightning is capricious.

Bill Aycock wrote:

> Denver- see my comments following yours, below
>
> Denver Braughler wrote:
> >
> > Bill Aycock wrote:
> > > Until this reply to Toms position- I thought Denver had a fair grasp on
> > > the lightning situation. I do not, now, think so.
> > Because I admitted that I could be wrong or because I was too arrogant?
> >
> Now,what gave you the idea it was a personality issue? - I dont care at
> ALL if you are arrogant or not. If that bothered me, I would delete
> stuff from over half the people here. My questions are technical, and
> also have to do with the logic of the situation.
>
> > > I, personally have been the recipient of a couple of close hits. The
> > > last one was a direct hit on the transformer feeding my house. It fried,
> > > making noise heard in a heavy rain over 150 ft. The same bolt followed
> > > the guy wire down to the water pipe (PVC) and made an exit over 300 feet
> > > away, blowing two holes in the PVC, and creating two waterspouts.
> > Electricity that can penetrate PVC, in my opinion,
> > won't must a little tarnish on the copper.
> >
> Right. At low amperage, like normal RF, it may matter. I worked in an
> explosives plant for 38 years. We had no buildings hit, and the
> grounding system was heavy, woven, copper rope, and it was as black as

> the ace of spades, after a short time.
> ...

2767. Re: Problem with "skin effect theory"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 23:13:32 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF3379C.2FB51378@eznec.com>
Source record: 164213

The formulas for skin effect assume linear properties and, as you point out, permeability is often a function of current density. So it's not unreasonable to assume that skin depth is a function of current density. In fact, in a nonlinear material, the current penetrating the material wouldn't be purely sinusoidal, since the permeability, hence the penetration, would vary over the waveform period. If the material is highly nonlinear, you wouldn't be able to use these equations at all, but would have to resort to a time domain or harmonic balance method for solution. It would probably have to be done numerically with a computer if you need accurate results.

This is generally true any time you try to apply linear equations to nonlinear circuits or materials.

Roy Lewallen, W7EL

Serafini wrote:
>
> I have a problem about ï¿½skin effect theoryï¿½
>
> In a past discussions I found the following comments about ï¿½skin effectï¿½
> :
>
> ï¿½ï¿½ï¿½Ramo, Whinnery and Van Duzer in "Fields and Waves in Communication
> Electronics", section 5.13 to 5.20 discuss skin effect.
> In section 5.18 they present a general formula for impedance of
> a round wire as a function of skin depth.
> In section 5.17 they present approximations for low and high
> frequencies as follows:
>
> With ro = radius of the round wire (meters)
> del = skin depth (meters)
> = 1/(pi*f*mu*sigma)^.5
> f = frequency
> mu = material permeability (henrys/meter)
> (4*pi*10^-7 for good conductors)
> sigma = material conductivity (mhos/meter)
> (5.8*10^7 for copper, for example)
> Ro = 1/(pi*sigma*ro^2) (DC resistance)
>
> O ro/del < 2 (low frequencies)
>
> R/Ro = 1 + (1/48)*(ro/del)^4
>
> (approx. 6% error at ro/del = 2)

>
> O ro/del > 2 (high frequencies)
>
> R/Ro = ro/(2*del)
>
> By the way, in section 5.16 they present an equation for current
> as:
> | Iz/Io | = e^[-(ro-r)/del]
>
> where r is the distance measured from the center of the wire
>
> (So it looks to me that at 2*del from the conductor edge,
> the current has decreased to e^(-2) of its value at the edge.)
> ï¿½i¿½i¿½ï¿½i¿½ï¿½
> and
> ï¿½i¿½ï¿½..(at a certain frequency)
> at 1 skin depth there is about 63% of current density
> at 2 skin depth there is about 86% of current density
> at 3 skin depth there is about 95% of current density
> at 4.6 skin depth there is about 99% of current densityï¿½ï¿½i¿½ï¿½
>
> Now I ask if it is possible to say that the formula of skin effect migh
> depend too from the power of the current, i.e. material permeability is
> not the same for every flow of current for the fact that the material of
> the antenna must have its hysteresis curve at every annulus area.
> So increasing the power , at constant ro , f and sigma , the
> distribution of the current density for magnetic field ,for diamagnetic
> conductors, must increase as increase skin depth , for the fact that the
> external annulus area need to have a greather DECREASE of hysteresis
> of lower annulus areas in a manner that : (for example)
> at 1 skin depth there might be about 62% of current density
> at 2 skin depth might be about 87% of current density
> at 3 skin depth might be about 96% of current density ï¿½ï¿½i¿½ï¿½
> The opposite for current density it seem to me that might happen for
> ferromagnetic conductors the external annulus area need to have a
> greather POSITIVE hysteresis of lower annulus areas
> In such hypothesis clearly I donï¿½t evaluate a decrease of conductivity
> as density current increase
>
> Antonio

2768. Re: Need Portable, Lightweight, and Shortened 20 Meter Antenna for PSK31

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 23:18:48 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9cvd7o$n1g$1@neptunium.btinternet.com>
Source record: 164215

Ask for a top floor bedroom at the hotel rear overlooking the
garbage bins.

For the 20m band throw a 16 to 25 feet length of thin multi-strand
brown plastic insulated wire out of the window.

Close the window.

Tune it against the hot + cold plumbing system. (Take with you a
couple of giant alligator clips with wires already soldered).

At the last place I did this the hotel manageress, who caught me in
the act, was fascinated by reading all about the DX in my log book.
At that time my favourite band was 160m. Worked right over mount
Snowdon in N.Wales in broad daylight. Forgot to use GW4 in my call
sign instead of plain G4.

Regards, Reg, G4FGQ

****

Les Kramer <wa3sgz@mindspring.com> wrote in message
news:9cu061$4bs$1@nntp9.atl.mindspring.net...
> This request is a repost from about 2 weeks ago. My request for
help netted
> only one response.
> Surely with all the brainpower on this NG, someone else can give
me
> additional ideas!!
>
> I operate PSK31 most of the time because of the ability to
reliabily
> communicate at low power. Due to the narrow bandwidth of PSK31
(31.5 Hz),
> most operation occurs within 3KHz above the defacto PSK31 calling
frequency
> (i.e., for 20 meters, that frequency is 14.070 MHz). Thus, for
monoband
> operation, a narrow bandwidth antenna is an acceptable
compromise. I have
> seen over 30 signals within the PSK 3KHz passband on 20 meters.
>
> I intend to purchase a Small Wonders Laboratory 20M PSK31 QRP kit
later in
> the year and use it exclusively when I travel with my laptop (it
will fit in

> the laptop case). My problem is that I need a short, highly
portable, light
> weight antenna cut for 14.070 MHz. This antenna needs to be small
enough to
> fit in a small suitcase (20 inch) with normal travel stuff. I
also have two
> folding, bungy corded fiberglass tent poles of about 10 feet in
length that
> I intend to support the antenna with from a hotel window
(hopefully three
> stories or higher but depends on the hotel layout).
>
> CAN SOMEBODY SUGGEST THE BEST COMPROMISE ANTENNA FOR THIS KIND OF
OPERATION?
> I have thought of helical dipoles, shortened loops, a fractal
monopole,
> possibly a vertical delta loop for some applications, etc.)
Obviously, a
> wire antenna is the preferred solution. Sketches or references to
sketches
> and other information would also be appreciated.
>
> 73,
>
> de WA3SGZ Les
>
>

2769. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 23:24:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF33A1A.EE3A064B@eznec.com>
Source record: 164216

Some vendors claim considerably better performance than they can demonstrate either with modeling or professional testing, and in some cases better than is theoretically possible. They get away with it because most beams do have a modest amount of gain (around 4.5 dB for two elements) and good front/back ratio, and very few hams can measure the difference between the actual and claimed gains. If I were you I'd ignore the performance claims and assume all are about equal as far as gain is concerned. I'd look at the mechanical construction, customer support, and front/back ratio and decide on that basis.

Claims that an antenna possesses some sort of mystical property that programs are incapable of modeling is pure marketing hype and a way to explain away the performance shortfall, and has never been convincingly demonstrated.

Roy Lewallen, W7EL

Helge Dommarsnes wrote:
>
> Hi
> Does anyone have experience with these types of antennas?
> I'm considering to test one of these antennas on my very "limited space
> QTH". Some vendors claim very high performance close to, or better than
> supergain performance, but I can't say that I have reached such high
> performance in simulation with MININEC. Anyone that have practical
> experience they want to share?
>
> --
> Helge LA1DGA

2770. Re: proof

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 23:34:16 UTC
From: ? & The Mysterians <nospam@clearsail.net>
Message-ID: <3AF33C78.CF72768B@clearsail.net>
Source record: 164217

Which goes to show you that the proof was in the pudding all along!

Dennis Collin wrote:

> On Fri, 04 May 2001 20:20:56 +0200, Serafini <nerva4@mywebpages.com>
> wrote:
>
> >proof
>
> pud<proof>ding

2771. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 23:37:19 UTC
From: Richard McCollum <rmccollOMA@worldnet.att.net>
Message-ID: <P2HI6.5143$t12.365467@bgtnsc05-news.ops.worldnet.att.net>
Source record: 164218
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF29002.97AB689C@spam.me.not...
> Comments within:
>
> Richard McCollum wrote:
> >
> > "Sideband" <sideband@spam.me.not> wrote in message
> > news:3AF21492.23260143@spam.me.not...
> > > Will a tester come out to an invalid's house in order to test them? If
> > > not, how would someone who cannot leave the house get tested to attain
> > > their license?
> > >
> > > I've heard the "if you want to DX and run power, get a license"
argument
> > > ad nauseum. Some people are incapable of passing a code test due to
> > > dyslexia or other disorders. Some people are incapable of even leaving
> > > their house. How do those people attain their license?
> > >
> > > -SSB
> >
> > For what it is worth, in my VE days in Wausau WI I went up to Merrill to
> > administer an exam to a housebound man who for reasons known only unto
him
> > wanted DXCC before he died. I and my partners read an Extra to a blind
man
> > after a regular testing session in Wisconsin Rapids at about -35 degrees
> > costing me a few bucks to get moving again.
>
> I didn't know this went on. Kudos to you, Dick. Highly commendable.

****
Not looking for a medal. VEs are required to make reasonable accomodation
to disabilities and medical conditions. Besides, we are generally pretty
good people with a streak of insanity for volunteering.

****
>
> > I have a friend of many years standing who tried to learn code as both a
> > left and right-handed activity at the same time and ran into a brutal
'hump'
> > at about 6wpm. We had to literally tie his left hand in his belt, pump
code
> > into the right ear only, and such things to get him to do it only one
way.

> > As he holds an Advanced, it must have worked. This is not dyslexia by
any
> > means but 5wpm can be worked around.
>
> And I'm still trying to work around it, only my "hump" is right at about
> 2 WPM.

****
Might I suggest Morse Academy from http://ah0a.org. If you have a problem
recognizing sounds the freq can be adjusted as well as the spacing. If you
type decently, learn the code typing. Seven lessons, tried and true
software, read the instructions before installing. Buy a cheap set of cans
from Walmart before those near and dear berate you strongly about the head
and shoulders with large cudgels to stop the incessant beeping.

****

>
> > I have long advocated the eventual outlawing of AM on CB freqs simply
> > because it is nitro in the hands of children. To do this, it would seem
> > that setting up a truckers band (FM, PL, the whole enchilada) to prevent
> > these 'opinion leaders' into ownership mode instead of wandering farther
> > afield would make sense. Adding a sideband segment might fit into this.
> > Marine freqs are also plagued by this sort of thing. The early phone
> > companies did not view pointless babbling and time wasting as valid
> > activities either and lived to regret it. If your point is that we are
> > making the same mistake I tend to agree.
>
> Actually, Dick, you just reminded me of this precise point, which I had
> wanted to make, yet had forgotten to.
>
> AM is a volatile emission mode, IMHO. Of course, FM isn't much better;
> if the deviation is turned up too high, it "bleeds over" just as badly
> as over modulation and carrier instabilities bleed over on AM. I prefer
> sideband for a multitude of reasons. This is one of them.

****
FM has the advantage of being receiver-dependent. Pump 15 kHz deviation
into a receiver expecting five and all you get is 'What did you say?'

****
>
> > Some years ago a university I happened to be attending built a new
library.
> > They installed a few paved paths in obvious places to get to it and
waited a
> > few years to pave the paths the students made. This was a simple and
> > practical approach as opposed to putting them in right away and planting
> > landmines to keep the students on the paths. As Flaubert, a French
poobah,
> > once said of taxation, the object of plucking a goose is maximum
feathers

> > with minimum hissing.
>
> If you're speaking of Calvin College, in Grand Rapids, MI, I attended
> the same School. Escher started this trend when the school was designed
> and first built, in keeping with his ideals of letting his buildings
> flow with nature as much as possible.

****
Washington U St. Louis
****
>
> >
> > Dick N&#65533;BK
>
> Basically, CB needs to be revamped. CB'ers need to be educated about
> what's "loud" and what causes interference, what "gets out" and what
> bleeds over. Modes need to change, and bandwidth needs to be
> reallocated. Leave 1-40 for the AM'ers, and set aside a band for FM and
> a band for SSB either above 40 or below 1. There are some unallocated
> frequencies there, I'm sure. I DO NOT want to make HAMs give up any more
> bandwidth, and I don't want to take seldom used emergency frequencies
> from other services, but the whole of 27.405-27.800 can't be
> allocated.... at least I've never seen a chart that shows anything
> allocated in that area. (Maybe someone has a URL to a chart/page that
> lists all allocated frequencies?)
>
> -SSB

Considering that 28-29.7 is a treaty ham band as is the 24.89-24.99 band,
the Commission could not give you them if they wanted to.

The 25-30 range are garbage frequencies to begin with so even the allocated
ones are probably never used. If they are used, it is with hardware that
probably takes three minutes for the tubes to lite and the dynamotor to come
up to speed. It is damned hard to tell just how vital these were and at one
time the FCC was going to a 99-channel CB and clearing everything up toe
27.99. There is no great way to tell. Below CB is also a land mobile
allocation. Hard to tell just what is there. The 11 meter broadcast band
has some STLs in it, one of which plays reggae to keep the freebanders away.
You should remember, however, that while the treaty definition of land
mobile is pretty broad, it really does not include hobbyists.

This thread has identified problems broader than the one you proposed
originally:

Equipment: So long as equipment that is within a pair of dykes of
out-of-band operation is allowed to come thru the ports we are dead in the
water. These things can be made more bullet-proof than they are and whether
intended for CB or 2 meter amateur or marine VHF they need to be. Time to
get Customs involved. Engineering firms can be hired to do the grunt work
just as they are for everything else; the FCC (properly) does no grunt work.

Enforcement: Phil Kane, as usual, makes a good point with respect to separating the enforcement and technical from the political. The priorities and funding are just too different.

History: It is not 1958 but some of the uses of the garbage band predate CB. There is a lot of history to wade thru. I agree fully that Ancient Modulation needs to be kept in the 40 until it dies. While it is an interesting nostagia trip, there is no good reason for ham gear to be AM-capable; another equipment problem.

Attitude: This is a tough one. While I tend to like to legalize facts on the ground to try to get people in the tent pissing out rather than outside the tent pissing in (TNX LBJ) the two good objections are the rewarding of outlawry and the lack of a guarantee that this will stop the problem. In this case, justice lies on the side of the truckers who are for the most part the English speakers on 28.085. There is a real use for a trucking service, it does meet the treaty requirements, and it could be designed to use the present antennas etc on an increasingly electronically-cluttered cab. As they are pretty much the 'opinion leaders' in CB circles giving them ownership interest in a band that was hard to bootleg (13.2 channel spacing for example and PL required) might ultimately help cool things down.

There is less justification for opening a new SSB-only hobbyist service on say 5kHz USB channels simply because you don't fit any reasonable definition of Land Mobile. This is the reason for the skip limits in the regs to begin with and the requirement in a number of countries that at least one party to a conversation be literally mobile. I tend to favor it only because it would accelerate the scrapping of Antique Modulation and the TVI, non-Linears, etc that go with it.

Download the CW software, use my e-mail (God, I love ATT) if need be, and let's get you on the ham bands before the spots go down

Dick NBK

2772. Re: B&W Folded dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-04 23:39:05 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF33D99.DE6986C8@IEEE.org>
Source record: 164119

on4caf@qsl.net wrote:
>
> On Fri, 04 May 2001 12:42:12 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>
> >Roger Leone wrote:
> >>
> >> I think we should stop criticizing this antenna and focus on its best
> >> feature: If more hams used it there would be a lot less QRM on our bands...
> > >
> > >And a lot more global warming. :-)
> >
> > Not true.
> > Exept what is radiated into space, all radiated power will end up in heat on
> > earth. ;-)

That's exactly what I mean. Not much power is radiated so not much can
be radiated into space.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2773. Re: B&K Folded dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 00:30:04 UTC
From: Harold <hsnyder@houston.flightlessbird.com>
Message-ID: <gQHI6.2409$hu.1025197@typhoon.austin.rr.com>
Source record: 164121

Doc and Kelly,
I have a CanTenna too. It solved my difficult RFI problem and I can work
any station I can hear.

Harold
wd5kca

"'Doc" <w5lz@oio.net> wrote in message news:3AF2953F.4412F16C@oio.net...
> Kelly,
> Having been a B&K folded dipole user, I think the best
> advice is to try it and see for your self. That antenna is
> not one of the 'best' you could find on any band. If you
> are looking for a comparable 'no tune' antenna, Heathkit
> made hundreds of them called a CanTenna. Over all, it's a
> very disapointing antenna.
> 'Doc
> PS - At least you saved $119.00...

2774. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 00:42:27 UTC
From: Walter Maxwell <w2du@journey.com>
Message-ID: <3AF34B5E.FD580E40@journey.com>
Source record: 164120

```
VE9SRB wrote:
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3AF055B7.70166AF1@IEEE.org...
> > VE9SRB wrote:
> > >
> > > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > > news:3AF011B8.A04FD554@IEEE.org...
> > > > VE9SRB wrote:
> > > > > Powers do not add as you claim they do. 100 Watts added in phase
> with
> > > 33.33
> > > > > Watts simply does not add to 133.33 Watts.
> > > >
> > > > Uhhhhh Steve, power is a scalar and doesn't have a phase. Scalars add
> > > > directly with no phase angle involved. If you have a 100 watt light
> > > > bulb and a 33.33 watt light bulb, aren't they dissipating 133.33
> watts?
> > > >
> > > > > Walter, Johnson shows that the sum of the forward source voltage and
> > > > > re-reflected voltage add to the total voltage. He does not add
> power.
> > > >
> > > > On the contrary, Equation (6.17) P = (|E+|^2)/Z0 - (|E-|^2)/Z0
> > > > on page 150 of the first edition clearly shows that Johnson adds power
> > > > and that the power he adds/subtracts is a *scalar* value with no phase
> > > > in sight. Note the absolute value of the voltages.
> > > > --
> > > > http://www.mindspring.com/~w6rca
> > >
> > > This is Pdelivered = Pforward - Prearward.
> > >
> > > We do not disagree on this concept.
> >
> > But, but, but, Steve. You said "He (Johnson) does not add power."
> > Have you changed your mind about that? :-)
> > --
>
> He's subtracting two powers traveling in opposite directions. He is not
> adding two powers traveling in the same direction. Big conceptual
> difference.
>
> Steve
```

Sorry Steve, there is no conceptual difference. If 3 - 1 = 2, then 2 + 1 = 3. Powers DO add. If you add voltages the result is meaningless--add powers and get the correct results. Johnson's equation works both ways--it can't work one way and not the other.

Walt, W2DU

2775. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 00:47:18 UTC
From: Walter Maxwell <w2du@journey.com>
Message-ID: <3AF34C80.8E422D33@journey.com>
Source record: 164122

W6RCecilA wrote:
>
> "Peter O. Brackett" wrote:
> > Voltages and currents are "added" by mother nature, but powers are not.
>
> That's funny, Peter. When I screw in an extra light bulb, sure seems
> like mother nature makes the room brighter. Is that not power being
> added to make the room warmer and brighter?
>
> > Especially since power and voltage are related non-linearly [P = I*V] by a
> > product, then one cannot simply assume that linearity follows across the
> > great power divide, from volts to power...heh, heh.
>
> Nobody assumes that "linearity follows across the great power divide".
> The very basic principle behind voltage, current, and power is that
> energy cannot be created or destroyed (by ordinary means). The energy
> is the cause. The voltages and currents are the effects. If you double
> the energy, you do NOT double the voltage AND current. When someone
> claims that 75 joules plus 8.33 joules is equal to 133.33 joules
> because of the voltages involved, that is more than enough reason to
> distrust the voltage analysis.
>
> > This kind of little error alone is one of the largest sources of confusion
> > in the debates on "reflected" power. One must take great care with
> > voltages and currents in handling the components into which we claim to be
> > able to "resolve" those voltages and currents. And especially subsequently
> > with the "powers that we mathematically derive from those components.
>
> Actually not much care is required at all. Simply calculate/measure the
> energy and let the voltages and currents fall out from the boundary
> conditions. The voltages and currents MUST satisfy the conservation
> of energy principle. There is no other choice.
>
> > It's "safer" to deal only with I and V and leave power out of it.
>
> It is safer (more basic) to deal with energy because of the conservation
> of energy principle. 75 joules plus 8.33 joules simply cannot add up to
> 133.33 joules. Do you disagree? That someone believes 75 joules plus 8.33
> joules can equal 133.33 joules is proof that his voltage analysis is
> filled with misconception and error.
> --
> http://www.mindspring.com/~w6rca
>
Steve has been trying for many months to try to make me believe that 75

joules plus 8.33 joules equals 133.33 joules. How can such a true mathematician make such a statement anytime except April 1?

Walt, W2DU

> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2776. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 00:57:30 UTC
From: Walter Maxwell <w2du@journey.com>
Message-ID: <3AF34EE5.7CA571B9@journey.com>
Source record: 164123

VE9SRB wrote:
>
> "Walter Maxwell" <w2du@iag.net> wrote in message
> news:n8GH6.3462$c4.377186@e420r-chi1.usenetserver.com...
> > Steve's problem with addition of voltages or powers on a transmission
> line
> > is that it is NOT the voltages that add, it's power, even though Steve
> > denies that this is true. His misconception on this issue is why his
> powers
> > don't add up correctly. Everything cpmes out correctly when powers are
> > added, but never come out correctly by adding voltages. Kirchoff's law
> > simply doesn't apply here.
> >
>
> Walter:
>
> If one forward voltage is 100 V and another forward voltage is 100 V, do you
> deny that the total voltage is 200 V?
>
> Steve
>
Yes Steve, I deny that the total voltage is 200 V. The actual total
voltage under the conditions we are discussing is 141.42 V.

Walt, W2DU
> >
> >

2777. B&K Folded dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 01:16:58 UTC
From: test <swish@123.net>
Message-ID: <8pnl6.150$Bt1.180680@news03.micron.net>
Source record: 164276

I just picked up a B&K 1.8-30mhz folded dipole, brand new in the box from a ham estate sale. It's several years old but never been out of the box. The receipt in the box says $169. I picked it up for $50. I plan to mount it as an inverted VEE with the center at the 50 foot level on my self supporting tower. This should be great for QRP on my TS-430S. Anyone had/have this antenna or any experience with it? Any input would be greatly appreciated.

73 & Thanks
Kelly
K7SU

2778. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 01:17:49 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <1xII6.473$B%4.235685@dfiatx1-snr1.gtei.net>
Source record: 164124

Well, the Feds have the H.A.R.P. transmitters on-line at several million watts. I suppose it would not be too difficult to use it to sweep the CB freqs with an oscillating tone for a year or two...

73 de W6DKN

"Rob St.Denis" <tstdenis3160@home.com> wrote in message news:TqDI6.15583$2_.5480291@news3.rdc1.on.home.com...
> Would never work ... too many cb'ers out there to butt heads with ...better
> off sending out an oscilatting tone at a few kilowatts in major cities
> accross north america for a couple years to annoy the heck out of them ...
> then they will lose interest and then we can take it back
>
> --
> Rob St.Denis
>
> "N3VST" <not@chance.com> wrote in message
> news:c%CI6.9215$R2.7157648@newsrump.sjc.telocity.net...
> > 11 meters was once a ham band. Hams can still go there, use your callsign
> > and follow all the rules. Of course do not use you ham gear there, buy a
> > cheap CB. If we hams again populate this band maybe we can win it back,
> for
> > sole amateur use. If would be great to have another digital band.. Just
> > some thoughts. One thing I have found is that the freeband cb'ers do not
> > like be associated with hams and our rules and practices. I think it is
> > time to take back the bands.
> >
> >
> > 73, N3VST
> >
> >
>
>

2779. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 01:59:23 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <n5n6ftcrdl3q38ibmk5dpab50p9bu00dhg@4ax.com>
Source record: 164129

I have found that modeling is an excellent reality check. You can see
for yourself if calming super gain, critical coupling or secret
patented process has any validity. Under the light of computer
analysis many manufacture's calms are exposed for what they are...
B... S...

Stick with MININEC it's giving you data far closer to the truth.

Danny

On Fri, 4 May 2001 22:37:12 +0200, "Helge Dommarsnes" <hdom@online.no>
wrote:

>Hi
>Does anyone have experience with these types of antennas?
>I'm considering to test one of these antennas on my very "limited space
>QTH". Some vendors claim very high performance close to, or better than
>supergain performance, but I can't say that I have reached such high
>performance in simulation with MININEC. Anyone that have practical
>experience they want to share?

2780. 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 02:40:40 UTC
From: yardleyite@aol.com
Message-ID: <20010504224040.21929.00003933@ng-md1.aol.com>
Source record: 164125

Hello,
My name is Joe Cro - N3IBX and I'm going to build up a 40M Delta Loop to help my signal on that band. If anyone could give me advice on where to put the feedpoint, tuning tips, etc. it would be most appreciated.

I plan to feed it with coax, and I can get the apex up to about 80 feet or so.
73 de joe N3IBX

2781. FA - Hustler Mobile Setup

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 02:44:33 UTC
From: kk4tl@aol.com
Message-ID: <20010504224433.25835.00004222@ng-mq1.aol.com>
Source record: 164126

http://cgi.ebay.aol.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1235577858

2782. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 02:49:56 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3af36a53$0$12824$1dc6e903@news.corecomm.net>
Source record: 164127
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Sparky wrote:
>
> On Fri, 04 May 2001 08:30:25 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >"Rob St.Denis" wrote:
> >> It's a simple law that you choose to disobey, you obviously think yourself
> >> grandiose enough to decide which law should be followed and which shouldn't.
> >
> >You are implying that you have never driven above the speed limit, Rob.
> >Will you swear that you have never broken a traffic law? Have you never
> >gotten a traffic ticket or a parking ticket?
> >--
>
> The vast majority of speeders don't purchase and install special
> equipment (linear amps) and modify their rigs (frequency mods) with
> the sole intention of breaking the law.

No. They purchase speed radar detectors so they can slow down when they
approach a cop out trying to bust them....

Dave Nagel

2783. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 02:50:28 UTC
From: qrm2000@aol.com
Message-ID: <20010504225028.07174.00001556@ng-fj1.aol.com>
Source record: 164128

The Troll-o-Meter is off the scale.

>11 meters was once a ham band.

True, over 40 years ago. It was under-utilized for several reasons, some of which remain valid today.

*It is not harmonically related to the other Amateur bands, so you generally have to have an antenna specific to the frequency. If you like odd-ball bands, we already have several WARC bands to play with.

*Ten meters has the same characteristics, and there is plenty of operating space being unused. Why do we need additional frequencies?

>Hams can still go there, use your callsign
>and follow all the rules.

*ANYBODY can go there. And you don't need to use your ham call sign. You don't need ANY call sign. Furthermore, when a ham goes to 11 meters, he "checks his license at the door". He/she has no more "authority" or rights than anyone else on 11 meters.

> If we hams again populate this band maybe we can win it back, for
>sole amateur use.

CB is a designated set of frequencies and those operating in the United States and many other places are doing so with the permission and blessing of their government. How would you like it if roles were reversed? Try this: Okay, all CBers report to ten meters and begin operating. CBers might win the band for themselves. Don't like it? Tough. CBers operate on 11 meters with exactly the same authority as YOU operate on 10 meters!

> One thing I have found is that the freeband cb'ers do not
>like be associated with hams and our rules and practices.

You are mixing apples and oranges when you discuss CB and freebanding in the same paragraph. They are not the same thing. It is this kind of ignorance that spreads ill will. In many places, hams and CBers cooperate.

>I think it is
>time to take back the bands.
>
>

If you want to do something constructive, operate on 10 and 12 meters. Quit worrying about what's happening on 11 meters. Take back your own bands, first.

QRM

2784. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 02:51:46 UTC
From: qrm2000@aol.com
Message-ID: <20010504225146.07174.00001557@ng-fj1.aol.com>
Source record: 164130

The group has fallen victim to a Troll.

Get wise. Stop fighting. The troll is laughing as he watches the message count in this thread.

QRM

2785. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 02:53:08 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cvpuk$4lr$0@208.207.71.158>
Source record: 164131

Reg Edwards wrote:
>
> Matter and anti-matter have one essential factor in common -
> GRAVITY.
>
> Isn't it obvious the 95.6% of matter which is "missing" is in the
> form of black holes. The dinasaurs were aware of that in their
> bones. And today, somewhere in the universe, on planets revolving
> around stars in distant galaxies, there are intelligent creatures
> who had it all sorted out before our insignificant tiny Earth came
> into existence.
>
> Even now, I have at the tip of my right-hand index finger a tiny
> black hole. I cannot see it but its presence is necessary to
> account for the gravitational field which actually exists in my
> immediate vicinity, which cannot be accounted for by the remainder
> of the visible or otherwise detectable mass of the universe.
>
> Then there are the vastly superior intelligences evolved during the
> eons by the countless galaxies themselves. Each galaxy is but an
> atom in the brain of an unimaginable (to us) intelligence. To them,
> the human race along with jelly fish and the Aids virus have been
> relegated to the realm of quarks.
>
> But I'm sure, just like us, they all have their little problems and
> regularly pray to God for assistance.

And all you have described may be occurring in a speck of dirt under a
fingernail of a cosmic scaled lady who is about to visit her
manicurist...

Dick

2786. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 03:00:07 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cvqb1$7su$1@nntp9.atl.mindspring.net>
Source record: 164132

Richard:

Ahhh so that was the question. Must remember that.

Too bad there wasn't a Starbucks beside the "restaurant at the end of the Universe", I need a strong coffee to keep me awake while I ponder the significance of 42.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:3af4d63f.676849468@news.seanet.com...
> On Thu, 3 May 2001 22:08:46 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Cecil:
> >
> >[snip]
> >"> we have accounted for only 4.5% of the mass in the universe. Maybe
> >> empty space is not empty?
> >[snip]
> >
> >Wow... Still a long way to go.
> >
> >Did they say... Who "we" is? And...
> >
> >How will "we" know when "we" have counted it all?
> >
> >Douglas Adams said the answer was 42? But that was after he forgot what the
> >question was.
> >
> >-Peter K1PO
> >
>
> Hi Peter,
>
> "What do you get when you multiply 6 times 7?"
>
> The ultimate question of life, the universe, and everything.
>
> 73's
> Richard Clark, KB7QHC

2787. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 03:06:55 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF36E4F.BB09EBD4@IEEE.org>
Source record: 164133

Yardleyite wrote:
> My name is Joe Cro - N3IBX and I'm going to build up a 40M Delta Loop to
> help my signal on that band. If anyone could give me advice on where to put the
> feedpoint, tuning tips, etc. it would be most appreciated.

Take a look at the loops on my web page(s). My favorite is the 40m
triangular loop with a 50 ohm feedpoint.
--
http://www.mindspring.com/~w6rca

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2788. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 03:10:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF36F21.6C2DF6B8@IEEE.org>
Source record: 164134

Walter Maxwell wrote:
> Steve has been trying for many months to try to make me believe that 75
> joules plus 8.33 joules equals 133.33 joules. How can such a true
> mathematician make such a statement anytime except April 1?

Wow Walt, are you already in Mich. or still in Fla.?

I've been trying to figure out exactly what Steve has been trying to say
when he says the above. What I believe is the mistake is that he is
trying to add voltages directly instead of electromagnetic fields. He
started another thread entitled "Reflections" to which I replied and
sent you an email about it.
--
http://www.mindspring.com/~w6rca

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2789. FA - Diamond Mobile Mount

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 03:17:42 UTC
From: kk4tl@aol.com
Message-ID: <20010504231742.24993.00004579@ng-mq1.aol.com>
Source record: 164135

http://cgi.ebay.aol.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1235587342

Info and pictures at this URL.

2790. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 03:31:53 UTC
From: richardharrison@webtv.net
Message-ID: <4811-3AF37429-62@storefull-118.iap.bryant.webtv.net>
Source record: 164137

Walter, W2DU wrote:
"Yes Steve, I deny that the total voltage is 200V. The actual total voltage under the conditions we are discussing is 141.42V."

The voltage does double at the open-circuit reflection point in a transmission line because the reflected voltage is in-phase with the incident voltage at the open-circuit. But there`s no current. This is a very special situation. The current is abruptly interrupted. Even in this special circumstance, power and energy are unchanged. For just an instant all the energy in the magnetic field is transfered to the electric field which exhibits the doubled voltage until it starts to regenerate the magnetic field. Since current has dropped to zero at the open-circuit, the temporarily doubled voltage does not indicate a change in energy.

The Bird wattmeter can show what happens. If you have 100 volts on a 50-ohm line representing that the incident wave has a power of 200 watts, that`s what the Bird will indicate as forward power. If the line is open-circuited, the wattmeter will indicate a reflected power of 200 watts. Delivered power is zero because it is calculated as the difference of the two indicated powers, incident and reflected.

I just wanted to point out a possible confusion because there exists a special situation in which the voltage doubles at the end of the line with no increase of power.

Best regards, Richard Harrison, KB5WZIj

2791. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 03:37:10 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF37566.21E9D0A2@bwcc.com>
Source record: 164136

Reg Edwards wrote an explanation that I would not have thought of.
And I just want to say a big thank you to him for it.

2792. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 03:58:51 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF37A7B.64008B61@eznec.com>
Source record: 164138

In all the modeling I've done, I've never found a delta loop that did as
well as a dipole at the same maximum height. All the loop seems to do is
lower the average height of the current. What's the appeal of this
antenna?

Roy Lewallen, W7EL

W6RCecilA wrote:
>
> Yardleyite wrote:
> > My name is Joe Cro - N3IBX and I'm going to build up a 40M Delta Loop to
> > help my signal on that band. If anyone could give me advice on where to put the
> > feedpoint, tuning tips, etc. it would be most appreciated.
>
> Take a look at the loops on my web page(s). My favorite is the 40m
> triangular loop with a 50 ohm feedpoint.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2793. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:18:24 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF37F10.94C61DDD@spam.me.not>
Source record: 164139
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Richard:

Thanks for the kind words... You've brought up a few points that I hadn't thought of, and that I need to give some thought to before responding..

I take my written Tech and General tests on the 8th. I'm going to work on my code with KC8HEZ and others here in Livingston county on 2M when I get my set up. Once I get the code down, I'll take the code test, find an HF set, and hopefully be talking on HF by the end of the year.

The next problem is going to be an antenna here in the apt. I've thought of throwing out a longwire and using a tuner, trying to use the gutters on the building as a large loop antenna with a tuner, and a few other options. The 2M setup shouldn't be too difficult. I do have a rail outside my window I can mount an antenna to... I just hope it's high enough to get to the repeater.

Hopefully, by the 10th, I'll have a callsign to send you guys... and by the 15th I should have the domain name corresponding to that callsign.. I'm going to put a site up here at the house for those who are curious.

73's and Hopefully I'll be chatting with you all on the air soon.

-SSB

Richard McCollum wrote:
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF29002.97AB689C@spam.me.not...
> > Comments within:
> >
> > Richard McCollum wrote:
> > >
> > > "Sideband" <sideband@spam.me.not> wrote in message
> > > news:3AF21492.23260143@spam.me.not...
> > > > Will a tester come out to an invalid's house in order to test them? If
> > > > not, how would someone who cannot leave the house get tested to attain
> > > > their license?
> > > >
> > > > I've heard the "if you want to DX and run power, get a license"
> argument
> > > > ad nauseum. Some people are incapable of passing a code test due to
> > > > dyslexia or other disorders. Some people are incapable of even leaving
> > > > their house. How do those people attain their license?

> > > >
> > > > -SSB
> > >
> > > For what it is worth, in my VE days in Wausau WI I went up to Merrill to
> > > administer an exam to a housebound man who for reasons known only unto
> him
> > > wanted DXCC before he died. I and my partners read an Extra to a blind
> man
> > > after a regular testing session in Wisconsin Rapids at about -35 degrees
> > > costing me a few bucks to get moving again.
> >
> > I didn't know this went on. Kudos to you, Dick. Highly commendable.
>
> **********
> Not looking for a medal. VEs are required to make reasonable accomodation
> to disabilities and medical conditions. Besides, we are generally pretty
> good people with a streak of insanity for volunteering.
>
> **********
> >
> > > I have a friend of many years standing who tried to learn code as both a
> > > left and right-handed activity at the same time and ran into a brutal
> 'hump'
> > > at about 6wpm. We had to literally tie his left hand in his belt, pump
> code
> > > into the right ear only, and such things to get him to do it only one
> way.
> > > As he holds an Advanced, it must have worked. This is not dyslexia by
> any
> > > means but 5wpm can be worked around.
> >
> > And I'm still trying to work around it, only my "hump" is right at about
> > 2 WPM.
>
> **********
> Might I suggest Morse Academy from http://ah0a.org. If you have a problem
> recognizing sounds the freq can be adjusted as well as the spacing. If you
> type decently, learn the code typing. Seven lessons, tried and true
> software, read the instructions before installing. Buy a cheap set of cans
> from Walmart before those near and dear berate you strongly about the head
> and shoulders with large cudgels to stop the incessant beeping.
>
> **********
>
> >
> > > I have long advocated the eventual outlawing of AM on CB freqs simply
> > > because it is nitro in the hands of children. To do this, it would seem
> > > that setting up a truckers band (FM, PL, the whole enchilada) to prevent
> > > these 'opinion leaders' into ownership mode instead of wandering farther
> > > afield would make sense. Adding a sideband segment might fit into this.

> > > Marine freqs are also plagued by this sort of thing. The early phone
> > > companies did not view pointless babbling and time wasting as valid
> > > activities either and lived to regret it. If your point is that we are
> > > making the same mistake I tend to agree.
> >
> > Actually, Dick, you just reminded me of this precise point, which I had
> > wanted to make, yet had forgotten to.
> >
> > AM is a volatile emission mode, IMHO. Of course, FM isn't much better;
> > if the deviation is turned up too high, it "bleeds over" just as badly
> > as over modulation and carrier instabilities bleed over on AM. I prefer
> > sideband for a multitude of reasons. This is one of them.
>
> **
> FM has the advantage of being receiver-dependent. Pump 15 kHz deviation
> into a receiver expecting five and all you get is 'What did you say?'
>
> **
> >
> > > Some years ago a university I happened to be attending built a new
> library.
> > > They installed a few paved paths in obvious places to get to it and
> waited a
> > > few years to pave the paths the students made. This was a simple and
> > > practical approach as opposed to putting them in right away and planting
> > > landmines to keep the students on the paths. As Flaubert, a French
> poobah,
> > > once said of taxation, the object of plucking a goose is maximum
> feathers
> > > with minimum hissing.
> >
> > If you're speaking of Calvin College, in Grand Rapids, MI, I attended
> > the same School. Escher started this trend when the school was designed
> > and first built, in keeping with his ideals of letting his buildings
> > flow with nature as much as possible.
>
> **
> Washington U St. Louis
> **
> >
> > >
> > > Dick Ni¿½BK
> >
> > Basically, CB needs to be revamped. CB'ers need to be educated about
> > what's "loud" and what causes interference, what "gets out" and what
> > bleeds over. Modes need to change, and bandwidth needs to be
> > reallocated. Leave 1-40 for the AM'ers, and set aside a band for FM and
> > a band for SSB either above 40 or below 1. There are some unallocated
> > frequencies there, I'm sure. I DO NOT want to make HAMs give up any more
> > bandwidth, and I don't want to take seldom used emergency frequencies

> > from other services, but the whole of 27.405-27.800 can't be
> > allocated.... at least I've never seen a chart that shows anything
> > allocated in that area. (Maybe someone has a URL to a chart/page that
> > lists all allocated frequencies?)
> >
> > -SSB
>
> Considering that 28-29.7 is a treaty ham band as is the 24.89-24.99 band,
> the Commission could not give you them if they wanted to.
>
> The 25-30 range are garbage frequencies to begin with so even the allocated
> ones are probably never used. If they are used, it is with hardware that
> probably takes three minutes for the tubes to lite and the dynamotor to come
> up to speed. It is damned hard to tell just how vital these were and at one
> time the FCC was going to a 99-channel CB and clearing everything up toe
> 27.99. There is no great way to tell. Below CB is also a land mobile
> allocation. Hard to tell just what is there. The 11 meter broadcast band
> has some STLs in it, one of which plays reggae to keep the freebanders away.
> You should remember, however, that while the treaty definition of land
> mobile is pretty broad, it really does not include hobbyists.
>
> This thread has identified problems broader than the one you proposed
> originally:
>
> Equipment: So long as equipment that is within a pair of dykes of
> out-of-band operation is allowed to come thru the ports we are dead in the
> water. These things can be made more bullet-proof than they are and whether
> intended for CB or 2 meter amateur or marine VHF they need to be. Time to
> get Customs involved. Engineering firms can be hired to do the grunt work
> just as they are for everything else; the FCC (properly) does no grunt work.
>
> Enforcement: Phil Kane, as usual, makes a good point with respect to
> separating the enforcement and technical from the political. The priorities
> and funding are just too different.
>
> History: It is not 1958 but some of the uses of the garbage band predate
> CB. There is a lot of history to wade thru. I agree fully that Ancient
> Modulation needs to be kept in the 40 until it dies. While it is an
> interesting nostagia trip, there is no good reason for ham gear to be
> AM-capable; another equipment problem.
>
> Attitude: This is a tough one. While I tend to like to legalize facts on
> the ground to try to get people in the tent pissing out rather than outside
> the tent pissing in (TNX LBJ) the two good objections are the rewarding of
> outlawry and the lack of a guarantee that this will stop the problem. In
> this case, justice lies on the side of the truckers who are for the most
> part the English speakers on 28.085. There is a real use for a trucking
> service, it does meet the treaty requirements, and it could be designed to
> use the present antennas etc on an increasingly electronically-cluttered
> cab. As they are pretty much the 'opinion leaders' in CB circles giving

> them ownership interest in a band that was hard to bootleg (13.2 channel
> spacing for example and PL required) might ultimately help cool things down.
>
> There is less justification for opening a new SSB-only hobbyist service on
> say 5kHz USB channels simply because you don't fit any reasonable definition
> of Land Mobile. This is the reason for the skip limits in the regs to begin
> with and the requirement in a number of countries that at least one party to
> a conversation be literally mobile. I tend to favor it only because it
> would accelerate the scrapping of Antique Modulation and the TVI,
> non-Linears, etc that go with it.
>
> Download the CW software, use my e-mail (God, I love ATT) if need be, and
> let's get you on the ham bands before the spots go down
>
> Dick Nï¿½BK

2794. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:18:29 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cvuu2$f11$1@slb7.atl.mindspring.net>
Source record: 164140

Steve and Walt:

[snip]
> > Steve
>
> Sorry Steve, there is no conceptual difference. If 3 - 1 = 2, then 2 + 1
> = 3. Powers DO add. If you add voltages the result is meaningless--add
> powers and get the correct results. Johnson's equation works both
> ways--it can't work one way and not the other.
>
> Walt, W2DU
[snip]

The above might be true - if and only if... the powers in question were not ficticious to begin with.

And it so happens that they are!

In any real transmission line, after "start up" transients, there are no more forward and reflected "energy" quanta sloshing back and forth on the line bouncing off reflection points. Just simple power flowing unidirectionally towards the sink [load] from the source [generator].

During the "momentary" start up transient, when "power" is first applied to a line, there is energy quanta surging up and down the line in diminishing quantity until the line becomes "charged". i.e. the distributed capacitance and distributed inductance of the line take up their initial energy quantum.

Subsequent to the transient or "start up", in the ensuing and predominant steady state, the only "sloshing" back and forth of energy is between the energy stored on each half cycle in the distributed capacitance of the line which is passed over to the distributed inductance of the line on the next half cycle.

All this stored energy which "charged" the line in the transient stage, remains in the line stored in the electric and magnetic fields. Meanwhile there is a steady state unidirectional progression of power down the line from the generator to the load just as in a DC circuitl

The incident, reflected, and transmitted "powers" to which y'all have been referring do not really exist, they are all made up values!

What most are discussing when talking about reflected powers, etc.. in the steady state are "voltages" indicated by, or "resolved" by a "bridge" circuit. [i.e. for the voltage reflected off an impedance discontinuity at the junction of say R & Z, with V=IZ, the reflected voltage is "calculated" by the direcional coupler as b = V - IR.]

This voltage b is an entirely ficticious voltage and it exists no where on the line other than in the "meter" itself a somewhat arbitrary resolution of the "true" voltage V and current I actually on the line. The reflected voltage b = V - IR exists only inside the metering circuitry, not on the line. This bears repeating, "The reflected voltage "b" where b = V - IR, exists only inside themetering circuitry, NOT ON THE LINE.

Ascribing an "actual" power to this "made up" voltage "b" and using it to "visualize" line power dynamics is a ficticious and possibly misleading picture. I am not saying it is a useless picture, just that it is ficticious.

One should not ascribe reality to a power that results simply from the mathematical formula Pr = b*b/R when both b and perhaps R are simply "made up values" existing only in a measuring instrument and not present physically on or in the transmission line or lumped components of the circuitry and networks under examination.

Methinks y'all ascribe too much reality to something that is not even present in the actual problem being examined but rather exists only in the metrology!

One can use "instruments" to resolve 10 volts into the sum 5 + 5 or into 2 + 8, or whatever... according to some "model" that one assumes and builds into the instrument. However, that does not make 2*2/R or 8*8/R a power!

The fact that b = V - IR can just as easily "resolve" a mismatch at DC as at RF and results in all the same ficticious quantities is proof enough that such visualizations of powers sloshing back and forth are not real. [See my NG thread called "Direct Reflections".]

Guys... this whole Incident Power, Reflected Power, Transmitted Power fiction applied to the "steady state" is nothing more nor less than a "Mathematical Formalism".

If a short transient pulse were sent down a line, or if a line was suddenly attached to a battery, then for the momentary period as the line "charges" up there will be transient energy [Joules] surging back and forth along the line, in the forward and reverse directions, diminishing as energy is lost in line losses or loads and generator resistance. However, once the line is fully charged, there is no more forward and reverse energy reflection. All that exists then is the "steady state" with either no power in the circuit or a steady unidirectional progression of power from the generator [source] to the load [sink].

And all this "reflected voltage", "incident voltage" and "transmitted voltage" stuff is just a method of measuring and characterizing a mismatch between two impedances.

The reflected voltage b = V - IR is a voltage developed entirely within an instrument [Actually a Wheatstone Bridge Circuit] which attempts to measure and quantify a mismatch at an impedance discontinuity.

Nothing more, nothing less.

The fact that the whole industry, including power meter manufacturers, has "institutionalized" these "ficticious powers" by placing labels on meter faces and discussing them as if they were "real", is one of the factors contributing to the continuing attempts to ascribe reality and various somewhat "silly" interpertations and visualizations to powers that simply don't exist.

If Z = R then b = 0, nothing more nothing less.

b = V - IR... It's true in the steady state at DC just as it is true at RF. There is no real "power" associated with "b" it is just a "made up" voltage computed by an analog computer called a reflected voltage bridge.

In the limit a lossless line may simply be analyzed and visualized as nothing more nor less than a cascade of incremental L - C low pass ladder sections, a distribution in space of L and C low pass increments.

For your visualization, break the line into as many small incremental such sections as necessary to support your visualization. If you are one of the "gifted vusualizers" you may even be able to visualize an infinity of infinitesimal L - C sections comprised of series inductances of value dL and shunt capacitances of value dC where d denotes the "differential" quantity of the calculus.

This is the only "real" visualization of the physical phenomena, and this distributed L and C line supports V and I at all points along the line. There are no reflected voltages and currents on the line. All you need are I and V. a and b are simply not there! a and b are only in the instrumentation! With that line visualization in the steady state, for example with a DC generator driving it, you will then see that in the steady state there is simply a fixed amount of energy trapped or stored in the line. This energy "charge" is either held in the distrubuted inductance or distributed capacitance or being exchanged between the distributed inductance and capacitance in the case of AC steady state. After the transient fully charges the line with stored energy there is no more energy surging up and down the line due to "reflections". There is merely an impedance mismatch to the continuous flow of current at impedance discontinuities. With a continuous one directional "flow" of power down the line from generator to load.

In the steady state there is no reflected power, reflected power in the steady state is just a convenient fiction used to calculate, measure and visualize impedance mismatches at impedance discontinuities.

In a two port network the Scattering Formalism is simply:

b = S a

with b the reflected wave vector and a the incident wave vector and S the scattering matrix.

S is defined mathematically by a "formalism" with rather arbitrarily chosen constants and relationships. It is a useful artifice and can be used, with proper interpertations, to make deductions and calculations to help with

both the analysis and synthesis of circuits, networks and transmission lines.

The Scattering Formalism and the concepts of incident and reflected power, therefore are useful formalisms, but are no more "real" than say the logarithms of numbers that you might use to help you to multiply quantities by taking the logarithms of the quantities and adding the logs rather than multiplying the numbers. The logs might be useful as an intermediate step in a calculation, but they don't necessarily bear any relationship to the reality of the physical problem being solved. Reflected Power is useful as a "thinking" tool in making adjustments and/or calculations for analysis, adjustment or design, but don't ascribe "reality" to it, since it is "ficticious".

And so... attemtping to "justify" these ficticious powers with ever more complicated "visualizations" of various named powers bouncing around and adding up and cancelling each other at various points is fraught with potential errors and is largely a waste of time since the visualization has no real bearing on the reality of the situation.

Cecil says that energy "causes" voltages and not vice versa... and that is true. Conservation of energy is an all emcompassing principle. However the point he misses is that these "energies" or "powers" in question were in fact derived ficticious quantities derived from voltages and not "virgin" energies to begin with.

The only "real" power is the power generated by a generator and dissipated in the internal resistance of the generator and in the resistive part of the load.

If a power does not have a clearly identified "source" and a clearly identified "sink" with power being delivered in one direction from source to sink then it is simply a ficticious power. Useful perhaps, but ficticious nonetheless.

This viewpoint does not have to be seen as "goring" anyone's "sacred power cow", it merely means the ficticious power may be useful for some purposes as an intermediate stage in a calculation, etc... it's just not real!

Or... it is just as real as the reflected power in a DC cirucuit. [See my NG thread called "Direct Reflections".]

-Peter K1PO

2795. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:24:12 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cvv8m$425$1@slb6.atl.mindspring.net>
Source record: 164141

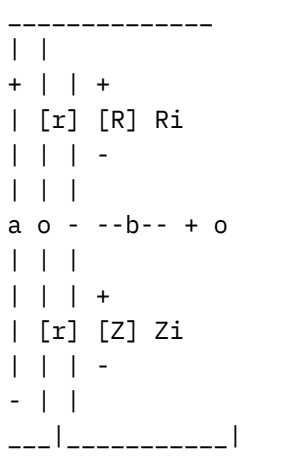
Roger:

All is revealed in the short analysis below...

[snip]
> Hi Peter,
>
> Why do you maintain that most SWR meters read only voltage? All of the
SWR
> meters I am familiar with read both voltage and current to properly sample
> energy from both parts of the electromagnetic wave.
>
> Part of the energy of each wave is carried as electrostatic energy
measured
> as voltage, and part in the magetic field measured as current. Both must
> be sampled to measure the total energy in the wave.
>
> You are using the term IR which is the voltage drop across a resistance.
A
> properly designed SWR meter will actually measure the current strength in
> the wire based on the direction from which the wave front came.
>
> I think I must better understand the origin of your formulas before I can
> comment on your results.
>
> 73, Roger, W7WKB
[snip]

See below...

VSWR bridge simplified!



Two arm four element "Wheatstone" bridge.

First arm - two series connected equal valued resistors [r].
Second arm - reference impedance [R] in series with unknown
impedance [Z].
The incident voltage "a" is applied across both arms.
Load current i flows through both [R] and [Z] in series.
By Ohm's law.
Voltage across [R] is Ri.
Voltage across [Z] is Zi.
Note that the "incident" voltage "a" is given by the sum:
a = Zi + Ri = (Z + R)i
Later we will use i = a/(Z + R) from this equation.
Place the indicating device (voltmeter) of the Wheatstone "bridge"
across the "span" between the two arms of the circuit. (Hence the
name "bridge" for this circuit, because the meter bridges the arms.)
Now by simple subtraction, calculate the voltage "b" indicated by
the meter placed on the bridge.
b = Zi - a/2
Substitute for a.
b = Zi - (Z + R)i/2
Simplify.
b = (Z - R)i/2
Substitute for i.
And ta dahhhh here it is....
b = ((Z-R)/(Z+R))a/2
or
b = (rho*a)/2
Within a scale factor of 1/2, the bridge meter output equals the
incicdent voltage "a" times the reflection coefficient (Z-R)/(Z+R).
Clearly Z may be anything you like, from a simple resistor to a
complex impedance to a transmission line or antenna.
No waves, no partial differential equations, no phasors, no rotating
vectors, just plain old high school algebra and Ohms law!
It works for AC it works for DC...

As they taught me in high school geometry...
QED!

>
>
>
>

2796. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:26:41 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF38101.858C2075@spam.me.not>
Source record: 164143
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Comments within:

"Leland C. Scott" wrote:
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF2090C.2C9DD715@spam.me.not...
> > Actually, I don't have my license yet. I go for my written tests next
> > week.
>
> I wish you good luck and hope you make it!!! You have any equipment yet? If
> not what are you looking at getting?

I'm starting out taking the Tech and General written tests. Code will
come later this year, hopefully. I'm going to need a 2M set to start,
and an HF set later, once I've passed the code requirement.

>
> > I've been studying code for over two years (see the other thread:
> > Ticket test suggestions for more info on this) without much result. I
> > won't go into that rigmarole again here. It's already in that other
> > thread.
>
> Yeah, I know what you mean there.
>
> > That's a bit reactionary, Leland. I don't think legalizing drugs is an
> > option. I don't see the connection between the two.
>
> To a point true, but I think you get my drift however. Until somebody makes
> a stand and says "NO MORE" they will just keep taking what is not theirs to
> take.

I did get that, Leland.. But honestly, the problem with CB'ers venturing
out where they don't belong is twofold: (1) There just isn't enough
bandwidth for CB. and (2) Export Radios that do too much. I think we can
both agree on these two, so I won't go into it too deeply here.

>
> > I'm proposing additional bandwidth for a particular mode of operation in
> > order to help alleviate some of the congestion on an already overtaxed
> > and overused band, which may just help to reduce the encroachment by
> > unlicensed radio operators on HAM bands.
>
> You have to stop and think about the mechanics a little bit. If a new band
> was created, as you suggest, then there will appear commercial rigs to
> operate on the new band. Once that happens then hordes of other CBers,

> looking for a clear channel to talk on, will show up over running the
> operators there now. Now we have the same situation all over again. SSB
> operators looking for the open band. They have to learn to be happy with
> what they already "legally" have.
>
> Ham Radio is not going to be any different either once you get your ticket.
> Sometimes the bands get crowed so you either put up with it, move, or turn
> the rig off. We don't just spin the VFO knob looking for an open frequency
> outside of our legal bands like the freebanders currently do on 11m. Hams
> seem to have much more respect for their privileges than freeband CBers do.
> I think Hams have more sense of respect for others rights to radio spectrum
> than the freebanders do. If there is any spectrum use disagreement it is
> taken up with the FCC, and let them decide. Hams don't just "occupy"
> spectrum outside of our bands because we feel we have a "right" to it.

No, but you can look for an open frequency within the bands HAMs are
allowed to transmit on. That's my point... HAMs have the bandwidth.
CB'ers don't. So when a CB'er goes off to find an empty frequency to
talk on, they're in violation of FCC rules when they go outside of the
standard-40. HAMs have MUCH more bandwidth with which to search for an
"open channel"...

>
> --
> --
> 73 de,
>
> Leland C. Scott
> KC8LDO
>
> ARRL member
> NCI member
>
> "You ask what Morse Code is good for? I'll tell you. Morse
> Code is used exclusively by Electronics Based life forms to
> communicate amongst themselves using advanced Organic
> Digital Signal Processors, running state of the art Artificial
> Intelligence Software, to perform the highly complex
> transmit encryption, receive decryption and error correction
> functions."

73's

-SSB

2797. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:27:13 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cvvea$a5d$1@slb6.atl.mindspring.net>
Source record: 164144

Reg:

Heh, heh... Nor I!

Thanks Reg... you seem to have a deep understanding of "watts". Could be because James Watt was one of your countrymen!

Wattmeters must be able to measure V and I and multiply, or convert from a measurement of say heat, or whatever, which is equvalent.

Indicating b = V - IR does not make watts, no matter how you mark your meter faces!

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:9ctv03ioq1@uranium.btinternet.com...
> The conventional forward/reflected power (SWR) meter responds to
> volts and amps. It is incapable of performing a multiplication sum.
>
> It indicates watts merely on the ASSUMPTION of a particular value
> of resistance Ro.
>
> That's not what I would call a watt-meter.
> ----
> Reg
>
>
>

2798. Re: Need Portable, Lightweight, and Shortened 20 Meter Antenna for PSK31

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:27:52 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9cvvg8nmp0@208.207.71.158>
Source record: 164145

Les:

Take an appropriate length of RG58c/u coax (use the type with stranded center conductor for flexibility and get the version with tinned braid). (Make sure it is long enough to serve as your feedline AND a half wave on 20 meters).

Measure 18ft 6 inches off one end, and strip the black jacket from it. Then, with the newly exposed braid, push it back onto itself, loosening it and working it loose and open until the free end it can be worked back over itself, the idea being to 'gurn it inside out" and work the free end back over the part of the intact coax so that it forms a "sleeve" over it. Viola! you now have a **20 meter Sleeve Dipole** and its feedline, in a single unit.

You still have a little adjusting of lengths to do, so cut the center conductor to 16 ft. 8in., and smooth the new braid sleeve out on the coax, tape or wiretire it in place and cut it to the same length. The idea is to make the exposed center conductor (with its insulation left intact) and the folded back braid each to be 1/4 wavelength on the operating frequency.

If it proves difficult to turn the braid back onto itself, you can cut it at the point where the jacket meets the exposed braid, loosen it and slide it back onto the jacket, and make a careful(small) solder joint to the coax part of the braid. Works either way.

You can use your fiberglas rod to hang it out a window, a few feet away from the motel wall. I leave it to your ingenuity as to how to attach the in-room end of the pole so the whole affair doesn't fall to the parking lot below.<g> You may want to use some small weight at the tip end to keep it stretched straight down when in use. Be careful that none of this falls on the head of other motel guests.

I haven't made a 20 meter version of this antenna, but it works very well at VHF and I'm sure it will do so on 20 meters. In fact, I have the Small Wonders kit also, and I think I'll make one for myself! Thanks for the idea.

73, Dick Wï¿½EX

Les Kramer wrote:
>
> This request is a repost from about 2 weeks ago. My request for help netted
> only one response.
> Surely with all the brainpower on this NG, someone else can give me
> additional ideas!!

>
> I operate PSK31 most of the time because of the ability to reliabily
> communicate at low power. Due to the narrow bandwidth of PSK31 (31.5 Hz),
> most operation occurs within 3KHz above the defacto PSK31 calling frequency
> (i.e., for 20 meters, that frequency is 14.070 MHz). Thus, for monoband
> operation, a narrow bandwidth antenna is an acceptable compromise. I have
> seen over 30 signals within the PSK 3KHz passband on 20 meters.
>
> I intend to purchase a Small Wonders Laboratory 20M PSK31 QRP kit later in
> the year and use it exclusively when I travel with my laptop (it will fit in
> the laptop case). My problem is that I need a short, highly portable, light
> weight antenna cut for 14.070 MHz. This antenna needs to be small enough to
> fit in a small suitcase (20 inch) with normal travel stuff. I also have two
> folding, bungy corded fiberglass tent poles of about 10 feet in length that
> I intend to support the antenna with from a hotel window (hopefully three
> stories or higher but depends on the hotel layout).
>
> CAN SOMEBODY SUGGEST THE BEST COMPROMISE ANTENNA FOR THIS KIND OF OPERATION?
> I have thought of helical dipoles, shortened loops, a fractal monopole,
> possibly a vertical delta loop for some applications, etc.) Obviously, a
> wire antenna is the preferred solution. Sketches or references to sketches
> and other information would also be appreciated.
>
> 73,
>
> de WA3SGZ Les

2799. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:28:25 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cvvgj$8b0$1@slb6.atl.mindspring.net>
Source record: 164146

Walt:

Those kinds of arithmetical errors can arise when you are adding ficticious
quantities.

Heh, heh.

-Peter K1PO

"Walter Maxwell" <w2du@journey.com> wrote in message
news:3AF34C80.8E422D33@journey.com...
> W6RCecilA wrote:
> >
> > "Peter O. Brackett" wrote:
> > > Voltages and currents are "added" by mother nature, but powers are
not.
> >
> > That's funny, Peter. When I screw in an extra light bulb, sure seems
> > like mother nature makes the room brighter. Is that not power being
> > added to make the room warmer and brighter?
> >
> > > Especially since power and voltage are related non-linearly [P = I*V]
by a
> > > product, then one cannot simply assume that linearity follows across
the
> > > great power divide, from volts to power...heh, heh.
> >
> > Nobody assumes that "linearity follows across the great power divide".
> > The very basic principle behind voltage, current, and power is that
> > energy cannot be created or destroyed (by ordinary means). The energy
> > is the cause. The voltages and currents are the effects. If you double
> > the energy, you do NOT double the voltage AND current. When someone
> > claims that 75 joules plus 8.33 joules is equal to 133.33 joules
> > because of the voltages involved, that is more than enough reason to
> > distrust the voltage analysis.
> >
> > > This kind of little error alone is one of the largest sources of
confusion
> > > in the debates on "reflected" power. One must take great care with
> > > voltages and currents in handling the components into which we claim
to be
> > > able to "resolve" those voltages and currents. And especially
subsequently
> > > with the "powers that we mathematically derive from those components.
> >

> > Actually not much care is required at all. Simply calculate/measure the
> > energy and let the voltages and currents fall out from the boundary
> > conditions. The voltages and currents MUST satisfy the conservation
> > of energy principle. There is no other choice.
> >
> > > It's "safer" to deal only with I and V and leave power out of it.
> >
> > It is safer (more basic) to deal with energy because of the conservation
> > of energy principle. 75 joules plus 8.33 joules simply cannot add up to
> > 133.33 joules. Do you disagree? That someone believes 75 joules plus
8.33
> > joules can equal 133.33 joules is proof that his voltage analysis is
> > filled with misconception and error.
> > --
> > http://www.mindspring.com/~w6rca
> >
> Steve has been trying for many months to try to make me believe that 75
> joules plus 8.33 joules equals 133.33 joules. How can such a true
> mathematician make such a statement anytime except April 1?
>
> Walt, W2DU
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2800. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:29:00 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF3818C.28F440BF@spam.me.not>
Source record: 164147
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

I've turned down the carrier on my Grant XL to 2 watts. The radio swings to 5 on AM, and does 0-12 on SSB. the AM measurements are RMS, the SSB measurements are PEP.

-SSB

HelmutSweenie wrote:
>
> A 2 watt carrier? do you just sit there and throw dead keys or do you talk.
> If you do talk I am sure it is more than 2 watts so your deadkey figure is
> irrelavent.
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF25F37.669914B6@spam.me.not...
> > Well, I'm heard with a 2 watt carrier over 20 miles away straight shot,
> > so I must have done something right.
> >
> > ::shrug::
> >
> > -SSB
> >
> > "David G. Nagel" wrote:
> > >
> > > No. Two 5/8 wave loaded antenna's do not make a 1 1/4 wave dipole. They
> > > make a dipole composed of two 5/8 wave loaded antenna's. This
> > > configuration will not make a truly efficient antenna. Read up on
> > > collinear antenna's and dipole antenna's. You will see that what you
> > > have is nothing. However for you sake I do hope it works to your
> > > satisfaction. I prefer something else...
> > >
> > > Dave WD9BDZ
> > >
> > > Sideband wrote:
> > > >
> > > > Doug:
> > > >
> > > > Hit Wilson's site and read up on what a Wilson Silver Load is....
> > > >
> > > > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
> > > > top loaded coil antenna. Two of them make 1 1/4 wave. Maybe I should
> > > > have said 1 1/4 wave dipole?
> > > >
> > > > -SSB
> > > >

> > > > Doug Smith wrote:
> > > > >
> > > > > On Thu, 03 May 2001 09:31:36 -0400, Sideband <sideband@spam.me.not>
> wrote:
> > > > > >them as well. Granted, I run a 5/8 dipole on the car (two 4' Wilson
> > > > > >
> > > > > Uh, 8 feet is not 5/8 wave on 11 meters. A 102" (8-1/2') whip is
> 1/4 wave,
> > > > > so a 5/8 wave would be a bit more than 17 feet long.
> > > > > >
> > > > > (you should try a 102" whip, I think you're likely to find it more
> effective
> > > > > than the twin four-footers. Because you won't have loading-coil
> losses.
> > > > > Mine worked *fantastically* well on 10 meters with a converted SSB
> CB.)
> > > > > --
> > > > > Doug Smith W9WI
> > > > > Pleasant View (Nashville), TN EM66
> > > > > http://www.w9wi.com

2801. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:29:06 UTC
From: Les Kramer <wa3sgz@mindspring.com>
Message-ID: <9cvvcr$75g$1@slb1.atl.mindspring.net>
Source record: 164142

Hi Joe,

You didn't mention if its going to be horizontal or vertical. A number of hams in the Orlando, FL area have standardized on delta loops and other loop configurations. I, myself, run an 80 meter horizontal loop at 30 feet (i.e., quad configuration fed at the corner with ladderline). I mainly run 20 through 10 meters with that configuration on PSK31 and have a great time with it. I fed it with the 450 ohm ladder line running directly to the tuner in the shack - no stubs or tuning sections for me.

Before I put the antenna up, I had a friend run several ENZEC simulations for quad and delta loops in both the vertical and horizontal planes. Since I live in a deed restricted area and don't have a tower or tall enough trees for a vertical antenna, I didn't consider a vertical delta loop or loop although the takeoff angle is lower at the lowest resonant frequency. For my horizontal loop on 80 meters, the takeoff angle is almost vertical and I can only talk to locals. On 30 meters and higher, the DX capabilities are great. In the horizontal ELNEC simulation, corner or mid leg feeding didn't seem to matter for quad sides and great number of sides in a loop, but for the delta loop is does. I know that Orlando hams feed horizontal delta loops at the MID SIDE rather than at the corner with 450 ohm ladder line with excellent results. I forget the ELNEC explaination for this effect.

Hope that this info helps.

de WA3SGZ

Les

"Yardleyite" <yardleyite@aol.com> wrote in message
news:20010504224040.21929.00003933@ng-md1.aol.com...
> Hello,
> My name is Joe Cro - N3IBX and I'm going to build up a 40M Delta
Loop to
> help my signal on that band. If anyone could give me advice on where to
put the
> feedpoint, tuning tips, etc. it would be most appreciated.
>
> I plan to feed it with coax, and I can get the apex up to about 80 feet or
so.
> 73 de joe N3IBX

2802. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:34:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF382C8.D5E40CC9@IEEE.org>
Source record: 164150

Roy Lewallen wrote:
> In all the modeling I've done, I've never found a delta loop that did as
> well as a dipole at the same maximum height. All the loop seems to do is
> lower the average height of the current. What's the appeal of this
> antenna?

Take a look at the radiation pattern at:

http://people.delphi.com/cecilmoore/tri40m.htm

It has a 216 degree horizontal beamwidth and a 160 degree vertical
beamwidth. It has a gigantic footprint and is one of the best all-
around 40m antennas that I have ever used. It combines the features
of a horizontal dipole and a vertical. I talked to New Zealand one
night on this antenna using 100 watts. Yet it performed well for
domestic nets during the daytime.
--
http://www.mindspring.com/~w6rca

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2803. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:35:21 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF38309.834F8041@spam.me.not>
Source record: 164148

What? And violate FCC rules?

::grin::

-SSB

"Rob St.Denis" wrote:
>
> Would never work ... too many cb'ers out there to butt heads with ...better
> off sending out an oscilatting tone at a few kilowatts in major cities
> accross north america for a couple years to annoy the heck out of them ...
> then they will lose interest and then we can take it back
>
> --
> Rob St.Denis
>
> "N3VST" <not@chance.com> wrote in message
> news:c%CI6.9215$R2.7157648@newsrump.sjc.telocity.net...
> > 11 meters was once a ham band. Hams can still go there, use your callsign
> > and follow all the rules. Of course do not use you ham gear there, buy a
> > cheap CB. If we hams again populate this band maybe we can win it back,
> for
> > sole amateur use. If would be great to have another digital band.. Just
> > some thoughts. One thing I have found is that the freeband cb'ers do not
> > like be associated with hams and our rules and practices. I think it is
> > time to take back the bands.
> >
> >
> > 73, N3VST
> >
> >

2804. Re: B&K Folded dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:35:37 UTC
From: nielsen@remove_this.oz.net
Message-ID: <9cvvup$g68$0@216.39.171.5>
Source record: 164149

And those nearby KW stations won't overload your receiver, either.

On Sat, 05 May 2001 00:30:04 GMT, Harold wrote:
> Doc and Kelly,
> I have a CanTenna too. It solved my difficult RFI problem and I can work
> any station I can hear.
>
> Harold
> wd5kca
>
> "'Doc" <w5lz@oio.net> wrote in message news:3AF2953F.4412F16C@oio.net...
>> Kelly,
>> Having been a B&K folded dipole user, I think the best
>> advice is to try it and see for your self. That antenna is
>> not one of the 'best' you could find on any band. If you
>> are looking for a comparable 'no tune' antenna, Heathkit
>> made hundreds of them called a CanTenna. Over all, it's a
>> very disapointing antenna.
>> 'Doc
>> PS - At least you saved $119.00...
>
>

--
Bob Nielsen, N7XY nielsen@oz.net
Bainbridge Island, WA http://www.oz.net/~nielsen
IOTA NA-065, USI WA-028S

2805. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:36:33 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9cvvvq$2g1$1@slb3.atl.mindspring.net>
Source record: 164151

Richard:

You are absolutely correct.

The vaunted Bird Model 43 will not work all the way down to DC.

Too bad it is sooooo limited in it's operations.

As you pointed out, this is due to the fact that in order for it to calculate and present the value:

b = V - IR on its' meter face, it needs to get a sample of V... and it does this with a high impedance capacitive voltage divider.

A very "cheap" way to do that.... heh, heh...

In addition it samples I by means of a magnetic field tap, which again won't support DC measurements.

Anyone know how to de-rate the Bird Model 43 readings as frequency approaches zero? Heh, heh.

In my reflected voltmeter designs, I arrange for a high impedance "tap" off of V with a method that works all the way down to DC! Same for the current.

But the Bird... it's good enough for hams and others who hang out in only one small part of the spectrum.

b = V - IR where R is the "reference" impedance is an equation with units of "volts". V is volts, and IR is volts, and b is volts.

b or B is the customary "symbol" used by the Scattering Formalists for "reflected waves". They usually use the symbol "a" for "incident waves". Us less formal mortals might like to use Vr for reflected voltage rather than "b", but I sort of like the simplicity of "b".

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:4811-3AF2237A-24@storefull-118.iap.bryant.webtv.net...
> Peeter, K1PO wrote:
> "I believe I gotcha>"
>
> I believe there is still an element of the Bird wattmeter operation
> Peter doesn`t appreciate. It can`t work with d-c.
>
> First, its samples are coupled through capacitance and mutual inductance
> for the voltage and current samples, respectively.
>

> Once d-c reaches a steady state, the sampling ends; a-c, on the other
> hand, continues to have regular alternations which provide samples of
> voltage and current. Output of the samples would normally be
> proportional; to frequency, but Bird has cleverly divided the spectrum
> into ranges and compensated the frequency response to make an individual
> element flat in response over its intended range of operation.
>
> Second, is the vital role of Zo in the power determination of the Bird
> wattmeter. This locked relation between voltage and current permits
> samples produced by voltage and current to be exactly balanced against
> each other so that one direction of power flow cancels while the other
> is measured.
>
> In a perfect line, the characteristic impedance is equal to the square
> root of L over C. A pulse or alternating signal applied to the line must
> charge the line`s capacitance through the line`s inductance. This square
> root of L over C forces energy traveling through a substantial length of
> line to obey the voltage to current ratio it imposes. L and C are simply
> results of the line`s construction. Line L and C simply can`t do much
> with d-c.
>
> I don`t have the patience for lengthy explanations. I`ve about hit my
> limit here. I am a lowly retired electrical engineer, not a teacher, but
> if you would like a little more on the subject, look ar page 24-4 of the
> 19th edition of the ARRL Antenna Book, or for yet more see Terman`s
> "Radio Engineering" or any of his more recent books.
>
> Best regards, Richard Harrison, KB5WZI
>

2806. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:49:07 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d00novlm1@slb5.atl.mindspring.net>
Source record: 164152

Richard et al:

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3af2d101.675507398@news.seanet.com...
> On Thu, 3 May 2001 22:35:22 -0500 (CDT), richardharrison@webtv.net
> (Richard Harrison) wrote:
>
> >Peeter, K1PO wrote:
> >"I believe I gotcha>"
> >
> >I believe there is still an element of the Bird wattmeter operation
> >Peter doesn`t appreciate. It can`t work with d-c.
> >
>
[snip]

Most, not all of these reflected voltmeters compute b = V - IR for a certain point on a line.

The "cheap" ones get a sample of V from a high impedance capacitive voltage divider.

Usually a couple of series capacitors of a few pF each. [That's mmFd, for you QCWA'ers like me.] The capacitive reactance is arranged to be so high due to the small size of the capacitive divider string that it creates almost no load on the line, hence theoretically leaving the "sampled" line voltage V undisturbed.

Of course as you point out, this capacitive sampling of voltage V prevents it's use at DC. Shame... a more sophisticated instrument could work all the way down to DC. Cheap those Birds.

The "cheap" ones get a sample of I from a "current transformer", i.e. possibly a small torroid of magnetic material through which one of the transmission line conductors, usually the center one, is passed, and a sample of current I is then picked off with a low impedance by a few turns on the torroid.

Of course as you point out, this magnetic sampling of current I prevents it's use at DC. Shame... a more
sophisticated instruement could work all the way down to DC. Cheap those Birds.

Then the rest of the meter circuitry merely uses the sample of V, pulled off the capacitive divider, call it xV and the sample of I pulled off the small torroid, call it yI, to compute using appropriate scale factors the reflected voltage, b = V - IR. Where R is the reference impedance. For

Bird R is the equivalent of 50 Ohms.

The Bird Model 43 and many of it's imitators are great little devices, inexpensive and fairly accurate over well defined frequency ranges, and suitable for field use.

But they are definitely not laboratory quality instruments, and few, if any ham instruments are suitable for making reflected voltage measurements at DC, simply because their "guts" are all only AC coupled as described above.

-Peter K1PO

> Hi Richard,
>
> That's called a backatcha.
>
> 73's
> Richard Clark, KB7QHC

2807. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:51:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF386CC.6D08CC89@IEEE.org>
Source record: 164153

"Peter O. Brackett" wrote:
> In any real transmission line, after "start up" transients, there are no
> more forward and reflected "energy" quanta sloshing back and forth on the
> line bouncing off reflection points. Just simple power flowing
> unidirectionally towards the sink [load] from the source [generator].

Then how do you explain the additional transmission line loss due to
SWR? How do you explain the impedance transformation up and down the
line that carries an SWR greater than 1:1? How do you explain the
variation in steady-state energy existing at any particular point?

> All this stored energy which "charged" the line in the transient stage,
> remains in the line stored in the electric and magnetic fields.

RF energy cannot stand still and if it is moving, it is power by definition.

> This bears repeating, "The reflected voltage "b" where b = V - IR,
> exists only inside themetering circuitry, NOT ON THE LINE.

Why can we pick off the reflected power with a directional coupler
and boil water with it?

> However, once the line is
> fully charged, there is no more forward and reverse energy reflection.

That charge cannot stand still. It has to move. The movement is called
forward and reverse energy reflection. The energy at any particular
point changes with time. Where does it go when it's not there?
--
http://www.mindspring.com/~w6rca

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2808. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:53:20 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF38740.BBC8788A@IEEE.org>
Source record: 164154

"Peter O. Brackett" wrote:
> It works for AC it works for DC...

Too bad a Bird Wattmeter doesn't.
--
http://www.mindspring.com/~w6rca

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2809. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 04:59:47 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF388C3.EF5D694D@IEEE.org>
Source record: 164155

"Peter O. Brackett" wrote:
> Indicating b = V - IR does not make watts, ...

Well, that's not what my SWR meter does. Mine's equation is

V(v) - V(i) is proportional to reflected power and is equal

to zero if there is no reflected power assuming Z0=50 ohms.
--
http://www.mindspring.com/~w6rca

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2810. Re: construction details for TET TE-23M?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 05:42:23 UTC
From: David Harvey <gedanate@yahoo.com>
Message-ID: <3pMI6.34371$ff.261753@news-server.bigpond.net.au>
Source record: 164156

Rudi forgets things, I'm afraid.
Sometimes you tell him twice, weeks apart, and he STILL forgets.
I just gave up on him. :-(
Cheers
--
David Harvey (in Sydney, Australia)
mailto:david@motzamarketing.com
http://www.roibot.com/w.cgi?R26293_sgtac

2811. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 05:43:44 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d03tt$d9g$1@slb7.atl.mindspring.net>
Source record: 164157

Cecil:

[snip]
> Then how do you explain the additional transmission line loss due to
> SWR? How do you explain the impedance transformation up and down the
> line that carries an SWR greater than 1:1? How do you explain the
> variation in steady-state energy existing at any particular point?
[snip]

Simple...

In a lossless line of course there is no "additional" loss due to SWR. The SWR can be a million to one on a lossless line and there is no extra loss.

In a lossy line, of course that is a different matter.

The way to do this is entirely straightforward if you examine and visualize the line as I suggested.

In the lossless case the line is just a cascade of incremental low pass ladder like L - C sections.

In the lossy line, the low pass ladder like sections each have an incremental resistance, call it "r" in series with the L and a shunt incremental conductance, call it g in parallel with the C. In most "practical" lossy lines the shunt g can be ignored and the series r used to do the computations of losses.

Now to see how a missmatch causes additional losses in the line just use this equivalent circuit.

To make a simple example without a lot of sections, look at the DC case first.

It might seem surprising but VSWR exists for DC as well as for AC and so do reflections etc... as I pointed out in my thread on "Direct Reflections".

Cecil set up a simple DC circuit such as the one in my example of "Direct Reflections". With a battery, an internal resistance and a load resistor. Calculate b and VSWR using the "usual" formulas.

To simulate a lossy line, simply put an additional resistor, the line loss resistor, in series with the load between the generator and the load resistance.

Then again compute b = V-IR, etc... and the VSWR, and compute the loss due to the line loss resistor, as I squared R, with the various VSWRs.. It's easy to do with such a DC example since the current is constant for DC all

along the line and the line loss can be treated as a lumped constant resistance. It gives all the same results as the formulae and nomographs we generally use at HF for additional line loss due to VSWR, etc... Cecil, no magic there. Nothing is different, DC, AC, all sammeee.

In the case of AC, and for a line which is a significant part of a wavelength long, since the current value I varies along the line, usually in a sinusoidal fashion, the simple DC approach assuming a constant current through the whole line resistance won't work as it does for DC, and you need to divide the line up into segments, sort of like the segments in MOM em, analysis programs like EZENEC.

To compute the total line loss, you must sum the loss in several segments for the VSWR cases, since the loss must be computed as I*I*r at each segment where I is the current "value" assumed at that segment on the line and r is the incremental constant resistance at that same point.

To get farily accurate answers [i.e. within 2 - 5%] you will generally only need a few segments depending upon how much of a wavelength appears in the line, say 3 to 5 segments and 3 to 5 values of I from a sinusoidal wave should do it. The calculations for loss at each segment can be done just as if it were DC! And it is simply a job for a scientific calculator, not a computer. Although I am sure that Reg could automate it all and zip it up in compiled Pascal for us. Heh, heh.

Using this technique you can produce your own graphs, nomographs, values, etc just like those in the handbook, including special undocumented lines, etc..... for excess loss on a lossy line due to non-unity VSWR.

And you can do it for your own homemade line, etc... All you really need to know is the resistance per unit length at the desired frequency and then break the line up into a few segments to calculate your answer.

All you really need are I and V and the resistance per unit length and b = V - IR.

Cecil, forget all that forward and reflected power stuff... intermediate level fiction!

[snip]
> RF energy cannot stand still and if it is moving, it is power by definition.
[snip]

But which way? longitudinally up and down the line, or back and forth latterly between the distributed line capacitance and inductance?

[snip]
> > This bears repeating, "The reflected voltage "b" where b = V - IR,
> > exists only inside themetering circuitry, NOT ON THE LINE.
>
> Why can we pick off the reflected power with a directional coupler
> and boil water with it?

[snip]

To the extent that you pull "power" out of the "b" produced by the meter, you will be affecting the measurement of I and V, since the oly source of power if you use b as the emf is from the I and V on the line. You will simply be tapping off some of the power in I and V, flowing unidirectionally down the line to boil the water. If you really try to boil a lot of it vigourously, you will upset the whole line conditions and the measurements are no longer valid. It's like the Heisenberg uncertainity principle, you cannot expect to draw a lot of powe from the thing you are measuring and have it remain the same! What?

[snip]
> > However, once the line is
> > fully charged, there is no more forward and reverse energy reflection.
>
> That charge cannot stand still. It has to move. The movement is called
> forward and reverse energy reflection. The energy at any particular
> point changes with time. Where does it go when it's not there?
[snip]

Cecil... the energy "charge" stored in the distributed capacitance and incuctance of the line is just like the energy stored in an LC tank cirucuit. It is "dynamically" stored energy.

Consider a stand alone lossless LC tank which started with an initial charge on the capacitor. The energy stored in the tank can remain there oscillating back and forth between the C and the L, endlessly if there are no losses. On one half cycle the energy is stored in the electorstatic field of the capacitor and on the next half cycle in the magnetic field of the inductor. And the two lossless elements the L and the C, simply throw t he energy back and forth between them

The same thing happens on a lossless line. The stored energy or charge on the line is simply thrown back and forth between the distributed inductance and the distributed capacitance of the line.

Think of a lossless line as a cascade of elementary low pass L, C sections, that's what it is... driven by a resistive generator and loaded by a resistor.

There is an initial start up transient to "charge" the line, and thereafter delivered power passes unidirectionally down the line from the generator to the load, all the while the L's and C's are "storing" energy equal to the "initial" charge as long as the steady state goes on. The distributed L and C is just tossing the energy back and forth as in the lossless tank circuit. When the steady state ends, of course the line will eventually dump its stored Joules into the load and the internal resistance of the generator.

Forget about reflected power, incident power, delivered power, all you need is delivered power a source, a sink and you can calculate everything else with I and V, you don't need VSWR and reflected power and all that confusing

ficticious stuff.

-Peter K1PO

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2812. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 05:51:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d04ckoir1@slb3.atl.mindspring.net>
Source record: 164158

Dick:

Is there some other place on that cosmic scaled lady where we could hang
out?

I don't like it under her finger nail. I can think of nicer places.

-Peter K1PO

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9cvpuk$4lr$0@208.207.71.158...
>
>
> Reg Edwards wrote:
> >
> > Matter and anti-matter have one essential factor in common -
> > GRAVITY.
> >
> > Isn't it obvious the 95.6% of matter which is "missing" is in the
> > form of black holes. The dinasaurs were aware of that in their
> > bones. And today, somewhere in the universe, on planets revolving
> > around stars in distant galaxies, there are intelligent creatures
> > who had it all sorted out before our insignificant tiny Earth came
> > into existence.
> >
> > Even now, I have at the tip of my right-hand index finger a tiny
> > black hole. I cannot see it but its presence is necessary to
> > account for the gravitational field which actually exists in my
> > immediate vicinity, which cannot be accounted for by the remainder
> > of the visible or otherwise detectable mass of the universe.
> >
> > Then there are the vastly superior intelligences evolved during the
> > eons by the countless galaxies themselves. Each galaxy is but an
> > atom in the brain of an unimaginable (to us) intelligence. To them,
> > the human race along with jelly fish and the Aids virus have been
> > relegated to the realm of quarks.
> >
> > But I'm sure, just like us, they all have their little problems and
> > regularly pray to God for assistance.
>
>
>
> And all you have described may be occurring in a speck of dirt under a
> fingernail of a cosmic scaled lady who is about to visit her
> manicurist...

>
> Dick

2813. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 06:08:45 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AF398ED.DC668D50@oio.net>
Source record: 164160

N3VST wrote:
>
> 11 meters was once a ham band. Hams can still go there, use your callsign
> and follow all the rules. Of course do not use you ham gear there, buy a
> cheap CB. If we hams again populate this band maybe we can win it back, for
> sole amateur use. If would be great to have another digital band.. Just
> some thoughts. One thing I have found is that the freeband cb'ers do not
> like be associated with hams and our rules and practices. I think it is
> time to take back the bands.
>
> 73, N3VST

I'd give you maybe a 5 on the 'troll' scale. No originality,
moderate amount of 'stupid', sure way to piss-off the CB'ers, and
other than that, I've seen better...
Unless! Your serious? Surely not, I mean, it's a totally stupid
idea. Who in their right mind would want it 'back'? Are you even
old enough to remember when 11 meters was an amateur band? I doubt
it...
'Doc

2814. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 06:10:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d05fh$k03$1@slb1.atl.mindspring.net>
Source record: 164159

Cecil:

"V(v) - V(i)"... Heh, heh... surely you jest!

As the "Bard" [Reg knows him well, for he was the first "ham"]... from Avon on the Thames... would have said...

"A rose by any other name would smell as sweet".

"b" is "b"...

Call it what you will... but "reflected volts" is...

The difference between the actual voltage (V) and the voltage (IR) you would measure, where is V now, if you were matched...

Nothing more, nothing less...

Get used to it!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF388C3.EF5D694D@IEEE.org...
> "Peter O. Brackett" wrote:
> > Indicating b = V - IR does not make watts, ...
>
> Well, that's not what my SWR meter does. Mine's equation is
>
> V(v) - V(i) is proportional to reflected power and is equal
>
> to zero if there is no reflected power assuming Z0=50 ohms.
> --
> http://www.mindspring.com/~w6rca
>
>
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2815. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 06:12:24 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d05ji$fa0$1@nntp9.atl.mindspring.net>
Source record: 164161

Cecil:

Despite the claims to the contrary, the Bird Model 43 is not a wattmeter!

It is a special kind of voltmeter, plain and simple.

And it has a very limited frequency response, won't even measure DC
voltages.

What?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF38740.BBC8788A@IEEE.org...
> "Peter O. Brackett" wrote:
> > It works for AC it works for DC...
>
> Too bad a Bird Wattmeter doesn't.
> --
> http://www.mindspring.com/~w6rca
>
>
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2816. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 06:24:58 UTC
From: 2w8ji@akorn.net
Message-ID: <3af39bb2.131601419@news.accessunited.com>
Source record: 164162

On Fri, 04 May 2001 20:47:45 GMT, wa9mzt@arrl.net wrote:

>Wouldn't the copper strap mentioned by polyphase be another solution
>to using braid or solid?? It offers more surface area and would
>allow for more skin effect, but I think it is significantly more
>money.
>
>I can't leave the conductor that connects the ground rods on top of
>the ground, so I need to bury it at least somewhat.
>
>
>Thanks,
>
>Steve

Copper flashing is readily available and cheap. Try commercial roofing
places.

I bought 50 feet of three inch wide at Dayton last year for about $40.

If you don't want to spend that money, then buy solid copper like #6
and run two or three conductors spaced a foot or so apart.

Don't use braiding, no matter what you hear.

73 Tom

2817. Re: Lightning conductors.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 06:36:55 UTC
From: 2w8ji@akorn.net
Message-ID: <3af39e54.132274838@news.accessunited.com>
Source record: 164163

On Fri, 4 May 2001 23:56:27 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Take the case of coax. In 50-ohm solid polyethylene coax the
>attenuation due to the outer conductor is only 22% of the total
>attentuation. The other 78% is due to the inner conductor because
>of its much smaller diameter. In 75-ohm coax only 13% of
>attenuation is due to the outer conductor. Conclusion, coax
>attenuation is relatively insensitive to outer conductor
>resistance. And its not very high anyway.

What you are missing is that while the clean and new attenuation is
only 10-25% of acble loss, once the braid corrodes the loss in the
braid dominates the loss in the cable by a large margin.

Virtually ALL of the additional loss in a cable that gets wet and then
drys out is do to the braid. I've measured 100 feet of RG-8 that has
had over 20 dB loss on 30 MHz, even though the cable was totally dry
when I stripped it back.

The braid, of course, was black.

73 Tom

2818. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 07:11:29 UTC
From: mike.luther@ziplog.com
Message-ID: <tf79t1q0jh160b@corp.supernews.com>
Source record: 164164

In <9d04ckoir1@slb3.atl.mindspring.net>, "Peter O. Brackett" <ab4bc@ix.netcom.com> writes:
>Dick:

>Is there some other place on that cosmic scaled lady where we could hang
>out?

>-Peter K1PO

Think positive, Pete. Relatively speaking, the re-incarnative possiblities in a multi-dimensional universe are staggering.

Per my recall, reading, my Dad's comments, and those of Peter Ford here at Texas A&M, who taught the Development of Europe, the cathedral spire at Ulm, Germany was actually about ten feet higher than it is today! Ford noted that when first finished, on the dedication day lightning hit it! It collapsed inward, hurling stone and all down into the cathedral below, with a number of carnate souls perishing under the rain of rubble.

In reverence, it wound up finished the second time at the 624 foot odd height it is today, the tallest cathedral spire I think you'll find in the world .. grin. Eienstein grew up in Ulm. Per Dad, and his readings in German, it was also part of the inspiration for the work on relativity! Finished around the time he was a young boy, Dad noted that Albert took the roughly 45 minutes to climb it, looked out the observation windows that are ten or so feet from the tip!

But he saw not only the dimension of the level he was on, and the extension of the horizon, but, per Dad, he visualized the possibilties of what things would look like from both higher up and lower still! From that, came the idea and perspective of multiple dimensions!

We've made a lot of progress (?), since then, perhaps. But in the same way that you expanded your universe with your view, you can postualate all sorts of things smaller as well!

"Big fleas have little fleas
that ride their backs and bite 'em.
And little fleas have smaller fleas ..
so on adinfinitum!"

Steven King?

As a ham radio operator, have you ever walked out on a crystal clear cold winter night and shined a flashlight up in the sky? Noticed how far it went? Then gone inside and used that same watt or two to talk on 40 CW from the USA to VK land? While pondering that thousands of

hams in VK land could simultaneously hear you at the same time?

(?) Ethereal isn't it?

Think positive, Pete. Relatively speaking, the re-incarnative
possiblities in a multi-dimensional universe are staggering.

"There was an old woman who rode in a basket,
nineteen times as high as the sky.
And what she was doing I couldn't but ask it!

Old woman, old woman, way up in the sky,
will I ride with you there by and by?

Aye, by and by."

Inspired by, so taught me by Dr. John Abbot,
Kafka's, "The Bucket Rider"

which he noted was produced from the same
natural settings that befell Napoleon!

Yes, from Napoleon's march on Russia,
of which you might have seen that priceless
graph, the width of which depicts the number
of his men alive on the march mile by mile
as he sallied forth and fell back. Half inch
wide it started and you can't even see it
as it vectors in back to France...

Think positive, Pete. Relatively speaking, the re-incarnative
possiblities in a multi-dimensional universe are staggering.

--> Sleep well; OS2's still awake! ;)

Mike - W5WQN
Mike.Luther@ziplog.com
Mike.Luther@f3000.n117.z1.fidonet.org

2819. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 07:24:13 UTC
From: Dwight Stewart <stewartx@sccoast.net>
Message-ID: <3AF3AA40.AD6DA43B@sccoast.net>
Source record: 164165
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

W6RCecilA wrote:
>
> What gave you the idea that I consider it
> a minor problem? I don't consider illegally
> driving on the shoulder of the road to be a
> minor problem, do you? Bicyclists can die
> because of that problem. Do you care about
> the RF emissions of freebanders more than
> the lives of bicyclists?

I must have missed that part - I don't remember any mention of
bicyclists. All I remember is a mention about driving on the side of
the road, which is indeed minor (unless you hit a bicyclist).

> On a scale of crimes, is freebanding a
> minimum offense compared to rape and murder?

Well, that is certainly stating the obvious.

Dwight Stewart (W5NET)

http://www.qsl.net/w5net

2820. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 08:22:55 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF3B85F.DE424C4E@eznec.com>
Source record: 164166

mike.luther@ziplog.com wrote:

> . . .

> "Big fleas have little fleas
> that ride their backs and bite 'em.
> And little fleas have smaller fleas ..
> so on adinfinitum!"
>
> Steven King?

> . . .

Not quite.

So, naturalists observe, a flea
Hath smaller fleas that on him prey;
And these have smaller still to bite 'em;
And so proceed ad infinitum.
Thus every poet in his kind,
Is bit by him that comes behind.

- Jonathan Swift, "On Poetry. A Rhapsody", 1733.

Roy Lewallen, W7EL

2821. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 10:21:02 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF3D40E.DF74B8D8@eznec.com>
Source record: 164167

If you still have the model, I'd appreciate your emailing it to me. I couldn't quite duplicate the pattern. What I got was higher gain, but not the flattening at the top of the pattern. It appears that you used a poorer than average ground, but even with very poor ground I couldn't duplicate the results.

Comparing what I did get to a dipole at 37 feet (the height of the top of the loop),

The loop is about 1 dB better than the dipole below 20 deg. elevation
The loop is the same as the dipole at 20 deg. elevation
The dipole is about 1 dB better at 25 deg. elevation,
2 dB better at 30 deg., and 3 dB better at 45 deg. and higher.

The loop's front/side ratio is about 6 dB as opposed to the dipole's 9-10 dB (at 28 degree elevation angle), so it would do better off the end at higher angles.

I doubt if many people could tell the difference between this loop and a dipole, but the loop might be slightly better for some paths (and worse for others). The combination of horizontal and vertical poloarization is often a useful compromise, and this antenna is easier to feed than an inverted L (which I'd expect to have similar characteristics). Thanks for pointing this design out to me. Apparently delta loops aren't too bad if they're designed and/or fed so all the vertically polarized radiation doesn't cancel. That way, at least, you're making reasonably good use of the current flowing at lower heights.

I am surprised that it's one of the best 40 meter antennas you've ever used, but it can be surprisingly hard to beat a dipole by much if your height is limited.

I worked YJ8OT in New Hebrides, off New Zealand, with 1.5 watts on 40 meters using a dipole made from tinned #28 hookup wire, bent to fit my attic, 15 feet above the ground. (And my house is on land that slopes upward to the west.) It was definitely not the best antenna I've used on 40, and was many dB worse than a dipole outside in the clear at 40 feet. My report was 559, he copied solid, and I have the QSL. I've worked VK and ZL many times on 40 with 1.5 watts with various simple antennas. If the best you can do with this antenna is ZL with 100 watts, you should check your connections!

How about JA on 40 meters from a VW Squareback using a bumper-mounted CB whip base loaded with a coil wound on a powdered iron toroid? I was QRO at 8 watts CW for that one. The QTH was admittedly good -- I was motoring down highway 101 at about 2 a.m. But doesn't this prove that I

was using a great antenna?

Roy Lewallen, W7EL

W6RCecilA wrote:
>
> Roy Lewallen wrote:
> > In all the modeling I've done, I've never found a delta loop that did as
> > well as a dipole at the same maximum height. All the loop seems to do is
> > lower the average height of the current. What's the appeal of this
> > antenna?
>
> Take a look at the radiation pattern at:
>
> http://people.delphi.com/cecilmoore/tri40m.htm
>
> It has a 216 degree horizontal beamwidth and a 160 degree vertical
> beamwidth. It has a gigantic footprint and is one of the best all-
> around 40m antennas that I have ever used. It combines the features
> of a horizontal dipole and a vertical. I talked to New Zealand one
> night on this antenna using 100 watts. Yet it performed well for
> domestic nets during the daytime.
> --
> http://www.mindspring.com/~w6rca
>
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2822. StreetNav iGPS Receiver

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 10:46:13 UTC
From: clvancil@aol.com.spamnix
Message-ID: <20010505064613.17157.00002145@ng-ct1.aol.com>
Source record: 164168

Hi All,

Has anyone purchase a Pharos Streetnav? What is your opinion of this receiver?
I would be using it in a balloon payload.

73,
Chris Vancil (KD7LRV)
"Limine fato impedito, perage fenestram"
"When fate closes a door go in through a window."
http://members.aol.com/CLVANCIL/MarsBalloon.html

2823. Re: Lightning conductors.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 11:05:23 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9d0mkg$7jr$1@neptunium.btinternet.com>
Source record: 164069

The moral seems to be - don't soak your coax in water till the
braid gets black.

Use any substantial conductor you fancy to lead lightning down to
ground.

Reg.

2824. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 11:46:08 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <4KRI6.47835$Ce4.3627049@news1.rdc1.ct.home.com>
Source record: 164070

11 meters was never an amateur band. It was a shared
band that amateurs were granted access to.

Pete

"'Doc" <w5lz@oio.net> wrote in message news:3AF398ED.DC668D50@oio.net...
>
>
> N3VST wrote:
> >
> > 11 meters was once a ham band. Hams can still go there, use your
callsign
> > and follow all the rules. Of course do not use you ham gear there, buy
a
> > cheap CB. If we hams again populate this band maybe we can win it back,
for
> > sole amateur use. If would be great to have another digital band..
Just
> > some thoughts. One thing I have found is that the freeband cb'ers do
not
> > like be associated with hams and our rules and practices. I think it is
> > time to take back the bands.
> >
> > 73, N3VST
>
> I'd give you maybe a 5 on the 'troll' scale. No originality,
> moderate amount of 'stupid', sure way to piss-off the CB'ers, and
> other than that, I've seen better...
> Unless! Your serious? Surely not, I mean, it's a totally stupid
> idea. Who in their right mind would want it 'back'? Are you even
> old enough to remember when 11 meters was an amateur band? I doubt
> it...
> 'Doc

2825. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 11:54:32 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <rdq7ftkt3f76dub6gld1uot6gop58abffq@4ax.com>
Source record: 164071

On Fri, 4 May 2001 15:00:56 -0400, "N3VST" <not@chance.com> wrote:

>If we hams again populate this band maybe we can win it back, for
>sole amateur use.

Don't smoke that stuff in public. Cops read this too.

W7TI

2826. Re: Problem with "skin effect theory"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 12:17:48 UTC
From: Serafini <nerva4@mywebpages.com>
Message-ID: <3AF3EF6C.3ABC07DE@mywebpages.com>
Source record: 164072

Roy Lewallen ha scritto:

> The formulas for skin effect assume linear properties and, as you point
> out, permeability is often a function of current density. So it's not
> unreasonable to assume that skin depth is a function of current density.
> In fact, in a nonlinear material, the current penetrating the material
> wouldn't be purely sinusoidal, since the permeability, hence the
> penetration, would vary over the waveform period. If the material is
> highly nonlinear, you wouldn't be able to use these equations at all,
> but would have to resort to a time domain or harmonic balance method for
> solution. It would probably have to be done numerically with a computer
> if you need accurate results.

>
> This is generally true any time you try to apply linear equations to
> nonlinear circuits or materials.
>
> Roy Lewallen, W7EL

Really i try to understand why skin effect exist.
It seem to me that the way of skin effect is to expell current and magnetic field from the inner part of a conductor, i.e. to shield the skin current, i.e. the conductor from the action of internal and external EM fields.
Can you agree in such evaluation of procedure of shield by skin effect?

Antonio

2827. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 12:25:26 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d0rf1$j5p$1@slb7.atl.mindspring.net>
Source record: 164073

Mike:

Thanks for those thoughts...

And... FWIW... I am definitely a positive thinker.

-Peter K1PO

<mike.luther@ziplog.com> wrote in message
news:tf79t1q0jh160b@corp.supernews.com...
> In <9d04ckoir1@slb3.atl.mindspring.net>, "Peter O. Brackett"
<ab4bc@ix.netcom.com> writes:
> >Dick:
>
> >Is there some other place on that cosmic scaled lady where we could hang
> >out?
>
> >-Peter K1PO
>
> Think positive, Pete. Relatively speaking, the re-incarnative
> possiblities in a multi-dimensional universe are staggering.
>
> Per my recall, reading, my Dad's comments, and those of Peter Ford here
> at Texas A&M, who taught the Development of Europe, the cathedral spire
> at Ulm, Germany was actually about ten feet higher than it is today!
> Ford noted that when first finished, on the dedication day lightning hit
> it! It collapsed inward, hurling stone and all down into the cathedral
> below, with a number of carnate souls perishing under the rain of rubble.
>
> In reverence, it wound up finished the second time at the 624 foot odd
> height it is today, the tallest cathedral spire I think you'll find in
> the world .. grin. Eienstein grew up in Ulm. Per Dad, and his readings
> in German, it was also part of the inspiration for the work on relativity!
> Finished around the time he was a young boy, Dad noted that Albert took
> the roughly 45 minutes to climb it, looked out the observation windows
> that are ten or so feet from the tip!
>
> But he saw not only the dimension of the level he was on, and the
> extension of the horizon, but, per Dad, he visualized the possibilties
> of what things would look like from both higher up and lower still!
> From that, came the idea and perspective of multiple dimensions!
>
> We've made a lot of progress (?), since then, perhaps. But in the same
> way that you expanded your universe with your view, you can postualate
> all sorts of things smaller as well!

>
> "Big fleas have little fleas
> that ride their backs and bite 'em.
> And little fleas have smaller fleas ..
> so on adinfinitum!"
>
> Steven King?
>
> As a ham radio operator, have you ever walked out on a crystal clear
> cold winter night and shined a flashlight up in the sky? Noticed how
> far it went? Then gone inside and used that same watt or two to talk
> on 40 CW from the USA to VK land? While pondering that thousands of
> hams in VK land could simultaneously hear you at the same time?
>
> (?) Ethereal isn't it?
>
> Think positive, Pete. Relatively speaking, the re-incarnative
> possiblities in a multi-dimensional universe are staggering.
>
> "There was an old woman who rode in a basket,
> nineteen times as high as the sky.
> And what she was doing I couldn't but ask it!
>
> Old woman, old woman, way up in the sky,
> will I ride with you there by and by?
>
> Aye, by and by."
>
> Inspired by, so taught me by Dr. John Abbot,
> Kafka's, "The Bucket Rider"
>
> which he noted was produced from the same
> natural settings that befell Napoleon!
>
> Yes, from Napoleon's march on Russia,
> of which you might have seen that priceless
> graph, the width of which depicts the number
> of his men alive on the march mile by mile
> as he sallied forth and fell back. Half inch
> wide it started and you can't even see it
> as it vectors in back to France...
>
> Think positive, Pete. Relatively speaking, the re-incarnative
> possiblities in a multi-dimensional universe are staggering.
>
>
>
> --> Sleep well; OS2's still awake! ;)
>
> Mike - W5WQN

> Mike.Luther@ziplog.com
> Mike.Luther@f3000.n117.z1.fidonet.org
>

2828. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 12:26:34 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d0rh2$mu1$1@slb3.atl.mindspring.net>
Source record: 164074

Roy:

ad infinitum... I love that.

-Peter K1PO

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:3AF3B85F.DE424C4E@eznec.com...
> mike.luther@ziplog.com wrote:
>
> > . . .
>
> > "Big fleas have little fleas
> > that ride their backs and bite 'em.
> > And little fleas have smaller fleas ..
> > so on adinfinitum!"
> >
> > Steven King?
>
> > . . .
>
> Not quite.
>
> So, naturalists observe, a flea
> Hath smaller fleas that on him prey;
> And these have smaller still to bite 'em;
> And so proceed ad infinitum.
> Thus every poet in his kind,
> Is bit by him that comes behind.
>
> - Jonathan Swift, "On Poetry. A Rhapsody", 1733.
>
> Roy Lewallen, W7EL

2829. Re: Problem with "skin effect theory"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 12:46:20 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AF3F61C.16BE05D9@mwci.net>
Source record: 164075

Serafini wrote:

> Really i try to understand why skin effect exist.
> It seem to me that the way of skin effect is to expell current and magnetic
> field from the inner part of a conductor, i.e. to shield the skin current,
> i.e. the conductor from the action of internal and external EM fields.
> Can you agree in such evaluation of procedure of shield by skin effect?

RF current flow below the surface of a conductor creates an RF magnetic field below the surface of the conductor according to Ampere's law. This magnetic field creates an RF electromagnetic force (EMF) below the surface, according to Faraday's law. This EMF opposes the current flow. As the depth below the surface increases this opposition increases very quickly. The result is that current flows mostly at the surface.

You can read about Ampere's law, Faraday's law and EMF.

Bill W0IYH

2830. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 12:54:11 UTC
From: Tad Danley <taddanley@att.net>
Message-ID: <3AF3F7F3.CB14DB51@att.net>
Source record: 164076
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Sideband wrote:

> Richard:
>
> Thanks for the kind words... You've brought up a few points that I
> hadn't thought of, and that I need to give some thought to before
> responding..
>
> I take my written Tech and General tests on the 8th. I'm going to work
> on my code with KC8HEZ and others here in Livingston county on 2M when I
> get my set up. Once I get the code down, I'll take the code test, find
> an HF set, and hopefully be talking on HF by the end of the year.
>
> The next problem is going to be an antenna here in the apt. I've thought
> of throwing out a longwire and using a tuner, trying to use the gutters
> on the building as a large loop antenna with a tuner, and a few other
> options. The 2M setup shouldn't be too difficult. I do have a rail
> outside my window I can mount an antenna to... I just hope it's high
> enough to get to the repeater.
>
> Hopefully, by the 10th, I'll have a callsign to send you guys... and by
> the 15th I should have the domain name corresponding to that callsign..
> I'm going to put a site up here at the house for those who are curious.
>
> 73's and Hopefully I'll be chatting with you all on the air soon.

Good luck with your tests, and welcome to ham radio! As far as antennas go, they are always a challenge in an apartment setting, but you can get creative and will learn much in the process!

Don't forget about going mobile if you are not able to get satisfactory performance with your base antennas or have RF interference problems with your neighbors. I have lots of fun with a Yaesu FT-100D and Hamsticks.

73,

--
Tad Danley, K3TD
mailto:taddanley@att.net

2831. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 13:16:57 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3af3fc3c.145610681@news.aepnet.com>
Source record: 164077

On Sat, 5 May 2001 00:18:29 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
wrote:

[baffle gab]

Lovely day in Tucson yesterday. Temp 77. Nice cool clear morning today and
I've got the top off the Camaro and am heading down to Sierra Vista to a
hamfest.

When I get back, I expect to see a "proof" from you that explains how your
fictitous reflected power manages to warm up the thermistors in my waveguide
power sensors.

Regards,

Wes Stewart N7WS

2832. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 13:25:03 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <PaTI6.47845$Ce4.3642566@news1.rdc1.ct.home.com>
Source record: 164078

Especially the stuff that got sprayed...

_____
>
> Don't smoke that stuff in public. Cops read this too.
>
> W7TI

2833. Re: Problem with "skin effect theory"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 13:27:35 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AF3FFC7.A8AF1733@mwci.net>
Source record: 164079

William E. Sabin wrote:

> Serafini wrote:
>
> > Really i try to understand why skin effect exist.
> > It seem to me that the way of skin effect is to expell current and magnetic
> > field from the inner part of a conductor, i.e. to shield the skin current,
> > i.e. the conductor from the action of internal and external EM fields.
> > Can you agree in such evaluation of procedure of shield by skin effect?
>
> RF current flow below the surface of a conductor creates an RF magnetic field
> below the surface of the conductor according to Ampere's law. This magnetic
> field creates an RF electromagnetic force (EMF) below the surface, according to
> Faraday's law. This EMF opposes the current flow. As the depth below the
> surface increases this opposition increases very quickly. The result is that
> current flows mostly at the surface.
>
> You can read about Ampere's law, Faraday's law and EMF.
>
> Bill W0IYH

Correction: "electromagnetic force" should be "electromotive force"

Bill W0IYH

2834. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 13:47:44 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d109a$c55$1@slb7.atl.mindspring.net>
Source record: 164080

Wes:

Very nice morning here in Cary, NC as well. About 72F, wall to wall blue sky, ducks and geese sitting on the lake out back.

In a few minutes I'll go up to the garage and "fire up" the Ford Expedition... for the trip over to Clayton. Going to the race track over there today. Gotta use the SUV to go to the track!

Wife and I are going over to Clayton, NC to the Brookhill Steeplechase for the day. http://www.brookhillsteeplechase.com. We'll be drinking mint juleps and urging the horses and jockeys on... that kinda stuff.

\Aside: We just ignore those goings on over in Louisville, KY, today. heh, heh. We got our own races.

Wes, when you get a chance, remind me again of how you get that "so-called" reflected power into your microwave thermistors.

I hope this is not just another "play on words" that you want me to "prove". It's really hard to "prove" things when we don't agree on the words and basic definitions. I'll gladly give my interpertation of those "words", but just calling something "reflected power" doesn't mean that it came from someplace and bounced off or reflected off something and returned again.

Were there circulators involved in your setup, like with Walt Maxwell's earlier question?

In that case of course, what he called "reflected" power was just not a "reflected" power it was just a "name" applied to a delivered power that progressed unidirectionally from port 1 to port 2 to port 3 with some power dropped off at port 1 and some split off and continuing on around the circle of the circulator when it encounters the mismatch at port 2. This is nothing more nor less than unidirectional power splitting, it is not reflection.

Even though folks use the nomenclature, "reflected" applied to things like this, it does not mean that the residual power was "reflected" at port 2 of the circulator, it certainly was not, all that happens in that case is a unidirectional power splitting.

Is the "case" that you want me to "prove" similar, i.e. just a "play" on words for a more ordinary phenomena, or... then again maybe not. Point me at your question again or cut and paste it into an answer to this post.

I'm not trying to "blow you off" Wes... just trying to "catch up".

Let's discuss it a little more and see where we come out.

Have a nice day.

-Peter K1PO

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
news:3af3fc3c.145610681@news.aepnet.com...
> On Sat, 5 May 2001 00:18:29 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com>
> wrote:
>
>
> [baffle gab]
>
>
> Lovely day in Tucson yesterday. Temp 77. Nice cool clear morning today
and
> I've got the top off the Camaro and am heading down to Sierra Vista to a
> hamfest.
>
> When I get back, I expect to see a "proof" from you that explains how your
> fictitous reflected power manages to warm up the thermistors in my
waveguide
> power sensors.
>
> Regards,
>
> Wes Stewart N7WS
>

2835. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 13:54:10 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF40602.5DAFA757@IEEE.org>
Source record: 164081

"Peter O. Brackett" wrote:
> Why would there be a difference between 60Hz and a transmission line...

Wavelength

> Or for that matter a difference between AC and DC when it comes to a
> mismatch.

Wavelength
--
http://www.mindspring.com/~w6rca

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2836. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 14:00:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF40779.E1387A37@IEEE.org>
Source record: 164082

"Peter J. Bertini" wrote:
> 11 meters was never an amateur band. It was a shared
> band that amateurs were granted access to.

Hmmmmm, my 1957 "The radio amateur's handbook" lists 26.960-27.230
under "THE AMATEUR BANDS". Was that a mistake?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2837. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 14:06:21 UTC
From: richardharrison@webtv.net
Message-ID: <18646-3AF408DD-16@storefull-117.iap.bryant.webtv.net>
Source record: 164083

Peter, K1PO wrote:
"Guys...this whole Incident Power, Reflected Power, Transmitted Power fiction applied to the "steady state" is nothing more nor less than a "Mathematical Formalism".

I have right here at hand a PRD Mod. 215-A, Ser. No. 538, UHF slotted (trough) line which shows the profile of "steady state" VSWR when a mismatch exists between a transmission line and its load.

I also have right here at hand a Bird Electronic Corp Mod. 100H element for 100 watts maximum in the 2-30 MHz range. In my wattmeter it reliably indicates forward and reflected power.

These items deal with fact, not fiction.

Best regards, Roichard Harrison, KB5WZI

2838. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 14:51:58 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <isUI6.113198$xN4.7374475@news1.sttls1.wa.home.com>
Source record: 164084

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9cstt8$b8u$1@slb0.atl.mindspring.net...
(snip some)
> And... I maintain that since "almost" all known amateur power meters are
NOT
> measuring power, but rather are measuring voltages a = V + IR and b = V -
> IR, and then only "indicating" powers on a meter face, that one must be
> careful about adding those "pseudo" er... "ficticious" powers. For they
are
> really voltages that you are adding.
>
(snip the rest)

Hi Peter,

Thanks for posting the derivation of the formulas. It all makes sense to me now.

I must agree with you that you are only measuring voltages because you are using a volt meter to do the measuring.

The circuit you are using could be described as being an integrating circuit because it combines readings caused by two sources. Source one is the reference voltage you describe as 'a'. Source two is the voltage accross Z. The voltage meter reads voltage 'b' which is the result of voltage and currents which flow in the circuit.

This circuit has the valuable property of having a zero reading on voltage 'b' only when the current in Z equals the current in R, or (Zi = Ri). (and the trivial condition when all voltages are zero). Voltage 'b' will equal voltage 'a'/2 under two conditions, if i = 0 and if Z = 0. This circuit as you are using it is providing a voltage reading for the instantaneous energy flow of the system.

Power is energy delivered over time.

Here is an example of a puzzling reading sequence you might observe with this meter. The test circuit is a transmission line, a veeerrrry long lossless line, which is terminated in a mismatch. The line is so long that it takes 6 seconds for voltage applied at the feed end to reach the antenna. The test circuit is matched to the impedance of the transmission line.

With your meter hooked to the transmission line, you apply a voltage 'a'. The reading of the meter is zero. This is good because the circuit is matched to the line. After 12 seconds, the volt meter measuring 'b' suddenly records a voltage. Surprise, the line appears to be mismatched, or something just went wrong with the test. You cut off voltage 'a', it drops

to zero, voltage 'b' changes but does not become zero. Whoa, what is going on? Have you discovered a new source of power? After 12 seconds, voltage 'b' also drops to zero.

This experiment is repeatable.

The logical explanation is that energy is returned to the feed point continuously while in the steady state, and that power is stored in the transmission line for a long as it takes for energy to travel from end to end of the transmission line.

I think I understood your circuit and the very complete derivation of the formula. Of course if I erred in the basic understanding of your circuit, this entire explanation would be incorrect for your situation.

73, Roger, W7WKB

2839. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 15:26:28 UTC
From: Rough Rider <roughrider@home.com>
Message-ID: <EYUI6.48645$B22.12307263@news1.rdc2.pa.home.com>
Source record: 164085
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Yes but what you are saying is you are heard with a 2 watt carrier. It is irrelavent what your carrier power is when you are talking. If you had a 10 watt carrier and when you talk it went back to 5 watts then all you are doing is 5 watts not 10.

"Sideband" <sideband@spam.me.not> wrote in message news:3AF3818C.28F440BF@spam.me.not...
> I've turned down the carrier on my Grant XL to 2 watts. The radio swings
> to 5 on AM, and does 0-12 on SSB. the AM measurements are RMS, the SSB
> measurements are PEP.
>
> -SSB
>
> HelmutSweenie wrote:
> >
> > A 2 watt carrier? do you just sit there and throw dead keys or do you talk.
> > If you do talk I am sure it is more than 2 watts so your deadkey figure is
> > irrelavent.
> >
> > "Sideband" <sideband@spam.me.not> wrote in message
> > news:3AF25F37.669914B6@spam.me.not...
> > > Well, I'm heard with a 2 watt carrier over 20 miles away straight shot,
> > > so I must have done something right.
> > >
> > > ::shrug::
> > >
> > > -SSB
> > >
> > > "David G. Nagel" wrote:
> > > >
> > > > No. Two 5/8 wave loaded antenna's do not make a 1 1/4 wave dipole. They
> > > > make a dipole composed of two 5/8 wave loaded antenna's. This
> > > > configuration will not make a truly efficient antenna. Read up on
> > > > collinear antenna's and dipole antenna's. You will see that what you
> > > > have is nothing. However for you sake I do hope it works to your
> > > > satisfaction. I prefer something else...
> > > >
> > > > Dave WD9BDZ
> > > >

> > > > Sideband wrote:
> > > > >
> > > > > Doug:
> > > > >
> > > > > Hit Wilson's site and read up on what a Wilson Silver Load is....
> > > > >
> > > > > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on
11M)
> > > > > top loaded coil antenna. Two of them make 1 1/4 wave. Maybe I
should
> > > > > have said 1 1/4 wave dipole?
> > > > >
> > > > > -SSB
> > > > >
> > > > > Doug Smith wrote:
> > > > > >
> > > > > On Thu, 03 May 2001 09:31:36 -0400, Sideband
<sideband@spam.me.not>
> > wrote:
> > > > > >them as well. Granted, I run a 5/8 dipole on the car (two 4'
Wilson
> > > > > >
> > > > > Uh, 8 feet is not 5/8 wave on 11 meters. A 102" (8-1/2') whip
is
> > 1/4 wave,
> > > > > so a 5/8 wave would be a bit more than 17 feet long.
> > > > > >
> > > > > (you should try a 102" whip, I think you're likely to find it
more
> > effective
> > > > > than the twin four-footers. Because you won't have loading-coil
> > losses.
> > > > > Mine worked *fantastically* well on 10 meters with a converted
SSB
> > CB.)
> > > > > --
> > > > > Doug Smith W9WI
> > > > > Pleasant View (Nashville), TN EM66
> > > > > http://www.w9wi.com

2840. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 15:50:08 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF42130.7083E136@spam.me.not>
Source record: 164086
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

well, if a 2 watt carrier is full quieting 20 miles away, then the
antenna must be doing its job, wouldn't you think?

-SSB

Rough Rider wrote:
>
> Yes but what you are saying is you are heard with a 2 watt carrier. It is
> irrelavent what your carrier power is when you are talking. If you had a 10
> watt carrier and when you talk it went back to 5 watts then all you are
> doing is 5 watts not 10.
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF3818C.28F440BF@spam.me.not...
> > I've turned down the carrier on my Grant XL to 2 watts. The radio swings
> > to 5 on AM, and does 0-12 on SSB. the AM measurements are RMS, the SSB
> > measurements are PEP.
> >
> > -SSB
> >
> > HelmutSweenie wrote:
> > >
> > > A 2 watt carrier? do you just sit there and throw dead keys or do you
> talk.
> > > If you do talk I am sure it is more than 2 watts so your deadkey figure
> is
> > > irrelavent.
> > >
> > > "Sideband" <sideband@spam.me.not> wrote in message
> > > news:3AF25F37.669914B6@spam.me.not...
> > > > Well, I'm heard with a 2 watt carrier over 20 miles away straight
> shot,
> > > > so I must have done something right.
> > > >
> > > > ::shrug::
> > > >
> > > > -SSB
> > > >
> > > > "David G. Nagel" wrote:
> > > > >
> > > > > No. Two 5/8 wave loaded antenna's do not make a 1 1/4 wave dipole.
> They
> > > > > make a dipole composed of two 5/8 wave loaded antenna's. This
> > > > > configuration will not make a truly efficient antenna. Read up on

> > > > > collinear antenna's and dipole antenna's. You will see that what you
> > > > > have is nothing. However for you sake I do hope it works to your
> > > > > satisfaction. I prefer something else...
> > > > >
> > > > > Dave WD9BDZ
> > > > >
> > > > > Sideband wrote:
> > > > > >
> > > > > > Doug:
> > > > > >
> > > > > > Hit Wilson's site and read up on what a Wilson Silver Load is....
> > > > > >
> > > > > > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on
> 11M)
> > > > > > top loaded coil antenna. Two of them make 1 1/4 wave. Maybe I
> should
> > > > > > have said 1 1/4 wave dipole?
> > > > > >
> > > > > > -SSB
> > > > > >
> > > > > > Doug Smith wrote:
> > > > > > >
> > > > > > > On Thu, 03 May 2001 09:31:36 -0400, Sideband
> <sideband@spam.me.not>
> > > wrote:
> > > > > > > >them as well. Granted, I run a 5/8 dipole on the car (two 4'
> Wilson
> > > > > > > >
> > > > > > > Uh, 8 feet is not 5/8 wave on 11 meters. A 102" (8-1/2') whip
> is
> > > 1/4 wave,
> > > > > > > so a 5/8 wave would be a bit more than 17 feet long.
> > > > > > >
> > > > > > > (you should try a 102" whip, I think you're likely to find it
> more
> > > effective
> > > > > > > than the twin four-footers. Because you won't have loading-coil
> > > losses.
> > > > > > > Mine worked *fantastically* well on 10 meters with a converted
> SSB
> > > CB.)
> > > > > > > --
> > > > > > > Doug Smith W9WI
> > > > > > > Pleasant View (Nashville), TN EM66
> > > > > > > http://www.w9wi.com

2841. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 16:00:59 UTC
From: Walter Maxwell <w2du@journey.com>
Message-ID: <3AF422A2.3369ACB@journey.com>
Source record: 164087

Walter Maxwell wrote:
>
> VE9SRB wrote:

> > Walter:
> >
> > If one forward voltage is 100 V and another forward voltage is 100 V, do you
> > deny that the total voltage is 200 V?
> >
> > Steve
> >
> Yes Steve, I deny that the total voltage is 200 V. The actual total
> voltage under the conditions we are discussing is 141.42 V.
>
> Walt, W2DU
> > >
> > >

Gentlemen:

I would like to lay rest to Steveï¿½s erroneous claim that reflected voltage adds to the source voltage to establish the total forward power, and refute with proof that reflected power adds to the source power to establish the total forward power when a transmission line is terminated in a mismatch.

Assume a lossless 50-ohm line terminated in a pure 150-ohm load. The result is a reflection coefficient magnitude rho of 0.5, a power reflection coefficient rho*2 of 0.25, and a power transmission coefficient (1 ï¿½ rho*2) = (1 ï¿½ 0.25) and an SWR of 2:1. The forward power increase factor is 1/(1 ï¿½ rho*2), which Steve earlier vehemently denied in extended correspondence with me, but has apparently discovered it is correct, because he uses this expression in his QEX Jan/Feb 2001 QEX article. Consequently, the forward-power increase factor for rho = 0.5 is 1/0.75 = 1.33333. Thus, when the source power is 100 watts the total forward power is 133.333 watts. 100 watts plus 33.3333 watts must equal 133.33 watts. There can be no argument here! Therefore reflected power ADDS to the source power to establish the total forward power.

So now letï¿½s examine the arithmetic considering the addition of powers. In a lossless line all power entering the line is absorbed in the load, regardless of the mismatch. Therefore, in this example, 100 watts supplied by the source is totally absorbed in the 150-ohm load. The power transmission coefficient is 0.75, and 133.33 x 0.75 = 100. Continuing, the power reflection coefficient is 0.25, and 133.33 x 0.25 = 33.333. 100 watts plus 33.333 watts = 133.33 watts, ERGO, case proven.

So now letï¿½s examine the arithmetic considering the addition of voltages. We will discover that adding the voltages as if they were coming from batteries in series yields totally erroneous answers. With 100 watts entering a 50-ohm line the voltage is 70.71 v. With 33.333 watts of reflected power the reflected voltage on a 50-ohm line is 40.82 v. The sum of 70.71 and 40.82 = 111.54 v. Now 111.54 v on a 50-ohm line represents 248.8 watts. According to Steveï¿½s voltage-addition method this means that the total forward power is 248.8 watts.

So now letï¿½s see what happens when we apply the voltage and power reflection coefficients and the power transmission coefficient.

The power transmission coefficient is 0.75, which when multiplied by 248.8 = 186.6 watts absorbed in the 150-ohm load. This is 86.6 watts more than the 100 watts delivered by the source, an impossibility.

The voltage reflection coefficient of 0.5, when multiplied by 111.54 = 55.77 v. This is 14.95 volts more than that with 33.333 watts on the line.

The power reflection coefficient of 0.25, when multiplied by 248.8 = 62.2 watts. This is 28.9 watts more than the 33.33 watts actually reflected.

With Steveï¿½s method the expression is (Vfwd + Vref)*2/Zoï¿½wrong!

Using the correct method the expression is (Vfwd*2)/Zo + (Vref*2)/Zo = total forward power.

As I said at the beginning of this post, this should lay to rest the erroneous method of adding the reflected voltage to the forward voltage to obtain the total forward power.

Walt, W2DU

2842. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 16:04:07 UTC
From: Rough Rider <roughrider@home.com>
Message-ID: <XvVI6.48662$B22.12323325@news1.rdc2.pa.home.com>
Source record: 164088
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Full quieting is normally associated with FM use. Who cares and what does
it really mean you have a 2 watt carrier, unless you go around deadkeying
and never say anything . your carrier power is a useless figure. What is
your carrier power on ssb?

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF42130.7083E136@spam.me.not...
> well, if a 2 watt carrier is full quieting 20 miles away, then the
> antenna must be doing its job, wouldn't you think?
>
> -SSB
>
> Rough Rider wrote:
> >
> > Yes but what you are saying is you are heard with a 2 watt carrier. It
is
> > irrelavent what your carrier power is when you are talking. If you had a
10
> > watt carrier and when you talk it went back to 5 watts then all you are
> > doing is 5 watts not 10.
> >
> > "Sideband" <sideband@spam.me.not> wrote in message
> > news:3AF3818C.28F440BF@spam.me.not...
> > > I've turned down the carrier on my Grant XL to 2 watts. The radio
swings
> > > to 5 on AM, and does 0-12 on SSB. the AM measurements are RMS, the SSB
> > > measurements are PEP.
> > >
> > > -SSB
> > >
> > > HelmutSweenie wrote:
> > > >
> > > > A 2 watt carrier? do you just sit there and throw dead keys or do
you
> > talk.
> > > > If you do talk I am sure it is more than 2 watts so your deadkey
figure
> > is
> > > > irrelavent.
> > > >
> > > > "Sideband" <sideband@spam.me.not> wrote in message
> > > > news:3AF25F37.669914B6@spam.me.not...
> > > > > Well, I'm heard with a 2 watt carrier over 20 miles away straight

> > shot,
> > > > > so I must have done something right.
> > > > >
> > > > > ::shrug::
> > > > >
> > > > > -SSB
> > > > >
> > > > > "David G. Nagel" wrote:
> > > > > >
> > > > > > No. Two 5/8 wave loaded antenna's do not make a 1 1/4 wave
dipole.
> > They
> > > > > > make a dipole composed of two 5/8 wave loaded antenna's. This
> > > > > > configuration will not make a truly efficient antenna. Read up
on
> > > > > > collinear antenna's and dipole antenna's. You will see that what
you
> > > > > > have is nothing. However for you sake I do hope it works to your
> > > > > > satisfaction. I prefer something else...
> > > > > >
> > > > > > Dave WD9BDZ
> > > > > >
> > > > > > Sideband wrote:
> > > > > > >
> > > > > > > Doug:
> > > > > > >
> > > > > > > Hit Wilson's site and read up on what a Wilson Silver Load
is....
> > > > > > >
> > > > > > > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8
(on
> > 11M)
> > > > > > > top loaded coil antenna. Two of them make 1 1/4 wave. Maybe I
> > should
> > > > > > > have said 1 1/4 wave dipole?
> > > > > > >
> > > > > > > -SSB
> > > > > > >
> > > > > > > Doug Smith wrote:
> > > > > > > >
> > > > > > > > On Thu, 03 May 2001 09:31:36 -0400, Sideband
> > <sideband@spam.me.not>
> > > > wrote:
> > > > > > > > >them as well. Granted, I run a 5/8 dipole on the car (two
4'
> > Wilson
> > > > > > > >

> > > > 1/4 wave,
> > > > > > > > > so a 5/8 wave would be a bit more than 17 feet long.
> > > > > > > > >
> > > > > > > > > (you should try a 102" whip, I think you're likely to find
it
> > more
> > > > > effective
> > > > > > > > > than the twin four-footers. Because you won't have
loading-coil
> > > > losses.
> > > > > > > > > Mine worked *fantastically* well on 10 meters with a
converted
> > SSB
> > > > > CB.)
> > > > > > > > > --
> > > > > > > > > Doug Smith W9WI
> > > > > > > > > Pleasant View (Nashville), TN EM66
> > > > > > > > > http://www.w9wi.com

2843. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 16:06:08 UTC
From: Walter Maxwell <w2du@journey.com>
Message-ID: <3AF423D8.BACAD945@journey.com>
Source record: 164089

Richard Harrison wrote:
>
> Walter, W2DU wrote:
> "Yes Steve, I deny that the total voltage is 200V. The actual total
> voltage under the conditions we are discussing is 141.42V."
>
> The voltage does double at the open-circuit reflection point in a
> transmission line because the reflected voltage is in-phase with the
> incident voltage at the open-circuit. But there`s no current. This is a
> very special situation. The current is abruptly interrupted. Even in
> this special circumstance, power and energy are unchanged. For just an
> instant all the energy in the magnetic field is transfered to the
> electric field which exhibits the doubled voltage until it starts to
> regenerate the magnetic field. Since current has dropped to zero at the
> open-circuit, the temporarily doubled voltage does not indicate a change
> in energy.
>
> The Bird wattmeter can show what happens. If you have 100 volts on a
> 50-ohm line representing that the incident wave has a power of 200
> watts, that`s what the Bird will indicate as forward power. If the line
> is open-circuited, the wattmeter will indicate a reflected power of 200
> watts. Delivered power is zero because it is calculated as the
> difference of the two indicated powers, incident and reflected.
>
> I just wanted to point out a possible confusion because there exists a
> special situation in which the voltage doubles at the end of the line
> with no increase of power.
>
> Best regards, Richard Harrison, KB5WZIj

Richard, the open-cicuit voltage at the line is double the source voltage as you say, but this is not the condition we've discussing. This is different than the condition where the reflected voltage is re-reflected at a totally reflecting discontinuity at the line input, as that occurring when the antenna tuner is adjusted for an input SWR of 1:1.

Please see my earlier posting of this morning.

73,

walt, w2du

2844. Re: A potential new band for CB'ers? [Was: Re: Respect For Freebanders]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 16:24:05 UTC
From: Karl <wa7ycp@yahoo.com>
Message-ID: <3AF42925.2CCC297C@yahoo.com>
Source record: 164090
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Very, very good attitute :) May others follow this example.
Karl

--
for info and email go to:
http://www.dalek.org/srg

2845. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 16:33:14 UTC
From: dentronman
Message-ID: <eXVI6.101$lo2.1640@newsfeed.intelenet.net>
Source record: 164091
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

thats not that fast come one try 0 150 in 10 seconds then talk to me.
"Walt Davidson" <walt@f1racing.co.uk> wrote in message
news:j9g7ftsl5i999vod9pa42njbnlv8ha34vv@4ax.com...
> On 05 May 2001 04:12:35 GMT, moparholic@home.net wrote:
>
> >0 to 140 in 11 seconds is actually a lot of fun. Sorry you'll never
experience it.
>
> Especially on a motorcycle! (I have the ticket to prove it ... the
> only one I have ever received.)
>
> :-)
> 73 de G3NYY
>
> --
> Walt Davidson Email: g3nyy @freeuk.com

2846. Re: REC.RADIO.AMATEUR.ANTENNA?????

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 16:41:22 UTC
From: Kari <me@here.net>
Message-ID: <9d1ajrdfd1@news.koti.tpo.fi>
Source record: 164098

"J M Noeding" <la8ak@online.no> wrote in
news:3af30aeb.695437528@news.online.no...
> On Fri, 4 May 2001 13:59:50 +0300, "OH8MFH" <oh8mfh@hotmail.com>
> wrote:
>
>
> >The reason that many hams ask questions about commercial stuff might be
the
> >endless curiosity that at least I suffer from: any time I see any
antenna,
> >for example, I start thinking "How does it work? Is it an efficient
antenna?
> >Could I use the idea for any ham stuff? Could I learn anything from it?"
> >
> >Anyone else as crazy as I am? :-)
> >
> > 73, Kari
>
> Kari, sure you have learnt something important, on this side of the
> ocean we have Halgon and Kathrein, and I see no reason not to spy on
> their techniques instead of trying to invent it by oneself
>
> seems to be a lot of persons considering inventing the so-called gun
> powder here...
>
> 73
> Jan-Martin
> LA8AK

Roger that, Jan-Martin, and may I add that without hams there wouldn't BE
any cell phones, repeater systems, TV, radio and so on, to mention just a
few :-))

73, Kari in KP34UG

2847. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 16:41:31 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <l4b8ftgn3mivkqu7uf31973h2ncmb9heb6@4ax.com>
Source record: 164092

On Sat, 5 May 2001 09:47:44 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>Wes, when you get a chance, remind me again of how you get that "so-called"
>reflected power into your microwave thermistors.
>
>I hope this is not just another "play on words" that you want me to "prove".
>It's really hard to "prove" things when we don't agree on the words and
>basic definitions. I'll gladly give my interpertation of those "words", but
>just calling something "reflected power" doesn't mean that it came from
>someplace and bounced off or reflected off something and returned again.
>
>Were there circulators involved in your setup, like with Walt Maxwell's
>earlier question?

Hi Peter,

How is that you can recall the more complex details of Walt's and
forget the simple arrangement Wes provided?

You are evading the question that he put to you and that I seconded.
His technique is classic and beyond challenge. If you rely on foggy
recollection, we can hard take DC VSWR seriously.

73's
Richard Clark, KB7QHC

2848. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 16:42:35 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AF42D7B.48E4F2ED@hiwaay.net>
Source record: 164093

Hey, Al,
look at what Sideband said- ALL of it, about the Wilson- he said it was a coiled antenna with an end cap load. It can be - electrically- a 5/8 wave, and be - geometrically- 8 feet long with end loading, as he said. I dont know the Wilson, but I'm not ready to jump without reading- and comprehending- or asking for a fill-in on what I might be missunderstanding.

Bill-W4BSG

Arrow146 wrote:
>
> >Sideband wrote:
>
> > Hit Wilson's site and read up on what a Wilson Silver Load is....
> > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
>
> A 5/8 wave antenna for 11 meters is 255 inches or 21.27 feet.
>
> Just because Wilson says it, don't make it so.
> But I guess CBers will believe most anything.
>
> 73 Al Lowe N0IMW
> ArrowAntenna.com

2849. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 16:44:57 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <c6WI6.376$R01.172960@paloalto-snr1.gtei.net>
Source record: 164095
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF42130.7083E136@spam.me.not...
> well, if a 2 watt carrier is full quieting 20 miles away, then the
> antenna must be doing its job, wouldn't you think?
>
> -SSB

Not really. How about 4 million + miles per watt ?

(Full quieting? Then you must have been using FM emissions, an illegal mode
on 11 meters. :>)

http://radioworks.com/hpmain.html

73 de W6DKN

2850. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 16:46:32 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <as98ft8hgjtboq78115spa63c84rhb9i1s@4ax.com>
Source record: 164094

On Fri, 4 May 2001 23:00:07 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>Ahhh so that was the question. Must remember that.
>
>Too bad there wasn't a Starbucks beside the "restaurant at the end of the
>Universe", I need a strong coffee to keep me awake while I ponder the
>significance of 42.
>
>-Peter K1PO
>

Hi Peter,

Make mine a Pan Galagtic Gargleblaster.

73's
Richard Clark, KB7QHC

2851. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 16:49:53 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <1db8ft0h5ohdqugbkarp944r5pfsm2ktlj@4ax.com>
Source record: 164096

On Fri, 4 May 2001 11:09:40 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>The conventional forward/reflected power (SWR) meter responds to
>volts and amps. It is incapable of performing a multiplication sum.
>
>It indicates watts merely on the ASSUMPTION of a particular value
>of resistance Ro.
>
>That's not what I would call a watt-meter.
> ----
>Reg
>
>

Ah Punchinello,

Another Old Wive's tale about multiplication. Do you need a
mathematician sitting behind the meter scale? The non-linearty of the
scale suffices as the math operator.

I suppose when engineers roamed the earth with slip-sticks, you were
hunkered down in your cave with an abacus? ;-)

73's
Richard Clark, KB7QHC

2852. Need Info on Cushcraft Matchbox (MN7000)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 16:51:13 UTC
From: markem@cervnet.com
Message-ID: <9098623A7markemcervnetcom@64.152.100.92>
Source record: 164097

My Cushcraft R-7000 was damaged last fall by a near lightning strike. The only visible damage is to the matchbox (I guess that's what it is...the box at the base). There's what appears to be a choke that runs from the antenna element to ground. I assume it's there to keep the antenna at DC ground. Anyway, it's pretty much destroyed. The windings are partly burned away and melted together. Except for some soot and a vaporized trace, everything else looks OK. I can replace the trace but what about the choke? Is its value critical? It's 1.5" long and 3/8" dia and appears to be molded plastic, not a metallic core. It's wound with LOTS of turns of very fine wire so I doubt I could rewind it. If it's there for DC ground I'd think that about any high-Z choke or resistor would do. Any thoughts? Anyone have a schematic for the box (MN-7000)? I checked with Cushcraft and they want almost $300 for a new box. No way that's worth that. I figure I don't have anything to lose so I'll play with it a little. If I can't get it working, well, wire is cheap...

Any info will be appreciated.

Thanks & 73... Mark AA7TA

2853. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 17:07:48 UTC
From: unkadean <dnorris@k7nomyclothes.com>
Message-ID: <kqc8ftoip9cl7ji5rs12jfibqqof12q3es@4ax.com>
Source record: 164099
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Fri, 04 May 2001 13:54:17 GMT, "Rob St.Denis"
<tstdenis3160@home.com> wrote:

>> You are implying that you have never driven above the speed limit, Rob.
>> Will you swear that you have never broken a traffic law? Have you never
>> gotten a traffic ticket or a parking ticket?
>
>
>I have never received a speeding or any other traffic infraction. I have
>never received a warning. I never speed. I always use my turn
>signals/mirrors/shoulder check when turning and changing lanes. There is no
>need to. I always give myself ample time to get anywhere. I have never
>received a parking ticket either. Speeding is stupid AND illegal.

I bow to perfection!

unkadean

Visit www.k7no.com Under construction but getting there.

2854. Re: Ham IV Rotator

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 17:12:02 UTC
From: Chuck Costa <cvc@bigfoot.com>
Message-ID: <CvWI6.39339$Jh5.36893955@news1.rdc1.sfba.home.com>
Source record: 164100
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna

Sold!!!!

"Chuck Costa" <cvc@bigfoot.com> wrote in message
news:udzI6.38212$Jh5.35321542@news1.rdc1.sfba.home.com...
> Ham IV Rotator and control box. Excellent condition, Mast bracket and all
> hardware included. No rust, Control panel is clean, no scratches or dents.
>
> $275 plus shipping
>
> Chuck
> k6cvc@home.com
>
>

2855. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 17:32:30 UTC
From: k3bu@aol.com
Message-ID: <20010505133230.10535.00002741@ng-ci1.aol.com>
Source record: 164101

>
>Is there some other place on that cosmic scaled lady where we could hang
>out?
>
>I don't like it under her finger nail. I can think of nicer places.
>
>-Peter K1PO

You sexy senior citizen! What like top of the hills?

K3BU/7

2856. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 18:02:17 UTC
From: yardleyite@aol.com
Message-ID: <20010505140217.23982.00001006@ng-ch1.aol.com>
Source record: 164102

Thank you for the information on the 40M loop. I appreciate it!
73 de Joe N3IBX

2857. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 18:06:29 UTC
From: richardharrison@webtv.net
Message-ID: <11744-3AF44125-40@storefull-116.iap.bryant.webtv.net>
Source record: 164103

Walter, W2DU wrote:
"Please see my earlier posting of this morning."

I`ve read it, and it seems right to me.

I only posted the Ferranti effect thing to distinguish that particular voltage doubling from the one which does not happen at an impedance matching point.

Cecil`s examples should have clarified the situation, but drew argument. It seems obvious that if you cut a matched 50-ohm line and insert 1/2-wave of 300-ohm, or some other impedance line, that the transmitter and load should be unaffected, given low-loss inserted line. No net reflected energy is passing through the 50/300-ohm junctions to the 50-ohm connections on each end of the strange line. The reflections are contained within the strange line.

The 1/2-wave of strange line is in effect (2) 1/4-wave sections back-to-back. Since there is 50-ohms on one end of each junction, where the 1/4-wave sections meet in the middle they have identical impedances. The impedance transformation works in forward or in reverse, so the the 50-ohms on one end of the strange line looks like 50-ohms on the opposite end.

A 50-ohm source gets no nreflection from a 50-ohm line, and a 50-ohm line gets no reflection from a 50-ohm load. The 300-ohm line gets a reflection at either end from the 50-ohms presented, but all the reflections are contained within the 300-ohm line.

I`ve been suprised by some of the postings seen here.

Best regards, Richard Harrison, KB5WZI

2858. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 18:27:17 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <9CXI6.22981$2_.7980964@news3.rdc1.on.home.com>
Source record: 164104
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

I take it you are a fan of EME?

--
Rob St.Denis

"W6DKN" <w6dkn@qsl.net> wrote in message
news:c6WI6.376$R01.172960@paloalto-snr1.gtei.net...
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF42130.7083E136@spam.me.not...
> > well, if a 2 watt carrier is full quieting 20 miles away, then the
> > antenna must be doing its job, wouldn't you think?
> >
> > -SSB
>
> Not really. How about 4 million + miles per watt ?
>
> (Full quieting? Then you must have been using FM emissions, an illegal
mode
> on 11 meters. :>)
>
> http://radioworks.com/hpmain.html
>
> 73 de W6DKN
>
>

2859. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 18:28:09 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <ZCXI6.22985$2_.7978926@news3.rdc1.on.home.com>
Source record: 164105
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> I bow to perfection!

Perfection is irrelevant ... it doesnt take a genious to simply not break
the laws ...

--
Rob St.Denis

2860. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 18:30:09 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3AF446B1.22780247@berkshire.net>
Source record: 164108

we can't even populate 10m enough to keep them off of it, and you want to try to take another mhz that is already over flowing?

> If we hams again populate this band maybe we can win it back,

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

2861. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 19:07:32 UTC
From: Walter Maxwell <w2du@journey.com>
Message-ID: <3AF44E5E.FF011C6A@journey.com>
Source record: 164106

I made an error nn my earlier post today in which I presented an example where powers are added to establish the total forward power.

The conditions I discribed included a 150-ohm load on a 50-ohm line. The typo error is that I hit the 2 for 2:1, but it should have been a 3 for 3:1 SWR.

Sorry,

Walt, W2DU

2862. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 19:14:51 UTC
From: Bill Ogden <wogden@attglobal.net>
Message-ID: <3af452f9_1@news1.prserv.net>
Source record: 164107

Roy:

I am going to a fair amount of trouble to get a "diamond" loop up about 65' (for the top point of the diamond). My primary reasons are (1) loops are said to be quieter (less noise pickup) than many other configurations, (2) I can work with a single support pole, and (3) I want to use the support as a vertical. I want to use the loop on 20-10 meters and the vertical on 160-40 meters. The vertical part is made from 2" alum tubing.

Am I wasting my time? Would a dipole (or two) do just as well?

Bill Ogden
W2WO

2863. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 19:47:39 UTC
From: n2ey@aol.com
Message-ID: <20010505154739.24362.00000569@nso-fj.aol.com>
Source record: 164109

Been reading this thread and thought I'd share my experiences.....

I've used coax traps for 15 years or so in an 80/40 inverted V, and never had any problems. SWR bandwidth is the same as predicted for LC traps. I use good quality RG-58/U type coax (solid poly insulation, stranded center conductor) on 2-1/2" PVC pipe, which guives a coil that is about as long as the diameter. Their Q turns out to be 100-150 on my Q meter, which is lower than can be had with conventional LC construction, but not so low that trap heating is a problem. The design is the N4UU design from QST for December, 1984.

Coax traps have the advantages of being cheap, rugged and made of readily available materials. In side-by-side FD comparisons with G5RVs at the same height, the coax trap dipole beat the G5RV every time, on both 80 and 40. I don't doubt that coax-trap loss is higher than LC trap loss if the LC traps are well made, but whether the difference is significant in real-world situations isn't clear. Where trap losses become a big issue is when lots of them are used in the same antenna.

Besides the somewhat-lower loss, LC traps have two big advantages: Ease of adjustment (trimming those coax traps is a pain!) and control of the LC ratio. My 80/40 inverted V has too much L and not enough C to give a good match on 20 meters (it does about 3:1). LC traps of the right ratio could do the job on three bands without a tuner rather than two.

Have thought of using open-wire feed on the inverted V with no traps, but the mechanical problems of keeping the open-wire away from the metal mast pipe, as well as the need for a tuner at all times, have put that idea on the back burner. (Because of the layout of this little suburban lot, the feedline is rather short (40 feet) and the total wire length is limited to 100 feet or so).

The way I see it, if you've gotta use coax feed and want a multiband dipole, LC traps are first choice, followed closely by coax traps if you can't get the parts for LC traps.

73 de Jim, N2EY

2864. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 20:23:21 UTC
From: rsmits@home.com
Message-ID: <3af46133$1$efzvgf$mr2ice@news>
Source record: 164110

In <3AF37A7B.64008B61@eznec.com>, on 05/04/2001
at 08:58 PM, Roy Lewallen <w7el@eznec.com> said:

>In all the modeling I've done, I've never found a delta loop that did as
>well as a dipole at the same maximum height. All the loop seems to do is
>lower the average height of the current. What's the appeal of this
>antenna?

>Roy Lewallen, W7EL

From my experience, the biggest advantage is lowering noise levels.
Secondly, if you only have one support, you can still put up a delta
loop, although it's obviously not the optimum configuration.

Robert Smits Ladysmith BC Canada VE7HS

--
---
rsmits@home.com

2865. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 20:44:05 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF46615.4BD57305@IEEE.org>
Source record: 164111

Bill Aycock wrote:
> look at what Sideband said- ALL of it, about the Wilson- he said it was
> a coiled antenna with an end cap load. It can be - electrically- a 5/8
> wave, and be - geometrically- 8 feet long with end loading, as he said.
> I dont know the Wilson, but I'm not ready to jump without reading- and
> comprehending- or asking for a fill-in on what I might be
> missunderstanding.

I haven't been following this thread but it is my understanding that it's
not a true 5/8WL antenna unless the current maximum point is on the radiating
element above the coil and below the top hat.
--
http://www.mindspring.com/~w6rca

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2866. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 20:54:56 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF468A0.26E1D1E4@IEEE.org>
Source record: 164112

Roy Lewallen wrote:
> So, naturalists observe, a flea
> Hath smaller fleas that on him prey;
> And these have smaller still to bite 'em;
> And so proceed ad infinitum.
> Thus every poet in his kind,
> Is bit by him that comes behind.
>
> - Jonathan Swift, "On Poetry. A Rhapsody", 1733.

Where did, "Little fleas have littler fleas", come from?
--
http://www.mindspring.com/~w6rca

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2867. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 20:57:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF46923.33FC0B1B@IEEE.org>
Source record: 164113

Richard Clark wrote:
> Make mine a Pan Galagtic Gargleblaster.

Shaken or stirred?
--
http://www.mindspring.com/~w6rca

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2868. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 21:06:18 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3AF46B4A.37A4C7B@dialpoint.net>
Source record: 164019

Because the meter is messed up. With equal resistors you have to have
equal voltages.

W6RCecilA wrote:
>
> Consider the following circuit:
>
> +------R1----------------------------+
> | 25 ohms |
> | |
> 100v gen R2 25 ohms
> | |
> | |
> +-----------------------------------+
>
> Voltage across R1 is 0.31v and voltage across R2 is 5.54v
> Generator voltage is 100v Generator current is 12.3 mA
> Why doesn't Kirchhoff's voltage laws work?
>

2869. Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 21:19:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF46E46.D23D29E1@IEEE.org>
Source record: 164115

Consider the following circuit:

```
+------R1----------------------------+
| 25 ohms |
| |
100v gen R2 25 ohms
| |
| |
+-----------------------------------+
```

Voltage across R1 is 0.31v and voltage across R2 is 5.54v
Generator voltage is 100v Generator current is 12.3 mA
Why doesn't Kirchhoff's voltage laws work?
--
http://www.mindspring.com/~w6rca

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2870. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 21:20:01 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <58_I6.48304$Ce4.3715578@news1.rdc1.ct.home.com>
Source record: 164114
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

```
"> Hit Wilson's site and read up on what a Wilson Silver Load is....
>
> Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
> top loaded coil antenna.

Runs chills up and down my spine just thinking about
a Wilson Silver Load. Gives me the urge to run and
buy two, and co-phase them on the sidemirrors for
anudder 10dB or so.. Ten Fer.
```

2871. Portable 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 21:26:38 UTC
From: Gary Boyer <gboyer@computech-online.net>
Message-ID: <0c_I6.694$IE3.4371@newsfeed.slurp.net>
Source record: 164116

Does anyone have a suggestion on how to use a 2 meter base rig in the house....I am looking for a suggestion on a cheap antenna to use inside the house with my base station. I am only going to use it for local or area repeaters....thanks.. I am strapped for funds so don't want to purchase a mobile/ car antenna..Gary..K8BY

2872. Quick disconnect for a G5RV

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 21:32:34 UTC
From: Ken Jacobs <tekwrite@mindspring.com>
Message-ID: <Sj_I6.123$PX6.30749@newsread1.prod.itd.earthlink.net>
Source record: 164117

I am putting up a G5RV dipole. I have to make one splice anyway to splice new coax running to the house into the coax already attached to the antenna. That is about 100 feet from the house. I would like to have some kind of quick disconnect (for storms) that is also waterproof.

I have two barrel connectors and four PLT-259 connectors.

Thanks.

Ken

2873. Re: Portable 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 21:40:30 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF4734E.FB46F051@IEEE.org>
Source record: 164118

Gary Boyer wrote:
> Does anyone have a suggestion on how to use a 2 meter base rig in the
> house....I am looking for a suggestion on a cheap antenna to use inside the
> house with my base station.

Use an SO-259 socket. Run 4 19" #12 radials from the four outside holes and
slant them down at 45 degrees. Run a 19" vertical #12 wire from the center
conductor. Put it as high as possible (attic?) and connect coax to it.
Costs almost nothing. SO-259 available at Radio Shack. Enjoy.
--
http://www.mindspring.com/~w6rca

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2874. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 21:58:14 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF47776.852C8F4F@IEEE.org>
Source record: 164021

Ralph Mowery wrote:
>
> Because the meter is messed up. With equal resistors you have to have
> equal voltages.

Nope you don't, Ralph. There's 1/4WL of 450 ohm ladder-line between
R1 and R2 that I forgot to tell you about. :-)

> W6RCecilA wrote:
> >
> > Consider the following circuit:
> >
> > +------R1----------------------------+
> > | 25 ohms |
> > | |
> > 100v gen R2 25 ohms
> > | |
> > | |
> > +-----------------------------------+
> >
> > Voltage across R1 is 0.31v and voltage across R2 is 5.54v
> > Generator voltage is 100v Generator current is 12.3 mA
> > Why doesn't Kirchhoff's voltage laws work?
> >

--
http://www.mindspring.com/~w6rca

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2875. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 21:58:36 UTC
From: greg <greg@valkyrie.net>
Message-ID: <3af47790_2@athena.netset.com>
Source record: 164020

very well said !!!!!

GREG N8TDL

> >11 meters was once a ham band.
>
> True, over 40 years ago. It was under-utilized for several reasons, some
of
> which remain valid today.
>
> *It is not harmonically related to the other Amateur bands, so you
generally
> have to have an antenna specific to the frequency. If you like odd-ball
bands,
> we already have several WARC bands to play with.
>
> *Ten meters has the same characteristics, and there is plenty of operating
> space being unused. Why do we need additional frequencies?
>
> >Hams can still go there, use your callsign
> >and follow all the rules.
>
> *ANYBODY can go there. And you don't need to use your ham call sign. You
don't
> need ANY call sign. Furthermore, when a ham goes to 11 meters, he "checks
his
> license at the door". He/she has no more "authority" or rights than anyone
else
> on 11 meters.
>
> > If we hams again populate this band maybe we can win it back, for
> >sole amateur use.
>
> CB is a designated set of frequencies and those operating in the United
States
> and many other places are doing so with the permission and blessing of
their
> government. How would you like it if roles were reversed? Try this:
Okay,
> all CBers report to ten meters and begin operating. CBers might win the
band
> for themselves. Don't like it? Tough. CBers operate on 11 meters with
> exactly the same authority as YOU operate on 10 meters!
>
> > One thing I have found is that the freeband cb'ers do not

> >like be associated with hams and our rules and practices.
>
> You are mixing apples and oranges when you discuss CB and freebanding in
the
> same paragraph. They are not the same thing. It is this kind of ignorance
that
> spreads ill will. In many places, hams and CBers cooperate.
>
> >I think it is
> >time to take back the bands.
> >
> >
>
> If you want to do something constructive, operate on 10 and 12 meters.
Quit
> worrying about what's happening on 11 meters. Take back your own bands, f
irst.
>
> QRM

2876. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 22:34:07 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <vqv8ftsf5n0h94abigordk387h7pjmmmfl@4ax.com>
Source record: 164022

On Sat, 05 May 2001 15:54:56 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Roy Lewallen wrote:
>> So, naturalists observe, a flea
>> Hath smaller fleas that on him prey;
>> And these have smaller still to bite 'em;
>> And so proceed ad infinitum.
>> Thus every poet in his kind,
>> Is bit by him that comes behind.
>>
>> - Jonathan Swift, "On Poetry. A Rhapsody", 1733.
>
>Where did, "Little fleas have littler fleas", come from?

Hi Cecil,

Probably Ogden Nash.

73's
Richard Clark, KB7QHC

2877. Re: Portable 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-05 23:59:43 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3af493cd.2203260@news.aepnet.com>
Source record: 164023

On Sat, 05 May 2001 16:40:30 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Gary Boyer wrote:
>> Does anyone have a suggestion on how to use a 2 meter base rig in the
>> house....I am looking for a suggestion on a cheap antenna to use inside the
>> house with my base station.
>
>Use an SO-259 socket. Run 4 19" #12 radials from the four outside holes and
>slant them down at 45 degrees. Run a 19" vertical #12 wire from the center
>conductor. Put it as high as possible (attic?) and connect coax to it.
>Costs almost nothing. SO-259 available at Radio Shack. Enjoy.

And be sure to put it out of eyeball range.

>--
>http://www.mindspring.com/~w6rca
>
>
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2878. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 00:50:07 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d2737$8c3$1@slb6.atl.mindspring.net>
Source record: 164024

Richard:

That's unfair.

When Wes posted his microwave example, I was out of the country, in the Carribean, drinking Margaritas, sailing from island to island, listening to Jimmy Buffet on the stereo, etc.... and using a different laptop computer.

Since then, I'm back home, running a different laptop computer, etc... none of the thread postings here are marked "read", etc... it's easier for ya'll to send me the post again than for me to find it here.

Please do so.

And speaking of microwaves.... what's wrong with DC anyway?

I always say... What 's good for AC is good for DC!

DC and low frequency circuits have Reflected Power, mismatches, reflection coefficients, even VSWR, etc...

"All sammee", AC - DC -.... no different.

Don't "trash" DC circuits just because they are "slow".

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:l4b8ftgn3mivkqu7uf31973h2ncmb9heb6@4ax.com...
> On Sat, 5 May 2001 09:47:44 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> > >Wes, when you get a chance, remind me again of how you get that "so-called"
> > >reflected power into your microwave thermistors.
> > >
> > >I hope this is not just another "play on words" that you want me to "prove".
> > >It's really hard to "prove" things when we don't agree on the words and
> > >basic definitions. I'll gladly give my interpertation of those "words", but
> > >just calling something "reflected power" doesn't mean that it came from
> > >someplace and bounced off or reflected off something and returned again.
> > >
> > >Were there circulators involved in your setup, like with Walt Maxwell's
> > >earlier question?
>

> Hi Peter,
>
> How is that you can recall the more complex details of Walt's and
> forget the simple arrangement Wes provided?
>
> You are evading the question that he put to you and that I seconded.
> His technique is classic and beyond challenge. If you rely on foggy
> recollection, we can hard take DC VSWR seriously.
>
> 73's
> Richard Clark, KB7QHC

2879. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 01:02:10 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF4A291.12187ECE@IEEE.org>
Source record: 164025

Richard Clark wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >Where did, "Little fleas have littler fleas", come from?
>
> Hi Cecil,
>
> Probably Ogden Nash.

I looked the quote up on the web and here's what it said:

Even fleas have little fleas
On their backs, to bite ï¿½em
And little fleas have littler fleas
And so on, infinitum ï¿½unknown

Actually, the way I first heard it was:

Big fleas have little fleas, upon their backs to bite 'em,
And little fleas have littler fleas, and so ad infinitum.
--
http://www.mindspring.com/~w6rca

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2880. Re: Portable 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 01:10:50 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3af4a4a1$0$14451$1dc6e903@news.corecomm.net>
Source record: 164026

Gary:
Do what I did when I first started out. Take a PL259 connector solder a
1/4 wave length (19") of wire to the center connector. Plug the PL259
into the radio and transmit. It will work just fine.
Dave Nagel WD9BDZ

Gary Boyer wrote:
>
> Does anyone have a suggestion on how to use a 2 meter base rig in the
> house....I am looking for a suggestion on a cheap antenna to use inside the
> house with my base station. I am only going to use it for local or area
> repeaters....thanks.. I am strapped for funds so don't want to purchase a
> mobile/ car antenna..Gary..K8BY

2881. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 01:26:51 UTC
From: mike.luther@ziplog.com
Message-ID: <tf9a2riianluf3@corp.supernews.com>
Source record: 164027

In <3AF3B85F.DE424C4E@eznec.com>, Roy Lewallen <w7el@eznec.com> writes:
>mike.luther@ziplog.com wrote:

>Not quite.
>
> So, naturalists observe, a flea
> Hath smaller fleas that on him prey;
> And these have smaller still to bite 'em;
> And so proceed ad infinitum.
> Thus every poet in his kind,
> Is bit by him that comes behind.
>
> - Jonathan Swift, "On Poetry. A Rhapsody", 1733.

>Roy Lewallen, W7EL

Aha! Now I know too! I'd heard it attributed to Steven King by the one
of the more read people locally. However without the knowledge like you
have of it, I knew enough to only say .. I think! Grin ..

--> Sleep well; OS2's still awake! ;)

Mike.Luther@ziplog.com
Mike.Luther@f3000.n117.z1.fidonet.org

2882. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 01:28:21 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d29aveb1@slb7.atl.mindspring.net>
Source record: 164028

Richard:

PRD, eh? Are they still in business? What ever happened to that company?

Slotted line instruments such as the 215A are not making "point" measurements as do most "ham" VSWR wattmeters which are essentially making measurements at a single point on a line.

Slotted line instruments allow one to observe and measure conditions along a line over a considerable portion of a wavelength or even several wavelengths.

Using such a slotted line instrument one can easily "observe" standing waves by taking samples of I and V along the length of the standing waves spread out in space, rather than infer the presence of standing waves from a measurement at a single point or from a reflection coefficient measurement at a single point where an impedance discontinuity exists.

I don 't deny the existence of standing waves, never have never will. Mismatches on transmission lines cause standing waves, period, end of story.

However apparently you don]t understand my whole point about "reflected power" and the "reflected power equation" Pr = Pi - Pt! Just because one can observe a standing wave directly as it is spread out in space using a slotted line instrument such as the 215-A, does not mean that steady state reflected power is real and not a fiction.

A transmission line is a "distributed network" comprising distributed inductance, capacitance, resistance and conductance, and as such it can store energy in it's reactances, both at DC and at AC. In the steady state on a transmission line, as opposed to any intial "turn on" or "turn off" transients which are necessary to "charge" the line with it's stored energy, the current and voltage or E and H fields along the line will have to match the "boundary" conditions at the ends of the line, be those boundary impedances or transitions matched or not.

For instance if the end of a line is open, then the current there must be zero. If the end of the line is shorted then the voltage there must be zero. If there is some other impedance, say Z, at the end of the line then the current and voltage there must obey V = IZ. Given that the boundary conditions impose their constraints on the overall current and voltage along the line, then the current and voltage at other points along the line, where any power might be progressing unilaterally along, if any power does exist, clearly the current and voltage will vary along the line because of the distributed storage inherent in the distributed capacitance and inductance along the line.

The standing wave does not exist because of some ficticious power bouncing back and forth the length of the line.

The standing waves exist because of the distributed inductance and capacitance which are storing energy all along the line. That stored energy, in the AC rather than DC case, must alternate back and forth between the capacitance and the inductance all along the line. Those distributed reactances of the line are what supports the standing waves, not ficticious reflected power.

Think about it... the existence of "Standing Waves" spread out along a line, do not imply the existence of "reflected power" they imply only the existence of "energy storage", or what is equivalent, the existence of reactance, in this case inductive and capacitive reactance distributed in space. Once the intitial "transient" required to charge a line and bring it to steady state has passed, there is no energy bouncing from end to end of the line. Just a straighforward progression of power from source to sink.

In the case of an open or short on the end of a lossless line, why certainly there is still a standing wave, and you can observe it with your slotted instruments such as the 215-A, BUT NO POWER whatsoever, be it reflected or otherwise!

There is no power dissipated in an open circuit. There is no power dissipated in a short circuit. Nada, Zilch, Zero, None!

Yet with a lossless line shorted or open on the end remote from a generator, you will still observe standing waves with your slotted instruments!

But there is no power! How can you have a standing wave if there is no power, reflected or otherwise, when you claim that reflected power is the cause of standing waves? What? You can't have it both ways.

Either standing waves and VSWR are "independent" of so-called reflected power and have no need for that fiction, or... standing waves exist when there is no power, and don't need "reflected power" to exist!

Which is it?

I believe I "gotcha".

Richard make a simple circuit model of a transmission line comprising a cascade of incrementally lumped series inductance and shunt capacitance and calculate or measure the voltage and or current along the cascade, you will easily "see" how the standing waves develop. Stick an actual power meter in that line and measure P = I*V at any point along the line and you will not measure reflected power, etc... just plain old fashioned power being delivered unidirectionally down the line from source [generator] to sink [load].

Jeesh! Powers bouncing longitudinally back and forth along a line!

Talk about taking an analogy too far! Common falicy carried to an extreme!

What?

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:18646-3AF408DD-16@storefull-117.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "Guys...this whole Incident Power, Reflected Power, Transmitted Power
> fiction applied to the "steady state" is nothing more nor less than a
> "Mathematical Formalism".
>
> I have right here at hand a PRD Mod. 215-A, Ser. No. 538, UHF slotted
> (trough) line which shows the profile of "steady state" VSWR when a
> mismatch exists between a transmission line and its load.
>
> I also have right here at hand a Bird Electronic Corp Mod. 100H element
> for 100 watts maximum in the 2-30 MHz range. In my wattmeter it reliably
> indicates forward and reflected power.
>
> These items deal with fact, not fiction.
>
> Best regards, Roichard Harrison, KB5WZI
>

2883. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 01:35:46 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d29orjls1@slb6.atl.mindspring.net>
Source record: 164029

Hi Richard:

Wow... A slip stick! I'll bet that you, like me, are a member of QCWA...
I've got a 40 year pin...

The Hemi, log log slide rule... made of bamboo, for accuracy under
environmenal changes, ahhh those were the days. My first one cost me $35!
And nearly cost me a semester of luches!

BTW... slip sticks were/are analog computers, the abacus was/is a digital
computer.

I have no fear of non-linearity, just of those who assume glibly that
superposition of effects can persist throughout a non-linear system.

Measuring volts and "calling" them watts is tantamount to measuing height
and guessing weight.

Fine for a circus mid-way shark conning country "rubes", come into town for
the day, but...

Don't ask me to pay to have my weight guessed.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:1db8ft0h5ohdqugbkarp944r5pfsm2ktlj@4ax.com...
> On Fri, 4 May 2001 11:09:40 +0100, "Reg Edwards"
> <g4fgq.regp@btinternet.com> wrote:
>
> >The conventional forward/reflected power (SWR) meter responds to
> >volts and amps. It is incapable of performing a multiplication sum.
> >
> >It indicates watts merely on the ASSUMPTION of a particular value
> >of resistance Ro.
> >
> >That's not what I would call a watt-meter.
> > ----
> >Reg
> >
> >
>
> Ah Punchinello,
>
> Another Old Wive's tale about multiplication. Do you need a
> mathematician sitting behind the meter scale? The non-linearty of the
> scale suffices as the math operator.

>
> I suppose when engineers roamed the earth with slip-sticks, you were
> hunkered down in your cave with an abacus? ;-)
>
> 73's
> Richard Clark, KB7QHC

2884. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 01:47:20 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d2aei$n8n$1@slb2.atl.mindspring.net>
Source record: 164030

Roger:

As I have elaborated up and down this thread, the transient and the steady state are two different animals.

In the transient state as a transmission line, or any impedance Z at a discontinuity, is being "charged" or "discharged" with the stored energy it will require because of it's inherent reactances, there will be "surges" of energy proceeding up and down the line momentarily, (Say over a small handfull of "time constants".) until it is charged.

During this transient charging period on the line, the equation for reflected voltage, say b = V - IR, etc... does not exhibit a steady state value. Let's say we drive the line with a single narrow pulse rather than a sine wave or DC, in that case if you had a "fast scope" hooked to "b" you might see a few "blips" as the pulse charges up the line and spreads the energy out along the distributed capacitance and inductance of the line. But in that case there is no continuous indication on a meter hooked to read the "b" value.

Hams seldom have the ability to "observe" transient phenomena on lines, what they usually see with their "wattmeters" is the steady state, where if you hook a meter to read "b" you will read either a steady DC if the line is driven with DC or AC, say rms, value.

However these bridge circuits can be used to observe transient line charging and discharging conditions, and can be used as the observation port for a "time domain reflectometer".

-Peter K1PO

"Roger Sparks" <sparksrc@home.com> wrote in message
news:isUI6.113198$xN4.7374475@news1.sttls1.wa.home.com...
>
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> news:9cstt8$b8u$1@slb0.atl.mindspring.net...
> (snip some)
> > And... I maintain that since "almost" all known amateur power meters are
> NOT
> > measuring power, but rather are measuring voltages a = V + IR and b =
V -
> > IR, and then only "indicating" powers on a meter face, that one must be
> > careful about adding those "pseudo" er... "ficticious" powers. For they
> are
> > really voltages that you are adding.
> >

> (snip the rest)
>
> Hi Peter,
>
> Thanks for posting the derivation of the formulas. It all makes sense to
me
> now.
>
> I must agree with you that you are only measuring voltages because you are
> using a volt meter to do the measuring.
>
> The circuit you are using could be described as being an integrating
circuit
> because it combines readings caused by two sources. Source one is the
> reference voltage you describe as 'a'. Source two is the voltage
accross
> Z. The voltage meter reads voltage 'b' which is the result of voltage and
> currents which flow in the circuit.
>
> This circuit has the valuable property of having a zero reading on voltage
> 'b' only when the current in Z equals the current in R, or (Zi = Ri).
(and
> the trivial condition when all voltages are zero). Voltage 'b' will equal
> voltage 'a'/2 under two conditions, if i = 0 and if Z = 0. This circuit
as
> you are using it is providing a voltage reading for the instantaneous
energy
> flow of the system.
>
> Power is energy delivered over time.
>
> Here is an example of a puzzling reading sequence you might observe with
> this meter. The test circuit is a transmission line, a veeerrrry long
> lossless line, which is terminated in a mismatch. The line is so long
that
> it takes 6 seconds for voltage applied at the feed end to reach the
antenna.
> The test circuit is matched to the impedance of the transmission line.
>
> With your meter hooked to the transmission line, you apply a voltage 'a'.
> The reading of the meter is zero. This is good because the circuit is
> matched to the line. After 12 seconds, the volt meter measuring 'b'
> suddenly records a voltage. Surprise, the line appears to be mismatched,
or
> something just went wrong with the test. You cut off voltage 'a', it
drops
> to zero, voltage 'b' changes but does not become zero. Whoa, what is
going
> on? Have you discovered a new source of power? After 12 seconds, voltage
> 'b' also drops to zero.

>
> This experiment is repeatable.
>
> The logical explanation is that energy is returned to the feed point
> continuously while in the steady state, and that power is stored in the
> transmission line for a long as it takes for energy to travel from end to
> end of the transmission line.
>
> I think I understood your circuit and the very complete derivation of the
> formula. Of course if I erred in the basic understanding of your circuit,
> this entire explanation would be incorrect for your situation.
>
> 73, Roger, W7WKB
>
>

2885. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 01:50:31 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3AF4ADE7.7523CD29@dialpoint.net>
Source record: 164034

Then you have not drawn the circuit correct. All connecting wires are assumed to have zero resistance and reactance. I knew there was a trick to the circuit that was left out. Just thought I would bite. While I don't have time to check it out I guess that you could have a capacitor or inductor across the resistors that were left out also.

W6RCecilA wrote:
>
> Ralph Mowery wrote:
> >
> > Because the meter is messed up. With equal resistors you have to have
> > equal voltages.
>
> Nope you don't, Ralph. There's 1/4WL of 450 ohm ladder-line between
> R1 and R2 that I forgot to tell you about. :-)
>
> > W6RCecilA wrote:
> > >
> > > Consider the following circuit:
> > >
> > > +------R1----------------------------+
> > > | 25 ohms |
> > > | |
> > > 100v gen R2 25 ohms
> > > | |
> > > | |
> > > +-----------------------------------+
> > >
> > > Voltage across R1 is 0.31v and voltage across R2 is 5.54v
> > > Generator voltage is 100v Generator current is 12.3 mA
> > > Why doesn't Kirchhoff's voltage laws work?
> > >
>

2886. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 01:58:23 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d2b38$a9t$1@slb6.atl.mindspring.net>
Source record: 164031

Cecil:

Wavelength is a question of degree?

How many waves or how much of a wavelength are we speaking of here?

If a wavelength is lambda, then will your analogies also work for a "delta lambda"?

Or do all of your analogies somehow magically quit working if the fraction of a wavelength approaches zero?

Same with the "reflected" power equations... if they work for a frequency f what makes them stop working as f is decreased an allowed to approach zero in the limit?

What is that magic frequency, or magic large wavelength beyond which all of your analogies stop working and some other analogy takes over?

Let's call it fcutoff, or maybe fcecil... and for wavelength say lambda cutoff or lambda cecil... the "cecil point"... I like that...

"The cecil point" - that frequency or wavelength beyond which a circuit or system can no longer support "reflected power".

At frequencies below "fcecil" or at wavelengths beyond "lambda cecil", all effects of "reflected power" cease and no longer exist.

Let's call this the "reflected power" extinction frequency or extinction wavelength.

We should have the NSF fund some research into how we can characterize this "queer" frequency or wavelength and to study and parameterize the way in which reflected power slowly dissappears as wavelength gets longer than say...

Come on Cecil, give it up... ya'll have carried this ficticious reflected power analogy way too far... it's gonna start affecting your life soon...

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF40602.5DAFA757@IEEE.org...
> "Peter O. Brackett" wrote:
> > Why would there be a difference between 60Hz and a transmission line...
>
> Wavelength
>
> > Or for that matter a difference between AC and DC when it comes to a

> > mismatch.
>
> Wavelength
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2887. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 02:04:30 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d2benvvv1@slb2.atl.mindspring.net>
Source record: 164032

Cecil:

What? You don't know the schematic symbol for a DC transformer? Can't just leave it out even if you don't know the symbol.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF46E46.D23D29E1@IEEE.org...
> Consider the following circuit:
>
> +------R1----------------------------+
> | 25 ohms |
> | |
> 100v gen R2 25 ohms
> | |
> | |
> +-----------------------------------+
>
> Voltage across R1 is 0.31v and voltage across R2 is 5.54v
> Generator voltage is 100v Generator current is 12.3 mA
> Why doesn't Kirchhoff's voltage laws work?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2888. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 02:16:33 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d2c59egc1@slb6.atl.mindspring.net>
Source record: 164033

I enjoy mountain scenery. I may be old but not dead yet.

K1PO

"Yuri Blanarovich" <k3bu@aol.com> wrote in message
news:20010505133230.10535.00002741@ng-ci1.aol.com...
> >
> >Is there some other place on that cosmic scaled lady where we could hang
> >out?
> >
> >I don't like it under her finger nail. I can think of nicer places.
> >
> >-Peter K1PO
>
> You sexy senior citizen! What like top of the hills?
>
> K3BU/7

2889. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 02:45:19 UTC
From: N3VST <not@chance.com>
Message-ID: <JU2J6.9801$R2.8364054@newsrump.sjc.telocity.net>
Source record: 164035

I take it you are either a freeband moron or you are simPATHETIC to there cause. Gee I love how these idiots "CB'ers" will splatter all the way up to six meters with there illegal and otherwise shitty equipment. Beware, if you live anywhere near me, I am probably talking to you on 11 meters, and taping you brag about how much power you run and the freebanding you do. I attend your club meetings and collect your propaganda. Why am I doing with this, a sept. meeting with Mr. Hollingsworth. Some fines will be handed down, and equipment confiscated. Then I will laugh everywhere I can..

"Qrm2000" <qrm2000@aol.com> wrote in message
news:20010504225028.07174.00001556@ng-fj1.aol.com...
> The Troll-o-Meter is off the scale.
>
> >11 meters was once a ham band.
>
> True, over 40 years ago. It was under-utilized for several reasons, some
of
> which remain valid today.
>
> *It is not harmonically related to the other Amateur bands, so you
generally
> have to have an antenna specific to the frequency. If you like odd-ball
bands,
> we already have several WARC bands to play with.
>
> *Ten meters has the same characteristics, and there is plenty of operating
> space being unused. Why do we need additional frequencies?
>
> >Hams can still go there, use your callsign
> >and follow all the rules.
>
> *ANYBODY can go there. And you don't need to use your ham call sign. You
don't
> need ANY call sign. Furthermore, when a ham goes to 11 meters, he "checks
his
> license at the door". He/she has no more "authority" or rights than anyone
else
> on 11 meters.
>
> > If we hams again populate this band maybe we can win it back, for
> >sole amateur use.
>
> CB is a designated set of frequencies and those operating in the United
States

> and many other places are doing so with the permission and blessing of
their
> government. How would you like it if roles were reversed? Try this:
Okay,
> all CBers report to ten meters and begin operating. CBers might win the
band
> for themselves. Don't like it? Tough. CBers operate on 11 meters with
> exactly the same authority as YOU operate on 10 meters!
>
> > One thing I have found is that the freeband cb'ers do not
> >like be associated with hams and our rules and practices.
>
> You are mixing apples and oranges when you discuss CB and freebanding in
the
> same paragraph. They are not the same thing. It is this kind of ignorance
that
> spreads ill will. In many places, hams and CBers cooperate.
>
> >I think it is
> >time to take back the bands.
> >
> >
>
> If you want to do something constructive, operate on 10 and 12 meters.
Quit
> worrying about what's happening on 11 meters. Take back your own bands,
first.
>
> QRM

2890. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 02:50:19 UTC
From: N3VST <not@chance.com>
Message-ID: <qZ2J6.9802$R2.8366661@newsrump.sjc.telocity.net>
Source record: 164036

I love hams that will bitch about the nonsense, and then show no action. Gee is this why we have to fear losing more band space, because most hams are afraid to stand up and demand rules be enforced, and we preserve what we have. And no I am not old enough to remember when 11meters was a ham band, I am also not old enough to remember WWII, but I am still thankfull for everyone that fought there.

"Peter J. Bertini" <commquart@home.com> wrote in message news:PaTI6.47845$Ce4.3642566@news1.rdc1.ct.home.com...
>
> Especially the stuff that got sprayed...
>
> _____
> >
> > Don't smoke that stuff in public. Cops read this too.
> >
> > W7TI
>
>

2891. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 03:10:57 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3AF4C213.7050701@aol.com>
Source record: 164037

The first use of the term "supergain" in Ham literature that I found was in the book by Les Moxon, "HF Antennas for all Locations".

The term is related to the characteristics of gain in "close spaced" antennas, and that the gain in close spaced elements "may" be larger(albeit marginally) than an "ordinary" antenna with the same number of elements. (see page 21) He also quickly points out the reduced bandwidth and reduced efficiency.....

It seems to me that the term "supergain", should probably not be used as the basis of a purchasing decision. It is misleading at best.

I have been experimenting with a hexagonal shaped homebrew 2-element beam which was mounted at a low height. My testing corresponds to the model predictions for similar designs. The improved f/b ratio over my dipole was easily discernible, and the noise levels reduced. The antenna did not have much gain, but did give better copy on the weaker signals. Elevating the antenna seemed to improve the pattern only slightly. The SWR remained constant at elevations down to about 15 feet. Even this low, the test antenna could "hear" better than the dipole, and signal reports were as good as the dipole.

The designs do function. If you are willing to put up with the tradeoffs, they can be viable alternatives to rotateable dipoles, but don't expect to have the performance of a 7 element Yagi. The models I have predict the performance bandwidth to be much narrower than the SWR bandwidth. I found this to be true with my test beam.

The biggest problem I encountered was with trying to make a multiband beam. The interactions between bands seems to degrade the performance on the higher frequency bands. In my models, varying the vertical distance between band elements seems to help, but I have not yet tested this idea.

I decided that a yagi would be best, but won't fit in the space I have available. If I can get the multi banding to work, I'll keep my test antenna up.

Decide first which solution works best for your site. Whatever turns out to be practical is "the best". (As in the

best you can manage).

Also, if you are homebrewing, have fun! That's sort of the point, isn't it?

73,
Keith, W4KAZ

2892. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 03:30:50 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF4C56A.3DBFD42D@IEEE.org>
Source record: 164038

"Peter O. Brackett" wrote:
> Or do all of your analogies somehow magically quit working if the fraction
> of a wavelength approaches zero?

Transmission line theory is not needed when the fraction of a wavelength approaches zero. As long as the impedance transformation is negligible, conventional circuit theory works just fine. Did you see my example where Kirchhoff's laws don't work?
--
http://www.mindspring.com/~w6rca

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2893. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 03:41:10 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF4C7D6.4B517D73@spam.me.not>
Source record: 164039
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Um... Either you're being ignorant, or you're trying to test me...

either way.. my answer is...

DUH!

SSB radio emissions have no carrier.

-SSB

Rough Rider wrote:
>
> Full quieting is normally associated with FM use. Who cares and what does
> it really mean you have a 2 watt carrier, unless you go around deadkeying
> and never say anything . your carrier power is a useless figure. What is
> your carrier power on ssb?
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF42130.7083E136@spam.me.not...
> > well, if a 2 watt carrier is full quieting 20 miles away, then the
> > antenna must be doing its job, wouldn't you think?
> >
> > -SSB
> >
> > Rough Rider wrote:
> > >
> > > Yes but what you are saying is you are heard with a 2 watt carrier. It
> is
> > > irrelavent what your carrier power is when you are talking. If you had a
> 10
> > > watt carrier and when you talk it went back to 5 watts then all you are
> > > doing is 5 watts not 10.
> > >
> > > "Sideband" <sideband@spam.me.not> wrote in message
> > > news:3AF3818C.28F440BF@spam.me.not...
> > > > I've turned down the carrier on my Grant XL to 2 watts. The radio
> swings
> > > > to 5 on AM, and does 0-12 on SSB. the AM measurements are RMS, the SSB
> > > > measurements are PEP.
> > > >
> > > > -SSB
> > > >
> > > > HelmutSweenie wrote:
> > > > >
> > > > > A 2 watt carrier? do you just sit there and throw dead keys or do

> you
> > > talk.
> > > > > If you do talk I am sure it is more than 2 watts so your deadkey
> figure
> > > is
> > > > > irrelavent.
> > > > >
> > > > > "Sideband" <sideband@spam.me.not> wrote in message
> > > > > news:3AF25F37.669914B6@spam.me.not...
> > > > > > Well, I'm heard with a 2 watt carrier over 20 miles away straight
> > > shot,
> > > > > > so I must have done something right.
> > > > > >
> > > > > > ::shrug::
> > > > > >
> > > > > > -SSB
> > > > > >
> > > > > > "David G. Nagel" wrote:
> > > > > > >
> > > > > > > No. Two 5/8 wave loaded antenna's do not make a 1 1/4 wave
> dipole.
> > > They
> > > > > > > make a dipole composed of two 5/8 wave loaded antenna's. This
> > > > > > > configuration will not make a truly efficient antenna. Read up
> on
> > > > > > > collinear antenna's and dipole antenna's. You will see that what
> you
> > > > > > > have is nothing. However for you sake I do hope it works to your
> > > > > > > satisfaction. I prefer something else...
> > > > > > >
> > > > > > > Dave WD9BDZ
> > > > > > >
> > > > > > > Sideband wrote:
> > > > > > > >
> > > > > > > > Doug:
> > > > > > > >
> > > > > > > > Hit Wilson's site and read up on what a Wilson Silver Load
> is....
> > > > > > > >
> > > > > > > > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8
> (on
> > > > > 11M)
> > > > > > > > top loaded coil antenna. Two of them make 1 1/4 wave. Maybe I
> > > should
> > > > > > > > have said 1 1/4 wave dipole?
> > > > > > > >
> > > > > > > > -SSB
> > > > > > > >
> > > > > > > > Doug Smith wrote:
> > > > > > > > >

> > > > > > > > > On Thu, 03 May 2001 09:31:36 -0400, Sideband
> > > <sideband@spam.me.not>
> > > > > wrote:
> > > > > > > > > >them as well. Granted, I run a 5/8 dipole on the car (two
> 4'
> > > Wilson
> > > > > > > > > >
> > > > > > > > > > Uh, 8 feet is not 5/8 wave on 11 meters. A 102" (8-1/2')
> whip
> > > is
> > > > > > > 1/4 wave,
> > > > > > > > > > so a 5/8 wave would be a bit more than 17 feet long.
> > > > > > > > > >
> > > > > > > > > > (you should try a 102" whip, I think you're likely to find
> it
> > > more
> > > > > > effective
> > > > > > > > > > than the twin four-footers. Because you won't have
> loading-coil
> > > > > > losses.
> > > > > > > > > > Mine worked *fantastically* well on 10 meters with a
> converted
> > > SSB
> > > > > > CB.)
> > > > > > > > > > --
> > > > > > > > > > Doug Smith W9WI
> > > > > > > > > > Pleasant View (Nashville), TN EM66
> > > > > > > > > > http://www.w9wi.com

2894. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 03:44:28 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF4C89C.25CB3C84@spam.me.not>
Source record: 164040
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Um.... Ok...

So I drive a truck.. Big Deal. I have never cophased antennae on my
truck. I find it counterproductive to even attempt to do so.

But if you want to play CB games...

Uh, 10-9 good buddy?

-SSB

"Peter J. Bertini" wrote:
>
> "> Hit Wilson's site and read up on what a Wilson Silver Load is....
> > >
> > > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
> > > top loaded coil antenna.
>
> Runs chills up and down my spine just thinking about
> a Wilson Silver Load. Gives me the urge to run and
> buy two, and co-phase them on the sidemirrors for
> anudder 10dB or so.. Ten Fer.

2895. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 06:18:00 UTC
From: "Leland C. Scott" <no-spam@junk-mail.net>
Message-ID: <s06J6.38783$qD1.727134@typhoon.mw.mediaone.net>
Source record: 164041
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF38101.858C2075@spam.me.not...
> Comments within:
>
> "Leland C. Scott" wrote:
> >
> > "Sideband" <sideband@spam.me.not> wrote in message
> > news:3AF2090C.2C9DD715@spam.me.not...
> > > Actually, I don't have my license yet. I go for my written tests next
> > > week.
> >
> > I wish you good luck and hope you make it!!! You have any equipment yet?
If
> > not what are you looking at getting?
>
> I'm starting out taking the Tech and General written tests. Code will
> come later this year, hopefully. I'm going to need a 2M set to start,
> and an HF set later, once I've passed the code requirement.

That sounds good. The credit for the written elements are good for a year I
think. If you
can find somebody to practice code with that would be great help I'm sure.
Depending on your finances, if your looking to save some money, check out
some of the local Hamfests in your area. The ARRL web site has a list of
them all over the country. A used radio can save you a big chunk of coin.
That's maybe your best bet until you figure out what you want or need in the
way of features in a rig. Once you know that then you are in a better
position to spend some money on a new, or newer, radio knowing it will do
what you want. Also don't let some of the Old Timers on this news group get
under your skin either about anything. Some like to take cheap shots at Tech
Class operators. Regardless of what class license you get, or the code speed
you test at, your a Ham at that point, and don't let anybody tell you
different.

--
Leland C. Scott
KC8LDO

ARRL Member
NCI Member
--
"Sometimes our enthusiasm for change
depends on our willingness to take a
chance on tomorrow by risking what

we have today."

2896. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 07:20:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF4FB3F.2559CDF7@eznec.com>
Source record: 164042

Except for local noise and noise from static charge, a quieter antenna is a lossier antenna. Or one that doesn't receive well from distant points where atmospheric noise is being propagated from. I doubt that the loop will reject local noise better than a dipole, but it's likely to do a poorer job than a dipole at the same maximum height at receiving distant signals. So it might well be quieter. If you like quiet, you could just build a low dipole -- it'll be quieter and quieter as it gets lower and lower. You can bleed static charge from a dipole with an RF choke or large resistor if it's a problem and if your rig doesn't already have an RF choke at the input.

The pattern of the diamond loop will be different than a dipole on each band, and might or might not favor some directions and distances you're interested in compared to a dipole. You can easily compare the patterns and gains on each band with EZNEC, and decide for yourself if you'll get anything worthwhile. Even the free demo version from http://eznec.com would be adequate to give you reasonably accurate answers.

Roy Lewallen, W7EL

Bill Ogden wrote:
>
> Roy:
>
> I am going to a fair amount of trouble to get a "diamond" loop up about 65'
> (for the top point of the diamond). My primary reasons are (1) loops are
> said to be quieter (less noise pickup) than many other configurations, (2)
> I can work with a single support pole, and (3) I want to use the support as
> a vertical. I want to use the loop on 20-10 meters and the vertical on
> 160-40 meters. The vertical part is made from 2" alum tubing.
>
> Am I wasting my time? Would a dipole (or two) do just as well?
>
> Bill Ogden
> W2WO

2897. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 07:21:24 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF4FB74.B1C44F33@eznec.com>
Source record: 164043

If you have only a single support, a fair comparison is between a loop
and an inverted vee.

Roy Lewallen, W7EL

rsmits@home.com wrote:
>
> In <3AF37A7B.64008B61@eznec.com>, on 05/04/2001
> at 08:58 PM, Roy Lewallen <w7el@eznec.com> said:
>
> >In all the modeling I've done, I've never found a delta loop that did as
> >well as a dipole at the same maximum height. All the loop seems to do is
> >lower the average height of the current. What's the appeal of this
> >antenna?
>
> >Roy Lewallen, W7EL
>
> From my experience, the biggest advantage is lowering noise levels.
> Secondly, if you only have one support, you can still put up a delta
> loop, although it's obviously not the optimum configuration.
>
> Robert Smits Ladysmith BC Canada VE7HS
>
> --
> --
> rsmits@home.com
> --

2898. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 07:39:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF4FFA6.145FEEAB@eznec.com>
Source record: 164044

N2EY wrote:
> . . .
> Coax traps have the advantages of being cheap, rugged and made of readily
> available materials. In side-by-side FD comparisons with G5RVs at the same
> height, the coax trap dipole beat the G5RV every time, on both 80 and 40.
>. . .

Let's think about why that might be. The G5RV itself is so close to 100% efficient that you wouldn't be able to measure the difference between it and a 100% efficient antenna. So the trap dipole isn't more efficient. (In fact, the traps are likely to noticeably reduce the efficiency.) On 40, the difference might be explained by the G5RV having multiple lobes, or a lobe too narrow to cover your target region. But not on 80. On 80, the G5RV pattern is essentially identical to a dipole's. So it's as efficient as a dipole and has the same pattern as a dipole. Why the difference? The only possible explanation is that you're not getting as much power to the G5RV as to the dipole. And there are two possible causes for this. One is the feedline. If you were using open wire or ladder line, and it was dry, that's not it. If it was wet, it might be. The other is the tuner. It sounds like your tuner is pretty inefficient when matching the G5RV. This does raise a cautionary note to people using these "all band" antennas and readily embracing a tuner as a cure-all that they might be paying a pretty big price.

Roy Lewallen, W7EL

2899. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 07:56:29 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF503AD.E2B1D30F@eznec.com>
Source record: 164045

The term "supergain" is a marketer's dream, and more than one has used to full advantage the general level of misunderstanding about this term.

Moxon is a good source for a simple explanation. One of the things he points out is that the absolute maximum gain of a "supergain" antenna, even if you could somehow make one 100% efficient (which you can't -- anywhere near), is n^2 where n is the number of elements. This means that no 2 element antenna can possibly have a gain of more than 6 dB relative to a single element. Yet one of the more creative vendors insists (or used to -- I don't follow the gyrations of their claims) that his 2 element antenna's gain exceeds even this value.

Of course, as Moxon says, the current gets astronomical as this gain value is approached, reducing the efficiency to essentially zero. In practice, only a very small increment in gain can be achieved by using "supergain" methods, at the expense of very narrow bandwidth, critical tuning, and the need to use very low loss construction techniques. (There's also the problem of efficient matching. "Supergain" antennas inherently have a very low feedpoint resistance.) Anyone interested in the topic should carefully read Chapter 5 of Moxon's book.

Rest assured that no esoteric principles are involved, and nothing abrupt or magical happens at the spacings involved in "supergain" antennas. Modeling programs do fully account for the phenomena leading to "supergain" properties. You do, though, have to be careful to include realistic amounts of loss in your model. And it's up to you to figure out how to deal with an antenna with a 0.05 ohm feedpoint resistance.

Roy Lewallen, W7EL

kazering wrote:
>
> The first use of the term "supergain" in Ham literature that
> I found was in the book by Les Moxon, "HF Antennas for all
> Locations".
>
> The term is related to the characteristics of gain in "close
> spaced" antennas, and that the gain in close spaced elements
> "may" be larger(albeit marginally) than an "ordinary"
> antenna with the same number of elements. (see page 21) He
> also quickly points out the reduced bandwidth and reduced
> efficiency.......
>
> It seems to me that the term "supergain", should probably
> not be used as the basis of a purchasing decision. It is
> misleading at best.

>
> I have been experimenting with a hexagonal shaped homebrew
> 2-element beam which was mounted at a low height. My
> testing corresponds to the model predictions for similar
> designs. The improved f/b ratio over my dipole was easily
> discernible, and the noise levels reduced. The antenna did
> not have much gain, but did give better copy on the weaker
> signals. Elevating the antenna seemed to improve the
> pattern only slightly. The SWR remained constant at
> elevations down to about 15 feet. Even this low, the test
> antenna could "hear" better than the dipole, and signal
> reports were as good as the dipole.
>
> The designs do function. If you are willing to put up with
> the tradeoffs, they can be viable alternatives to rotateable
> dipoles, but don't expect to have the performance of a 7
> element Yagi. The models I have predict the performance
> bandwidth to be much narrower than the SWR bandwidth. I
> found this to be true with my test beam.
>
> The biggest problem I encountered was with trying to make a
> multiband beam. The interactions between bands seems to
> degrade the performance on the higher frequency bands. In
> my models, varying the vertical distance between band
> elements seems to help, but I have not yet tested this idea.
>
> I decided that a yagi would be best, but won't fit in the
> space I have available. If I can get the multi banding to
> work, I'll keep my test antenna up.
>
> Decide first which solution works best for your site.
> Whatever turns out to be practical is "the best". (As in the
> best you can manage).
>
> Also, if you are homebrewing, have fun! That's sort of the
> point, isn't it?
>
> 73,
> Keith, W4KAZ

2900. Tower

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 08:01:47 UTC
From: George <exburb@3web.net>
Message-ID: <6y7J6.450$757.13076@jekyl.ab.tac.net>
Source record: 164046

Wanted: Self-supporting tower to hang my antennae. Powered or crank-up okay. VE6AAL, near Edmonton, Alberta
Email: exburb@3web.net

2901. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 09:27:58 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9d35f4$h3m$1@plutonium.btinternet.com>
Source record: 164047

Jim wrote -
> Have thought of using open-wire feed on the inverted V with no traps, but the
> mechanical problems of keeping the open-wire away from the metal mast pipe, as
> well as the need for a tuner at all times, have put that idea on the back
> burner
==========

I think loss due to running open-wire line very near to a metal mast is often more imagined than real. For loss to be appreciable there has to be some resistance somewhere in which to dissipate it. Steel has a low resistance. Aluminium is even lower. And a mast has a very large surface area.

For appreciable power transfer from line to mast, as in any other power transfer situation, there has to be some sort of impedance match. The coupling between line and mast is very poor to say the least. So I-squared-R is extremely small.

When a balanced-pair line runs close to a metal surface the principal effect is a moderate decrease in Zo due to the extra capacitance.

A pair of 10 awg wires, spaced 1/2 inch, has Zo = 300 ohms. When spaced 1/2 inch from a metal surface Zo decreases to roughly 250 ohms. Loss, dB-wise, increases by 20 %. Incidentally, this extra loss occurs in the line wires, not in the nearby metal.

100 feet of the above line at 14 MHz has a loss of about 0.27 dB. An increase of 20 % is 0.054 dB which is hardly likely to affect the result of a contest. ;o)

Reg

2902. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 10:14:39 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3AF5240F.82990D7E@berkshire.net>
Source record: 164048

because you haven't fully specified the generator with a frequency and internal impedance and you haven't specified other distributed impedances in the circuit?

W6RCecilA wrote:
>
> Consider the following circuit:
>
> +------R1----------------------------+
> | 25 ohms |
> | |
> 100v gen R2 25 ohms
> | |
> | |
> +-----------------------------------+
>
> Voltage across R1 is 0.31v and voltage across R2 is 5.54v
> Generator voltage is 100v Generator current is 12.3 mA
> Why doesn't Kirchhoff's voltage laws work?
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

2903. Yagi TH6DXX rebuild & erect advice?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 11:27:23 UTC
From: ham_guy@webtv.net
Message-ID: <14590-3AF5351B-104@storefull-132.iap.bryant.webtv.net>
Source record: 164049

I bought a 25' used, television type, 3 section tower and decided to look for an antenna to put on it.
I came home with a Hygain Super Thunderbird TH6DXX with the manual and a box of new replacement parts. The antenna looks pretty good... had 1 end broken off a director and the stub had RF welded into the mating tube. (I finally had to drill it out, but is okay and I have a replacement aluminum tube for it.)
I started on the task of reworking the antenna yesterday and have decided to use extra fine steel wool to remove the oxidation.... followed by a coat of clear lacquer after reassembly.

Now, I'd like some advice... how to check the traps... particulary the one on the tube that I banged on getting the broken stub out.

Also, this looks like an insurmountable task to erect the antenna with it's 24 foot boom! The drawing on the manual shows it being lifted straight up, fully assembled to the top of the mast by a frame bolted onto the side of the tower. Oh My Gosh this looks SCARY! But I can't think of any better method. Anyone have a better idea?

I'm planning on using a discarded garage door opener for a rotor at the bottom of the mast.... replace the motor with a crank and hand-crank it around. (I'm retired and getting the most mileage for the buck)

After looking at the magnitude of the job(s) ahead, I'm thinking it would be prudent to ask for a bit of advice on this project! Thanks...
Johnny KF4WWF

2904. Re: Yagi TH6DXX rebuild & erect advice?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 12:23:09 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3AF5422D.8B5522BC@dialpoint.net>
Source record: 164051

Are you sure the TV tower is enough to support the beam ? Most TV antennas do not have the wind load or the twisting motion of a 24 foot boom. I would think that anything larger than an TA33 junior (even that may be too much) would overload the tower.

JJ OKK wrote:
>
> I bought a 25' used, television type, 3 section tower and decided to
> look for an antenna to put on it.
> I came home with a Hygain Super Thunderbird TH6DXX with the manual
> and a box of new replacement parts. The antenna looks pretty good...
> had 1 end broken off a director and the stub had RF welded into the
>

2905. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 12:45:40 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF54774.167E9F91@IEEE.org>
Source record: 164050

David Robbins wrote:
> because you haven't fully specified the generator with a frequency and internal
> impedance and you haven't specified other distributed impedances in the circuit?

The only other thing in the circuit is copper wire, 1/4WL of 450 ohm
ladder-line between R1 and R2.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2906. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 13:33:57 UTC
From: alice@kramden.moon
Message-ID: <9pcJ6.1545$OS1.200917@news1.iquest.net>
Source record: 164052

So, how long IS one wavelength in this example? "Generator" implies "DC". You are not disclosing all information.

R1 <> Z1 and/or R2 <> Z2.

But to answer you question, Kirchoff's voltage law DOES work.

In article <3AF54774.167E9F91@IEEE.org>, Cecil.A.Moore@IEEE.org was of the opinion...
>
>David Robbins wrote:
>> because you haven't fully specified the generator with a frequency and interna
>l
>> impedance and you haven't specified other distributed impedances in the circui
>t?
>
>The only other thing in the circuit is copper wire, 1/4WL of 450 ohm
>ladder-line between R1 and R2.
>--
>http://www.mindspring.com/~w6rca
>
>
>-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
>http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
>-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2907. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 13:41:50 UTC
From: k1bqt@aol.com
Message-ID: <20010506094150.08135.00002308@ng-fy1.aol.com>
Source record: 164053

RE: Running balanced lines up conductive masts--

Supporting 300-Ohm ribbon or open-wire 3-4 spacing-distances off the mast and twisting it to distribute (and cancell) any influence from stray coupling, should eliminate most problems.

Rick K1BQT

2908. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 14:11:09 UTC
From: k1bqt@aol.com
Message-ID: <20010506101109.08135.00002313@ng-fy1.aol.com>
Source record: 164054

>The term "supergain" is a marketer's dream, and more than one has used
to full advantage the general level of misunderstanding about this term.<

Bob Haviland, W4MB, has also written on this topic--both in Communications Quarterly and his book, "The Quad Antenna". His observations and Roy's essentially agree. Bob wrote that "supergain" is achieved through small but careful optimizations of F/B, reducing drive resisitance, and sacrificing bandwidth.

From my own subjective experience, the Hex and Moxon Rectangle seem to perform on a par with each other, while a close-spaced 3-element yagi will yield discernably better overall performance under identical positioning conditions. As near as I have been able to measure over a lot of trials using sample-and-hold metering, the practical "on-air" gain advantage is about 2 dB for the yagi due to its sharper directivity.

Nevertheless, reports that a small close-spaced antenna may "perform better" on some signals than a high gain yagi may not be entirely false. Like the H-plane pattern, the E-plane pattern on a Hex or Moxon Rectangle is apt to be broad and smoothly defined. At the same time, a much higher gain yagi may exhibit deep E-plane nulls that could attenuate signals arriving at higher angles. Thus, the small antenna may "look" better on some signals, only to get clobbered by the yagi on lower-angle DX.

You still can't fool mother nature--even with slick marketing and fairy dust.

73

Rick K1BQT

2909. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 14:26:53 UTC
From: 2w8ji@akorn.net
Message-ID: <3af55905.245621761@news.accessunited.com>
Source record: 164055

On 05 May 2001 19:47:39 GMT, n2ey@aol.com (N2EY) wrote:

>I've used coax traps for 15 years or so in an 80/40 inverted V, and never had
>any problems. SWR bandwidth is the same as predicted for LC traps. I use good
>quality RG-58/U type coax (solid poly insulation, stranded center conductor) on
>2-1/2" PVC pipe, which guives a coil that is about as long as the diameter.
>Their Q turns out to be 100-150 on my Q meter, which is lower than can be had
>with conventional LC construction, but not so low that trap heating is a
>problem. The design is the N4UU design from QST for December, 1984.

Coaxial traps are physically large. They can dissipate consderable
power without failing because of the exposed surface area.

Q measured on a Q meter is meaningless, unless we know the reactance
of the trap. Without reactance included with Q, we have no idea what
the resistance is.

Q with reactance is also meaningless unless we know the current at the
point where the trap is placed, or the voltage across the trap at that
point.

The Q also varies with frequency, so we need to know what it is at
several points of interest, along with reactance and current through
the trap at those points.

I'll not release data now, and ruin my talk at Dayton except to say
what I've already said .

>Coax traps have the advantages of being cheap, rugged and made of readily
>available materials. In side-by-side FD comparisons with G5RVs at the same
>height, the coax trap dipole beat the G5RV every time, on both 80 and 40. I
>don't doubt that coax-trap loss is higher than LC trap loss if the LC traps are
>well made, but whether the difference is significant in real-world situations
>isn't clear. Where trap losses become a big issue is when lots of them are used
>in the same antenna.

I can put exact numbers on that loss, and will. It is not surprising
how little we can tell in-on-the air reports when comparing two
unknown efficiency antennas (generally in cluttered locations) with
random people on the air.

A few years ago I did a test on the air with a G5RV and a dipole. I
changed back and forth between a dipole an G5RV and the dipole easily
won. Everyone except one or two people reported the dipole better.

The only problem with that test is I was not changing antennas. I was
not changing anything, except the name I called the antenna. What I

was really testing, was how important the name of an antenna is.

What I learned was to NEVER tell the person giving the report what you are doing...just say antenna 1 and antenna 2. When I did that dipole 1 won half the time when I compared it to dipole 2, but for the large part they tied. Of copurse once again I was comparing the same antenna as antenna 1 and antenna 2.

73 Tom

2910. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 14:43:18 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d3nu5edi1@slb4.atl.mindspring.net>
Source record: 164056

Cecil:

Yes I saw your example demonstrating Kirchoff's laws... but you didn't write the equation down, I always do. A diagram in ASCII without an in line equation could be misinterperted. Heh, heh.

Cecil, transmission line theory does work well at DC and so does lumped circuit theory work at AC...

You just have to know how to apply them in each domain. That takes "judgement".

For example, it just takes a whole lotta little lumps to "get close" to a distributed system. Sometimes you gotta use judgement to know what a "lotta little lumps" needs to be. i.e. How many little lumps.

However, if you will note the number of "segments" that EZNEC chooses to approximate antennas, (those are it's "lotta little lumps"... it's not a great number, and thinking about things that way, i.e. as a lotta little lumped network elements, gives a lot more useful and valid insight than using...

that silly ficticious "reflected power" model invented by some poor misguided engineer, long since forgotten by the way, that has ficticious powers sloshing up and down a transmission line bouncing off reflection points, etc...

Cecil, the ONLY energy bouncing around in a distributed transmission line is that bouncing back and forth, most likely latterally rather than longitudinally, between the distributed capacitance dC, and the distributed inductance dL per unit length.

The only "end to end energy surges" that occur on a transmission line are while the line is "charging" to its' steady state. Surely that transient event lasts no more than a few microseconds for the usual amateur radio installation. Why continue to carry that "visualization" of a short transient event on to the steady state to explain and visualize steady state behavior? During the steady state there is nothing more nor less than a steady progression of power down the line from source [generator] to sink [load] just as in a DC circuit. It's just not sensible or appropriate, it makes things seem much more complicated than they really are. Paraphrasing Einstein, things should only be as complicated as they need to be, and no more.

The "reflected power" model, although capable of giving correct answers, is just more complicated than it needs to be to do the same job.

The whole steady state can be visualized more simply with little more than the visualizations and theory used for DC analysis.

All you really need are I and V and some DC circuit analysis techniques, and you can do everything with transmission lines that you need to do, and certainly all that you can do with that silly ficticious and overly complicated "reflected power" model.

And BTW... mismatched DC circuits do have a perfectly valid VSWR!

That DC VSWR may be calculated, even though there are no "standing waves". Is DC VSWR then "ficticious" or is it "real".

For one can readily calculate the reflected voltage b = V - IR and the incident voltage a = V + IR and derive the reflection coefficient rho = (Z - R)/(Z + R). Here of course R might be the internal resistance of the battery, Rint, and Z would be the resistance of the load, Rload. Then rho = (Rload - Rint)/(Rload + Rint)... then... VSWR = (1 + rho)/(1 - rho), etc... and "presto" we have a DC VSWR. Is it "real" or is it "ficticious"?

And so... what does it mean, when one can calculate and absolutely quantify a "ficticious" VSWR for a mismatched DC circuit, when one can plainly see there are no standing waves in the DC circuit? Would this DC VSWR be useful, or an unecessary complication? It is plainly valid!

In fact you can easily establish and use this DC VSWR as an intermediate quantity in lots of design and analysis calculations if you wished, such as computing the extra loss in battery leads due to increased VSWR, etc, etc...

Cecil DC VSWR means just about as much as it means when you can calculate the ficticious "reflected power" Pr = b*b/R in a transmission line problem and then try to ascribe some kind of reality to it.

Reflected Power has some "mathematical" uses just as the VSWR in DC circuits can have, but that doesn't make either of them "real". Even though they are useful does not mean that they are real. Many useful things are ficticious in that way.

Go ahead calculate some VSWR's for your favorite DC circuit analysis problems, it won't hurt!

In fact... why don't you develop and build a VSWR bridge for use in battery circuits... It would prove helpful and enable folks to adjust their battery loads to the "conjugate match".

You will know that your load resistor is "correct" when the DC VSWR meter reads 1:1...

Heck if you were interested in making things more complicated you might even want to calculate that "reflected DC power" that bounces off the mismatched load and goes right back into the battery... h e e... h e e

didididit dit dit.

Gotcha thinking yet?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF4C56A.3DBFD42D@IEEE.org...
> "Peter O. Brackett" wrote:
> > Or do all of your analogies somehow magically quit working if the
fraction
> > of a wavelength approaches zero?
>
> Transmission line theory is not needed when the fraction of a wavelength
> approaches zero. As long as the impedance transformation is negligible,
> conventional circuit theory works just fine. Did you see my example where
> Kirchhoff's laws don't work?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2911. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 14:47:58 UTC
From: 2w8ji@akorn.net
Message-ID: <3af56037.247463838@news.accessunited.com>
Source record: 164057

Hi Bill,

Your question was addressed to Roy, but let me interject my
experience. People often ask me why I don't have a delta loop or two
on my towers. One of my towers is 318 feet tall!

Imagine how easy it would be to have delta loops.

What I find, when I model the antennas, is exactly what Roy describes.
I might as well simply lower a dipole a bit lower on the tower as to
use a delta loop. I might get a tiny bit of gain at some angles in
some directions, but it is insignificant. So what are we left with?

On Sat, 5 May 2001 15:14:51 -0400, "Bill Ogden" <wogden@attglobal.net>
wrote:

>I am going to a fair amount of trouble to get a "diamond" loop up about 65'
>(for the top point of the diamond). My primary reasons are (1) loops are
>said to be quieter (less noise pickup) than many other configurations,

That's a myth.

Noise, assuming noise originates some distance from the antenna, is a
function of antenna pattern. Nothing more, nothing less. Other than
pattern changes that reduce response to the noise direction and
polarization and NOT to the desired signals, it make no difference
what shape or form the antenna is (or how much gain it has).

My quietest antennas are my most directional antennas, even when
vertical or vertically polarized antennas!

>(2)I can work with a single support pole,

That's an advantage, but the same as an inverted V.

>(3) I want to use the support as
>a vertical. I want to use the loop on 20-10 meters and the vertical on
>160-40 meters. The vertical part is made from 2" alum tubing.

Same as an Inverted V would be, except you get more effective height
with the Inverted V.

>Am I wasting my time? Would a dipole (or two) do just as well?

The difference is so small, no one would know the difference. So use
whatever one you feel good about. One advantage of a loop is it might
have a lower SWR on multiple bands when feeding it with coax. You
might check that out for your proposed antenna.

Since I have individual antennas for each band, I don't worry about multiband use and have never paid attention to that aspect. When I have used an antenna on multibands, I use open wire and a tuner and a regular dipole. I did that in a location where I had limited room and had a dipole for 40 between two very tall trees on hills with the feedline vertical (80-100 feet) dropped down to a good ground system. I loaded it as a T on 160 and 80, and as a dipole on the higher bands.

73 Tom

2912. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 14:57:35 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d3ooamaj1@slb7.atl.mindspring.net>
Source record: 164059

Cecil:

Yes I saw your example demonstrating Kirchoff's laws... but you didn't write the equation down, as I always try to do. A diagram in ASCII without an in line
equation could be misinterperted depending upon the "font" set up in your email reader.

Is that how I missed your invisible transmission line? Heh, heh.

Cecil, transmission line theory does work well at DC and so does lumped circuit theory work at AC...

You just have to know how to apply them in each domain. That takes "judgement".

For example, it just takes a whole lotta little lumps to "get close" to a distributed system. Sometimes you gotta use judgement to know what a "lotta little lumps" needs to be. i.e. How many little lumps to use.

However, if you will note the number of "segments" that EZNEC chooses to approximate antennas, (those are it's "lotta little lumps")... it's not a great number, and thinking about things that way, i.e. as a lotta little lumped network elements, often gives a lot more useful and valid insight than
using...

that silly ficticious "REFLECTED POWER" model invented by some poor misguided engineer, long since forgotten by the way, that has ficticious powers sloshing up and down a transmission line bouncing off reflection points, etc... way more complicated than it need to be!

Cecil, the ONLY energy bouncing around in a distributed transmission line is that bouncing back and forth, most likely latterally rather than longitudinally, between the distributed capacitance dC, and the distributed inductance dL per unit length.

The only "end to end energy surges" that occur on a transmission line are while the line is "charging" to its' steady state. Surely that transient event lasts no more than a few microseconds for the usual amateur radio installation. Why continue to carry that "visualization" of a short transient event on to the steady state to explain and visualize steady state behavior?

During the steady state there is nothing more nor less than a steady progression of power down the line from source [generator] to sink [load] just as in a DC circuit. It's just not sensible or appropriate, no

matter how
correct it is "mathematically" to "imagine" a ficticious power bouncing up
and down
the line.

It just makes things seem much more complicated than they really are.
Paraphrasing Einstein, "things should only be made as complicated as they
need to be,
and no more."

The "reflected power" model, although capable of giving mathematical correct
answers, is
just more complicated than it needs to be to do the same job. Sort of like
the Copernican
system of astronomy. You need to to create ever more complicated epicycles
of the
mathematical model to make it fit reality. When in fact that's not the way
things are at all.

The whole steady state on transmission lines can be visualized more simply
with little more than
the visualizations and theory used for DC analysis.

All you really need are I and V and some DC circuit analysis techniques, and
you can do everything with transmission lines that you need to do,.

Certainly all that you can do with that silly ficticious and overly
complicated "reflected power" model.

And BTW... mismatched DC circuits do have a perfectly valid VSWR!

That DC VSWR may be calculated, even though there are no "standing waves".
What is your opinion, is DC VSWR then a "ficticious" quantity, or is it
"real".

For in a circuit, be it AC or DC, one can readily calculate the reflected
voltage

b = V - IR

and the incident voltage

a = V + IR

and derive the reflection coefficient

rho = (Z -R)/(Z + R) from a an b.

Here of course, if you like R as a symbol better than Z, then R might be the
internal resistance of the battery, call it Rint, and Z would be the
resistance
of the load, call it Rload.

Then rho =(Rload - Rint)/(Rload + Rint)...

then...

VSWR = (1 + rho)/(1 - rho), etc...

and "presto" we have a DC VSWR.

Is it "real" or is it "ficticious"?

And so... what does it mean, when one can calculate, and absolutely quantify,
a "ficticious" VSWR for a mismatched DC circuit, when one can plainly see there are no standing waves in the DC circuit?

Would this DC VSWR be useful, or an unecessary complication?

As a mathematically derived quantity DC VSWR is plainly valid! That cannot be refuted.

In fact you could easily establish and use this DC VSWR as an intermediate quantity in lots of design and analysis calculations if you wished. Such as computing the extra loss in battery leads due to increased VSWR, etc, etc...

Cecil DC VSWR means just about as much as it means when you can calculate the ficticious "reflected power" Pr = b*b/R in a transmission line problem and then try to ascribe some kind of reality to it.

Reflected Power has some "mathematical" uses just as the VSWR in DC circuits can have, but that doesn't make either of them "real".

Even though mathematically derived quantities are
useful does not mean that they are real.

Many useful things are ficticious in that way. The use of logarithims in calculations
is another such example.

Go ahead calculate some VSWR's for your favorite DC circuit analysis problems, it won't hurt!

In fact... why don't you develop and build a VSWR bridge for use in battery circuits... I am sure that you could sell it to Napa Auto Parts.

It would prove helpful and enable folks to adjust their battery
loads exactly to the proper "conjugate match".

You will know that your load resistor is "conjugagte matched" when the DC VSWR meter
reads 1:1...

Heck if you were interested in making things more complicated than they need to be,
you might even want to calculate the "reflected DC power" that bounces off the mismatched
load resistor and goes right back into the battery... h e e... h e e

didididit dit dit.

Gotcha thinking yet?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF4C56A.3DBFD42D@IEEE.org...
> "Peter O. Brackett" wrote:
> > Or do all of your analogies somehow magically quit working if the
fraction
> > of a wavelength approaches zero?
>
> Transmission line theory is not needed when the fraction of a wavelength
> approaches zero. As long as the impedance transformation is negligible,
> conventional circuit theory works just fine. Did you see my example where
> Kirchhoff's laws don't work?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF47776.852C8F4F@IEEE.org...
> Ralph Mowery wrote:
> >
> > Because the meter is messed up. With equal resistors you have to have
> > equal voltages.
>
> Nope you don't, Ralph. There's 1/4WL of 450 ohm ladder-line between
> R1 and R2 that I forgot to tell you about. :-)
>
> > W6RCecilA wrote:
> > >
> > > Consider the following circuit:
> > >
> > > +------R1----------------------------+
> > > | 25 ohms |
> > > | |
> > > 100v gen R2 25 ohms
> > > | |
> > > | |
> > > +-----------------------------------+
> > >
> > > Voltage across R1 is 0.31v and voltage across R2 is 5.54v
> > > Generator voltage is 100v Generator current is 12.3 mA
> > > Why doesn't Kirchhoff's voltage laws work?
> > >
>
>
> --

> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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2913. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 15:05:18 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3af5652b.55809170@news.aepnet.com>
Source record: 164060

On Sun, 06 May 2001 00:39:18 -0700, Roy Lewallen <w7el@eznec.com> wrote:

[snip]
>
>This does raise a cautionary note to people
>using these "all band" antennas and readily embracing a tuner as a
>cure-all that they might be paying a pretty big price.
>
>Roy Lewallen, W7EL

Amen.

Wes Stewart N7WS

2914. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 15:33:48 UTC
From: Tad Danley <taddanley@att.net>
Message-ID: <3AF56EDE.DBCDF53F@att.net>
Source record: 164061

Tom W8JI wrote:

> On Sat, 5 May 2001 15:14:51 -0400, "Bill Ogden" <wogden@attglobal.net>
> wrote:
>
> >I am going to a fair amount of trouble to get a "diamond" loop up about 65'
> >(for the top point of the diamond). My primary reasons are (1) loops are
> >said to be quieter (less noise pickup) than many other configurations,
>
> That's a myth.
>
> Noise, assuming noise originates some distance from the antenna, is a
> function of antenna pattern. Nothing more, nothing less. Other than
> pattern changes that reduce response to the noise direction and
> polarization and NOT to the desired signals, it make no difference
> what shape or form the antenna is (or how much gain it has).

Interesting ... I had always heard that a "closed" loop antenna has less noise pickup than a dipole - sounds like one more thing that I "thought" I knew! Could it be this applies to static build-up? Some guys I know with quads swear they are quieter than yagis.

73,

--
Tad Danley, K3TD
mailto:taddanley@att.net

2915. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 15:47:48 UTC
From: "MIchael W. McGinley" <mmcginley@kscable.comSTOPSPAM>
Message-ID: <060520011048147038%mmcginley@kscable.comSTOPSPAM>
Source record: 164062
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

No Respect - No Quarter - No Mercy

There is no such thing as a freebander
I'll call Freebanders what They really are... FELONS !

Nuff Said

Michael - N0JVT

2916. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 15:48:41 UTC
From: Henry Knoll <knoll003@tc.umn.edu>
Message-ID: <3AF56449.2756@tc.umn.edu>
Source record: 164058

Tom W8JI wrote:

> I'll not release data now, and ruin my talk at Dayton except to say
> what I've already said .

Tom, will you post your report somewhere after Dayton? I can't go this year. Thanks and 73,

Henry WA0GOZ

2917. Re: Yagi TH6DXX rebuild & erect advice?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 16:05:42 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3af57654.60203045@news.aepnet.com>
Source record: 164063

On Sun, 6 May 2001 06:27:23 -0500 (CDT), ham_guy@webtv.net (JJ OKK) wrote:

>I bought a 25' used, television type, 3 section tower and decided to
>look for an antenna to put on it.

Is this a real "tower" (i.e. lattice) or just a tubular mast? If it is tubular, then I advise to stop here.

> I came home with a Hygain Super Thunderbird TH6DXX with the manual
>and a box of new replacement parts. The antenna looks pretty good...
>had 1 end broken off a director and the stub had RF welded into the
>mating tube. (I finally had to drill it out, but is okay and I have a
>replacement aluminum tube for it.)
> I started on the task of reworking the antenna yesterday and have
>decided to use extra fine steel wool to remove the oxidation....
>followed by a coat of clear lacquer after reassembly.

I too acquired one of these antennas as part of the deal when I bought a used tower from a homeowner who acquired it when he bought the house.

With good intentions, I bought the "rebuild kit" from Hygain that included the trap covers, etc. When I actually opened the traps, I found that many of the internal insulators were shot. I order a bunch of these and started with the overhaul.

Problem is, these internal insulators are captured by some dimples on the outside trap cover. It is difficult to impossible to get these off without further damage. Also, the outside cover of the trap is part of the trap capacitor and the ground point is via a deformed piece of the cover, penetrated by a rusty sheet metal screw. To disassemble the trap this piece must be made "round" again. When you try this, it will probably break at the screw hole. All in all, a piece of crap.

I finally gave up the idea of rebuilding. I figured that the sunspot cycle was not going to favor the higher bands and I prefer 20 meters anyway. So I designed a three element monobander that uses the aluminum from the TH6.

I will relate how I cleaned the aluminum but caution you this isn't for everybody. Also, it isn't for the traps either.

In the back yard, I built a rectangular framework of 2 x 6 lumber set on edge and laying on the ground. The long side of the rectangle was about a foot longer than the longest length of aluminum tubing (part of the reflector) and the short side was about a foot or so wide. Line this with heavy plastic sheet. I used the black stuff used in landscaping. What you should wind up with is a watertight trough. Fill this trough about 4" deep with water and disolve a can of household lye in it. (It's better to disolve the lye in a bucket of water and

add it to the trough.)

You now have a very caustic solution sitting in your back yard. Made damn sure no pets, children, etc. can come in contact with it! Also, it would be best of you don't put this on your wife's prized flower garden.

Wearing safety glasses and rubber gloves, you are now ready to drop in the aluminum. I did maybe six pieces at a time. The solution will bubble and fizz like crazy. After a few minutes, using your rubber gloves, remove a piece and inspect it. You will probably see a smutty film on it that when rubbed off reveals a nice satin surface. If so, rinse the tube in running water, remembering the inside too. If the surface is blotchy, with areas that aren't shiny, then back into the solution for a while.
A final wipedown with a vinegar-soaked rag will finish the job.

I took several days to do this. I disposed of the solution each day so it was not a hazard. This isn't a waste because the solution will "wear out" anyway and need to be renewed. As I recall I did three times.

Don't forget the boom to element and boom to mast clamp. Just remember to remove all of the hardware. I replaced all of the 1/4" hardware with stainless steel bolts and stainless nylon locking nuts. A well-stocked Ace Hardware will have these. Buy them by the box (50) and the price is right. Lubricate all stainless at assembly. I just used No-ox as it was handy since I used it on all tubing joints.

>
> Now, I'd like some advice... how to check the traps... particulary
>the one on the tube that I banged on getting the broken stub out.

All of the traps for a band are tuned to the same frequency. I can't find where I wrote this down, but it was once available from Hygain's web site before they effectively went belly up and became MFJ.

>
> Also, this looks like an insurmountable task to erect the antenna
>with it's 24 foot boom! The drawing on the manual shows it being lifted
>straight up, fully assembled to the top of the mast by a frame bolted
>onto the side of the tower. Oh My Gosh this looks SCARY! But I can't
>think of any better method. Anyone have a better idea?

This is the hard part. We need to know more about your tower. Can you climb it? If it as light-duty as I suspect, then this is too much antenna for it.
>
> I'm planning on using a discarded garage door opener for a rotor at
>the bottom of the mast.... replace the motor with a crank and
>hand-crank it around. (I'm retired and getting the most mileage for the
>buck)
>
> After looking at the magnitude of the job(s) ahead, I'm thinking it
>would be prudent to ask for a bit of advice on this project! Thanks...

It is wise of you to ask.

Wes Stewart N7WS

>Johnny KF4WWF
>

2918. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 16:51:10 UTC
From: Irv Finkleman <finkirvNOSPAM@home.com>
Message-ID: <3AF580FB.209CA2FB@home.com>
Source record: 164064

N2EY wrote:

> Been reading this thread and thought I'd share my experiences.....
>
> I've used coax traps for 15 years or so in an 80/40 inverted V, and never had
> any problems. SWR bandwidth is the same as predicted for LC traps. I use good
> quality RG-58/U type coax (solid poly insulation, stranded center conductor) on
> 2-1/2" PVC pipe, which guives a coil that is about as long as the diameter.
> Their Q turns out to be 100-150 on my Q meter, which is lower than can be had
> with conventional LC construction, but not so low that trap heating is a
> problem. The design is the N4UU design from QST for December, 1984.
>
> Coax traps have the advantages of being cheap, rugged and made of readily
> available materials. In side-by-side FD comparisons with G5RVs at the same
> height, the coax trap dipole beat the G5RV every time, on both 80 and 40. I
> don't doubt that coax-trap loss is higher than LC trap loss if the LC traps are
> well made, but whether the difference is significant in real-world situations
> isn't clear. Where trap losses become a big issue is when lots of them are used
> in the same antenna.
>
> Besides the somewhat-lower loss, LC traps have two big advantages: Ease of
> adjustment (trimming those coax traps is a pain!) and control of the LC ratio.
> My 80/40 inverted V has too much L and not enough C to give a good match on 20
> meters (it does about 3:1). LC traps of the right ratio could do the job on
> three bands without a tuner rather than two.
>
> Have thought of using open-wire feed on the inverted V with no traps, but the
> mechanical problems of keeping the open-wire away from the metal mast pipe, as
> well as the need for a tuner at all times, have put that idea on the back
> burner. (Because of the layout of this little suburban lot, the feedline is
> rather short (40 feet) and the total wire length is limited to 100 feet or so).
>
> The way I see it, if you've gotta use coax feed and want a multiband dipole, LC
> traps are first choice, followed closely by coax traps if you can't get the
> parts for LC traps.
>
> 73 de Jim, N2EY
>
>

Jim,
When I had my tower, 56 ft, I fed my dipole (apex at the top of the
towerstanding off about 1 foot on a hockey stick shaft) with
twinlead. I didn't use standoffs or anything -- the twinlead just hung down to a
window near

the base of the tower. It was a great antenna and never gave me any problems. 135 ft overall
in length, it worked well on all bands. If I was missing anything, I never noticed.

--

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

Please delete NOSPAM from my e-mail address when replying. Thanks!

2919. Re: Lightning conductors.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 18:35:53 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9d45i9$c7o$0@208.206.142.67>
Source record: 164065

Reg Edwards wrote:
>
> The moral seems to be - don't soak your coax in water till the
> braid gets black.
>
> Use any substantial conductor you fancy to lead lightning down to
> ground.
>

...and if you use the conductor that provides the lowest impedance path
that you can get, it leaves that much less of the lightning energy
available to look for an *additional* path through your ham station....

Dick

2920. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 19:01:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF59F79.C8548ECB@IEEE.org>
Source record: 164066

"Peter O. Brackett" wrote:
> Cecil, the ONLY energy bouncing around in a distributed transmission line is
> that bouncing back and forth, most likely latterally rather than
> longitudinally, between the distributed capacitance dC, and the distributed
> inductance dL per unit length.

But Peter, that energy per unit length increases and decreases with time.
Where does it go and where does it come from?

> Paraphrasing Einstein, things should only be as complicated as they
> need to be, and no more.

How would Einstein explain the additional losses when the SWR is high?
How would Einstein explain the measurable max/min voltage/current points
with their 90/180 degree relationships? How would Einstein explain you
being fried by a megajoule of reflected energy?

> The "reflected power" model, although capable of giving correct answers, is
> just more complicated than it needs to be to do the same job.

Without the "reflected power" model, how would you calculate the additional
losses when the SWR is high? - made tougher because SWR would be dropped
from the model at the same time as reflected energy.

> All you really need are I and V and some DC circuit analysis techniques, and
> you can do everything with transmission lines that you need to do, and
> certainly all that you can do with that silly ficticious and overly
> complicated "reflected power" model.

Can you calculate the voltages at the max/min voltage points and
the currents at the max/min current points and predict they will
be 90/180 degrees apart?

> And BTW... mismatched DC circuits do have a perfectly valid VSWR!
> That DC VSWR may be calculated, even though there are no "standing waves".
> Is DC VSWR then "ficticious" or is it "real".

Steady-state DC SWR and DC wavelength is what mathematicians call the
trivial limit condition.

> Gotcha thinking yet?

You got me thinking about the one second long lossless transmission line
loaded up with one megajoule for one second, disconnected from the source
and connected to you during the next second, and frying you with reflected
power the third second. Time for you to stop dodging that question.
--
http://www.mindspring.com/~w6rca

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2921. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 19:06:18 UTC
From: richardharrison@webtv.net
Message-ID: <18648-3AF5A0AA-47@storefull-117.iap.bryant.webtv.net>
Source record: 163969

Peter, K1PO wrote:
"Cecil, transmission line theory does work at DC and so does lumped circuit theory work at AC.."

A-C type transmission line theory works at d-c with certain restrictions. Connect an infinite amp-hour battery to an infinite length transmission line, and the current that flows is determined by the Zo of the line. That is because of the line`s response to the leading edge of the wave initiated by the battery.

If the line does not stretch to infinity, current can be interrupted by on open circuit at the end of the line. If that happens, the open-circuit situation is communicated back to the battery at the velocity of propagation on the transmission line. Call it the "reflected wave" which relays the open-circuit condition back to the battery.

If the line were terminated in Zo, and the line were lossless, the traveling incident wave initiated by connection of the battery to the line, would reach the termination resistance and that resistance would absorb all the battery current and no reflection would be sent back to the battery to change current drain from the battery. The line would behave just as if the line extended to infinity. Steady state control of the current will result from the battery`s internal resistance and the load resistance equal to Zo. But in the steady state, the Zo is not controlling the d-c current. The termination resistance could have just as well been an infinite extension of the Zo transmission line, if it were available.

Zo is not affecting an unchanging current. Opposition from Zo to a d-c step occurs where the step is charging up the energy storage elements of the transmission line.

Similarly, as happened with an open, a short at the termination of a line is communicated back to the battery. A damped oscillation would be a part of the transient period. But when the steady-state is reached, opposition to battery current comes from its internal resistance and its external load. The line`s inductance and capacitance have no effect on a constant current.

We should all know that artificial lines can be constructed of inductance, capacitance, resistance, and conductance.

Best regards, Richard Harrison, KB5WZI

2922. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 19:06:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF5A0B1.CDBD7310@IEEE.org>
Source record: 164067

Tad Danley wrote:
> Interesting ... I had always heard that a "closed" loop antenna has less noise
> pickup than a dipole - sounds like one more thing that I "thought" I knew!
> Could it be this applies to static build-up?

Yes, it does, Tad, especially in a dry climate. In AZ, my loop was much, much quieter than my dipole when the wind was blowing. However, putting an RFC across the dipole feedpoint also made the dipole a lot quieter.

Without the RFC across the dipole, I sometimes experienced actual arcing somewhere within my transceiver. Never happened with the loop.
--
http://www.mindspring.com/~w6rca

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2923. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 19:08:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF5A145.99147215@IEEE.org>
Source record: 164068

Tom W8JI wrote:
> Your question was addressed to Roy, but let me interject my
> experience. People often ask me why I don't have a delta loop or two
> on my towers. One of my towers is 318 feet tall!
> Imagine how easy it would be to have delta loops.

Where I've found the vertical loops to shine is at low heights. While
a dipole radiates most of its energy straight up, the loop maintains
a relatively low angle of radiation. I'll post the comparison
according to EZNEC.
--
http://www.mindspring.com/~w6rca

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2924. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 19:39:26 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AF5A86E.50C5@wt.net>
Source record: 163970

Roy Lewallen wrote:
>
> Except for local noise and noise from static charge, a quieter antenna
> is a lossier antenna. Or one that doesn't receive well from distant
> points where atmospheric noise is being propagated from. I doubt that
> the loop will reject local noise better than a dipole, but it's likely
> to do a poorer job than a dipole at the same maximum height at receiving
> distant signals. So it might well be quieter. If you like quiet, you
> could just build a low dipole -- it'll be quieter and quieter as it gets
> lower and lower. You can bleed static charge from a dipole with an RF
> choke or large resistor if it's a problem and if your rig doesn't
> already have an RF choke at the input.

I pretty much agree with your angle on this. I don't think the advantage of a loop over a dipole is worth bothering with. As you say, all you are really doing is lowering the point of max current lower to the ground. Also I've rarely seen the stated "2 db " gain from using a loop over a dipole unless they were real high in wavelength. Most average setups are not high enough when used on the low bands. I noticed Cecils comments about the loop he used, but I'm not sure he really has a good enough vertical to make a fair test. I know when I had both a dipole and a full size GP on 40m, we made many tests to VK land using all the different types. One guy I know here in town tried a loop mounted vertically on the side of his house on a tall mast. It "might" have been slightly better than my dipole, but not much. Actually I never really tested it against the dipole too often because I hardly used it. My GP beat both by a large amount. I bet my GP was at least 2 S units better or more to VK than his loop. So a loop as a low band DX antenna is not the world beater many claim it to be. I really see no difference from a good dipole, and in fact as you say, many times the dipole will be better because most of the antenna is higher in wavelength. I've also tried horizontal loops on 80m against dipoles. Again, I could tell no real difference at all. Also I agree about the noise. If an antenna shows less noise on a certain band, in 98% of all cases I've seen, it's the worse antenna. Noise is just rf like any other signal. Usually the best antenna picks up more noise, unless it's a gain antenna that pointed away from noise. On an omni antenna such as a vertical, if it's quieter, it's worse. I've never seen a case otherwise.
ps. I hope this sends. My news server has been kuput all week, and is still acting funny. MK
--
http://web.wt.net/~nm5k

2925. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 19:40:17 UTC
From: G&R <"stop the spam"@limbo.hell>
Message-ID: <BMhJ6.30517$_f3.512356@news20.bellglobal.com>
Source record: 163971

I wish you would also consider our Baby Boomer Quad (at
www.degendesigns.com). We have used modeling software based on average
ground conditions and based on our actual mounting conditions. To the best
of our experience our antenna does perform as indicated by our models.

For your reference our software is NEC4WIN95VM as we feel it's the only
software that can accurately model our antenna. There may be others,
however based our field testing and modeling results it currently performs
the function the best.

There are lots of good software out there, each performs calculations
differently and is best suited to specific tasks.

There are several articles on the Web which clear identify that different
software can and will produce three different performance levels for the
identical conditions and antennas. Are the results wrong...no, they just
calculate the conditions based on the math models used and it is up to the
user to determine if the results reflect the conditions tested.

That being said, one can easily skew the results on any antenna calculation
and software with slight adjustments to the base conditions. We have tried
to be fair and honest with our results. We want the posted results to
accurately reflect real life results, so, we have posted the results you
should realistically expect under similar conditions to the way we have
installed and tested our antenna.

73

Guenther
info@degendesigns.com

If you have any questions, please feel free to contact me at your
convenience.

"Helge Dommarsnes" <hdom@online.no> wrote in message
news:NzEI6.6301$gX3.339655@news3.oke.nextra.no...
> Hi
> Does anyone have experience with these types of antennas?
> I'm considering to test one of these antennas on my very "limited space
> QTH". Some vendors claim very high performance close to, or better than
> supergain performance, but I can't say that I have reached such high
> performance in simulation with MININEC. Anyone that have practical
> experience they want to share?
>
> --
> Helge LA1DGA
>

>
>
>

2926. Hi

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 20:10:16 UTC
From: Siddhartha <jrm7287@frontiernet.net>
Message-ID: <9d4b5rspq1@node17.cwnet.roc.gblx.net>
Source record: 163972

I have a Kenwood TS-570 and an Ameritron AL-811H. I am looking for a connection cable (shielded audio type cable with standard male phono plugs for the 811H) to interconnect with the 570 (7 pin male DIN connector). Hopefully this is a manufactured item as my old eyes are to weak to work with a DIN connector, and the hands are unsteady to attempt the fine solder. Thanks for your time and input. W2JRM Jim 73's

2927. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 20:20:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF5B21E.B4D8CE1C@IEEE.org>
Source record: 163973

W6RCecilA wrote:
>
> Tom W8JI wrote:
> > Your question was addressed to Roy, but let me interject my
> > experience. People often ask me why I don't have a delta loop or two
> > on my towers. One of my towers is 318 feet tall!
> > Imagine how easy it would be to have delta loops.
>
> Where I've found the vertical loops to shine is at low heights. While
> a dipole radiates most of its energy straight up, the loop maintains
> a relatively low angle of radiation. I'll post the comparison
> according to EZNEC.

Here's the EZNEC results: With the maximum height of the 40m dipole
and the 40m triangular loop at 31ft, the loop beats the dipole at
take off angles less than 20 degrees. At the dipole's maximum gain
of 6dBi straight up, the loop is 12dB down from the dipole. So if
you want better DXing than a low dipole and good attenuation of the
unwanted high angle arriving signals, the loop beats the dipole.
It also beats an ordinary 0dBi gain vertical in the loop's favored
directions and is much, much quieter.

To summarize the loop's DX advantage over a low dipole at the same
height:

Loop beats the dipole at low take off angles below 20 degrees
(by more than 3dB at ten degrees take-off-angle) with a wider
horizontal beamwidth than the dipole.

Loop attenuates the unwanted signals at the high incoming angles
above 20 degrees thus reducing "local" QRM and QRN which stomp
on those weak DX signals.
--
http://www.mindspring.com/~w6rca

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2928. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 20:33:27 UTC
From: Robert Watson <rwatson@westsound.com>
Message-ID: <3AF5B517.1EA22069@westsound.com>
Source record: 163974

Since I have read most of the posts, (up until 1320PDT local), and the circuit contains 450 Ohm ladder line, I will make a quick guess without explaining.

I will say that it involves instantaneous voltage at a different phase of the signal, at R1 and R2.

rwatson@westsound.com/WA7SON

(Furthermore, I dont believe you can say that Kirchhoff's theory isnt working, it will work in a good circuit as well as a bad circuit. It depends on what you are looking for....)

W6RCecilA wrote:

> Consider the following circuit:
>
> +------R1----------------------------+
> | 25 ohms |
> | |
> 100v gen R2 25 ohms
> | |
> | |
> +-----------------------------------+
>
> Voltage across R1 is 0.31v and voltage across R2 is 5.54v
> Generator voltage is 100v Generator current is 12.3 mA
> Why doesn't Kirchhoff's voltage laws work?
> --
> http://www.mindspring.com/~w6rca
>
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2929. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 20:37:23 UTC
From: w2du@iourney.com
Message-ID: <3af59ff0.10264189@news.journey.com>
Source record: 163975

Walter:
>
>This is part of my response to your challenge. These questions are
>different than the ones posted sometime ago because I would like us to
>consider some very basic concepts.
>
>I will be posting several sets of questions and I will also set up two
>examples that we can discuss. This first post will describe the first
>example of a Zo match established with a lossless tuner. I will describe
>the steady state conditions and I will then summarize your technical opinion
>of how the match is achieved and how the voltages, currents and power
>interact and combine within the system (you can correct me if I misstate
>your technical position). I will also describe my technical opinion of how
>the match is achieved and how the voltages, currents and power interact.
>This will establish the basis of our technical disagreement.
>
>Second, I will ask a series of questions that relate to basic circuit and
>transmission line theory. This may seem ridiculous, but it is necessary for
>us to agree on the basic concepts so that we can apply them correctly to the
>examples and to our technical positions. Since you quote Johnson and have
>indicated that your concepts are consistent with the material in his text, I
>will use his text - Transmission Lines and Networks (c) 1950 - as the
>technical reference. Once we agree on the technical basics, we can discuss
>the wave mechanics of the two examples in detail.
>
>Example 1.
>
>A ------ 50 ohms ------ B - Tuner - C ------ 50 ohms ------ D
>
>The source is located at point A. It is a voltage source V = 141.422 V.
>The source impedance is 50 ohms. The impedance seen looking rearward into
>the source is 50 ohms.
>
>Between points A and B, there is a lossless 50 ohm transmission line, L1.
>The transmission line is 1 wavelength long.
>
>Point B is the Tuner input. The Tuner is lossless. It is a T-network
>tuner. The first element is a capacitor, C1, with a value of 67.108 pF.
>The second element is a parallel inductor, L, with a value of 0.6962 uH.
>The third element is a series capacitor, C2, with a value of 50.0 pF. Point
>C is the tuner output.
>
>Between points C and D, there is a lossless 50 ohm transmission line, L2.
>The transmission line is 1 wavelength long.

>
>At point D there is an antenna with a feedpoint impedance of 150 ohms.
>
>The steady state power levels are as follows: In L1, the forward power is
>100 Watts and the reflected power is 0 Watts. In L2, the forward power is
>133.33 Watts and the reflected power is 33.33 Watts.
>
>Walter's Technical Opinion: The steady state match that occurs at point B
>is the result two rearward traveling waves coincident at this point. The
>voltages associated with these rearward waves are 180 degrees out of phase
>such that the resulting voltage is zero but the current is maximum. This is
>a virtual short circuit only to the reflected wave such that the reflected
>wave is totally re-reflected at point B. The totally re-reflected power of
>33.33 Watts adds in phase with the source delivered power of 100 Watts and
>the two combine to the total forward power of 133.33 Watts in L2.
>
>VE9SRB's technical opinion. The steady state match that occurs at point B
>is the result of two rearward traveling waves coincident at this point. The
>voltages and currents associated with these two rearward traveling waves are
>both 180 degrees out of phase such that the net rearward traveling wave is
>zero. There is no virtual short circuit created at point B and there is no
>re-reflection of power at point B. The re-reflection of power only occurs
>at point C, the tuner output. The total forward power in L2 is a result of
>the forward source power at point C adding to the re-reflections at point C.
>The forward source power at point C is 75 Watts and the re-reflected power
>at point C is 8.33 Watts. These two forward powers combine to the net
>forward power of 133.33 Watts in L2. Determination of these power levels
>must be made through a voltage and current analysis of the system.

First Steve, the two sets of rearward traveling wave are coincident at point B, creating a virtual short circuit, as stated in my opinion above.

Second, a forward source power of 75 watts and a re-reflected power of 8.33 watts combining to obtain 133.33 watts of forward power is absurd from both a practical and mathematical viewpoint. Steve, it is obvious that you are a distinguished mathematician. How can you live with yourself with such a ridiculous statement?
>
>Now the basics:
>
>1. It is my opinion that wave reflections in a transmission line occur at
>any impedance discontinuity relative to the transmission line Zo. The
>reflected voltage is equal to the incident voltage times rho: Vref = rho Vi.
>The total voltage at the impedance discontinuity is equal to the incident
>voltage times (1 + rho): Vtot = (1 + rho) Vi. The reflected power at any
>impedance discontinuity is equal to the incident power time |rho|^2: Pref =
>>|rho|^2 Pi. The power transmitted or delivered to the impedance
>discontinuity is equal to the incident power times (1 + |rho|^2): Pdel = (1
>>+ |rho|^2) Pi. These concepts are consistent with the discussion in
>Johnson's text. Do you concur?

No Steve, I do not concur.

First, the total voltage at the discontinuity is not (1 + rho). If this were the case the total voltage would be 1.5 times the source voltage when the mismatch is 3:1. Far to high. For 100 watts delivered to the 50-ohm input to the network the source voltage is 70.71 volts. 1.5 x 70.71 = 106.07 volts, 24.42 volts too high.

The real total voltage is square root of the expression 1/(1 - rho^2) times the source voltage. The sqr root of the expression 1/(1 - |rho|^2) equals the forward voltage increase factor, the same as the expression 1/(1 - |rho|^2) equals the forward power increase factor. Let's check it out: The voltage increase factor for a 3:1 SWR (rho = 0.5) is 1.1547, for a total voltage of 81.650 v when multiplied by the source voltage 70.71 volts for 100 watts delivered to the 50-ohm network input.

Let's check this total voltage value out. 81.65^2 divided by (Zo = 50) = 133.33 watts, the precise value when using the forward power increase factor 1/(1 - rho^2)= 1/(1 - 0.25) = 1.3333. (100 x 1.3333 = 133.33 watts.

Second, the total forward power, or as you say, Pdel, is not (1 + |rho|^2). Let's see why. Continuing with a 3:1 SWR and rho 0.5, we get (1 + |rho|^2) = 1.25 as the power increase factor. This would mean to total forward power would be only 125 watts with a 100 watt source. But we know from above that the total forward power is 133.33 watts.

Now let's verify that the forward power increase factor is 1/(1 - |rho|^2). Recall that during our earlier and continuing controversy on this point you vehemently refused to agree that this expression returns the forward power increase factor. However, you must have had a change of mind, because in your QEX article Jan/Feb 2001, you specify this expression as the forward power increase factor. If I remember correctly it is your Eq 36. Consequently, if the correct factor is 1/(1 - |rho|^2) it certainly cannot be (1 + |rho|^2), because for rho = 0.5, the resulting values are 1.3333 and 1.25, respectively.

My explanation above shows why your opinion is incorrect.

>2. Johnson clearly indicates that reflections and re-reflections are the
>direct result of the impedance discontinuity the wave sees when it reaches
>the *end* of the transmission line. The forward wave will be reflected
>based on the impedance it sees at the output end of the line and the
>reflected wave will be re-reflected based upon the impedance it sees at the
>input end of the line. From page 16 - "Thus, a terminating impedance
>different from Zo will give rise to a reflected wave which travels away from
>the termination. The reflection, upon reaching the other end of the line,
>will itself be reflected if the terminating impedance at that end is
>different than Zo." From page 19 - "A wave of voltages of this value
>travels to the receiving end [load end], where it is reflected with the
>coefficient, Kr. The reflection travels back to the generator end of the
>line, where it is reflected with the coefficient Kg." These statements are
>technically correct. Do you concur?

I concur with everything Johnson says, in fact he is one of my two idols concerning transmission lines. Chipman is the other.
>
>3) You made a recent statement in the NG as follows: "Steve's problem with
>addition of voltages or powers on a transmission line is that it is NOT the
>voltages that add, it's power, even though Steve denies that this is true.
>His misconception on this issue is why his powers don't add up correctly.

>Everything comes out correctly when powers are added, but never come out
>correctly by adding voltages."
>
>You clearly state that voltages on a transmission line do not add. You also
>clearly state that everything does not come out correctly by adding
>voltages. Emphasis on never come out correctly by adding voltage.
>
>Let's look at Johnson's opinion on the addition of voltages in a
>transmission line. Pages 98 - 101. Note
>that Johnson's entire wave reflection analysis is done with voltage not
>power. Johnson first defines the initial sending-end voltage: "When the
>generator is first connected to the line, it sees an impedance equal to Zo
>until the arrival of the first reflection from the load. Therefore, for the
>first few moments the sending end voltage of the line will be Eg Zo / (Zo +
>Zg). This wave, which we will imagine to flow forevermore out of the
>generator, will be propagated down the line." There are two significant
>point here. First, the forward driving voltage delivered to the
>transmission line by the source is a direct function of Zo - nothing else.
>Johnson also notes that this wave flows forevermore out of the generator.
>This is the forward driving voltage applied to the transmission line by the
>transmitter. It, in and of itself, never changes. The only voltage
>changing the total forward driving voltage at the line input are the
>re-reflections created at the line input. Let's continue: "As the wave
>reaches the load, it will be reflected with the reflection coefficient Kr
>and will thus give rise to a second wave which will travel back towards the
>generator. ... This wave reaches the generator ... and is reflected there
>with the coefficient Kg. The new reflection is propagated to the right
>[towards the load] ... Continuing in this way, we find an infinite series of
>reflections, each smaller than the last. The sum is convergent and
>represents the steady state which is finally established." Apparently
>Johnson is of the opinion that addng voltages in a transmission line to
>establish the steady state is correct. You disagree with my addition of
>voltage, do you disagree with Johnson's?

I agree with Johnson explicitly. What I do not agree with is your intrepretation of Johnson.

My Johnson is still in Florida, and will be until after Dayton. However, I can see the top of page 100 clearly from memory where Johnson's equation there derives the voltage of the standing wave at any point on the line. If you were to integrate all the voltage values along the line derived from Johnson's equation, the result will be a pattern of the standing wave.

Johnson's equations on pages 99 and 100 do not in any way derive the forward power in the line. However, the geometric series progression on page 99 converges to 1/(1 - a), as you well know. And when 'a' is assigned the value of |rho|^2 we get the expression 1(1 - |rho|^2) that you must agree is the correct expression for the forward power increase factor, because you said so in eq 36 in your QEX article. Apparently you changed your opinion on this point, because you disagreed with me concerning it earlier.

I must also point out an error in your use of the 1/(1 - a) expression in QEX. The expression is only valid for values less than 1. You failed to make that statement in your article when you presented the geometric progression.
>
>On determining the total forward power in the transmission line. Johnson
>defines the total forward voltage traveling in the transmission line as E+,
>which is "the net incident [forward] wave composed of the sum [he adds
>voltages] of
>all the individual waves that travel towards the load.." To determine the
>total forward power traveling in the line, Johnson (see pages 149 - 150)
>uses the expression |E+|^2 / Zo. To determine the total forward power in
>the line, Johnson first determines the total forward voltage (the net sum of
>the forward source voltage, determined as the voltage delivered to Zo, and
>the voltage re-reflections). He does not determine the total forward power
>through the addition of power. When I determine the total forward power
>from the addition of forward voltage, you indicate that I have a problem and
>don't understand the basic concepts. My approach to determining the total
>forward power is consistent with Johnson's. Is Johnson incorrect as well?
>Do you concurr with Johnson's approach?

Since I wont have my copy of Johnson until after Dayton I can't see what he does on the pages you referenced. I would never consider Johnson incorrect, but the voltages you use to determine the forward power are not correct, so I must assume you are not interpreting Johnson correctly, as you did not earlier also

Your method of adding voltages involved adding the source voltage 70.71 v (100 watts) and the re-reflected voltage of 40.82 v resulting in 111.54 total volts. Squaring 111.54 and dividing by (Zo = 50) results in a total forward power of 248.8 watts---incorrect.The transmission coefficient 0.75 times 248.8 = 186.8 watts delivered to the 150-ohm load, this is 86.6 watts more than the source power. Obviously and evidently 248.8 watts is incorrect because you used the voltage method incorrectly.

I should be painfully clear to you now that voltages DON'T ADD at the re-reflection point--powers DO.
>
>4) If the forward source voltage in a 50 ohm transmission line is 100 V,
>what is the forward source power?

200 Watts
>
>5) If the re-reflected voltage in a 50 ohm transmission line is 100 V, what
>is the re-reflected power?

The answer is indeterminate because you have not defined the necessary givens. What is the source power, and what is the value of mismatch teminating the line?
>
>6) If the forward source voltage is 100 V and the re-reflected voltage is
>100 V and these voltages are in-phase, what is the total forward voltage?
>What is the total forward power?

The total forward power is zero, because the termination on the line is either a short or an open circuit. This line termination is determined because the total forward voltage is reflected, and no power is delivered to a short or open circuit.

>
>7) If the forward source power is 200 W and the re-reflected power is 200 W,
>what it the total forward power? What is the total forward voltage?

This is not a practical question. It again is concerned with a totally reflecting load.
>

>I think that this pretty much covers the basics for now. After we discuss
>these issues, we can take a look at the above example and see if our
>analysis and approach is consistent with Johnson's technical discussions or
>not.
>
>Steve VE9SRB
>
I believe I have achived the goal of my challenge, Steve, so what say now?

Walt, W2DU
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2930. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 20:42:32 UTC
From: la8ak@online.no
Message-ID: <3af519f7.830382223@news.online.no>
Source record: 163976

X-beam system is not achieved from supergain, it uses 3+3 dipoles with reflectors. 3 dipoles on one side is fed in paralellell as are the 3 opposite, and a relay switches one field at the time at 500Hz frequency. The effect is a very narrow beam

73
JM

2931. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 20:51:52 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9d4dh8$bc9$0@208.206.142.67>
Source record: 163977

Tom W8JI wrote:
>
> On Fri, 04 May 2001 20:47:45 GMT, wa9mzt@arrl.net wrote:
>
> >Wouldn't the copper strap mentioned by polyphase be another solution
> >to using braid or solid?? It offers more surface area and would
> >allow for more skin effect, but I think it is significantly more
> >money.
> >
> >I can't leave the conductor that connects the ground rods on top of
> >the ground, so I need to bury it at least somewhat.
> >
> >
> >Thanks,
> >
> >Steve
>
> Copper flashing is readily available and cheap. Try commercial roofing
> places.
>
> I bought 50 feet of three inch wide at Dayton last year for about $40.
>
> If you don't want to spend that money, then buy solid copper like #6
> and run two or three conductors spaced a foot or so apart.
>
> Don't use braiding, no matter what you hear.

Even a single solid #6 is effective.
Several years ago at work I went through a period of reworking existing grounds that had not done a very good job of preventing lightning damage. Most were braid-type conductors, and no particular care had been taken to avoid sharp turns and bends. The several hardline coax runs were not grounded on the tower side of the drip loops where they ran from tower to the equipment building.
Using solid #6 copper and Andrews cable grounding kits, I installed a straight run of #6 solid copper from each of the feedlines at the tower, connected before the line made its bend toward the building, via a run of #6 solid copper directly to 8 foot ground rods driven directly below, as straight as they could be kept.
I also bonded all the steel equipment cabinets inside the building together with the #6 solid copper, bonded that run directly to the house AC ground, which was also bonded to the tower grounds with the #6 copper. All runs and lengths were installed to avoid bends to the maximum extent possible and where mecessary bends were made they were

'long radius' bends, the idea to minimize inductance to the maximum extent possible.
It helped a lot. After that, lightning strikes on the tower no longer routinely put the station off the air.In most cases no downtime whatever was experienced following lignthing strikes on the tower. Previously it was common for DC regulator transistors and other SS devices to require repair following storms.
The installation was 50 years old, though it had been retrofitted a few times. At the time it was built modern lightning mitigation schemes were unknown. Of course proper grounds should be installed during the construction phase of any such installations today.

Dick

2932. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 20:54:57 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d4dmc$50$1@slb0.atl.mindspring.net>
Source record: 163978

Cecil:

The stored megaJoule... It takes a second to charge the line with the megaJoule when the power is first applied, and then another second to discharge it when the power is removed.

And I agree... I don't want to be holding onto the end of that line when it discharges anymore than I want to be holding on to the terminals of a capacitor holding a megaJoule at 10,000 volts. Ouch!

Energy is definitely stored in a transmission line.

It's just not stored in pulses of "reflected power" bouncing back and forth from end to end!

That energy is stored in a distributed fashion all along the transmission line in the magnetic field of the distributed inductance and in the electorstatic field of the distributed capacitance as it oscillates back and forth between those two fields at the "natural" frequency of the system.

The only travelling energy in the steady state is the steady progression of power from the source to the load, just the same as with a DC system, and as that power is being continuously delivered, the stored energy is bouncing back and forth between the distributed inductance and capacitance.

Forget ficticious forward power and incident power, the only thing thats important from a power view point is that the generator puts out a certain amount of power and the load dissipates it, period, end of story.

And... in answer to all your other questions about calculating characteristic impedances, line losses, VSWR, losses due to VSWR, etc... that can all be done using simple V and I, without ever invoking that ephemeral and ficticious "reflected power".

I assume that you are familiar with those graphs in the Handbook and Antenna Handbook, showing "additional losses" due to SWR deviations from unity. It seems that most treat those graphs like the holy Bible. i.e. they were/are the divine word?

But I ask you...

Where are the equations used to derive those graphs? Why don't they show them? Who developed those graphs? Using what equations? Those graphs have no "attributions" telling us of their source, etc... Have you ever tried to validate those graphs yourself? Where did they come from?

Just try to calculate those curves of extra dB attenuation due to exess VSWR over unity, yourself, which I have done, and you will see that

so-called "reflected power" plays NO ROLE whatsoever in their development. In other words, reflected power is necessary to calculate those additional losses.

In fact... I'll bet you that many believe those graphs are true no matter what the length of the line...

Cecil... man give it up... it won't hurt... there is no such thing as reflected power! It is an artifice constructed by those who "hunger" for an explanation of the un-explainable. For those who must make things more complicated than necessary.

All you really need to calculate the formula for the input impedance of a transmission line with primary parameters of R, L, C, and G per unit length and of a particular length is an analysis using V and I... power simply does not enter into the derivation of those famous equations. The "soulution" to the "telegraph equations" does not require the ficticious concept of "reflected power".

All you really need are V and I and a good reflectometer to tell you how far away you are from a matching impedance.

You don't need no stinking ficticious "reflected power". You'r hooked on an artificial concept and you need to be free!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF59F79.C8548ECB@IEEE.org...
> "Peter O. Brackett" wrote:
> > Cecil, the ONLY energy bouncing around in a distributed transmission line is
> > that bouncing back and forth, most likely latterally rather than
> > longitudinally, between the distributed capacitance dC, and the distributed
> > inductance dL per unit length.
>
> But Peter, that energy per unit length increases and decreases with time.
> Where does it go and where does it come from?
>
> > Paraphrasing Einstein, things should only be as complicated as they
> > need to be, and no more.
>
> How would Einstein explain the additional losses when the SWR is high?
> How would Einstein explain the measurable max/min voltage/current points
> with their 90/180 degree relationships? How would Einstein explain you
> being fried by a megajoule of reflected energy?
>
> > The "reflected power" model, although capable of giving correct answers, is
> > just more complicated than it needs to be to do the same job.
>

> Without the "reflected power" model, how would you calculate the
additional
> losses when the SWR is high? - made tougher because SWR would be dropped
> from the model at the same time as reflected energy.
>
> > All you really need are I and V and some DC circuit analysis techniques,
and
> > you can do everything with transmission lines that you need to do, and
> > certainly all that you can do with that silly ficticious and overly
> > complicated "reflected power" model.
>
> Can you calculate the voltages at the max/min voltage points and
> the currents at the max/min current points and predict they will
> be 90/180 degrees apart?
>
> > And BTW... mismatched DC circuits do have a perfectly valid VSWR!
> > That DC VSWR may be calculated, even though there are no "standing
waves".
> > Is DC VSWR then "ficticious" or is it "real".
>
> Steady-state DC SWR and DC wavelength is what mathematicians call the
> trivial limit condition.
>
> > Gotcha thinking yet?
>
> You got me thinking about the one second long lossless transmission line
> loaded up with one megajoule for one second, disconnected from the source
> and connected to you during the next second, and frying you with reflected
> power the third second. Time for you to stop dodging that question.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2933. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 21:08:13 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d4ef6kun1@nntp9.atl.mindspring.net>
Source record: 163979

Richard:

[snip]
>
> We should all know that artificial lines can be constructed of
> inductance, capacitance, resistance, and conductance.
>
> Best regards, Richard Harrison, KB5WZI
>
[snip]

That's true of "artificial lines" AND it is also true of "real lines".

Real lines are also constructed, by man or God, out of distributed
inductance, capacitance, resistance and conductance.

"RLCG - the primary parameters"!

Real or artificial lines, it's all the same.

The dynamics of V and I on the line are controlled by inductance,
capacitance, resistance, and conductance, and the energy interchange between
the magnetic and electric fields all along the line... and NOT by some
ficticious "power" reflecting back and forth from end to end in some long
empty corridor bereft of any substance, with partially transparent
"mirrors" on the ends.

What kind of model of a transmission line is that?

Sure that "ficticious model" can be adjusted mathematically so that it
"fits" the real world measurements, and it can be endowed with the ability
to produce numerical results that "track" with measurements.

But that's no more a reality than the models that Copernicus used in his
Copernican system of astronomy. sure they give the right numerical answers,
but so what... the model was not closely aligned with reality... later a
more realistic model succeeded.

Richard, don't be sucked in by those who want you to believe that a
transmission line has powers surging up and down its' length, just because
it takes a latency period to charge the line.

-Peter K1PO

2934. Eleven Mtrs/Freebanders/Feds

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 21:18:13 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3AF5BF95.AA8DBE50@netdoor.com>
Source record: 163980

I remember when 11 meters was a ham band. I remember when the FCC was going to regulate the 'new' Citizens Band Radio Program. I remember when the Feds were overwhelmed with megawatts of voluminous squalling, screaming and cussing and I remember when the fedz just gave up and "de-regulated" the Citizens Band, just giving up because they could not control the unbelievable mess and couldn't CATCH NOBODY doing anything wrong/illegal on 11 meters.

We now have "free-banders". It won't be long now before the fedz just give up on the new CB Band. I don't know about the rest of you Hams, but I feel threatened that 10 meters is next in line to be de-regulated by an impotent and understaffed agency of my government that can and will nail my ass if I were to violate rules, but are unable to hammer some punk operating totally illegally.

Butch Magee KF5DE

2935. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 21:45:45 UTC
From: w2du@iourney.com
Message-ID: <3af5c371.19353859@news.journey.com>
Source record: 163981

On Sat, 5 May 2001 13:06:29 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Walter, W2DU wrote:
>"Please see my earlier posting of this morning."
>
>I`ve read it, and it seems right to me.
>
>I only posted the Ferranti effect thing to distinguish that particular
>voltage doubling from the one which does not happen at an impedance
>matching point.
>
>Cecil`s examples should have clarified the situation, but drew argument.
>It seems obvious that if you cut a matched 50-ohm line and insert
>1/2-wave of 300-ohm, or some other impedance line, that the transmitter
>and load should be unaffected, given low-loss inserted line. No net
>reflected energy is passing through the 50/300-ohm junctions to the
>50-ohm connections on each end of the strange line. The reflections are
>contained within the strange line.

Absolutely right! Anyone who disagrees needs tutoring.
>
>The 1/2-wave of strange line is in effect (2) 1/4-wave sections
>back-to-back. Since there is 50-ohms on one end of each junction, where
>the 1/4-wave sections meet in the middle they have identical impedances.
>The impedance transformation works in forward or in reverse, so the the
>50-ohms on one end of the strange line looks like 50-ohms on the
>opposite end.

I'ts a shame more people don't understand that the basis for the 1:1 transformer action of the 1/2 wave line is just as you described -- two 1/4 wave lines in series. And if the 1/2 wave line is lossless, it can be inserted anywhere in the line and it will be unnoticed.
>
>A 50-ohm source gets no nreflection from a 50-ohm line, and a 50-ohm
>line gets no reflection from a 50-ohm load. The 300-ohm line gets a
>reflection at either end from the 50-ohms presented, but all the
>reflections are contained within the 300-ohm line.
>
>I`ve been suprised by some of the postings seen here.

I'm more than surprised, I'm dismayed.
>
>Best regards, Richard Harrison, KB5WZI
>
Walt, W2DU

2936. Re: Eleven Mtrs/Freebanders/Feds

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 22:41:15 UTC
From: k1bqt@aol.com
Message-ID: <20010506184115.12079.00002289@ng-cr1.aol.com>
Source record: 163982

>...I feel threatened that 10 meters is next in line to be de-regulated by an impotent and understaffed agency....<

Most of the FBOMs I've heard on 10 meters are mobile--in trucks--constantly in motion. Do you propose the fed interdict by sending Blackhawks to blow them off the road? Sometimes ya gotta pick your battles...

Or get creative. If we expect the government to do everything for everybody, we either get disappointed on a good day or totalitarianism on a bad day. While I appreciate your frustration, I think Mr. Hollingsworth is doing a far better job for us than we've enjoyed for a long time--and "impotent" is not at term I'd associate with his efforts.

Perhaps your could help by tracking some of this activity and sharing the information via the many channels available to us ...rather than busting his chops. I think proaction is preferable to whining. How about you?

73

Rick K1BQT

2937. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 22:51:43 UTC
From: 2w8ji@akorn.net
Message-ID: <3af5d4d7.277323879@news.accessunited.com>
Source record: 163983

On Sun, 06 May 2001 20:42:32 GMT, la8ak@online.no (J M Noeding) wrote:

>X-beam system is not achieved from supergain, it uses 3+3 dipoles with
>reflectors. 3 dipoles on one side is fed in paralellell as are the 3
>opposite, and a relay switches one field at the time at 500Hz
>frequency. The effect is a very narrow beam

Why would the effect be a "very narrow beam"? It's just a two element
antenna, a shortened one at that. The additional parallel dipoles not
used certainly don't help things.

73 Tom

2938. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 23:12:40 UTC
From: 2w8ji@akorn.net
Message-ID: <3af5d812.278150758@news.accessunited.com>
Source record: 163984

On Sun, 06 May 2001 19:40:17 GMT, "G&R" <stop the spam@limbo.hell>
wrote:

>I wish you would also consider our Baby Boomer Quad (at
>www.degendesigns.com). We have used modeling software based on average
>ground conditions and based on our actual mounting conditions. To the best
>of our experience our antenna does perform as indicated by our models.
>
>For your reference our software is NEC4WIN95VM as we feel it's the only
>software that can accurately model our antenna. There may be others,
>however based our field testing and modeling results it currently performs
>the function the best.

A two-element shortened quad with 9 to 10 dBd gain?

I'd find out where the modeling error is, or are you twisting the
specs and comparing an antenna over ground to a dipole in freespace?!

73 Tom

2939. Re: Eleven Mtrs/Freebanders/Feds

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 23:18:26 UTC
From: Ian Jackson <ianjackson@g3ohx.demon.co.uk>
Message-ID: <re166HACvd96EwNa@g3ohx.demon.co.uk>
Source record: 163986

In article <3AF5BF95.AA8DBE50@netdoor.com>, Butch Magee
<lynyrd@netdoor.com> writes
>I remember when 11 meters was a ham band. I remember when the FCC was
>going to regulate the 'new' Citizens Band Radio Program. I remember
>when the Feds were overwhelmed with megawatts of voluminous squalling,
>screaming and cussing and I remember when the fedz just gave up and
>"de-regulated" the Citizens Band, just giving up because they could not
>control the unbelievable mess and couldn't CATCH NOBODY doing anything
>wrong/illegal on 11 meters.
>
>We now have "free-banders". It won't be long now before the fedz just
>give up on the new CB Band. I don't know about the rest of you Hams,
>but I feel threatened that 10 meters is next in line to be de-regulated
>by an impotent and understaffed agency of my government that can and
>will nail my ass if I were to violate rules, but are unable to hammer
>some punk operating totally illegally.
>
>Butch Magee KF5DE
>

Is this not a bit like what happened in the UK?

After a lot of battling, a Citizens' Band was granted in 1981 (all legal rigs bore the 'CB/81' logo). However, the 40 channels allocated were unique to the UK, being above the FCC band (which was used in many parts of the world as well as the USA), and butted up against the bottom of the 10m band. Apparently, the FCC frequencies were declared 'unsuitable' because of their harmonic relationship to VHF frequencies. Also, equipment designed to operate on the FCC band was declared to be 'dirty', ie it had insufficient supression of harmonic and other unwanted emissions (although the legal UK rigs seemed to have essentially identical circuits!).

However, to harmonise with the rest of Europe, the UK was eventually obliged to allocate the same 'CEPT' frequencies as used in Europe. This, of course, was on the same frequencies as the FCC band!! There was already a lot of illegal activity on this band, but it now became legal! So we now have two CB bands in the UK - the original CB/81 band and the CEPT band. You are, of course, supposed to use type-approved equipment (and it's 4W FM only).

There was also a UHF CB band allocated around 930MHz. This had much less appeal than 27MHz, but did attract some genuine experimenters. However, the equipment was much more expensive than that for 27MHz. This band was taken away s few years ago, due to the need for frequencies for mobile

phones.

These are obvious examples of 'the will of the people' being obeyed. If sufficient people transmit on certain frequencies, then those will become 'legal'. If 'big business' wants certain frequencies, these will taken away and re-allocated.

It's a funny old world....

Ian.

2940. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 23:20:12 UTC
From: 2w8ji@akorn.net
Message-ID: <3af5da58.278733199@news.accessunited.com>
Source record: 163985

On Sun, 06 May 2001 15:33:48 GMT, Tad Danley <taddanley@att.net>
wrote:

>Interesting ... I had always heard that a "closed" loop antenna has less noise
>pickup than a dipole - sounds like one more thing that I "thought" I knew!
>Could it be this applies to static build-up? Some guys I know with quads swear
>they are quieter than yagis.

That's mostly a myth Tad, unless the antenna has corona problems.

The limited true part is the ends of a quad don't stick the highest
impedance parts out into open air like a pointed antenna...and that
can reduce sensitvity to direct corona discharges. Of course there are
a dozen ways to accomplish nearly the same thing with a dipole.

The dc path has nothing to do with it, because you can have the dc
path in any antenna with the addition of a simple RF choke or bleeder
resistor.

If you take the antenna out of the nasty weather, or if you simply use
anti-corna treatment at the ends of a dipole element, they all behave
exactly the same way.

There is no difference at all in noise, except for the corna issue.

73 Tom

2941. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 23:28:55 UTC
From: 2w8ji@akorn.net
Message-ID: <3af5dce6.279387138@news.accessunited.com>
Source record: 163987

On Sun, 06 May 2001 15:20:46 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wr
>Here's the EZNEC results: With the maximum height of the 40m dipole
>and the 40m triangular loop at 31ft, the loop beats the dipole at
>take off angles less than 20 degrees. At the dipole's maximum gain
>of 6dBi straight up, the loop is 12dB down from the dipole. So if
>you want better DXing than a low dipole and good attenuation of the
>unwanted high angle arriving signals, the loop beats the dipole.
>It also beats an ordinary 0dBi gain vertical in the loop's favored
>directions and is much, much quieter.

I sure don't get that result, unless I have the loop vertically
polarized.

The comparion of a horizontal dipole to a vertically polarized loop at
low heights might be a bit misleading...unless you clearly state it is
for a vertical loop compared to a horizontal dipole.

Why would it be "much much quieter"?

73 Tom

2942. Re: Balanced Windom

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-06 23:59:04 UTC
From: N4LQ <N4LQ@igLou.com>
Message-ID: <3af5e555_2@news.iglou.com>
Source record: 163988

This is really beautiful. I would think you would get a lot more radiation
from the vertical feed members this way than with the Carolina version. You
could eliminate the 450 ohm line altogether as done with the Carolina
Windom. Another nice feature here is the reduction of weight. Coax hanging
down from the Carolina W along with the "line isolator" would put a real
strain on the flat-top part.
Thanks for the post Nick!

--
Steve Ellington
N4LQ
"Nick G4FAL" <ntotterdell@riverauto.co.uk> wrote in message
news:yEtI6.21$1H2.3227@wards...
> I have been using the antenna shown in the attached diagram for some time.
> It is based on a design from an RSGB Communications Handbook of years
ago -
> but scaled up to 132 feet. It seems to perform at least as well as a
> previous G5RV that I had. The theory is that the feed point represents an
> impedance of 400 Ohms or so on each band. Thus an 80m dipole can be fed
fine
> on 40m where a centre feed would be very high impedance. Its also OK on
WARC
> bands.
>
> The reason for adopting the design is that there is no need for a coax or
> balanced feeder to hang down from the antenna - thus it is much less
visible
> to my neighbours.
>
> I would appreciate some analysis of this design. It is a genuine windom -
at
> least two genuine windoms back-to-back. How does it stack up against a
> Carolina style windom (off centre fed dipole).
>
> Please any comments to the newsgroup or the undersigned.
>
>
> --
> Regards
>
> Nick G4FAL
> ntotterdell@riverauto.co.uk
>
>

>

2943. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 00:01:16 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9d4okc$hj9$0@208.206.142.67>
Source record: 163989

Roy Lewallen wrote:
>
> N2EY wrote:
> > . . .
> > Coax traps have the advantages of being cheap, rugged and made of readily
> > available materials. In side-by-side FD comparisons with G5RVs at the same
> > height, the coax trap dipole beat the G5RV every time, on both 80 and 40.
> >. . .
>
> Let's think about why that might be. The G5RV itself is so close to 100%
> efficient that you wouldn't be able to measure the difference between it
> and a 100% efficient antenna. So the trap dipole isn't more efficient.
> (In fact, the traps are likely to noticeably reduce the efficiency.) On
> 40, the difference might be explained by the G5RV having multiple lobes,
> or a lobe too narrow to cover your target region. But not on 80. On 80,
> the G5RV pattern is essentially identical to a dipole's. So it's as
> efficient as a dipole and has the same pattern as a dipole. Why the
> difference? The only possible explanation is that you're not getting as
> much power to the G5RV as to the dipole. And there are two possible
> causes for this. One is the feedline. If you were using open wire or
> ladder line, and it was dry, that's not it. If it was wet, it might be.
> The other is the tuner. It sounds like your tuner is pretty inefficient
> when matching the G5RV. This does raise a cautionary note to people
> using these "all band" antennas and readily embracing a tuner as a
> cure-all that they might be paying a pretty big price.

I've checked several antenna tuners, including Icom internal units in
transceivers, and my Drake MN2700 2KW unit. When adjusted they all lost
10 to 12% of the inputted power at the 100 watt level, into a terminated
wattmeter. Not enough loss to cause me to stop using them. The small
price of convenience.
And the station on the other end would be hard pressed to read the
difference on his S-meter.

Dick

2944. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 00:03:15 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9d4oo3$hj9$1@208.206.142.67>
Source record: 163990

Reg Edwards wrote:
>
> Jim wrote -
> > Have thought of using open-wire feed on the inverted V with no
> traps, but the
> > mechanical problems of keeping the open-wire away from the metal
> mast pipe, as
> > well as the need for a tuner at all times, have put that idea on
> the back
> > burner
> ================================
>
> I think loss due to running open-wire line very near to a metal
> mast is often more imagined than real. For loss to be appreciable
> there has to be some resistance somewhere in which to dissipate it.
> Steel has a low resistance. Aluminium is even lower. And a mast has
> a very large surface area.
>
> For appreciable power transfer from line to mast, as in any other
> power transfer situation, there has to be some sort of impedance
> match. The coupling between line and mast is very poor to say the
> least. So I-squared-R is extremely small.
>
> When a balanced-pair line runs close to a metal surface the
> principal effect is a moderate decrease in Zo due to the extra
> capacitance.
>
> A pair of 10 awg wires, spaced 1/2 inch, has Zo = 300 ohms. When
> spaced 1/2 inch from a metal surface Zo decreases to roughly 250
> ohms. Loss, dB-wise, increases by 20 %. Incidentally, this extra
> loss occurs in the line wires, not in the nearby metal.
>
> 100 feet of the above line at 14 MHz has a loss of about 0.27 dB.
> An increase of 20 % is 0.054 dB which is hardly likely to affect
> the result of a contest. ;o)
> ----
> Reg

Didn't I read that spacing from metal of 2 times the width of the
feedline is enough?

Dick

2945. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 00:05:29 UTC
From: w2du@iourney.com
Message-ID: <3af5e409.27697667@news.journey.com>
Source record: 163991

On Sat, 5 May 2001 13:06:29 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Walter, W2DU wrote:
>"Please see my earlier posting of this morning."
>
>I`ve read it, and it seems right to me.
>
>I only posted the Ferranti effect thing to distinguish that particular
>voltage doubling from the one which does not happen at an impedance
>matching point.
>
>Cecil`s examples should have clarified the situation, but drew argument.
>It seems obvious that if you cut a matched 50-ohm line and insert
>1/2-wave of 300-ohm, or some other impedance line, that the transmitter
>and load should be unaffected, given low-loss inserted line. No net
>reflected energy is passing through the 50/300-ohm junctions to the
>50-ohm connections on each end of the strange line. The reflections are
>contained within the strange line.
>
>The 1/2-wave of strange line is in effect (2) 1/4-wave sections
>back-to-back. Since there is 50-ohms on one end of each junction, where
>the 1/4-wave sections meet in the middle they have identical impedances.
>The impedance transformation works in forward or in reverse, so the the
>50-ohms on one end of the strange line looks like 50-ohms on the
>opposite end.

Absolutely correct! The back-to-back relationship of the two 1/4 wl line sections is the basis for the 1:1 1/2 wl line transformer. It amazes me that people fail to understand why the 1/2 wl line is a 1:1 transformer, regardless of its impedance.
>
>A 50-ohm source gets no nreflection from a 50-ohm line, and a 50-ohm
>line gets no reflection from a 50-ohm load. The 300-ohm line gets a
>reflection at either end from the 50-ohms presented, but all the
>reflections are contained within the 300-ohm line.

It also amazes me that many don't realize that a lossless 1/2 wl line can be inserted anywhere in a line with no effect on the operation of that line.
>
>I`ve been suprised by some of the postings seen here.

Richard, I'm not surprized, I'm dismayed by them.

>Best regards, Richard Harrison, KB5WZI

Walt, W2DU

2946. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 00:11:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF5E814.B1B27D6A@eznec.com>
Source record: 163992

The gain of a dipole at 50 feet on 20 meters is 7.64 dBi, or about 5.5 "dBd". The plots on the Baby Boomer web site are for gain over ground at 50 foot height. This means that the gain of the Baby Boomer quad is about 3.5 dB relative to a dipole at the boom height. I'd expect NEC4WIN or any other modeling program to show a similar gain for a dipole at the boom height. I hope the manufacturers will change their plots to show 3.5 dB gain relative to a dipole at the same boom height, rather than the very misleading "9 dBd" (and similarly for the other bands).

MININEC-based programs like NEC4WIN have to be used very carefully for quads because of MININEC's well known "corner cutting" error. It is possible to get good results by using a very large number of segments or segment length tapering, but if this isn't done, results won't be accurate. The forward gain won't usually be affected much, but the indicated F/B ratio can be badly off. See "MININEC: The Other Edge of the Sword", in QST, Feb. 1991. Because you don't have to worry about the "corner cutting problem", quad modeling is simpler with NEC-2 based programs. But results will be nearly identical when using NEC-2 or MININEC for quad modeling, as long as segment length tapering is used with MININEC.

Roy Lewallen, W7EL

Tom W8JI wrote:
>
> On Sun, 06 May 2001 19:40:17 GMT, "G&R" <stop the spam@limbo.hell>
> wrote:
>
> >I wish you would also consider our Baby Boomer Quad (at
> >www.degendesigns.com). We have used modeling software based on average
> >ground conditions and based on our actual mounting conditions. To the best
> >of our experience our antenna does perform as indicated by our models.
> >
> >For your reference our software is NEC4WIN95VM as we feel it's the only
> >software that can accurately model our antenna. There may be others,
> >however based our field testing and modeling results it currently performs
> >the function the best.
>
> A two-element shortened quad with 9 to 10 dBd gain?
>
> I'd find out where the modeling error is, or are you twisting the
> specs and comparing an antenna over ground to a dipole in freespace?!
>
> 73 Tom

2947. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 00:29:15 UTC
From: w2du@iourney.com
Message-ID: <3af5e84f.28791059@news.journey.com>
Source record: 163993

On Sun, 06 May 2001 20:37:23 GMT, Steve Best wrote:
>Walter:
>>
>>This is part of my response to your challenge. These questions are
>>different than the ones posted sometime ago because I would like us to
>>consider some very basic concepts.
>>
>>I will be posting several sets of questions and I will also set up two
>>examples that we can discuss. This first post will describe the first
>>example of a Zo match established with a lossless tuner. I will describe
>>the steady state conditions and I will then summarize your technical opinion
>>of how the match is achieved and how the voltages, currents and power
>>interact and combine within the system (you can correct me if I misstate
>>your technical position). I will also describe my technical opinion of how
>>the match is achieved and how the voltages, currents and power interact.
>>This will establish the basis of our technical disagreement.
>>
>>Second, I will ask a series of questions that relate to basic circuit and
>>transmission line theory. This may seem ridiculous, but it is necessary for
>>us to agree on the basic concepts so that we can apply them correctly to the
>>examples and to our technical positions. Since you quote Johnson and have
>>indicated that your concepts are consistent with the material in his text, I
>>will use his text - Transmission Lines and Networks (c) 1950 - as the
>>technical reference. Once we agree on the technical basics, we can discuss
>>the wave mechanics of the two examples in detail.
>>
>>Example 1.
>>
>>A ------ 50 ohms ------ B - Tuner - C ------ 50 ohms ------ D
>>
>>The source is located at point A. It is a voltage source V = 141.422 V.
>>The source impedance is 50 ohms. The impedance seen looking rearward into
>>the source is 50 ohms.
>>

Steve, I overlooked that your source voltage is 141.422 v and not 70.71 v. We have been consistenly using 100 watts as the source into 50 ohms, so I was conditioned to think in terms of 70.71 v. Consequently, my response to the material below in your earlier post was inadvertantly based on a voltage source of 70.71 v and not 141.422 v.

On the other hand, I believe you too were thinking of a 70.71 v source, because the power values you used are consistent with that source value. If we had correctly considered 141.422 v as the source the power levels would have been four times the actual values we discussed.

Walt, W2DU

2948. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 00:34:23 UTC
From: n2ey@aol.com
Message-ID: <20010506203423.20255.00000755@nso-bj.aol.com>
Source record: 163994

In article <3af55905.245621761@news.accessunited.com>, 2w8ji@akorn.net (Tom W8JI) writes:

>On 05 May 2001 19:47:39 GMT, n2ey@aol.com (N2EY) wrote:
>
>>I've used coax traps for 15 years or so in an 80/40 inverted V, and never >had
>>any problems. SWR bandwidth is the same as predicted for LC traps. I use >good
>>quality RG-58/U type coax (solid poly insulation, stranded center conductor) >on
>>2-1/2" PVC pipe, which guives a coil that is about as long as the diameter.
>>Their Q turns out to be 100-150 on my Q meter, which is lower than can be >had
>>with conventional LC construction, but not so low that trap heating is a
>>problem. The design is the N4UU design from QST for December, 1984.
>
>Coaxial traps are physically large. They can dissipate consderable
>power without failing because of the exposed surface area.

True - but they are made of plastics with low melting points. A coax trap made with black coax gets pretty warm in the sun on a 95 degree August day. RF losses would simply add to the trap temperature.

How much RF dissipation does it take to cause physical changes in a coax trap at, say, 100 degrees F ambient? I don't know.

>Q measured on a Q meter is meaningless, unless we know the reactance
>of the trap. Without reactance included with Q, we have no idea what
>the resistance is.
>
Agreed!

>Q with reactance is also meaningless unless we know the current at the
>point where the trap is placed, or the voltage across the trap at that
>point.

Agree again!

>The Q also varies with frequency, so we need to know what it is at
>several points of interest, along with reactance and current through
>the trap at those points.

Still 100% in agreement.

But Q is useful in comparing similar traps used for the same job. For example, in my 80/40 inverted V example, the coax traps were treated as inductors and measured on the 80 meter resonance frequency. Comparing them to typical LC circuits of the same equivalent inductance and capacitance showed that the Q of the coax traps was about half that obtainable from similar LC traps.
>
>I'll not release data now, and ruin my talk at Dayton except to say
>what I've already said .

I am truly sorry I can't make Dayton. Would love to hear your talk, Tom. Could it be posted here after Dayton? Better yet, how about a QST article?
>
>>Coax traps have the advantages of being cheap, rugged and made of readily
>>available materials. In side-by-side FD comparisons with G5RVs at the same
>>height, the coax trap dipole beat the G5RV every time, on both 80 and 40. I
>>don't doubt that coax-trap loss is higher than LC trap loss if the LC traps
>are
>>well made, but whether the difference is significant in real-world
>situations
>>isn't clear. Where trap losses become a big issue is when lots of them are
>used
>>in the same antenna.
>
>I can put exact numbers on that loss, and will. It is not surprising
>how little we can tell in-on-the air reports when comparing two
>unknown efficiency antennas (generally in cluttered locations) with
>random people on the air.

Agreed, but the pattern of coax-trap-dipole beats G5RV has held over more than one test. This doesn't mean the coax trap dipole is optimum for the space needed.
>
>A few years ago I did a test on the air with a G5RV and a dipole. I
>changed back and forth between a dipole an G5RV and the dipole easily
>won. Everyone except one or two people reported the dipole better.
>
>The only problem with that test is I was not changing antennas. I was
>not changing anything, except the name I called the antenna. What I
>was really testing, was how important the name of an antenna is.
>
>What I learned was to NEVER tell the person giving the report what you
>are doing...just say antenna 1 and antenna 2. When I did that dipole
>1 won half the time when I compared it to dipole 2, but for the large
>part they tied. Of copurse once again I was comparing the same antenna
>as antenna 1 and antenna 2.

I agree 100%. But that's not how we did the comparisons.

In the FD setups I mentioned, we had two stations that were near-identical. Same 100 w middle-line transceivers, antennas at same height, same feed line lengths, etc. One station had a homebrew coax-trap 80/40 dipole and the other a commercially made G5RV. Contact rates at the coax-trap station consistently

surpassed those of the G5RV station.

Of course that's just a couple of data points, comparing two actual antennas. Perhaps the baluns on the G5RVs used were faulty. Perhaps the autotuner in those rigs has high loss when matching the impedances presented (the coax-trap dipole did not need the tuner).

Please post the trap info after Dayton, Tom. Think seriosuly about a QST article, too.

Antenna-work weather is here! I'm looking for some Centralab 850s. Perhaps 68 pF resonated with enough L to hit 7050 will do the trick, and I'll get the SWR on 20 down to where I don't need the tuner.

73 de Jim, N2EY

2949. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 00:41:57 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF5EF55.4E376154@IEEE.org>
Source record: 163995

"Peter O. Brackett" wrote:
> Cecil... man give it up... it won't hurt... there is no such thing as
> reflected power!

I'm sorry, Peter, I just cannot visualize myself as the second person in
a group of crazy people who deny reality.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2950. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 00:55:54 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF5F29A.DE16DC37@IEEE.org>
Source record: 163996

Tom W8JI wrote:
> I sure don't get that result, unless I have the loop vertically
> polarized.

Most of the radiation from my triangular loop is vertically
polarized.

> Why would it be "much much quieter"?

I don't know but it was about 2 S-units quieter than a vertical.
Maybe because the loop used insulated "Quietflex" wire and the
vertical was not insulated? Maybe because the vertical didn't
have a leakage path between the monopole and ground plane?
--
http://www.mindspring.com/~w6rca

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2951. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 01:00:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF5F3BC.1A3885F6@IEEE.org>
Source record: 163997

Dick Carroll wrote:
> I've checked several antenna tuners, including Icom internal units in
> transceivers, and my Drake MN2700 2KW unit. When adjusted they all lost
> 10 to 12% of the inputted power at the 100 watt level, into a terminated
> wattmeter.

They lose even less if they are matching a resistive load higher than
50 ohms, a folded-dipole's 300 ohms, for instance.
--
http://www.mindspring.com/~w6rca

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2952. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 01:02:47 UTC
From: billsohl@mindspring.com
Message-ID: <3af5f3db.2766643@news.mindspring.com>
Source record: 163998
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Fri, 04 May 2001 19:52:27 GMT, sparky@cet.com (Sparky) wrote:

>On Fri, 04 May 2001 08:30:25 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
>wrote:
>
>>"Rob St.Denis" wrote:
>>> It's a simple law that you choose to disobey, you obviously think yourself
>>> grandiose enough to decide which law should be followed and which shouldn't.
>>
>>You are implying that you have never driven above the speed limit, Rob.
>>Will you swear that you have never broken a traffic law? Have you never
>>gotten a traffic ticket or a parking ticket?
>
>The vast majority of speeders don't purchase and install special
>equipment (linear amps) and modify their rigs (frequency mods) with
>the sole intention of breaking the law.

Additionally, speed limits in many places are arbitrarily set
low. The USA population routinely exceeds highway speed
limits and the police don't care one bit.

Cheers,
Bill K2UNK

2953. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 01:05:50 UTC
From: billsohl@mindspring.com
Message-ID: <3af5f463.2902852@news.mindspring.com>
Source record: 163999
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Fri, 04 May 2001 21:38:48 GMT, sparky@cet.com (Sparky) wrote:

>On Fri, 04 May 2001 21:05:45 GMT, "Rob St.Denis"
><tstdenis3160@home.com> wrote:
>
>>> My point exactly. 'Freebanding' is a deliberate act, carefully planned
>>
>>so is speeding, I'm not talking touching the accelerator a little too much
>>off a light or anything I'm talking hitting the highway at 120kmh ... people
>>do it and say well its not that much ... when that can land a hefty fine and
>>2 points on your licence ...
>
>The difference is that when you run a kilowatt amp, you do it with the
>sole intent of breaking the law -- you purchased the amp in order to
>break the law and nothing else. Not true with a car, unless your car
>can only operate above the speed limit.

And for most people, they are speeding just staying with
the flow of traffic on American highways. Interstae 80 in NJ
is 55 for 30 miles before NYC. The AVERAGE flow of traffic
is usually 65/70 or higher. Anyone doing 55 is (or should
be) in the extreme right lane.

Cheers,
Bill K2UNK

2954. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 01:12:19 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9d4skd$69f$1@uranium.btinternet.com>
Source record: 164000

> Where I've found the vertical loops to shine is at low heights.
While
> a dipole radiates most of its energy straight up, the loop
maintains
> a relatively low angle of radiation. I'll post the comparison
> according to EZNEC.
==========
Cecil, you don't need a computer program to demonstrate that a
vertical loop radiates better at lower angles than a horizontal
dipole. It's intuitively obvious that it does. In fact EZNEC
severely under estimates low-angle radiation from a vertical loop.

A vertical loop radiates a very strong vertically polarised
zero-vertical-angle ground wave in the plane of the loop. But EZNEC
says it's zero at zero elevation. Misleading to say the least.

Anyway, overall, the difference between a delta-loop and a dipole
is not worth haggling about.

Reg. G4FGQ

2955. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 01:17:17 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF5F79D.BCBBE851@IEEE.org>
Source record: 164002

Reg Edwards wrote:
> Cecil, you don't need a computer program to demonstrate that a
> vertical loop radiates better at lower angles than a horizontal
> dipole. It's intuitively obvious that it does.

I thought the argument was that a loop is never better than a dipole.
--
http://www.mindspring.com/~w6rca

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2956. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 01:20:44 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF5F86C.77ACA855@eznec.com>
Source record: 164001

EZNEC correctly reports the sky wave radiation from a vertical loop. The far field analysis does not include the ground wave radiation, which is only effective for a few miles at HF. If ground wave radiation intensity is needed, you can use the "Near Field" analysis, which does include ground wave, and in the far as well as near field.

Roy Lewallen, W7EL

Reg Edwards wrote:
>
> > Where I've found the vertical loops to shine is at low heights.
> While
> > a dipole radiates most of its energy straight up, the loop
> maintains
> > a relatively low angle of radiation. I'll post the comparison
> > according to EZNEC.
> ================================
> Cecil, you don't need a computer program to demonstrate that a
> vertical loop radiates better at lower angles than a horizontal
> dipole. It's intuitively obvious that it does. In fact EZNEC
> severely under estimates low-angle radiation from a vertical loop.
>
> A vertical loop radiates a very strong vertically polarised
> zero-vertical-angle ground wave in the plane of the loop. But EZNEC
> says it's zero at zero elevation. Misleading to say the least.
>
> Anyway, overall, the difference between a delta-loop and a dipole
> is not worth haggling about.
> ----
> Reg. G4FGQ

2957. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 01:25:45 UTC
From: 2w8ji@akorn.net
Message-ID: <3af5f92d.286627459@news.accessunited.com>
Source record: 164004

On Sun, 06 May 2001 20:17:17 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Reg Edwards wrote:
>> Cecil, you don't need a computer program to demonstrate that a
>> vertical loop radiates better at lower angles than a horizontal
>> dipole. It's intuitively obvious that it does.
>
>I thought the argument was that a loop is never better than a dipole.
>--
>http://www.mindspring.com/~w6rca

My diple has more gain than your vertically polarized loop, and is
quieter.

73 Tom

2958. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 01:27:15 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF5F9F3.53DA314F@eznec.com>
Source record: 164003

The tuner loss when feeding a nonresonant dipole can be vastly different than when feeding a 50 ohm resistive termination. (And the loss can vary greatly from band to band when feeding a nonresonant dipole.) Your test doesn't give any information at all about the loss when feeding a nonresonant dipole.

It is true that a whole lot of stations run 20 dB more power than they need to, and in those cases 20 dB loss can be tolerated. Shoot, I encourage people to use tuners, poorly designed traps, and "quiet" antennas. Cuts down the QRM for the rest of us.

Roy Lewallen, W7EL

Dick Carroll wrote:
>
> I've checked several antenna tuners, including Icom internal units in
> transceivers, and my Drake MN2700 2KW unit. When adjusted they all lost
> 10 to 12% of the inputted power at the 100 watt level, into a terminated
> wattmeter. Not enough loss to cause me to stop using them. The small
> price of convenience.
> And the station on the other end would be hard pressed to read the
> difference on his S-meter.
>
> Dick

2959. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 01:37:28 UTC
From: 2w8ji@akorn.net
Message-ID: <3af5f99d.286739123@news.accessunited.com>
Source record: 164005

On 07 May 2001 00:34:23 GMT, n2ey@aol.com (N2EY) wrote:

>>Coaxial traps are physically large. They can dissipate consderable
>>power without failing because of the exposed surface area.
>
>True - but they are made of plastics with low melting points. A coax trap made
>with black coax gets pretty warm in the sun on a 95 degree August day. RF
>losses would simply add to the trap temperature.

RF losses are mostly distributed in the vinal jacket. The losses are
pretty high in practical applications, compared to conventional L/C
traps with off-the-shelf components..like #14 airdux and 100 pF
doorknobs.

>But Q is useful in comparing similar traps used for the same job. For example,
>in my 80/40 inverted V example, the coax traps were treated as inductors and
>measured on the 80 meter resonance frequency. Comparing them to typical LC
>circuits of the same equivalent inductance and capacitance showed that the Q of
>the coax traps was about half that obtainable from similar LC traps.

I don't know how you measured that. I measured more like a ten times
difference. One of the major problems with a coaxial trap is the very
low amount of reactance in the trap. While 75 ohm cable is a step in
the right direction, it isn't enough.

>I agree 100%. But that's not how we did the comparisons.
>
>In the FD setups I mentioned, we had two stations that were near-identical.
>Same 100 w middle-line transceivers, antennas at same height, same feed line
>lengths, etc. One station had a homebrew coax-trap 80/40 dipole and the other a
>commercially made G5RV. Contact rates at the coax-trap station consistently
>surpassed those of the G5RV station.

That is the worse possible test we could ever do. Everything is
different, not just the antenna!

How did the G5RV compare to a dipole at the same height at the same
location with both antennas in the clear? Without knowing that, we
don't know how the G5RV works. How does the trap dipole compare to a
conventional dipole at the same height when both antennas are in the
clear at the same site? Without that, we don't know what the trap loss
is.

I'll certainly post the measurements after Dayton.

73 Tom

2960. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 01:40:24 UTC
From: 2w8ji@akorn.net
Message-ID: <3af5fc2f.287397364@news.accessunited.com>
Source record: 164006

On Sun, 06 May 2001 20:00:44 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Dick Carroll wrote:
>> I've checked several antenna tuners, including Icom internal units in
>> transceivers, and my Drake MN2700 2KW unit. When adjusted they all lost
>> 10 to 12% of the inputted power at the 100 watt level, into a terminated
>> wattmeter.
>
>They lose even less if they are matching a resistive load higher than
>50 ohms, a folded-dipole's 300 ohms, for instance.

That's right, in general the worst band is 160 meters, and the worst
load is high capacitive reactance and low resistance. That's where you
see the high loss data.

Most high power tuners become almost 100% efficient into higher
impedance loads.

The rub can be the ladder line, especially when wet and dirty.

73 Tom

2961. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 01:46:46 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <3AF5FE40.4EAEA4BA@att.net>
Source record: 164007

Hence, the notion of my Appellation Gain which I mentioned a year or so back.

As most antenna marketeers can testify, the proper choice of name is worth 3 db right off the top . . .

72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
Amateur Radio W5YR, in the 55th year and it just keeps getting better!
Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437

Tom W8JI wrote:

> The only problem with that test is I was not changing antennas. I was
> not changing anything, except the name I called the antenna. What I
> was really testing, was how important the name of an antenna is.

2962. Re: Respect For Freebanders Response

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 02:00:55 UTC
From: Oris Grim <oris@dirtball.com>
Message-ID: <3AF601D7.1594700@dirtball.com>
Source record: 164008
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Just get your ham ticket and become Legal!

"Arf! Arf!" wrote:

> Gee whiz! When you guys gonna learn to keep your responses short and to the
> point? Don't write a darn book....nobody reads past the first two paragraphs
> anyway.
> If you can't say it in a few sentences, nobody cares.
> Save your editorializing for the New York Times....
>
> <ccom2@socket.net> wrote in message news:3af0dcb3.3549117@news.socket.net...
> > Preach it Brother
> > It could not have been said any better.
> >
> > FreeBanders are bottom feeding scum.
> > That should have all their equipment taken away.
> > Mike
> > AB0IV
> >
> > Jerry Oxendine <joxendi@bellsouth.net> wrote:
> >
> > >Bob,
> > >
> > >Yours is the kind of misunderstanding that, try as people might, just
> > >can't seem to be overcome. I know FIRSTHAND that there are agencies
> > >that are assigned frequencies above and below the 11 meter CB band.
> > >Tell me, what is "unessential" about forest rangers. What is "unessen-
> > >tial" about military comms? The difference is the type and duration of
> > >commercial and military comms as opposed to civilians who are there just
> > >to talk, often as much as possible, to as many people as possible. Busi-
> > >ness or military comms are short and to the point.
> > >
> > >I know the regulars get tired of reading this example, but it is a per-
> > >fect example of why NOT to "freeband". Some years ago, I was acting
> > >as communications officer for Civil Air Patrol on a live search for a
> > >light plane that disappeared during a storm. We planned to use a freq-
> > >uency near 11 meters which is a USAF frequency assigned to CAP. Like
> > >many rescue agencies, both civilian and military, we use our assigned
> > >frequencies so as to separate various kinds of traffic, take advantage
> > >of atmospherics (time of day), and keep from "interfering" with our-
> > >selves--air to ground on one freq., mobile to base on another, and yet
> > >another for "incidental comms" such as flight line, safety, or even
> > >sending out for food for the searchers. Another reason for choosing the
> > >low power 26 MHZ band was to prevent news hounds, ambulance chasers,

> > >and even possibly the family of the pilot from hearing adverse news via
> > >scanner. *Most* scanners don't deal too well with SSB. We quickly dis-
> > >covered that there was a "freebander" on that frequency calling, "BREAK,
> > >BREAK, skipland", etc with a linear that made it difficult or impossible
> > >to use this frequency forcing a lot of incidental traffic onto VHF. I
> > >was LIVID! There was NO excuse for this person operating on that freq-
> > >uency whatsoever. He was interfering with an active USAF authorized
> > >mission, a real emergency where a life was hanging in the balance. In
> > >the following week after the mission was suspended, I began to DF this
> > >pirate, determined to put a stop to his outlaw operations. One evening,
> > >I happened to be in a nearby town, and absently switched on one of my
> > >radios in the car not expecting to hear anything. The guy was pegging
> > >my meter and almost busted my speaker. On my way out of town, I made
> > >a screeching U-turn and went back into town, stopping at the town PD to
> > >ask if they recognized that voice. Yup, they knew the fella and where he
> > >lived. I drove to his house and confirmed the location. Outlaw was
> > >reported to FCC field office, and was busted for out-of-band operation
> > >AND interfering with emergency communications--a serious Federal
> > >offense. Betcha he got tired of eating beans from a .10 can!
> > >
> > >There IS no excuse for operating on unauthorized frequencies. You might
> > >*think* these freqs are unoccupied and that the agencies thereto assign-
> > >ed are "non-essential". That is not for individuals to decide. Just
> > >because *you* don't hear anyone doesn't mean they aren't there and that
> > >there is no traffic being passed that you could hinder.
> > >
> > >Finally, let's say I, or you, rent/lease a piece of property with a nice
> > >lake on it. Intending to do a little fishing, you stock that lake with
> > >a variety of game fish--bass, crappy, catfish, perch, or whatever. You
> > >are busy and don't get out to your lake real often, but one day you
> > >decide it would be a good day to go fishing; remember, it's "your" lake
> > >by virtue of your lease to use as you see fit within the guidelines of
> > >your agreement with the owner. When you arrive, you discover a large
> > >group of people on your property, at YOUR lake, catching the fish YOU
> > >stocked--in spite of the fact there are No Trespassing signs all over-
> > >even right where the trespassers are fishing. I'd be angry and I'd bring
> > >charges against each and every one that trespassed on my land. It
> > >doesn't make any difference if I don't come to the lake every day, it
> > >is STILL property assigned to me by virtue of rent or lease and nobody
> > >has any business on it without permission.
> > >
> > >"Freebanders" don't have "permission" (license) to operate on frequen-
> > >cies outside the 11 meter band. They are trespassing just as surely
> > >as those people I cited in the above paragraph. And when they DO tres-
> > >pass, it pisses off those who are legitimately assigned said frequencies
> > >for their exclusive use and it don't make ANY difference if they "visit"
> > >(use) their "property" (frequency) once a minute or once a year--the
> > >"freebanders" are trespassing just as surely as if they just walked into
> > >your/my house uninvited. There is no respect due, and none forthcoming
> > >for trespassers, "freebanders", or outlaw radio ops.

> > >
> > >Jerry
> > >K4KWH
> > >
> > >
> > >Bob wrote:
> > >>
> > >> Ok, Mr. Letter of the Law.
> > >>
> > >> And I bet you ALWAYS obey the maximum posted speed limit. If you wanted
> to speed,
> > >> you would take the right approach to speeding legally - because, hey
> man, you do
> > >> EVERYTHING right. You would put your mind to becoming a race car driver
> and do your
> > >> speeding on the track where it belongs. You would follow the proper
> steps to
> > >> becoming a race car driver:
> > >>
> > >> 1. Learn to ride a unicycle, because that's how it all started, man.
> Our
> > >> forefather's rode unicycles before fast cars were around, so must you
> learn.
> > >> 2. Learn everything there is to know about cars - including memorizing
> the answers
> > >> to questions about walking, unicycles, horse and carriage, boats,
> planes, etc.
> > >> 3. If you skip the step on learning to ride a unicycle, prepare to be
> chastised by
> > >> old-timers that had to learn how to ride it and by some who love the
> unicycle and
> > >> can ride it at over 20 mph! BTW - learning to ride the unicycle keeps
> bad people
> > >> from becoming race car drivers.
> > >> 4. Prepare to spend some money. Your standard car won't do - it doesn't
> fit race
> > >> car specs! And every race track requires a different car and tire
> combination.
> > >>
> > >> Is becoming a race car driver what you should do because you like to
> take those 15
> > >> turns of Bear Mountain road at an faster than the posted speed? Well,
> ham radio IS
> > >> NOT a replacement for the "freeband" either. Ham radio doesn't fit
> everybody. Maybe
> > >> its a bit of an extreme commitment for some. Hey, I can operate my
> equipment and
> > >> make sure that it complies with the same rules the FCC mandates for
> hams. I can
> > >> operate it responsibly. I can operate it courteously . I can use the

> minimum amount
> > >> of power necessary for a contact.
> > >>
> > >> Still, is it illegal to operate between 27.405 - 28.000Mhz ? Yes. Is it
> immoral? A
> > >> crime against humanity? Absolutely not. To me - speeding in your car is
> a far more
> > >> worse crime.
> > >>
> > >> BTW, I do not condone operating on ham bands or intentionally
> interfering with any
> > >> service that I am aware of. Yes, I know there are (very few, non
> essential)
> > >> services allocated between 27.405 and 28Mhz. I support operations on
> 27.405 -
> > >> 27.855 Mhz that follow the same regulations that hams follow.
> > >>
> > >> Hopefully this metaphor can crack the thick skull of the "yes, but it's
> illegal,
> > >> yes, but it's illegal, yes, but it's illegal" ham. This is issue isn't
> black and
> > >> white.
> > >>
> > >> Bob.
> > >
> > >> > >
> >

2963. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 02:08:12 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d501m$48q$1@slb3.atl.mindspring.net>
Source record: 164009

Cecil:

Heh, heh...

I think you mean, crazy like a fox.

What is this?... Cecil a conformist? What? You don't want to be an independent thinker?

You, of all participants on this NG, I felt that you were the most iconoclastic!

Well... please don't worry about going over to the "dark side", you wouldn't be just the second.

There are others out there who are suspicious of that "reflected power".

Heh, heh... Hang in there, go to their sermons, and tow the "party line" but in the interests of your personal safety, just don't drink any Koolaid if the "reflected power" priests start offering it.

Cecil just for fun...
.....
Consider a 50 Ohm battery of open circuit voltage of 1 volt, driving a 100 Ohm resistor through a lossless 3 foot transmission line. Since the battery has a 50 Ohm resistance, and although it really doesn't matter since the reference impedance is an arbitrary and perhaps ficticious quantity, let's make it somewhat real and take the reference impedance to be R = 50 Ohms.

The reflection coefficient "rho" for this mismatched circuit by the usual formula is rho = (Z - R)/(Z + R):

rho = (100 - 50)/(100 + 50) = 50/150 = 1/3

And the VSWR would be 2:1:

VSWR = (1 + rho)/(1 - rho) = (1 + 1/3)/(1 - 1/3) = (4/3)/(2/3) = 2

Summarizing: rho = 1/3 and VSWR = 2.

The voltage across the load will be 100/(100 + 50) = 100/150 = 10/15 = 2/3 of the battery's open circuit voltage.

In this case since the open circuit voltage is 1 volt, the load voltage V will be V = 2/3 volts.

Of course if the 50 Ohm battery had been driving a 50 Ohm resistor it would have been perfectly matched and the voltage across the load would have been exactly 1/2 that of the battery's open circuit voltage. In that case the

load voltage would be 1/2 volt. That's if it had been driving a 50 Ohm load, which it's not.

Of course that's not the actual load voltage V, that is the voltage IR = 1/2 volt that would appear across a perfectly matched load R 50 Ohms if it was carring the perfectly matched current I = 1/100. Recal that 1/2 volt value is a fiction at this point since, the battery is actually connected to a 100 Ohms, not 50 Ohms!

We just made an assumption, a "fiction" that it could be connected to a 50 Ohm load resistance.

If that fiction were true, the reflected voltage "b" would be b = V - IR, the difference between V the actual voltage across the actual load, in this case V = 2/3 volts, and the ficticious voltage IR = 1/2 volts across the ficticious load R where R = 50 Ohms.

Thus the reflected voltage b is:

b = V - IR = 2/3 - 1/2 = 4/6 - 3/6 = 1/6 volts .... "the reflected voltage"

The reflected volts b = 1/6 volt is just the difference between V, the actual voltage across the load, and IR the ficticious voltage that would be across the load if the load were 50 Ohms, which its' not because it's really 100 Ohms!

Arithmetically correct? Yes! Mathematically correct,?Yes!

Confusing??? Yes!

Complicated??? Yes!

Heh, heh... you bet!

But that's what all of this danged high falutin "reflected power" theory asks you to "assume" as you work your way through this tangled model.

Where the hell is the IR = 1/2 volt in the circuit.

It's nowhere, just a fiction.

And where is the b = 1/6 of a volt of reflected voltage in the circuit.

It's nowhere, just fiction.

Just mathematical quantities defined and calculated to justify some model of reality that just doesn't exist. It's a ficticious setup to help us to "visualize" things a certain way.

Why do we need reflected voltage, let alone reflected power? We didn't need it to compute rho or VSWR? We didn't need it to tell us when we got a match?

But I do agree that the reflected voltmeter which computes and displays b = V - IR is very helpful since it tells us how far away we are from a match, by letting us "see" the difference between the actual voltage and the

desired ficticious voltage. We find the meters that display b useful because we can use them as a "null" indicator. Adjust the tuner for a reflected voltage null! A nice instrument, but not a power meter, and not a device that supports a whole theory of ficticious power bouncing up and down a line.

We computed the reflection coefficient rho = 1/3 and the voltage standing wave ratio VSWR = 2, without either the reflected voltage b or, God help us the reflected power Pr

What, and where would that power be in this circuit? Pr = b*b/R = (1/6*1/6)/50 = (1/36)/50 = 1/1800 Watts of reflected power.

God help us... in which resistor is that power dissipated?

What? Why do we need these fictions?

Let's be done with it, change the labels on our power meters from reflected watts to read "reflected voltage" and just instruct folks to tune for a null in the reflected voltage to make the load as close as possible to R, and be done with it.

Simplicity is best!

Cecil, I'm not crazy, just "simple".

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF5EF55.4E376154@IEEE.org...
> "Peter O. Brackett" wrote:
> > Cecil... man give it up... it won't hurt... there is no such thing as
> > reflected power!
>
> I'm sorry, Peter, I just cannot visualize myself as the second person in
> a group of crazy people who deny reality.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2964. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 02:15:14 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9d50fi$cm7$0@208.206.142.67>
Source record: 164010

"Peter O. Brackett" wrote:
>
> Dick:
>
> Is there some other place on that cosmic scaled lady where we could hang
> out?
>
> I don't like it under her finger nail. I can think of nicer places.

Not to worry, Pete. On such a scale it'll take her a few hundred
millennia to even get out the door to the car...

2965. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 02:25:41 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3af5eebc.91031776@news.aepnet.com>
Source record: 164011

On Sun, 06 May 2001 23:12:40 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:

>On Sun, 06 May 2001 19:40:17 GMT, "G&R" <stop the spam@limbo.hell>
>wrote:
>
>>I wish you would also consider our Baby Boomer Quad (at
>>www.degendesigns.com). We have used modeling software based on average
>>ground conditions and based on our actual mounting conditions. To the best
>>of our experience our antenna does perform as indicated by our models.
>>
>>For your reference our software is NEC4WIN95VM as we feel it's the only
>>software that can accurately model our antenna. There may be others,
>>however based our field testing and modeling results it currently performs
>>the function the best.
>
>A two-element shortened quad with 9 to 10 dBd gain?
>
>I'd find out where the modeling error is, or are you twisting the
>specs and comparing an antenna over ground to a dipole in freespace?!

I took the file 15mquad (packaged with EZNEC) and scaled it to 14.1 MHz at a height above ground of 50 feet. I set the gnd constants the same as used on the web site above. Plotting the az pattern at an elevation angle of 19 deg. I get 12.26 dBi or 10.1 dBd.

Since this is a "full-size" quad, the "baby" version should be considerably lower. Only 1 dB lower sounds too good to be true.

A dipole at the same height gives 5.3 "dBd" at the same elevation angle.

Oh, and another thing. The 14 MHz feedpoint Z is given as 66.25 - j67.92 and yet the SWR (I assume that's the number in brackets) is given as 2.47. That means that the reference Zo is 100 ohm. The claim is that the antenna can be fed with either coax or ladder line. I guess that's true but the 50 ohm SWR will be over 3:1 and the 400 ohm SWR would be over 6:1.

Sumthin' fishy here.

Wes Stewart N7WS
>
>73 Tom

2966. Re: HF Antenna for apartment bldg?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 02:26:20 UTC
From: Rik van Riel <riel@conectiva.com.br>
Message-ID: <9d514d$pb1$1@imladris.rielhome.conectiva>
Source record: 164018

W4NTI wrote:

> Yes go ahead and experiment. And you already have hit on a
> good compromise...the loop antenna. Have you considered a
> loop with a wide band amplifier on it? Then you may can drop
> the noise and peak the desired signal.

Well, since I got ADSL the indoors loop antenna isn't
functioning all that well any more. I got $5 worth of
electrical wire (25 meters) and strung up a random wire from
the laundry room to a nearby tree, making sure to get such a
direction that the antenna isn't broadside to any near building.

Since this is enough to overwhelm my Sony 7600G (on the 49 and
31 meter band, that is, the other bands are fine) I'm searching
for ways to reduce the noise level.

I know having a coaxial lead-in with decent grounding should
help, but are there any other tips to reduce noise ?

--
Rik
--
Virtual memory is like a game you can't win;
However, without VM there's truly nothing to lose...

http://www.surriel.com/ http://distro.conectiva.com/

Send all your spam to aardvark@nl.linux.org (spam digging piggy)

2967. Re: HF Antenna for apartment bldg?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 02:28:32 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9d518g$gb9$0@208.206.142.67>
Source record: 164012
Cross-posted to: rec.radio.amateur.antenna,rec.radio.shortwave,rec.radio.amateur.misc,alt.radio

DaveC wrote:
>
> When I comes to grounding his static protection device, in his 2nd-story
> apartment, the only ground available is the one in an A/C receptacle.
>
> Is this a terrible idea?

I can't forsee any circumsances in which I would want to use the AC wiring ground for any sort of antenna grounding.
If I had to rig an antenna to use on a second floor aparytment (for ham radio use) I'd rig something like a dipole using two Hamstick type whips (vendors sell a fitting for just this use, it has mounts for two horizontal hamsticks) with a temporaty mast so that I could set it up and take it down after each use. You could rig it to an old camera tripod or some such thing. And I'd forget a antenna ground, the AC ground is the safety ground, leave it at that. And run low transmit power to minimize RFI.
In some situations use of a random wire might be OK, but one must always be aware of all possibilities for lightning attraction and for problems involving any other persons in the area. THINK through it. Research it. And remember, all such mimimalist installations are compromises and work like them.

Dick

2968. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 02:36:36 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9d51nk$hq5$0@208.206.142.67>
Source record: 164013

"Peter J. Bertini" wrote:
>
> 11 meters was never an amateur band. It was a shared
> band that amateurs were granted access to.

There are a number of 'ham bands' that fit that description.

Dick

2969. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 03:37:05 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF61861.9ECC75A4@IEEE.org>
Source record: 164014

Tom W8JI wrote:
> My diple has more gain than your vertically polarized loop, and is
> quieter.

Not at low angles at a height of 30ft on 40m according to EZNEC.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2970. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 04:00:02 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9d56es$hi9$1@plutonium.btinternet.com>
Source record: 164015

The graph in ARRL and RSGB (whose old wives plagiarised without the ability to check) publications purporting to show the increase in loss due to the presence of standing waves on various types of transmission line is in error. Its been there for many years.

It is based on a whole list of incorrect assumptions. The ARRL was informed two years back on this newsgroup. One technical editor/adviser has agreed the error exists. But the graph and accompanying article remain (I don't have the latest issue).

Fortunately the errors are small. No serious errors dB-wise will be committed by use of the graphs.

But it is a fact that minimum loss on a transmission line does not always occur, as is shown by the graph, when SWR = 1-to-1. Does this make all the arguments involving SWR on this newsgroup (that's half of them) look silly?

Or is all now correct ?

Regards, Reg, G4FGQ

2971. Re: Is there an aether after all?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 04:02:05 UTC
From: mike.luther@ziplog.com
Message-ID: <tfc7htqu9sos19@corp.supernews.com>
Source record: 164016

In <9d50fi$cm7$0@208.206.142.67>, Dick Carroll <dixie@townsqr.com> writes:

>> I don't like it under her finger nail. I can think of nicer places.

> Not to worry, Pete. On such a scale it'll take her a few hundred
>millennia to even get out the door to the car...

Nice reply, well put!

--> Sleep well; OS2's still awake! ;)

Mike.Luther@ziplog.com
Mike.Luther@f3000.n117.z1.fidonet.org

2972. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 05:00:43 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF62BFB.D9D0FE16@eznec.com>
Source record: 164017

You have to realize that Cecil's loop isn't a traditional equilateral triangle. Rather, it looks like an inverted L, with a relatively short vertical section and a relatively long horizontal section, then with a return wire connecting the far side of the horizontal wire with the bottom of the vertical wire. The pattern ends up being a lot like an inverted L, with both horizontally and vertically polarized components. Like an inverted L, the vertical section fills in some of the lower elevation angles, although the increase is only a dB or so greater than a plain dipole.

Roy Lewallen, W7EL

Tom W8JI wrote:
>
> On Sun, 06 May 2001 20:17:17 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >Reg Edwards wrote:
> >> Cecil, you don't need a computer program to demonstrate that a
> >> vertical loop radiates better at lower angles than a horizontal
> >> dipole. It's intuitively obvious that it does.
> >
> >I thought the argument was that a loop is never better than a dipole.
> >--
> >http://www.mindspring.com/~w6rca
>
> My diple has more gain than your vertically polarized loop, and is
> quieter.
>
> 73 Tom

2973. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 09:02:42 UTC
From: 2w8ji@akorn.net
Message-ID: <3af66421.314011240@news.accessunited.com>
Source record: 163919

On Sun, 06 May 2001 22:37:05 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Tom W8JI wrote:
>> My diple has more gain than your vertically polarized loop, and is
>> quieter.
>
>Not at low angles at a height of 30ft on 40m according to EZNEC.
>--
>http://www.mindspring.com/~w6rca

Ohh, I didn't know the antennas had to be similar in characteristics!
I thought we could compare disimilar antennas.

73 Tom

2974. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 09:08:44 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <wCtJ6.36147$2_.12329513@news3.rdc1.on.home.com>
Source record: 163920
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> Additionally, speed limits in many places are arbitrarily set
> low. The USA population routinely exceeds highway speed
> limits and the police don't care one bit.

SO speeding tickets are given out just to be mean?

2975. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 09:11:42 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <iFtJ6.36148$2_.12331098@news3.rdc1.on.home.com>
Source record: 163921
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> And for most people, they are speeding just staying with
> the flow of traffic on American highways. Interstae 80 in NJ
> is 55 for 30 miles before NYC. The AVERAGE flow of traffic
> is usually 65/70 or higher. Anyone doing 55 is (or should
> be) in the extreme right lane.

See thats what people don't understand a speed limit is a maximum not a minimum.

It should go like this

55 <55 <<55

not

>>55 >55 55

People hitting 70+ should be the ones getting off teh road and having their heads checked.

2976. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 09:16:27 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <LJtJ6.36152$2_.12334679@news3.rdc1.on.home.com>
Source record: 163922
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Just because there are a lot of idiots out there that do it doesn't make it
right!

--
Rob St.Denis

"Walt Davidson" <walt@f1racing.co.uk> wrote in message
news:ktjcft8ni9nqv9252pdggfjdkq2k6sn4hr@4ax.com...
> On Mon, 07 May 2001 01:05:50 GMT, billsohl@mindspring.com (Bill Sohl)
> wrote:
>
> >And for most people, they are speeding just staying with
> >the flow of traffic on American highways. Interstae 80 in NJ
> >is 55 for 30 miles before NYC. The AVERAGE flow of traffic
> >is usually 65/70 or higher. Anyone doing 55 is (or should
> >be) in the extreme right lane.
>
> The speed limit on most UK motorways is 70 mph. If you drive at 70
> mph even in the center lane, you have people tailgating you, flashing
> their headlights and sounding their horn. Eventually they will
> overtake you on the wrong side. The average speed on motorways is
> probably 85 mph.
>
> 73 de G3NYY
>
> --
> Walt Davidson Email: g3nyy @freeuk.com

2977. Re: Quick disconnect for a G5RV

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 10:32:15 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3af679b1_1@news.cybertours.com>
Source record: 163923

"Ken Jacobs" <tekwrite@mindspring.com> wrote in message
news:Sj_I6.123$PX6.30749@newsread1.prod.itd.earthlink.net...
> I am putting up a G5RV dipole. I have to make one splice anyway to splice
> new coax running to the house into the coax already attached to the
antenna.
> That is about 100 feet from the house. I would like to have some kind of
> quick disconnect (for storms) that is also waterproof.
>
> I have two barrel connectors and four PLT-259 connectors.
>
> Thanks.
>
> Ken
>
Hi Ken ,
The Best WX proof Quick disconect that I'm aware of is an N Type connector
that is a one twist disconect.. don't exactly know where you might find them
in today's market. but would try sources like the Wireman , RadioWorks ,
Davis R.F. Etc.
Happy hunting
Dave kc1di

2978. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 10:41:03 UTC
From: helmsman <>
Message-ID: <ejucftc884a82olkuf5vaqpnggklgq54po@4ax.com>
Source record: 163925
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Mon, 07 May 2001 09:08:44 GMT, "Rob St.Denis"
<tstdenis3160@home.com> wrote:

>> Additionally, speed limits in many places are arbitrarily set
>> low. The USA population routinely exceeds highway speed
>> limits and the police don't care one bit.
>
>SO speeding tickets are given out just to be mean?
>

No it's for revenue enhansment. The cities need the money and most
cities use "traffic" for generating money as a lot of it isn't paid
for by residents. GOD help you if you violate in Royal Oak,Mi as they
have a brand new court bldg that is NOT paid for! Royal Oak police
allowed a video to be made once and it was broadcast, the sargent is
giving the beat cops hell so they will PRODUCE more. $$$

.
Help cure Cancer via Distributed Computing.
It costs you nothing.
http://www.ud.com/home.htm
==========
http://www.mindspring.com/~helmsman

2979. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 10:42:49 UTC
From: billsohl@mindspring.com
Message-ID: <3af67bf5.671565@news.mindspring.com>
Source record: 163924
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Mon, 07 May 2001 09:16:27 GMT, "Rob St.Denis"
<tstdenis3160@home.com> wrote:

>Just because there are a lot of idiots out there that do it doesn't make it
>right!

Not idiots...just common evryday people that recognize BAD
law when they see it and act accordingly.

Cheers,
Bill K2UNK

>--
>Rob St.Denis
>
>"Walt Davidson" <walt@f1racing.co.uk> wrote in message
>news:ktjcft8ni9nqv9252pdggfjdkq2k6sn4hr@4ax.com...
>> On Mon, 07 May 2001 01:05:50 GMT, billsohl@mindspring.com (Bill Sohl)
>> wrote:
>>
>> >And for most people, they are speeding just staying with
>> >the flow of traffic on American highways. Interstae 80 in NJ
>> >is 55 for 30 miles before NYC. The AVERAGE flow of traffic
>> >is usually 65/70 or higher. Anyone doing 55 is (or should
>> >be) in the extreme right lane.
>>
>> The speed limit on most UK motorways is 70 mph. If you drive at 70
>> mph even in the center lane, you have people tailgating you, flashing
>> their headlights and sounding their horn. Eventually they will
>> overtake you on the wrong side. The average speed on motorways is
>> probably 85 mph.
>>
>> 73 de G3NYY
>>
>> --
>> Walt Davidson Email: g3nyy @freeuk.com
>
>

2980. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 10:45:27 UTC
From: billsohl@mindspring.com
Message-ID: <3af67c43.749653@news.mindspring.com>
Source record: 163926
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Mon, 07 May 2001 09:11:42 GMT, "Rob St.Denis"
<tstdenis3160@home.com> wrote:

>> And for most people, they are speeding just staying with
>> the flow of traffic on American highways. Interstae 80 in NJ
>> is 55 for 30 miles before NYC. The AVERAGE flow of traffic
>> is usually 65/70 or higher. Anyone doing 55 is (or should
>> be) in the extreme right lane.
>
>See thats what people don't understand a speed limit is a maximum not a
>minimum.
>
>It should go like this
>
>55 <55 <<55
>
>not
>
>>>55 >55 55
>
>People hitting 70+ should be the ones getting off teh road and having their
>heads checked.

WHY? Do you believe for one second that the speed
limits on American highways are realistic? Do they have
any resemblemce to reality. Is 70 mph across Kansas
logical when there is visibility to the horizon, light traffic
and not a bend in the load for miles ahead?

Cheers,
Bill K2UNK

2981. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 10:46:21 UTC
From: billsohl@mindspring.com
Message-ID: <3af67cd1.891932@news.mindspring.com>
Source record: 163927
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Mon, 07 May 2001 09:08:44 GMT, "Rob St.Denis"
<tstdenis3160@home.com> wrote:

>> Additionally, speed limits in many places are arbitrarily set
>> low. The USA population routinely exceeds highway speed
>> limits and the police don't care one bit.
>
>SO speeding tickets are given out just to be mean?

More to just make $$$$ for the gov't entity involved.

Cheers,
Bill K2UNK

2982. Re: long dipole vs trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 10:53:34 UTC
From: kk4bh1@cs.comnospam
Message-ID: <20010507065334.03261.00002255@ng-mp1.news.cs.com>
Source record: 163928

>Subject: Re: long dipole vs trap dipole
>From: W6RCecilA Cecil.A.Moore@IEEE.org
>Date: 5/2/01 1:13 PM Pacific Daylight Time
>Message-id: <3AF06A4F.7AF7CCD0@IEEE.org>
>
>Rudy Marcelletti wrote:
>> Obviously you need a tuner with the ladder line antenna. If they
>> were both mounted at the same height and configuration and measured, which
>> one would would out perform the other?
>
>If certain precautions are taken, IMO, there is no substitute for being
>able to do the tuning of the antenna system at same place as the operator.
>Given a near-lossless transmission line, a non-resonant antenna length
>will radiate virtually just as well as a resonant antenna length.
>

One must not forget the drastic changes in radiation pattern a long dipole, say 160 meter half wave, exhibits as it is operated above its cut frequency. This antenna has a pattern similar to a many petalled flower when operated at 20 meters and above. This may be good and it can also be bad. A trap dipole, if designed properly, should produce a bi-directional pattern on each of its operating bands.

73
Ken
KK4BH

2983. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 10:58:11 UTC
From: helmsman <>
Message-ID: <7mvcft8pffd6i5hb7sjulbftjlt0d3nv5i@4ax.com>
Source record: 163929
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Mon, 07 May 2001 10:45:27 GMT, billsohl@mindspring.com (Bill Sohl)
wrote:
>
>WHY? Do you believe for one second that the speed
>limits on American highways are realistic? Do they have
>any resemblemce to reality. Is 70 mph across Kansas
>logical when there is visibility to the horizon, light traffic
>and not a bend in the load for miles ahead?
>
>Cheers,
>Bill K2UNK

The intrastate highways were engineered for 70 mph even in the city,
and I do miss the days of "no speed limit zone". Problem is with fuel
economy, doing away with frames, lawyers and millions of idiots who
can't control there machine at speed.

.
Help cure Cancer via Distributed Computing.
It costs you nothing.
http://www.ud.com/home.htm
==========
http://www.mindspring.com/~helmsman

2984. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 11:07:46 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3AF68202.CC4FF5F9@berkshire.net>
Source record: 163933

ok, now i can answer your question... kirchoff's voltage law doesn't work
because you have violated its most basic assumption... i'll leave this as an
excercise for the student.

<quote: Basic Circuit Theory, Desoer&kuh, 1969, page 6>
Kirchoff's Voltage Law: For any lumped electric circuit, for any of its loops,
and at any time, the algebraic sum of the branch voltages around the loop is
zero.
<unquote>

W6RCecilA wrote:
>
> David Robbins wrote:
> > because you haven't fully specified the generator with a frequency and internal
> > impedance and you haven't specified other distributed impedances in the circuit?
>
> The only other thing in the circuit is copper wire, 1/4WL of 450 ohm
> ladder-line between R1 and R2.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

2985. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 11:34:54 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d6188$1aj$1@slb7.atl.mindspring.net>
Source record: 163930

Reg:

Thanks for that feedback. I didn't know that subject had been discussed on the NG before.

I agree. Those graphs of "additional line losses due to deviations of VSWR from unity, are incorrect!

Just not by very much.

I believe that the originator of those graphs did not know how to compute them, and I suspect the reason is because he/or she did not really have a deep understanding of the whole subject matter. It could even be that the originator of those "additional loss" graphs was a "believer" in that fiction they call "reflected power" and fell into his/her error by using some such fiction to make the calculations.

The fact that such an obvious, but inconsequential, error could be published for years in a "reputable" manual or handbook for so long, attests to, and is indicative of, the widespread misapprehensions among certain practicioners about the "reality" and proper uses of that "nefarious" quantity called reflected power.

IMHO... it's far easier to compute those "additional losses due to VSWR variations from unity yourself, than to simply accept those graphs on faith. It only takes a few moments on a scientific calculator. That's how I first noticed the errors myself.

OTOH... for most amateur applications, as you point out, the errors are small enough to be neglected. As you are fond of telling the NG, "What's an S-Unit between hams?"

However it would be "nice" if the editors of the Handbook and Antenna Handbook were to publish the formulae or equations which were used to derive those graphs, so that the curious could have confidence in their veracity.

Thanks,

-Peter K1PO
"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:9d56es$hi9$1@plutonium.btinternet.com...
> The graph in ARRL and RSGB (whose old wives plagiarised without the
> ability to check) publications purporting to show the increase in
> loss due to the presence of standing waves on various types of
> transmission line is in error. Its been there for many years.
>
> It is based on a whole list of incorrect assumptions. The ARRL was

> informed two years back on this newsgroup. One technical
> editor/adviser has agreed the error exists. But the graph and
> accompanying article remain (I don't have the latest issue).
>
> Fortunately the errors are small. No serious errors dB-wise will be
> committed by use of the graphs.
>
> But it is a fact that minimum loss on a transmission line does not
> always occur, as is shown by the graph, when SWR = 1-to-1. Does
> this make all the arguments involving SWR on this newsgroup (that's
> half of them) look silly?
>
> Or is all now correct ?
> ----
> Regards, Reg, G4FGQ
>
>
>

2986. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 11:44:37 UTC
From: mbz07 <mbz07@lineone.net>
Message-ID: <tfd2k1m2jaua6@corp.supernews.co.uk>
Source record: 163931
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

```
>
> (Full quieting? Then you must have been using FM emissions, an illegal
mode
> on 11 meters. :>)

Not in the UK and most or Europe....
```

2987. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 11:50:26 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d625d$a91$1@slb2.atl.mindspring.net>
Source record: 163932

Cecil:

Kirchoff's Laws - or the Reflection's Laws?

At least Kirchoff set out to simplify and improve, not to complicate and obfuscate.

Reflection, well I shan't say what he has done...

Cecil just for fun...
.....
Consider a 50 Ohm battery of open circuit voltage of 1 volt, driving a 100 Ohm resistor through a lossless 3 foot transmission line. Since the battery has a 50 Ohm resistance, and although it really doesn't matter since the reference impedance is an arbitrary and perhaps ficticious quantity, let's make it somewhat real and take the reference impedance to be R = 50 Ohms.

The reflection coefficient "rho" for this mismatched circuit by the usual formula is rho = (Z - R)/(Z + R):

rho = (100 - 50)/(100 + 50) = 50/150 = 1/3

And the VSWR would be 2:1:

VSWR = (1 + rho)/(1 - rho) = (1 + 1/3)/(1 - 1/3) = (4/3)/(2/3) = 2

Summarizing: rho = 1/3 and VSWR = 2.

The voltage across the load will be 100/(100 + 50) = 100/150 = 10/15 = 2/3 of the battery's open circuit voltage.

In this case since the open circuit voltage is 1 volt, the load voltage V will be V = 2/3 volts.

Of course if the 50 Ohm battery had been driving a 50 Ohm resistor it would have been perfectly matched and the voltage across the load would have been exactly 1/2 that of the battery's open circuit voltage. In that case the load voltage would be 1/2 volt. That's if it had been driving a 50 Ohm load, which it's not.

Of course that's not the actual load voltage V, that is the voltage IR = 1/2 volt that would appear across a perfectly matched load R 50 Ohms if it was carring the perfectly matched current I = 1/100. Recal that 1/2 volt value is a fiction at this point since, the battery is actually connected to a 100 Ohms, not 50 Ohms!

We just made an assumption, a "fiction" that it could be connected to a 50 Ohm load resistance.

If that fiction were true, the reflected voltage "b" would be b = V - IR, the difference between V the actual voltage across the actual load, in this case V = 2/3 volts, and the ficticious voltage IR = 1/2 volts across the ficticious load R where R = 50 Ohms.

Thus the reflected voltage b is:

b = V - IR = 2/3 - 1/2 = 4/6 - 3/6 = 1/6 volts .... "the reflected voltage"

The reflected volts b = 1/6 volt is just the difference between V, the actual voltage across the load, and IR the ficticious voltage that would be across the load if the load were 50 Ohms, which its' not because it's really 100 Ohms!

Arithmetically correct? Yes! Mathematically correct,?Yes!

Confusing??? Yes!

Complicated??? Yes!

Heh, heh... you bet!

But that's what all of this danged high falutin "reflected power" theory asks you to "assume" as you work your way through this tangled model.

Where the hell is the IR = 1/2 volt in the circuit.

It's nowhere, just a fiction.

And where is the b = 1/6 of a volt of reflected voltage in the circuit.

It's nowhere, just fiction.

Just mathematical quantities defined and calculated to justify some model of reality that just doesn't exist. It's a ficticious setup to help us to "visualize" things a certain way.

Why do we need reflected voltage, let alone reflected power? We didn't need it to compute rho or VSWR? We didn't need it to tell us when we got a match?

We computed the reflection coefficient rho = 1/3 and the voltage standing wave ratio VSWR = 2, without either the reflected voltage b or, God help us the reflected power Pr

What, and where would that power be in this circuit? Pr = b*b/R = (1/6*1/6)/50 = (1/36)/50 = 1/1800 Watts of reflected power.

God help us... in which resistor is that power dissipated?

What? Why do we need these fictions?

But I do agree that the reflected voltmeter which computes and displays b = V - IR is very helpful since it tells us how far away we are from a match, by letting us "see" the difference between the actual voltage and the desired ficticious voltage. We find the meters that display b useful because we can use them as a "null" indicator. Adjust the tuner for a

reflected voltage null!

A nice null indicating instrument, but not a power meter, and certainly not a
device that supports a whole theory of ficticious power bouncing up and down
a line.

Model airplane "buffs" have a voltmeter built on a similar principal at their disposal
that model aircraft battery voltmeter is set up to indicate, on mV scales, the
difference between the current battery voltage on the aircraft and the ideal
voltage of a fully charged battery. With this "sensitive" null indication
they can accurately predict how many more "minutes" of flight they have
left in their batteries. Somewhat similar to how we hams use our so-called
reflected power meters.

Cecil, I say...

Let's be done with it, change out all the labels on our power meters from "reflected
watts" to read "reflected voltage" and just instruct folks to tune for a null
in the reflected voltage to make the load as close as possible to R, and be
done with it!

Simplicity is best! Complicity is not!

Come on... join the club... down with "reflected power", how about it?

Heh, heh...

Best,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF54774.167E9F91@IEEE.org...
> David Robbins wrote:
> > because you haven't fully specified the generator with a frequency and internal
> > impedance and you haven't specified other distributed impedances in the circuit?
>
> The only other thing in the circuit is copper wire, 1/4WL of 450 ohm
> ladder-line between R1 and R2.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2988. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 12:24:08 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF693E8.EF77E40@spam.me.not>
Source record: 163934
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Maybe I've got my definitions confused, but isn't full quieting when a
transmitted carrier is strong enough to cover all background noise at
the receiver?

I don't recall ever hearing/being told/reading that Full Quieting
applied only to FM. I could be wrong.

-SSB

W6DKN wrote:
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF42130.7083E136@spam.me.not...
> > well, if a 2 watt carrier is full quieting 20 miles away, then the
> > antenna must be doing its job, wouldn't you think?
> >
> > -SSB
>
> Not really. How about 4 million + miles per watt ?
>
> (Full quieting? Then you must have been using FM emissions, an illegal mode
> on 11 meters. :>)
>
> http://radioworks.com/hpmain.html
>
> 73 de W6DKN

2989. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 12:26:29 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF69475.4904E2B1@spam.me.not>
Source record: 163935
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

I hope the load doesn't bend... That would make it useless to the
receiver, and the shipper might get a little peeved.

::Grin::

-SSB

Bill Sohl wrote:
>
> WHY? Do you believe for one second that the speed
> limits on American highways are realistic? Do they have
> any resemblemce to reality. Is 70 mph across Kansas
> logical when there is visibility to the horizon, light traffic
> and not a bend in the load for miles ahead?
>
> Cheers,
> Bill K2UNK

2990. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 12:41:40 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF69804.25C76414@IEEE.org>
Source record: 163936

Tom W8JI wrote:
> Ohh, I didn't know the antennas had to be similar in characteristics!
> I thought we could compare disimilar antennas.

Of course your dipole at 100ft will beat my loop at 30ft. But if all one has is 30ft sticks, the 40m triangular loop will perform better for DX purposes than the 40m dipole. I know, I did A/B comparisons when I lived in AZ. A New Zealand ham could copy the loop and couldn't even hear the dipole. The same thing happened on receive on this end.

I'll post the overlaid radiation patterns so you can judge for yourself. They are not there now but by tomorrow, May 8, they will be at http://people.delphi.com/cecilmoore/40mtri.htm
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2991. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 12:48:50 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9d65e9$36q$1@neptunium.btinternet.com>
Source record: 163937

Dick wrote -
> Didn't I read that spacing from metal of 2 times the width of
the
> feedline is enough?
==========
Yes Dick, you did. It is often said that 2 or 3 times the width of
the line is enough. My point is that it is MORE than enough.

Reg.

2992. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 12:49:12 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF699C8.9F6DCDC0@IEEE.org>
Source record: 163938

Roy Lewallen wrote:
>
> You have to realize that Cecil's loop isn't a traditional equilateral
> triangle. Rather, it looks like an inverted L, with a relatively short
> vertical section and a relatively long horizontal section, then with a
> return wire connecting the far side of the horizontal wire with the
> bottom of the vertical wire. The pattern ends up being a lot like an
> inverted L, with both horizontally and vertically polarized components.
> Like an inverted L, the vertical section fills in some of the lower
> elevation angles, although the increase is only a dB or so greater than
> a plain dipole.

Actually, at about ten degrees take-off-angle, the triangle is about 3dB
better than the dipole when both are at a height of 30ft. One thing I
really loved about that triangle was the high angle attenuation compared
to a dipole. It has a built-in DX selective filter. I'll post the
comparisons tonight and they will be available by tomorrow, May 8, at:

http://people.delphi.com/cecilmoore/40mtri.htm
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2993. REALISTIC Patrolman Direct Entry Programmable 100 CHANNEL PRO-46 HANDHELD SCANNER

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 13:26:51 UTC
From: Stephen M Peterson <stephenmpeterson@hotmail.com>
Message-ID: <9d67q1cvm1@ophelia.uncg.edu>
Source record: 163823
Cross-posted to:
rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.scanner,rec.radio.shortwave

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1236147097

It will Pick up 2 way radios, police, Aircraft, Fire, Cell phones, Cordless Phones, TV stations, just about anything.

Its range is from 29MHz - 956MHz

This is a well kept scanner in Excellent Condition and works perfectly, It was mainly used when

I was in aviation school 1993-5 and kept in the included soft case.

This scanner will do the *Test Mode* holding L/OUT, 2, and 9 at the same time at power on to allow

for "Full Spectrum" of frequencies.

I cannot help you with the test mode since I don't use that, but it does do it, you could

look this up on the internet If you were curious.

The date code is * 6A3 * or June 1993 a Good year no doubt.

It was stored in the Box and comes with the Whip Antenna, unused Belt Clip, and AA Holder Battery Pack.

It comes with the everything as if it were new packed in the box with manual and even the receipt from 1993.

It comes with a few extras like the optional Archer Power Supply and Carry Case.

Check the Tandy Page for more information.

Shipping will Be $10.00 UPS insured in addition to bid Price in continental US.

I accept Palpal and Money Orders (US Dollars) only.

Sold as-is but is in excellent working order will not be DOA. Contact must be made within 24hrs from end of auction with address and payment method. Payment must be made within 10 days or item will be relisted. I reserve the right to reject bidders with too many negative comments.

Thanks for looking and Good Luck Bidding!

2994. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 13:32:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF6A3E8.5F001C5F@IEEE.org>
Source record: 163939
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Sideband wrote:
> I don't recall ever hearing/being told/reading that Full Quieting
> applied only to FM. I could be wrong.

From the IEEE Dictionary: "quieting sensitivity (frequency-modulation receivers) The minimum unmodulated signal input for which the output signal-noise ratio does not exceed a specified limit, under specified conditions."

Note the "unmodulated" requirement which would prohibit this term from being used associated with SSB.
--
http://www.mindspring.com/~w6rca

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2995. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 13:57:58 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF6A9E6.F393485E@IEEE.org>
Source record: 163940

Reg Edwards wrote:
> Yes Dick, you did. It is often said that 2 or 3 times the width of
> the line is enough. My point is that it is MORE than enough.

I have my 20m-10m dipole on a Rohn tower fed with 300 ohm twin-
lead. I can run relative receive strength measurements on WWVB
with the feedline on standoffs VS taped to the tower for a
distance of about ten feet. Care to estimate the difference,
if any, in receive signal strength?
--
http://www.mindspring.com/~w6rca

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2996. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 14:08:21 UTC
From: richardharrison@webtv.net
Message-ID: <12291-3AF6AC55-211@storefull-111.iap.bryant.webtv.net>
Source record: 163941

Peter, K1PO wrote:
"It`s nowhere, just fiction."

When a battery of 50 ohms internal resistance is connected to a 50-ohm transmission line, 1/2 its voltage drop is internal. The other 1/2 is across the line input.

After a transient period, the steady-state voltage drops appear as determined by what an ohmmeter would read across the load on the lossless line, and by the internal battery resistance as determined from the open-circuit voltage divided by the short-circuit current. For d-c, the characteristic impedance of the transmission line is inoperative.

No fiction.

Best regards, Richard Harrison, KB5WZI

2997. Re: Portable 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 14:39:34 UTC
From: curt <curtweldman@spamnot.com>
Message-ID: <3AF6B3EB.CAA489EC@spamnot.com>
Source record: 163942

www.cebik.com has lots of info on antennas
select technicals, page down to vhf/uhf and look at
2m half square. you can build it for a few dollars
and it is fed with coax 50 ohm so you are up fast.
It has 3 units gain over a jpole or 1/4 wave antenna.
When you do not need it you can put it away fast.

or how about a quad beam for the attic ?
http://www.softcom.net/users/kd6dks/quad.html
you can make it with up to 5 elements if you want
cost you under $ 10. or less if you have some
spare wire home, again 50 ohm feed coax.

post back and let us know what you did

73

Gary wrote:

> Does anyone have a suggestion on how to use a 2 meter base rig in the
> house...etc...

2998. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 14:48:39 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF6B5C7.501194DA@spam.me.not>
Source record: 163943
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

So it could apply to an unmodulated AM signal, then? If so, my statement
was correct. If not, I stand corrected. I hope someone will let me know
which it is.

-SSB

W6RCecilA wrote:
>
> Sideband wrote:
> > I don't recall ever hearing/being told/reading that Full Quieting
> > applied only to FM. I could be wrong.
>
> From the IEEE Dictionary: "quieting sensitivity (frequency-modulation
> receivers) The minimum unmodulated signal input for which the output
> signal-noise ratio does not exceed a specified limit, under specified
> conditions."
>
> Note the "unmodulated" requirement which would prohibit this term
> from being used associated with SSB.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2999. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 15:00:53 UTC
From: richardharrison@webtv.net
Message-ID: <13116-3AF6B8A5-220@storefull-112.iap.bryant.webtv.net>
Source record: 163946

Peter, K1PO wrote:
"I agree. Those graphs of "additional line loss due to deviations of VSWR from unity, are incorrect!

Just not by much."

OK, nothing`s perfect. How much is the additional loss?

For example, Fig 14 on page 24-11 of the new "Antenna Handbook" says that if my matched line loss is 3 db, and my SWR is 20, my total loss would be 3db + 6db or a total of 9db loss.

Do I need to ask for a refund?

Best regards, Richard Harrison, KB5WZI

3000. PLEASE PLEASE CHANGE THE HEADER WHEN CHANGING TOPICS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 15:04:13 UTC
From: AC6V <ac6v@ix.netcom.com>
Message-ID: <3AF6B96B.E2C0E002@ix.netcom.com>
Source record: 163944

I opened up several posts today and the topic dicussed had nothing to do
with the header.
AND neither the header or the topic had anything to do with antennas.

Come on folks - lets respect the Use Group Guide Lines at URL:
http://faqs.jmas.co.jp/FAQs/radio/personal-intro

AND FOR CRIPES SAKES __ CHANGE THE HEADER WHEN YOU CHANGE TOPICS.
I just read one with a header of "freebander" nonsense and it was
discussing FM Quieting!!!

--
73 From Rod AC6V In San Diego
700 Ham Topics & 6,000 Links
http://ac6v.com/
I Doubt, Therefore I Might Be!!!

3001. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 15:08:25 UTC
From: Ron in NC <kc4yoy@pop.trellis.net>
Message-ID: <01c0d707$57798ae0$a54c96d0@ron>
Source record: 163945
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

WOULD SOMEONE PLEASE TELL ME WHAT ALL
THIS HAS TO DO WITH AMATEUR RADIO
BOATANCHORS?

PLEASE STOP THIS CRAP......

Ron, KC4YOY

3002. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 15:22:06 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <y4zJ6.8600$kA2.678813@bgtnsc04-news.ops.worldnet.att.net>
Source record: 163947

"Walter Maxwell" <w2du@journey.com> wrote in message
news:3AF34B5E.FD580E40@journey.com...
> VE9SRB wrote:
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > news:3AF055B7.70166AF1@IEEE.org...
> > > VE9SRB wrote:
> > > >
> > > > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > > > news:3AF011B8.A04FD554@IEEE.org...
> > > > > VE9SRB wrote:
> > > > > > Powers do not add as you claim they do. 100 Watts added in phase
> > with
> > > > > 33.33
> > > > > > Watts simply does not add to 133.33 Watts.
> > > > >
> > > > > Uhhhhh Steve, power is a scalar and doesn't have a phase. Scalars
add
> > > > > directly with no phase angle involved. If you have a 100 watt
light
> > > > > bulb and a 33.33 watt light bulb, aren't they dissipating 133.33
> > watts?
> > > > >
> > > > > > Walter, Johnson shows that the sum of the forward source voltage
and
> > > > > > re-reflected voltage add to the total voltage. He does not add
> > power.
> > > > >
> > > > > On the contrary, Equation (6.17) P = (|E+|^2)/Z0 - (|E-|^2)/Z0
> > > > > on page 150 of the first edition clearly shows that Johnson adds
power
> > > > > and that the power he adds/subtracts is a *scalar* value with no
phase
> > > > > in sight. Note the absolute value of the voltages.
> > > > > --
> > > > > http://www.mindspring.com/~w6rca
> > > >
> > > > This is Pdelivered = Pforward - Prearward.
> > > >
> > > > We do not disagree on this concept.
> > >
> > > But, but, but, Steve. You said "He (Johnson) does not add power."
> > > Have you changed your mind about that? :-)
> > > --

> >
> > He's subtracting two powers traveling in opposite directions. He is not
> > adding two powers traveling in the same direction. Big conceptual
> > difference.
> >
> > Steve
>
> Sorry Steve, there is no conceptual difference. If 3 - 1 = 2, then 2 + 1
> = 3. Powers DO add. If you add voltages the result is meaningless--add
> powers and get the correct results. Johnson's equation works both
> ways--it can't work one way and not the other.
>
> Walt, W2DU

Johnson only adds complex forward voltages to determine the total forward voltage. He and I both disagree with you when you state that adding voltages is meaningless. There is no place in Johnson where he determines the total forward power from the addition of multiple forward powers.

If you add the voltages correctly the result is not meaningless. We are talking about the vector addition of complex voltages.

In vector addition, 3 + 3 is not always 6. If 3 and 3 are 180 degrees out of phase 3 + 3 = 0. The total forward voltage in a transmission line is the vector sum of complex voltages. Once the total forward voltage is determined, the total forward power is determined.

The total forward power in the transmission line is equal to |Vtotal|^2 / Zo. If adding voltages is meaningless, how would you determine the total forward voltage? If you have two complex voltages V1 @ X degrees and V2 @ Y degrees, how would you add them to determine the total forward voltage?

Steve VE9SRB

3003. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 15:26:32 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <I8zJ6.8603$kA2.679190@bgtnsc04-news.ops.worldnet.att.net>
Source record: 163948

"Walter Maxwell" <w2du@journey.com> wrote in message
news:3AF34EE5.7CA571B9@journey.com...
> VE9SRB wrote:
> >
> > "Walter Maxwell" <w2du@iag.net> wrote in message
> > news:n8GH6.3462$c4.377186@e420r-chi1.usenetserver.com...
> > > Steve's problem with addition of voltages or powers on a transmission
> > line
> > > is that it is NOT the voltages that add, it's power, even though Steve
> > > denies that this is true. His misconception on this issue is why his
> > powers
> > > don't add up correctly. Everything cpmes out correctly when powers are
> > > added, but never come out correctly by adding voltages. Kirchoff's law
> > > simply doesn't apply here.
> > >
> >
> > Walter:
> >
> > If one forward voltage is 100 V and another forward voltage is 100 V, do
> you
> > deny that the total voltage is 200 V?
> >
> > Steve
> >
> Yes Steve, I deny that the total voltage is 200 V. The actual total
> voltage under the conditions we are discussing is 141.42 V.
>
> Walt, W2DU
> > >

Walter:

If 100 V added in-phase with 100 V is equal to 141.42 V, then what is 100 V
@ 0 degrees added with 100 V @ 90 degrees?

Steve

3004. Re: PLEASE PLEASE CHANGE THE HEADER WHEN CHANGING TOPICS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 15:43:52 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3af6c33d_1@news3.prserv.net>
Source record: 163949

AC6V <ac6v@ix.netcom.com> wrote in message
news:3AF6B96B.E2C0E002@ix.netcom.com...
> I opened up several posts today and the topic dicussed had nothing to do
> with the header.
> AND neither the header or the topic had anything to do with antennas.
>
> Come on folks - lets respect the Use Group Guide Lines at URL:
> http://faqs.jmas.co.jp/FAQs/radio/personal-intro
>
> AND FOR CRIPES SAKES __ CHANGE THE HEADER WHEN YOU CHANGE TOPICS.
> I just read one with a header of "freebander" nonsense and it was
> discussing FM Quieting!!!

Which, I submit is a heck of a lot more useful subject and deserves a proper
header.
Crazy George

>
> --
> 73 From Rod AC6V In San Diego
> 700 Ham Topics & 6,000 Links
> http://ac6v.com/
> I Doubt, Therefore I Might Be!!!
>
>

3005. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 16:01:50 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF6C6EE.75B0A0AD@IEEE.org>
Source record: 163950

VE9SRB wrote:
> If you add the voltages correctly the result is not meaningless. We are
> talking about the vector addition of complex voltages.

Steve, the vector addition of voltages just does not work when the voltages have been canceled by destructive interference. The voltages may go to zero but the energy does not go to zero and must be preserved. Sometimes the voltages can be added as phasors and the correct result is obtained. But one must know when it is valid to do so and when it is invalid to do so.

The basic problem, as I see it, is that the electromagnetic energy involved in destructive interference of voltage and current phasors at a Z0-match cannot go to zero even if the voltages and currents go to zero. It's like squeezing a balloon. Squeeze it to nothing at one point and it gets bigger elsewhere.

Trying to add voltages phasors at a Z0-match point exhibiting destructive interference patterns is just plain invalid as proven by your assertion that 75 joules plus 8.33 joules equals 133.33 joules.
--
http://www.mindspring.com/~w6rca

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3006. Tower/mast question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 16:17:20 UTC
From: Eric Ruuska <eruuska@netnitco.net>
Message-ID: <3af6ca08@news.netnitco.net>
Source record: 163951

Hey Elmers,

I bought my 12yo son his very own 2m radio for his upcoming birthday, and thus I need to put up some sorta antenna system for him. I'm pretty much committed to building the 12-element yagi from www.6mdx.eurobell.co.uk, but I need to get it up in the air. I won't be using a rotater right away, funds don't permit it, but we live in an area where all the repeaters are in the same direction anyway, as is anyone we'd want to talk to via simplex.

Any suggestions? I'm looking for an inexpensive, yet SAFE way of getting the antenna up as high as possible.

Thanks in advance,
Eric Ruuska
KB9ZHN

3007. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 16:26:57 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AF6CCD1.41C67EA6@rupert.tds-az.lmco.com>
Source record: 163887

Sideband wrote:
>
> N2EY wrote:
>
> <snip>
>
> > > The code study is coming slow. I've got a problem (some call
> > > it an excuse), in that I'm dyslexic.

You can use the fact that you are dyslexic as an excuse to not
do something, or just view it as something to overcome. You
should never think of it as a problem, just an annoyance. And
before you ask, Yes, I am also dyslexic, so I know this is true
first hand. A dyslexic can do anything that anyone else can do.
The sooner you convince yourself of that, and drop this word
from your vocabulary, the better.

> > I'm not a speech-and-language professional, but the term
> > dyslexia covers a lot of ground. Here's a simple "thought
> > experiment":
> >
> > Suppose you had to listen to someone spelling out words
> > phonetically, and write down what was said. For example,
> > you would hear:
> > "Tango...hotel....india.....sierra.....india.....sierra
> >.....alpha....tango....echo......sierrra....tango....."
> >
> > and would write down:
> >
> > "THIS IS A TEST"
> >
> > For most people, doing the above for a couple of minutes
> > would be very easy, while for some it would be extremely
> > difficult. The basic skill of copyng code is no more than
> > this, except that instead of words you hear short and long
> > tones.
>
> In fact, this is how I learned the Phonetic alphabet when I
> was in the Corps. One of my Corporals saw how I was having
> trouble with it, and over a week's time I finally picked it
> up, to the point I had it Lima India Charlie Kilo Echo
> Delta, Over.
>
> >
> > > I hear a dit and it's really a dah, or vice versa.

> >
> > I think you are listening to code that is TOO SLOW. Have
> > you tried the Koch method? What speed is your training
> > software set for?
>
> I have the letters set for 20 WPM and the words for 5,
> and I still miss a few.

The problem here is that you are not studying for the test.

When you do finally get to the point of being able to copy
6 or 7 WPM at this 20 WPM character rate, when you take the test,
you might not be able to destinguish a single letter. The
test will not be sent to you at a 20 WPM character rate.
The character rate will be so slow that you might not
be able to recognize anything.

You need to find out how the test is given. When you go for
your written test ask about the CW test. Some testing places
send the code at a 5 WPM character and word rate, while others
send at a 5 WPM word rate but a 13 WPM character rate. They
will be glad to tell you and will probably even let you listen
to a session, so you will have an idea of what it will be like.

Before they lowered the CW speed requirements, the place where
I did my testing did the 5 WPM test with 5/13 rate. The
13 WPM test was done at a 13/20 rate. However the 20 WPM test
was done at 20/20. When I was studying for these tests, these
are the rates that I studied at. When you finally sit down
for the test, the rate should be something that you are
comfortable and familiar with. You are going to nervous anyway
so no sense in adding to it with a rate that you are not
familiar with.

Some other poster recommended "Morse Academy" as a computer
aid. I also highly recommend it. It got me through the
5, 13, and 20 WPM tests. I took them as separate times but
got through each one the first time I tried.

One advantage of "Morse Academy" is that it generates code
tests in the same format as the actual test and at any
word/character speed you wish. Personally, I skipped the
initial learning/interactive portion and went straight to
the section that just sends practice exams.

The tests, real and practice, always are in the same format.
They start with VVV followed by "[station 1 call] DE [station
2 call]". If you don't get all the letters of the call, it's
ok because these same call signs are going to be sent at the
end of the test. You can use the second sending to fill in
the missing characters.

The initial callsign info is then followed by standard QSO information: RST, Name, QTH, etc.. It is very easy to learn to listen for these key phrases and then concentrate on the info that follows. The names and QTH's are usually common so that if you miss a character or two, you can still guess the correct word. After the initial info there is a sentance of just general information, like "my mother is a ham with the call xx2yyy". The answer sheet will probably want to know who had the ham license and what was her call, so concentrate on only the pertinent info.

When I was studying, I would string about 10 sample tests together in a single computer file. Then I would play them back into a small cassette tape recorder. This way the test was handy without having to fire up the computer. It was also portable. I would play the tests back about 2 or 3 times a day, but only for about 15 minutes each time. When you check your work, don't worry that you didn't get 100% copy, just make sure that you copied all the important info. If you can do 100% copy, that's great because 1 minutes worth will get you through the test, but it's not necessary.

> >
> > > I've tried the "tricks", etc, such as turning each
> > > letter into a cute phrase, etc, but for some reason
> > > it doesn't want to work for me.
> >
> > Those "tricks" add a step to the decoding process - an
> > unnecessary step.
> >
> > Take a look at these, if you haven't already:
> >
> > http://www.sdc.org/~finley/
> >
> > and
> >
> > http://www.joates.demon.co.uk/megs/N0HFF/contents.htm
> >
> > > I've been going at it steady for the last two years or
> > > so, and the best I've been able to manage is about 2
> > > words/minute, and that's after correcting the "text"
> > > post-send.
> >
> > Try the methods described at the above websites. I do
> > think the slow code may be the problem!
> >
>
> I'll do that. Thanks for the tips. Hopefully they'll have
> something that will help.
>
> > > Honestly, I'm wondering if it would be any easier to
> > > learn on the air. The local club here in Livingston County

> > > does code study up on 2M weekly, and I've finally found
> > > an Elmer who said he'd help me out on the air with it,
> > > as well. Honestly, I think the only way I'm going to get
> > > it down is to do it on the air.
> >
> > Good idea! Try it!
>
> I plan on it. It worked for the Phonetic Alphabet.. why not
> code, too?

Try not to rely to heavily on the "on the air" practice. Yes
it will help, as long as you are getting the same information
that you will get on the test. And that may be a little difficult
to do. The small cassette recorder is a better idea, because it
is always ready when you are. An Elmer is helpful but is limited
to when he can get on the air to help you.

Use the "on the air" practice to augment your practice once a
week, but practice on your own daily. Without daily practice
you will be at it for a long, long time. Just do what ever
you need to do to get over the CW test, even if you never plan
on using it. Until they change the rules again, the CW test
is the key to the higher class licenses.

> > >
> > > I'll check out the sets you mentioned for HF, and I'll
> > > give serious thought to a 2M only set as well. If there's
> > > no use for 440 here in the area, or if repeaters out here
> > > bridge across the bands, I'll probably go with just a
> > > 2M set and be done with it.
> >
> > Lotsa good used stuff out there. I'm still using the
> > Heathkit HW-2036 I built from a kit in 1977.
>
> I wish they still made those kits, I'd love to build my own radio...
> Really the only way to really know how they work, IMHO.

Although Heathkit is not around any more, there are still plenty
of radio kits to choose from. Many of the ham clubs do special
projects and than offer the results to the generat ham public.
Usually these are low powered, QRP, rigs but the satisfaction
of building your own rig is still the same.

Personally, the only rig I have, that I didn't build, is a
Radio Shack HTX-100. All the rest I either built from scratch
or from a kit.

> Kindof like Antennas. I built my own 5/8 wave ground plane
> for my base station CB when I was still in Southern
> California. It was a top loaded coil design.. copper wire
> wrapped on a non cuprous PVC pipe, with aluminum tubing
> salvaged from DRMO (was originally camo-net poles) sloped

> down at about 40 degrees from perpendicular to the radiator.
> Got a 1.3:1 SWR over all 40 channels, and was heard almost
> 50 miles away (past Escondido from Oceanside 3 blocks from
> the ocean) with 12 watts on 27.385 LSB. I plan on building
> my own antennas for 2M on both the car and for the apartment.
> Maybe I'll try another 5/8 ground plane for the apartment
> for 2M...

Here is a good web site to get a little better handle on antennas.

How to Become An Antenna Guru
http://www.borg.com/~warrend/guru.html

> > >
> > >As for the HF, I'm really looking forward to the DX.
> > >
> > Lots of it out there. Good luck!
> >
> > 73 de Jim, N2EY
>
> Thanks again, and 73's
>
> -SSB

Good luck in your test, tomorrow.

--
Martin E. Meserve K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore
my responses may not be as timely as you, or I, would like them to
be. If I seem to be ignoring you, send me another E-Mail to jog my
memory. Opinions are my own and do not reflect the opinions of my
employer.

3008. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 16:45:39 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <TiAJ6.8598$4f7.666668@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163952

"Walter Maxwell" <w2du@journey.com> wrote in message
news:3AF422A2.3369ACB@journey.com...
> Walter Maxwell wrote:
> >
> > VE9SRB wrote:
>
> > > Walter:
> > >
> > > If one forward voltage is 100 V and another forward voltage is 100 V,
do you
> > > deny that the total voltage is 200 V?
> > >
> > > Steve
> > >
> > Yes Steve, I deny that the total voltage is 200 V. The actual total
> > voltage under the conditions we are discussing is 141.42 V.
> >
> > Walt, W2DU
> > > >
> > > >

> Gentlemen:
>
> I would like to lay rest to Steve's erroneous claim that reflected voltage
adds to the
> source voltage to establish the total forward power, and refute with proof
that
> reflected power adds to the source power to establish the total forward
power when
> a transmission line is terminated in a mismatch.
>
> Assume a lossless 50-ohm line terminated in a pure 150-ohm load. The
result is a
> reflection coefficient magnitude rho of 0.5, a power reflection
coefficient rho*2 of
> 0.25, and a power transmission coefficient (1 - rho*2) = (1 - 0.25) and an
SWR of
> 2:1. The forward power increase factor is 1/(1 - rho*2), which Steve
earlier
> vehemently denied in extended correspondence with me, but has apparently
> discovered it is correct, because he uses this expression in his QEX
Jan/Feb 2001

> QEX article. Consequently, the forward-power increase factor for rho = 0.5
is
> 1/0.75 = 1.33333. Thus, when the source power is 100 watts the total
forward
> power is 133.333 watts. 100 watts plus 33.3333 watts must equal 133.33
watts.
> There can be no argument here! Therefore reflected power ADDS to the
source
> power to establish the total forward power.
>

Why do you continually misrepresent my technical statements.

The relationship Pfwd = Pdel /(1 - |rhoA|^2) is not based on the re-reflections that occur at the input of the transmission line. It does not validate the concept of total power re-reflection or power addition at the input to the transmission line.

The relationship Pfwd = Pdel / (1 - |rhoA|^2) is simply derived from the relationship Pdel = Pfwd - Pref. It is a steady state relationship valid independent of an impedance match or impedance mismatch in the system.

Let's assume we have a lossless transmission line. The forward power at the line input is Pfwd. The reflected power at the line input is Pref. The forward power arriving at the antenna is Pfwd (lossless line). The reflected power at the antenna is Pref = Pfwd |rhoA|^2. The reflected power arriving at the line input is Pref = Pfwd |rhoA|^2. Now, the delivered power, Pdel = Pfwd - Pref. Rewriting, we have Pdel = Pfwd - Pfwd |rhoA|^2 = Pfwd (1 - |rhoA|^2). This can be re-written as Pfwd = Pdel / (1 - |rhoA|^2). This relationship is not a validation of power addition at the line input. In fact, this relationship is valid when an impedance match does not exist. Are you now going to tell us that a total re-reflection of power occurs even when a Zo match does not exist?

> So now let's examine the arithmetic considering the addition of powers. In
a
> lossless line all power entering the line is absorbed in the load,
regardless of the
> mismatch. Therefore, in this example, 100 watts supplied by the source is
totally
> absorbed in the 150-ohm load. The power transmission coefficient is 0.75,
and
> 133.33 x 0.75 = 100. Continuing, the power reflection coefficient is 0.25,
and
> 133.33 x 0.25 = 33.333. 100 watts plus 33.333 watts = 133.33 watts, ERGO,
case
> proven.
>

Case not proven. You just proved that Pdelivered = Pforward - Preflected.

> So now let's examine the arithmetic considering the addition of voltages.
We will
> discover that adding the voltages as if they were coming from batteries in
series
> yields totally erroneous answers. With 100 watts entering a 50-ohm line
the
> voltage is 70.71 v. With 33.333 watts of reflected power the reflected
voltage on a
> 50-ohm line is 40.82 v. The sum of 70.71 and 40.82 = 111.54 v. Now 111.54
v on
> a 50-ohm line represents 248.8 watts. According to Steve's
voltage-addition
> method this means that the total forward power is 248.8 watts.
>

Again, a misrepresentation of my technical position. I never said that the forward power on the line should be 248.8 Watts. I agree that the forward power on the line is 133.33 Watts.

The problem that you have with the concept of voltage addition is that you still fail to understand how to correctly determine the forward source voltage and the re-reflected voltage at the transmission line input. The forward source voltage at the transmission line input is not 70.71 V and the re-reflected voltage is not 40.82 V. The correct forward source voltage at the transmission line input is 61.24 V and the correct re-reflected voltage is 20.41 V. These two voltages add in-phase to a total voltage of 81.65 V for a total forward power of 133.33 Watts. If you had any serious interest in understanding this you would ask me how I determined these voltages, we would compare this with Johnson's discussion, and this disagreement would end.

> So now let's see what happens when we apply the voltage and power
reflection
> coefficients and the power transmission coefficient.
>
> The power transmission coefficient is 0.75, which when multiplied by 248.8
=
> 186.6 watts absorbed in the 150-ohm load. This is 86.6 watts more than the
100
> watts delivered by the source, an impossibility.
>
> The voltage reflection coefficient of 0.5, when multiplied by 111.54 =
55.77 v.
> This is 14.95 volts more than that with 33.333 watts on the line.
>
> The power reflection coefficient of 0.25, when multiplied by 248.8 = 62.2
watts.
> This is 28.9 watts more than the 33.33 watts actually reflected.
>

These calculations and statements have nothing to do with my technical position. They are not a correct application of the concepts that I have

been discussing.

> With Steve's method the expression is (Vfwd + Vref)*2/Zo-wrong!
>

THIS IS NOT MY EXPRESSION. Why do you continue to misrepresent my technical position.

> Using the correct method the expression is (Vfwd*2)/Zo + (Vref*2)/Zo = total
> forward power.
>

This is not a correct expression. It does not correctly account for the fact the we must add complex voltages with vector addition.

We must consider the differences that occur when Vfwd and Vref have differing phase angles.

> As I said at the beginning of this post, this should lay to rest the erroneous method
> of adding the reflected voltage to the forward voltage to obtain the total forward
> power.
>
> Walt, W2DU
>

Are you willing to stop the blustering and work an example together with voltages?

Steve VE9SRB

3009. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 16:53:57 UTC
From: w2du@iourney.com
Message-ID: <3af6af3a.1283625@news.journey.com>
Source record: 163954

On Sun, 06 May 2001 20:37:23 GMT, w2du@iourney.com (Walter Maxwell) wrote:

These concepts are consistent with the discussion in
>>Johnson's text. Do you concur?
>
>No Steve, I do not concur.
>
>First, the total voltage at the discontinuity is not (1 + rho). If this were the case the
>total voltage would be 1.5 times the source voltage when the mismatch is 3:1. Far to high.
>For 100 watts delivered to the 50-ohm input to the network the source voltage is 70.71
>volts. 1.5 x 70.71 = 106.07 volts, 24.42 volts too high.
>
>The real total voltage is square root of the expression 1/(1 - rho^2) times the source
>voltage. The sqr root of the expression 1/(1 - |rho|^2) equals the forward voltage
>increase factor, the same as the expression 1/(1 - |rho|^2) equals the forward power
>increase factor. Let's check it out: The voltage increase factor for a 3:1 SWR (rho = 0.5)
>is 1.1547, for a total voltage of 81.650 v when multiplied by the source voltage 70.71
>volts for 100 watts delivered to the 50-ohm network input.
>
>Let's check this total voltage value out. 81.65^2 divided by (Zo = 50) = 133.33 watts, the
>precise value when using the forward power increase factor 1/(1 - rho^2)= 1/(1 - 0.25) =
>1.3333. (100 x 1.3333 = 133.33 watts.
>
>Second, the total forward power, or as you say, Pdel, is not (1 + |rho|^2). Let's see why.
>Continuing with a 3:1 SWR and rho 0.5, we get (1 + |rho|^2) = 1.25 as the power increase
>factor. This would mean to total forward power would be only 125 watts with a 100 watt
>source. But we know from above that the total forward power is 133.33 watts.
>
>Now let's verify that the forward power increase factor is 1/(1 - |rho|^2). Recall that
>during our earlier and continuing controversy on this point you vehemently refused to
>agree that this expression returns the forward power increase factor. However, you must
>have had a change of mind, because in your QEX article Jan/Feb 2001, you specify this
>expression as the forward power increase factor. If I remember correctly it is your Eq 36.
>Consequently, if the correct factor is 1/(1 - |rho|^2) it certainly cannot be (1 +
>|rho|^2), because for rho = 0.5, the resulting values are 1.3333 and 1.25, respectively.
>
>My explanation above shows why your opinion is incorrect.

Steve, here is an additional factor that further proves that powers are added, not
voltages.

With a source of 100 watts in the line the current is 1.4142 a. The current increase
factor is the same as that for voltage, 1.1547, obtained from the expression above used to
obtain the voltage increase factor. Thus 1.4142 a. x 1.1547 = 1.63299 a., the total
current. Now multiplying 1.63299 x the total voltage 81.65 yields 133.33 watts. Also,

I^2Zo also equals 133.33 watts (1.63299^2 x 50 = 133.33).

Steve, no other combination of voltages and currents can yield 133.33 watts with a 3:1 mismatched termination on a 50-ohm line with 100 watts of source power. The forward and reflected voltages are not added in series like batteries connected in series, they are in parallel.

It should also be kept in mind that the phase of the resultant re-reflected voltage and current is zero at the match point when the network is adjusted for total re-reflection and a 50 + j0 input impedance. Thus phase does not enter the picture when adding the reflected power to the source power--they add directly to obtain the total forward power.

Walt, W2DU

3010. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 16:54:18 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9d6jqi$87t$1@uranium.btinternet.com>
Source record: 163953

Does your argument still work OK when the load resistance is 25
ohms ? The VSWR is still 2:1 but Rho is negative.

Reg

3011. Re: Tower/mast question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:04:23 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <3tkdft48eoro77ugppvvesi9cmtv97r4kp@4ax.com>
Source record: 163956

I would get one of the push-up telescoping masts from Radio Shack.
Get the 2-section (19-foot) version. That should be high enough. If
you use one of their wall mounts attached to your roof overhang, you
should not need any extra guys. Unless you happen to live in a high
wind area of course. Just make sure the base is attached firmly to
the ground. You can pound in a piece of rebar, etc. to set the bottom
over to keep it from slipping sideways. If you want to mount the mast
higher (off the ground) then you will have to guy it.

73, Dick - W6CCD

On Mon, 7 May 2001 11:17:20 -0500, "Eric Ruuska"
<eruuska@netnitco.net> wrote:

>Hey Elmers,
>
>I bought my 12yo son his very own 2m radio for his upcoming birthday, and
>thus I need to put up some sorta antenna system for him. I'm pretty much
>committed to building the 12-element yagi from www.6mdx.eurobell.co.uk, but
>I need to get it up in the air. I won't be using a rotater right away, funds
>don't permit it, but we live in an area where all the repeaters are in the
>same direction anyway, as is anyone we'd want to talk to via simplex.
>
>Any suggestions? I'm looking for an inexpensive, yet SAFE way of getting the
>antenna up as high as possible.
>
>Thanks in advance,
>Eric Ruuska
>KB9ZHN
>

3012. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:05:01 UTC
From: Gene <webmaster@zylay.com>
Message-ID: <3AF6D5BD.D4C1833B@zylay.com>
Source record: 163955
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

> "> Hit Wilson's site and read up on what a Wilson Silver Load is....
> >
> > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
> > top loaded coil antenna.
>
> Runs chills up and down my spine just thinking about
> a Wilson Silver Load. Gives me the urge to run and
> buy two, and co-phase them on the sidemirrors for
> anudder 10dB or so.. Ten Fer.

That's a big 10-fer good buddy. I'm sure you gets lots of horizontal
gain with a 4-ft-long half-wave antenna. These dumbasses don't even
recognize marketing hype when it's served to them on a silver platter.

--
Ride to eat, eat to ride. __O
_-\<,_
Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
Please visit http://www.tfn.net/~gfloyd7/cmn/

3013. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:09:23 UTC
From: Gene <webmaster@zylay.com>
Message-ID: <3AF6D6C3.2C6EDA34@zylay.com>
Source record: 163957
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

> > How serious a crime is it? Your assignment - think of all the crimes you can,
> > where does freebanding fit it?
>
> That's a pretty good question. Unless I'm missing something, I would
> rank it right up there with driving on the shoulder of the road where
> such is illegal.

I don't see where it's that minor at all. If one of my kids got hurt because of someone driving down the side of the road, I'd hunt them down and slowly kill them. If someone scared them with a near-miss, their car would not be recognizable when I was done with it. In short, nobody screws with my babies, else I become the mother of all mother bears.

Lots of people take driving infractions lightly until someone gets killed. All of a sudden there is a great wailing and gnashing of teeth as everyone wonders what can be done to make our roads safe. For starters, might I suggest taking ALL laws seriously, not just the ones that fit your own personal agenda?

--
Ride to eat, eat to ride. __O
_-\<,_
Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
Please visit http://www.tfn.net/~gfloyd7/cmn/

3014. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:09:54 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <CFAJ6.8673$kA2.691664@bgtnsc04-news.ops.worldnet.att.net>
Source record: 163958

"Walter Maxwell" <w2du@iourney.com> wrote in message
news:3af59ff0.10264189@news.journey.com...
> Walter:
> >
> >This is part of my response to your challenge. These questions are
> >different than the ones posted sometime ago because I would like us to
> >consider some very basic concepts.
> >
> >I will be posting several sets of questions and I will also set up two
> >examples that we can discuss. This first post will describe the first
> >example of a Zo match established with a lossless tuner. I will describe
> >the steady state conditions and I will then summarize your technical
opinion
> >of how the match is achieved and how the voltages, currents and power
> >interact and combine within the system (you can correct me if I misstate
> >your technical position). I will also describe my technical opinion of
how
> >the match is achieved and how the voltages, currents and power interact.
> >This will establish the basis of our technical disagreement.
> >
> >Second, I will ask a series of questions that relate to basic circuit and
> >transmission line theory. This may seem ridiculous, but it is necessary
for
> >us to agree on the basic concepts so that we can apply them correctly to
the
> >examples and to our technical positions. Since you quote Johnson and
have
> >indicated that your concepts are consistent with the material in his
text, I
> >will use his text - Transmission Lines and Networks (c) 1950 - as the
> >technical reference. Once we agree on the technical basics, we can
discuss
> >the wave mechanics of the two examples in detail.
> >
> >Example 1.
> >
> >A ------ 50 ohms ------ B - Tuner - C ------ 50 ohms ------ D
> >
> >The source is located at point A. It is a voltage source V = 141.422 V.
> >The source impedance is 50 ohms. The impedance seen looking rearward
into
> >the source is 50 ohms.
> >
> >Between points A and B, there is a lossless 50 ohm transmission line, L1.

> >The transmission line is 1 wavelength long.
> >
> >Point B is the Tuner input. The Tuner is lossless. It is a T-network
> >tuner. The first element is a capacitor, C1, with a value of 67.108 pF.
> >The second element is a parallel inductor, L, with a value of 0.6962 uH.
> >The third element is a series capacitor, C2, with a value of 50.0 pF.
Point
> >C is the tuner output.
> >
> >Between points C and D, there is a lossless 50 ohm transmission line, L2.
> >The transmission line is 1 wavelength long.
> >
> >At point D there is an antenna with a feedpoint impedance of 150 ohms.
> >
> >The steady state power levels are as follows: In L1, the forward power
is
> >100 Watts and the reflected power is 0 Watts. In L2, the forward power
is
> >133.33 Watts and the reflected power is 33.33 Watts.
> >
> >Walter's Technical Opinion: The steady state match that occurs at point
B
> >is the result two rearward traveling waves coincident at this point. The
> >voltages associated with these rearward waves are 180 degrees out of
phase
> >such that the resulting voltage is zero but the current is maximum. This
is
> >a virtual short circuit only to the reflected wave such that the
reflected
> >wave is totally re-reflected at point B. The totally re-reflected power
of
> >33.33 Watts adds in phase with the source delivered power of 100 Watts
and
> >the two combine to the total forward power of 133.33 Watts in L2.
> >
> >VE9SRB's technical opinion. The steady state match that occurs at point
B
> >is the result of two rearward traveling waves coincident at this point.
The
> >voltages and currents associated with these two rearward traveling waves
are
> >both 180 degrees out of phase such that the net rearward traveling wave
is
> >zero. There is no virtual short circuit created at point B and there is
no
> >re-reflection of power at point B. The re-reflection of power only
occurs
> >at point C, the tuner output. The total forward power in L2 is a result
of
> >the forward source power at point C adding to the re-reflections at point

C.
> >The forward source power at point C is 75 Watts and the re-reflected
power
> >at point C is 8.33 Watts. These two forward powers combine to the net
> >forward power of 133.33 Watts in L2. Determination of these power levels
> >must be made through a voltage and current analysis of the system.
>
> First Steve, the two sets of rearward traveling wave are coincident at
point B, creating a
> virtual short circuit, as stated in my opinion above.
>

Walter, it is physically impossible in any transmission line system to have the rearward voltage go to zero and yet still have a rearward current. If the rearward traveling voltage goes to zero, the rearward traveling current goes to zero as well. This is not the same as the total voltage and current. It is possible to have the total voltage go to 0 while the total current does not.

> Second, a forward source power of 75 watts and a re-reflected power of
8.33 watts
> combining to obtain 133.33 watts of forward power is absurd from both a
practical and
> mathematical viewpoint. Steve, it is obvious that you are a distinguished
mathematician.
> How can you live with yourself with such a ridiculous statement?

Because I know how to add two complex voltages together. I also know that the total forward voltage is the *vector* sum of the forward source voltage and the re-reflected voltage. I also know that the total forward power is determined from the total forward voltage.

The one concept that you fail to grasp here is that the forward source power delivered to the transmission line is not 100 Watts. The forward source voltage delivered to the transmission line at the tuner output is not 70.71 V. Johnson was very clear as to how to correctly determine the forward source voltage.

To see this, we would have to work an example together, step by step. For some reason you refuse to do this.

> >Now the basics:
> >
> >1. It is my opinion that wave reflections in a transmission line occur
at
> >any impedance discontinuity relative to the transmission line Zo. The
> >reflected voltage is equal to the incident voltage times rho: Vref = rho
Vi.
> >The total voltage at the impedance discontinuity is equal to the incident
> >voltage times (1 + rho): Vtot = (1 + rho) Vi. The reflected power at
any
> >impedance discontinuity is equal to the incident power time |rho|^2: Pref

=
> >|rho|^2 Pi. The power transmitted or delivered to the impedance
> >discontinuity is equal to the incident power times (1 + |rho|^2): Pdel =
(1
> >+ |rho|^2) Pi. These concepts are consistent with the discussion in
> >Johnson's text. Do you concur?
>
> No Steve, I do not concur.
>
> First, the total voltage at the discontinuity is not (1 + rho). If this
were the case the
> total voltage would be 1.5 times the source voltage when the mismatch is
3:1. Far to high.
> For 100 watts delivered to the 50-ohm input to the network the source
voltage is 70.71
> volts. 1.5 x 70.71 = 106.07 volts, 24.42 volts too high.
>
> The real total voltage is square root of the expression 1/(1 - rho^2)
times the source
> voltage. The sqr root of the expression 1/(1 - |rho|^2) equals the forward
voltage
> increase factor, the same as the expression 1/(1 - |rho|^2) equals the
forward power
> increase factor. Let's check it out: The voltage increase factor for a 3:1
SWR (rho = 0.5)
> is 1.1547, for a total voltage of 81.650 v when multiplied by the source
voltage 70.71
> volts for 100 watts delivered to the 50-ohm network input.
>
> Let's check this total voltage value out. 81.65^2 divided by (Zo = 50) =
133.33 watts, the
> precise value when using the forward power increase factor 1/(1 - rho^2)=
1/(1 - 0.25) =
> 1.3333. (100 x 1.3333 = 133.33 watts.
>
> Second, the total forward power, or as you say, Pdel, is not (1 +
|rho|^2). Let's see why.
> Continuing with a 3:1 SWR and rho 0.5, we get (1 + |rho|^2) = 1.25 as the
power increase
> factor. This would mean to total forward power would be only 125 watts
with a 100 watt
> source. But we know from above that the total forward power is 133.33
watts.
>
> Now let's verify that the forward power increase factor is 1/(1 -
|rho|^2). Recall that
> during our earlier and continuing controversy on this point you vehemently
refused to
> agree that this expression returns the forward power increase factor.
However, you must

> have had a change of mind, because in your QEX article Jan/Feb 2001, you specify this
> expression as the forward power increase factor. If I remember correctly it is your Eq 36.
> Consequently, if the correct factor is 1/(1 - |rho|^2) it certainly cannot be (1 +
> |rho|^2), because for rho = 0.5, the resulting values are 1.3333 and 1.25, respectively.
>
> My explanation above shows why your opinion is incorrect.
>

The detailed analysis you describe above has nothing to do with the point I was making regarding a rearward or forward wave arriving at an impedance discontinuity or termination.

If a forward voltage of 70.71 V arrives at a termination with a 3:1 SWR (|rho| = 0.5) the reflected voltage is equal to 35.355 V and the total voltage is equal to 106.065 V. This is very fundamental transmission line theory. That was the point of my discussion. Do you now disagree with these statements?

> >2. Johnson clearly indicates that reflections and re-reflections are the
> >direct result of the impedance discontinuity the wave sees when it reaches
> >the *end* of the transmission line. The forward wave will be reflected
> >based on the impedance it sees at the output end of the line and the
> >reflected wave will be re-reflected based upon the impedance it sees at the
> >input end of the line. From page 16 - "Thus, a terminating impedance
> >different from Zo will give rise to a reflected wave which travels away from
> >the termination. The reflection, upon reaching the other end of the line,
> >will itself be reflected if the terminating impedance at that end is
> >different than Zo." From page 19 - "A wave of voltages of this value
> >travels to the receiving end [load end], where it is reflected with the
> >coefficient, Kr. The reflection travels back to the generator end of the
> >line, where it is reflected with the coefficient Kg." These statements are
> >technically correct. Do you concur?
>
> I concur with everything Johnson says, in fact he is one of my two idols concerning
> transmission lines. Chipman is the other.
> >

No you do not concurr with everything Johnson says. In his analysis, Johnson adds voltages together. You have clearly stated that adding voltages is incorrect and meaningless.

> >3) You made a recent statement in the NG as follows: "Steve's problem
with
> >addition of voltages or powers on a transmission line is that it is NOT
the
> >voltages that add, it's power, even though Steve denies that this is
true.
> >His misconception on this issue is why his powers don't add up correctly.
> >Everything comes out correctly when powers are added, but never come out
> >correctly by adding voltages."
> >
> >You clearly state that voltages on a transmission line do not add. You
also
> >clearly state that everything does not come out correctly by adding
> >voltages. Emphasis on never come out correctly by adding voltage.
> >
> >Let's look at Johnson's opinion on the addition of voltages in a
> >transmission line. Pages 98 - 101. Note
> >that Johnson's entire wave reflection analysis is done with voltage not
> >power. Johnson first defines the initial sending-end voltage: "When the
> >generator is first connected to the line, it sees an impedance equal to
Zo
> >until the arrival of the first reflection from the load. Therefore, for
the
> >first few moments the sending end voltage of the line will be Eg Zo / (Zo
+
> >Zg). This wave, which we will imagine to flow forevermore out of the
> >generator, will be propagated down the line." There are two significant
> >point here. First, the forward driving voltage delivered to the
> >transmission line by the source is a direct function of Zo - nothing
else.
> >Johnson also notes that this wave flows forevermore out of the generator.
> >This is the forward driving voltage applied to the transmission line by
the
> >transmitter. It, in and of itself, never changes. The only voltage
> >changing the total forward driving voltage at the line input are the
> >re-reflections created at the line input. Let's continue: "As the wave
> >reaches the load, it will be reflected with the reflection coefficient Kr
> >and will thus give rise to a second wave which will travel back towards
the
> >generator. ... This wave reaches the generator ... and is reflected there
> >with the coefficient Kg. The new reflection is propagated to the right
> >[towards the load] ... Continuing in this way, we find an infinite series
of
> >reflections, each smaller than the last. The sum is convergent and
> >represents the steady state which is finally established." Apparently
> >Johnson is of the opinion that addng voltages in a transmission line to
> >establish the steady state is correct. You disagree with my addition of
> >voltage, do you disagree with Johnson's?
>
> I agree with Johnson explicitly. What I do not agree with is your
intrepretation of

> Johnson.
>
> My Johnson is still in Florida, and will be until after Dayton. However, I can see the top
> of page 100 clearly from memory where Johnson's equation there derives the voltage of the
> standing wave at any point on the line. If you were to integrate all the voltage values
> along the line derived from Johnson's equation, the result will be a pattern of the
> standing wave.
>
> Johnson's equations on pages 99 and 100 do not in any way derive the forward power in the
> line. However, the geometric series progression on page 99 converges to 1/(1 - a), as you
> well know. And when 'a' is assigned the value of |rho|^2 we get the expression 1(1 -
> |rho|^2) that you must agree is the correct expression for the forward power increase
> factor, because you said so in eq 36 in your QEX article. Apparently you changed your
> opinion on this point, because you disagreed with me concerning it earlier.
>

The "a" in Johnson's equation is not |rhoA|^2 at all. You should notice that it also includes the reflection coefficient of the generator. Neither reflection coefficient is expressed as a magnitude because he is using voltage, not power, in the analysis. Johnson's formula very clearly indicates the re-reflected *voltage* at the generator must be *added* to the forward (applied) source voltage. Although Johnson does this, you have clearly indicated that this is an incorrect approach.

Johnson does not derive the forward power in the line because he knows that powers do not add as you claim them to. Johnson derives the total voltage at any point on the line. The total voltage at any point on the line is the sum of the forward voltage and the rearward voltage.

In deriving the total voltage, Johnson clearly discusses the fact that the total forward voltage at the generator is the sum of the forward (applied) source voltage plus the re-reflected voltages at the input end of the transmission line.

If you look at Johnson's formula you would clearly see the component that makes up the total forward voltage. Your error in your analysis of the system is that you misinterpret Johnson's definition of forward (applied) source voltage. You incorrectly assume that the delivered power (voltage) is the forward source power (voltage), when it is not.

> I must also point out an error in your use of the 1/(1 - a) expression in QEX. The

> expression is only valid for values less than 1. You failed to make that statement in your
> article when you presented the geometric progression.
> >

There are no errors in my QEX formulas. If you look at them closely and then add the forward and rearward voltage expressions to arrive at the total voltage expression, you would see that they match Johnson's formula exactly.

> >On determining the total forward power in the transmission line. Johnson
> >defines the total forward voltage traveling in the transmission line as E+,
> >which is "the net incident [forward] wave composed of the sum [he adds
> >voltages] of
> >all the individual waves that travel towards the load.." To determine the
> >total forward power traveling in the line, Johnson (see pages 149 - 150)
> >uses the expression |E+|^2 / Zo. To determine the total forward power in
> >the line, Johnson first determines the total forward voltage (the net sum of
> >the forward source voltage, determined as the voltage delivered to Zo, and
> >the voltage re-reflections). He does not determine the total forward power
> >through the addition of power. When I determine the total forward power
> >from the addition of forward voltage, you indicate that I have a problem and
> >don't understand the basic concepts. My approach to determining the total
> >forward power is consistent with Johnson's. Is Johnson incorrect as well?
> >Do you concurr with Johnson's approach?
>
> Since I wont have my copy of Johnson until after Dayton I can't see what he does on the
> pages you referenced. I would never consider Johnson incorrect, but the voltages you use
> to determine the forward power are not correct, so I must assume you are not interpreting
> Johnson correctly, as you did not earlier also
>
> Your method of adding voltages involved adding the source voltage 70.71 v (100 watts) and
> the re-reflected voltage of 40.82 v resulting in 111.54 total volts. Squaring 111.54 and
> dividing by (Zo = 50) results in a total forward power of 248.8 watts---incorrect.The
> transmission coefficient 0.75 times 248.8 = 186.8 watts delivered to the 150-ohm load,
> this is 86.6 watts more than the source power. Obviously and evidently 248.8 watts is

> incorrect because you used the voltage method incorrectly.
>
> I should be painfully clear to you now that voltages DON'T ADD at the
re-reflection
> point--powers DO.
> >
> >4) If the forward source voltage in a 50 ohm transmission line is 100 V,
> >what is the forward source power?
>
> 200 Watts
> >
> >5) If the re-reflected voltage in a 50 ohm transmission line is 100 V,
what
> >is the re-reflected power?
>
> The answer is indeterminate because you have not defined the necessary
givens. What is the
> source power, and what is the value of mismatch teminating the line?
> >

You know the re-reflected voltage is 100 V. The source power has nothing to do with the answer. The value of the mismatch has nothing to do with the answer because the re-reflected voltage is defined as 100 V. The re-reflected power is 200 W.

> >6) If the forward source voltage is 100 V and the re-reflected voltage
is
> >100 V and these voltages are in-phase, what is the total forward voltage?
> >What is the total forward power?
>
> The total forward power is zero, because the termination on the line is
either a short or
> an open circuit. This line termination is determined because the total
forward voltage is
> reflected, and no power is delivered to a short or open circuit.
> >

Actually, this was a poor choice of voltages. I'm not going to ask this again.

> >7) If the forward source power is 200 W and the re-reflected power is 200
W,
> >what it the total forward power? What is the total forward voltage?
>
> This is not a practical question. It again is concerned with a totally
reflecting load.
> >
>

Poor choice of power levels. I'm not going to ask this again.

> >I think that this pretty much covers the basics for now. After we
discuss
> >these issues, we can take a look at the above example and see if our
> >analysis and approach is consistent with Johnson's technical discussions
or
> >not.
> >
> >Steve VE9SRB
> >
> I believe I have achived the goal of my challenge, Steve, so what say now?
>
> Walt, W2DU
> >

Nothing has been achieved at this point. You do not even remotely understand my technical position and it is clear you do not understand Johnson's. Let's stop the mutual blustering and work through an example using voltages. Willing to do this here?

Steve VE9SRB

3015. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:11:58 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <yHAJ6.8675$kA2.690117@bgtnsc04-news.ops.worldnet.att.net>
Source record: 163959

"Walter Maxwell" <w2du@iourney.com> wrote in message
news:3af6af3a.1283625@news.journey.com...
> On Sun, 06 May 2001 20:37:23 GMT, w2du@iourney.com (Walter Maxwell) wrote:
>
> These concepts are consistent with the discussion in
> >>Johnson's text. Do you concur?
> >
> >No Steve, I do not concur.
> >
> >First, the total voltage at the discontinuity is not (1 + rho). If this
were the case the
> >total voltage would be 1.5 times the source voltage when the mismatch is
3:1. Far to high.
> >For 100 watts delivered to the 50-ohm input to the network the source
voltage is 70.71
> >volts. 1.5 x 70.71 = 106.07 volts, 24.42 volts too high.
> >
> >The real total voltage is square root of the expression 1/(1 - rho^2)
times the source
> >voltage. The sqr root of the expression 1/(1 - |rho|^2) equals the
forward voltage
> >increase factor, the same as the expression 1/(1 - |rho|^2) equals the
forward power
> >increase factor. Let's check it out: The voltage increase factor for a
3:1 SWR (rho = 0.5)
> >is 1.1547, for a total voltage of 81.650 v when multiplied by the source
voltage 70.71
> >volts for 100 watts delivered to the 50-ohm network input.
> >
> >Let's check this total voltage value out. 81.65^2 divided by (Zo = 50) =
133.33 watts, the
> >precise value when using the forward power increase factor 1/(1 - rho^2)=
1/(1 - 0.25) =
> >1.3333. (100 x 1.3333 = 133.33 watts.
> >
> >Second, the total forward power, or as you say, Pdel, is not (1 +
|rho|^2). Let's see why.
> >Continuing with a 3:1 SWR and rho 0.5, we get (1 + |rho|^2) = 1.25 as the
power increase
> >factor. This would mean to total forward power would be only 125 watts
with a 100 watt
> >source. But we know from above that the total forward power is 133.33
watts.
> >

> >Now let's verify that the forward power increase factor is 1/(1 -
|rho|^2). Recall that
> >during our earlier and continuing controversy on this point you
vehemently refused to
> >agree that this expression returns the forward power increase factor.
However, you must
> >have had a change of mind, because in your QEX article Jan/Feb 2001, you
specify this
> >expression as the forward power increase factor. If I remember correctly
it is your Eq 36.
> >Consequently, if the correct factor is 1/(1 - |rho|^2) it certainly
cannot be (1 +
> >|rho|^2), because for rho = 0.5, the resulting values are 1.3333 and
1.25, respectively.
> >
> >My explanation above shows why your opinion is incorrect.
>
> Steve, here is an additional factor that further proves that powers are
added, not
> voltages.
>
> With a source of 100 watts in the line the current is 1.4142 a. The
current increase
> factor is the same as that for voltage, 1.1547, obtained from the
expression above used to
> obtain the voltage increase factor. Thus 1.4142 a. x 1.1547 = 1.63299 a.,
the total
> current. Now multiplying 1.63299 x the total voltage 81.65 yields 133.33
watts. Also,
> I^2Zo also equals 133.33 watts (1.63299^2 x 50 = 133.33).
>
> Steve, no other combination of voltages and currents can yield 133.33
watts with a 3:1
> mismatched termination on a 50-ohm line with 100 watts of source power.
The forward and
> reflected voltages are not added in series like batteries connected in
series, they are in
> parallel.
>
> It should also be kept in mind that the phase of the resultant
re-reflected voltage and
> current is zero at the match point when the network is adjusted for total
re-reflection
> and a 50 + j0 input impedance. Thus phase does not enter the picture when
adding the
> reflected power to the source power--they add directly to obtain the total
forward power.
>
> Walt, W2DU
>

Let's work a simple example together with voltages and see how it all works out? I'll pick a simple example, fair enough?

Steve

3016. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:11:58 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF6D75E.91D1ECD1@IEEE.org>
Source record: 163960
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Gene wrote:
>
> > > How serious a crime is it? Your assignment - think of all the crimes you can,
> > > where does freebanding fit it?
> >
> > That's a pretty good question. Unless I'm missing something, I would
> > rank it right up there with driving on the shoulder of the road where
> > such is illegal.
>
> I don't see where it's that minor at all. If one of my kids got hurt
> because of someone driving down the side of the road, I'd hunt them down
> and slowly kill them.

I'm with you, Gene. If you think I said "right down there", you are
mistaken. I ride a bicycle. Vehicles driving on the shoulder are
deadly weapons. What gave you the idea I consider it minor?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3017. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:18:12 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <oNAJ6.8678$kA2.692314@bgtnsc04-news.ops.worldnet.att.net>
Source record: 163961

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF47776.852C8F4F@IEEE.org...
> Ralph Mowery wrote:
> >
> > Because the meter is messed up. With equal resistors you have to have
> > equal voltages.
>
> Nope you don't, Ralph. There's 1/4WL of 450 ohm ladder-line between
> R1 and R2 that I forgot to tell you about. :-)
>
> > W6RCecilA wrote:
> > >
> > > Consider the following circuit:
> > >
> > > +------R1----------------------------+
> > > | 25 ohms |
> > > | |
> > > 100v gen R2 25 ohms
> > > | |
> > > | |
> > > +-----------------------------------+
> > >
> > > Voltage across R1 is 0.31v and voltage across R2 is 5.54v
> > > Generator voltage is 100v Generator current is 12.3 mA
> > > Why doesn't Kirchhoff's voltage laws work?
> > >

Kirchoff's voltage law works just fine after you fully describe the problem.

At the input to the 1/4 WL line the total voltage will be equal to 99.69 V.
99.69 + 0.31 = 100 V.

Steve VE9SRB

3018. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:19:13 UTC
From: la8ak@online.no
Message-ID: <3af6d806.944590816@news.online.no>
Source record: 163962

On Sun, 06 May 2001 22:51:43 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:

>On Sun, 06 May 2001 20:42:32 GMT, la8ak@online.no (J M Noeding) wrote:
>
>>X-beam system is not achieved from supergain, it uses 3+3 dipoles with
>>reflectors. 3 dipoles on one side is fed in paralellell as are the 3
>>opposite, and a relay switches one field at the time at 500Hz
>>frequency. The effect is a very narrow beam
>
>Why would the effect be a "very narrow beam"? It's just a two element
>antenna, a shortened one at that. The additional parallel dipoles not
>used certainly don't help things.
>
>73 Tom

3x 2el - it is fullwave yagies, haven't checked the gain, but believe
it is 10-12dB. And when you make an array of 6x 2el yagies on 30MHz
(and higher) it looks rather impressive, the vertical yagies are
stacked horisontally 1/2 wave apart (see Knickebein)

I don't know the theory, but it is mentioned in "The Secret War" by
Prof. R.V.Jones, I believe it is something in the effect of switching
the two 3x 2el yagy arrays with 500Hz rate, you achieve a DF effect.
It would be interesting to check it out on 2m towards the local
repeater, but used for listening to the carrier with an AM receiver

73
Jan-Martin

3019. Visit at - www.ab7sl.com -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:22:36 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <wRAJ6.3$Qx.302@newsread1.prod.itd.earthlink.net>
Source record: 163963
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy

Lots of STUFF to do at www.ab7sl.com such as...

All - NEW - W9INN antenna page!!

1. Ham Radio Links (some unusual)
2. Several Ham Radio Web Rings !
3.AB7SL Biography
4.Personal Photos
5.Station Description
6.Software Downloads
7.The DX Page (w / Telnet links)
8.Downloadable IOTA List
9.W7NH - Elmer Tribute
8.Prescott Arizona Page
9.Online DX Logbook
10.3D Art Gallery (downloads)
11.Music Page (downloads)
12.Frequently Asked Questions
13.Free-For-All Links Page
14.Guestbook
15.Equipment Photos
16.Downloadable DXCC Countries List
17.Downloadable ITU Prefixes List
18.W9INN Antennas Page
--

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

3020. Re: Tower/mast question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:24:48 UTC
From: JerryL <jlockett@onemain.com>
Message-ID: <9d6ln6$gtcl1$1@ID-55752.news.dfncis.de>
Source record: 163964

Unless you are just doing it just for 'fun' I seriously doubt that you will need a beam antenna of any sort much less a 12-element yagi to get into a repeater. With a bit of height, a plain old standard 1/4 wave groundplane will probably do just fine. As long as you have pretty much a clear 'view' (at the antenna height) of the mountains the repeaters are on, you should be able to hit them with almost anything you stick up in the air. Try a rubber ducky antenna or a 19" vertical just plugged in on the back of the rig, and see if you can bring any of the repeaters up, that will give you an idea of how much antenna you really need. It doesn't take much to hit most repeaters, which of course is the whole idea.. A 12-element beam would most likely be overkill, unless you are working simplex and turning it towards the signals you need, etc..

de Jerry -n6jp-

"Eric Ruuska" <eruuska@netnitco.net> wrote in message
news:3af6ca08@news.netnitco.net...
> Hey Elmers,
>
> I bought my 12yo son his very own 2m radio for his upcoming birthday, and
> thus I need to put up some sorta antenna system for him. I'm pretty much
> committed to building the 12-element yagi from www.6mdx.eurobell.co.uk,
but
> I need to get it up in the air. I won't be using a rotater right away,
funds
> don't permit it, but we live in an area where all the repeaters are in the
> same direction anyway, as is anyone we'd want to talk to via simplex.
>
> Any suggestions? I'm looking for an inexpensive, yet SAFE way of getting
the
> antenna up as high as possible.
>
> Thanks in advance,
> Eric Ruuska
> KB9ZHN
>
>

3021. Re: Tower/mast question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:33:13 UTC
From: Eric Ruuska <eruuska@netnitco.net>
Message-ID: <3af6dbd0$1@news.netnitco.net>
Source record: 163965

Jerry,

I've tried using a 2m mobile whip on my IC706MkII, and not gotten anywhere with it. We're a good 30 miles from the nearest repeater (that I know of), and about 20 miles from the nearest potential simplex station. So in my effort to increase range, he's getting an IC2100H which can run in excess of 50w (compared to 20w on the 706), plus an antenna with additional gain. The terrain around here is pretty flat, no big hills or mountains or anything, but distance is working against us.

Thanks and 73,
Eric Ruuska
KB9ZHN

JerryL wrote in message <9d6ln6$gtcl1$1@ID-55752.news.dfncis.de>...
>Unless you are just doing it just for 'fun' I seriously doubt that you will
>need a beam antenna of any sort much less a 12-element yagi to get into a
>repeater. With a bit of height, a plain old standard 1/4 wave groundplane
>will probably do just fine. As long as you have pretty much a clear 'view'
>(at the antenna height) of the mountains the repeaters are on, you should
be
>able to hit them with almost anything you stick up in the air. Try a
rubber
>ducky antenna or a 19" vertical just plugged in on the back of the rig, and
>see if you can bring any of the repeaters up, that will give you an idea of
>how much antenna you really need. It doesn't take much to hit most
>repeaters, which of course is the whole idea.. A 12-element beam would most
>likely be overkill, unless you are working simplex and turning it towards
>the signals you need, etc..
>
>de Jerry -n6jp-
>

3022. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:33:19 UTC
From: w2du@iourney.com
Message-ID: <3af6d456.10783686@news.journey.com>
Source record: 163966

On Mon, 07 May 2001 16:45:39 GMT, "VE9SRB" <srbest@att.net> wrote:

>> Gentlemen:
>>
>> I would like to lay rest to Steve's erroneous claim that reflected voltage
>adds to the
>> source voltage to establish the total forward power, and refute with proof
>that
>> reflected power adds to the source power to establish the total forward
>power when
>> a transmission line is terminated in a mismatch.
>>
>> Assume a lossless 50-ohm line terminated in a pure 150-ohm load. The
>result is a
>> reflection coefficient magnitude rho of 0.5, a power reflection
>coefficient rho*2 of
>> 0.25, and a power transmission coefficient (1 - rho*2) = (1 - 0.25) and an
>SWR of
>> 2:1. The forward power increase factor is 1/(1 - rho*2), which Steve
>earlier
>> vehemently denied in extended correspondence with me, but has apparently
>> discovered it is correct, because he uses this expression in his QEX
>Jan/Feb 2001
>> QEX article. Consequently, the forward-power increase factor for rho = 0.5
>is
>> 1/0.75 = 1.33333. Thus, when the source power is 100 watts the total
>forward
>> power is 133.333 watts. 100 watts plus 33.3333 watts must equal 133.33
>watts.
>> There can be no argument here! Therefore reflected power ADDS to the
>source
>> power to establish the total forward power.
>>
>
>Why do you continually misrepresent my technical statements.

I have not misrepresented your technical statements. I have tons of your statements
received in your emails that say precisely what I'm now saying.
>
>The relationship Pfwd = Pdel /(1 - |rhoA|^2) is not based on the
>re-reflections that occur at the input of the transmission line. It does
>not validate the concept of total power re-reflection or power addition at
>the input to the transmission line.

This is only your opinion and it is wrong.
>
>The relationship Pfwd = Pdel / (1 - |rhoA|^2) is simply derived from the
>relationship Pdel = Pfwd - Pref. It is a steady state relationship valid
>independent of an impedance match or impedance mismatch in the system.
>
>Let's assume we have a lossless transmission line. The forward power at the
>line input is Pfwd. The reflected power at the line input is Pref. The
>forward power arriving at the antenna is Pfwd (lossless line). The
>reflected power at the antenna is Pref = Pfwd |rhoA|^2. The reflected power
>arriving at the line input is Pref = Pfwd |rhoA|^2. Now, the delivered
>power, Pdel = Pfwd - Pref. Rewriting, we have Pdel = Pfwd - Pfwd |rhoA|^2 =
>Pfwd (1 - |rhoA|^2). This can be re-written as Pfwd = Pdel / (1 -
>|rhoA|^2). This relationship is not a validation of power addition at the
>line input. In fact, this relationship is valid when an impedance match
>does not exist. Are you now going to tell us that a total re-reflection of
>power occurs even when a Zo match does not exist?

It's only your opinion that a Zo match does not exist, and again, your opinion is wrong.
>
>> So now let's examine the arithmetic considering the addition of powers. In
>a
>> lossless line all power entering the line is absorbed in the load,
>regardless of the
>> mismatch. Therefore, in this example, 100 watts supplied by the source is
>totally
>> absorbed in the 150-ohm load. The power transmission coefficient is 0.75,
>and
>> 133.33 x 0.75 = 100. Continuing, the power reflection coefficient is 0.25,
>and
>> 133.33 x 0.25 = 33.333. 100 watts plus 33.333 watts = 133.33 watts, ERGO,
>case
>> proven.
>>
>
>Case not proven. You just proved that Pdelivered = Pforward - Preflected.
>
>
>> So now let's examine the arithmetic considering the addition of voltages.
>We will
>> discover that adding the voltages as if they were coming from batteries in
>series
>> yields totally erroneous answers. With 100 watts entering a 50-ohm line
>the
>> voltage is 70.71 v. With 33.333 watts of reflected power the reflected
>voltage on a
>> 50-ohm line is 40.82 v. The sum of 70.71 and 40.82 = 111.54 v. Now 111.54
>v on
>> a 50-ohm line represents 248.8 watts. According to Steve's
>voltage-addition
>> method this means that the total forward power is 248.8 watts.

>>
>
>Again, a misrepresentation of my technical position. I never said that the
>forward power on the line should be 248.8 Watts. I agree that the forward
>power on the line is 133.33 Watts.

As I said above, I have tons of data in your email responses to me that the total forward power is 248.8 watts and that the reflected voltage is 40.82 v., based on your own calculations. You have apparently changed your mind concerning the total forward power now that you agree that the power is 133.33 watts, the correct value.
>
>The problem that you have with the concept of voltage addition is that you
>still fail to understand how to correctly determine the forward source
>voltage and the re-reflected voltage at the transmission line input. The
>forward source voltage at the transmission line input is not 70.71 V and the
>re-reflected voltage is not 40.82 V. The correct forward source voltage at
>the transmission line input is 61.24 V and the correct re-reflected voltage
>is 20.41 V. These two voltages add in-phase to a total voltage of 81.65 V
>for a total forward power of 133.33 Watts. If you had any serious interest
>in understanding this you would ask me how I determined these voltages, we
>would compare this with Johnson's discussion, and this disagreement would
>end.

Will you please show me and the others on this news group how you get 61.24 volts on a 50-ohm line with a source delivering 100 watts? If you get 61.24 volts it is you who has the problem of correctly determining the voltage across a 50-ohm line with 100 watts delivered by the generator. Voltage across the line is the sqr root of the power-Zo product, which is the sqr root of 100 x 50, which equals 70.71 volts. So again I ask you, how do you get 61.24 volts?
>
>
>> So now let's see what happens when we apply the voltage and power
>reflection
>> coefficients and the power transmission coefficient.
>>
>> The power transmission coefficient is 0.75, which when multiplied by 248.8
>=
>> 186.6 watts absorbed in the 150-ohm load. This is 86.6 watts more than the
>100
>> watts delivered by the source, an impossibility.
>>
>> The voltage reflection coefficient of 0.5, when multiplied by 111.54 =
>55.77 v.
>> This is 14.95 volts more than that with 33.333 watts on the line.
>>
>> The power reflection coefficient of 0.25, when multiplied by 248.8 = 62.2
>watts.
>> This is 28.9 watts more than the 33.33 watts actually reflected.
>>
>
>These calculations and statements have nothing to do with my technical

>position. They are not a correct application of the concepts that I have
>been discussing.
>
These numbers are precisely the ones you submitted to me in past email correspondence when you first disagreed with my conclusion. Why would I change them?

>> With Steve's method the expression is (Vfwd + Vref)*2/Zo-wrong!
>>
>
>THIS IS NOT MY EXPRESSION. Why do you continue to misrepresent my technical
>position.

This is PRECISELY the expression you used. When I told you it should be (Vfwd^2/Zo + Vref^2/Zo) you slapped me down with some such statement that I'm incompetent.

>
>> Using the correct method the expression is (Vfwd*2)/Zo + (Vref*2)/Zo =
>total
>> forward power.
>>
>
>This is not a correct expression. It does not correctly account for the
>fact the we must add complex voltages with vector addition.

It is the correct expression, and vector addition is unneeded, because the phase of the re-reflected voltage and current are already at zero phase relative to the forward waves. If you understood the reflection mechanics occurring at the match point you would realize that there are no complex voltages or currents involved after the re-reflection. This is the very point in my QEX Mar/Apr 1998 that you fail to grasp. And you called me incompetent!
>
>We must consider the differences that occur when Vfwd and Vref have
>differing phase angles.
>
As I just said, there are NO differing phase angles after re-reflection.

>> As I said at the beginning of this post, this should lay to rest the
>erroneous method
>> of adding the reflected voltage to the forward voltage to obtain the total
>forward
>> power.
>>
>> Walt, W2DU
>>
>
>Are you willing to stop the blustering and work an example together with
>voltages?

Your continued harping on using voltage instead of power is the only blustering here. You are still barking up the wrong tree. As long as you continue to be unrealistic I see no further point in our discussion, because, as I said earlier, it has become fruitless. We are exactly where we were two years ago.

Walt, W2DU

3023. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:41:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF6DE42.B3D6559D@IEEE.org>
Source record: 163967

VE9SRB wrote:
> I also know that the total forward power is
> determined from the total forward voltage.

This is where you are making your conservation of energy error, Steve.
Your statement confuses cause and effect. The total forward voltage is
determined from the total forward energy, not vice versa. The energy
involved in the destructive interference pattern MUST be taken into
account. It adds to the electric fields and the magnetic fields and
helps to determine the magnitude of the voltage and current.

> The one concept that you fail to grasp here is that the forward source power
> delivered to the transmission line is not 100 Watts.

Of course it is, Steve. Since there is no reflected power going back toward
the transmitter, there is absolutely no place for it to go except toward
the load. You cannot be allowed to get away with disappearing energy.

> To see this, we would have to work an example together, step by step. For
> some reason you refuse to do this.

It's pretty simple, Steve. The 25w that would have been reflected back
toward the transmitter is instead canceled by destructive interference
at the Z0-match and joins the forward energy waves.

> If a forward voltage of 70.71 V arrives at a termination with a 3:1 SWR
> (|rho| = 0.5) the reflected voltage is equal to 35.355 V and the total
> voltage is equal to 106.065 V. This is very fundamental transmission line
> theory. That was the point of my discussion. Do you now disagree with
> these statements?

The 35.355v is canceled by the destructive interference pattern. The energy
associated with that 35.355v joins the forward energy wave. We know that
because there is no reflected energy traveling back to the transmitter.

> No you do not concurr with everything Johnson says. In his analysis,
> Johnson adds voltages together. You have clearly stated that adding
> voltages is incorrect and meaningless.

It's not always incorrect and meaningless, Steve. But one must know exactly
when it is incorrect and meaningless.

> Johnson does not derive the forward power in the line because he knows that
> powers do not add as you claim them to. Johnson derives the
> total voltage at any point on the line. The total voltage at any point on
> the line is the sum of the forward voltage and the rearward voltage.

That approach fails when destructive interference causes cancellation of voltages. You simply must know when it is valid and when it is not.

> In deriving the total voltage, Johnson clearly discusses the fact that the
> total forward voltage at the generator is the sum of the forward (applied)
> source voltage plus the re-reflected voltages at the input end of the
> transmission line.

That's in a non-Z0-matched system. In a Z0-matched system, zero reflected voltage reaches the generator.

> Nothing has been achieved at this point. You do not even remotely
> understand my technical position and it is clear you do not understand
> Johnson's. Let's stop the mutual blustering and work through an example
> using voltages. Willing to do this here?

Why don't you two start by agreeing that the destructive interference pattern at a Z0-match causes both the voltages and currents, involved in the destructive interference, to go to zero? No agreement is possible until you two agree on that point.
--
http://www.mindspring.com/~w6rca

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3024. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:43:04 UTC
From: w2du@iourney.com
Message-ID: <3af6dcad.12918726@news.journey.com>
Source record: 163968

On Mon, 07 May 2001 17:11:58 GMT, "VE9SRB" <srbest@att.net> wrote:

>Let's work a simple example together with voltages and see how it all works
>out? I'll pick a simple example, fair enough?

>Steve

You have already shown in your last post in the 'standing wave' thread that your voltage approach is incorrect, unless you can explain satisfactorily how 100 watts on a 50-ohm line yields 61.24 volts instead of 70.71 v. Why should we continue when the primary given is aleady incorrect?

Walt l

3025. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:47:59 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF6DFCF.77B2DE34@IEEE.org>
Source record: 163869

VE9SRB wrote:
> We must consider the differences that occur when Vfwd and Vref have
> differing phase angles.

The only relative phase angles possible at a Z0-match are zero degrees
and 180 degrees, so simple plus or minus signs can be used. No need
for phase angles and trig functions. Keeping it as simple as possible
exposes all sorts of illogic.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3026. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:53:15 UTC
From: w2du@iourney.com
Message-ID: <3af6de77.13376384@news.journey.com>
Source record: 163870

On Mon, 07 May 2001 12:41:22 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>VE9SRB wrote:

>> Nothing has been achieved at this point. You do not even remotely
>> understand my technical position and it is clear you do not understand
>> Johnson's. Let's stop the mutual blustering and work through an example
>> using voltages. Willing to do this here?

No Steve, we don't even remotely understand your technical position because it is fatally flawed. It is also becoming more and more clear to me that you don't understand Johnson either, because you are consistently misinterpreting his statements.
>
>Why don't you two start by agreeing that the destructive interference
>pattern at a Z0-match causes both the voltages and currents, involved
>in the destructive interference, to go to zero? No agreement is possible
>until you two agree on that point.

Cecil, I must disagree with your last statement, because at the match point voltage and current never go to zero simultaneously, only one or the other. At a short the voltage goes to zero and current is maximum. Conversely, at an open the current goes to zero and voltage is maximum.

Walt, W2DU

>
>
>-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
>http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3027. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 17:57:28 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF6E208.7642DDEC@IEEE.org>
Source record: 163871

VE9SRB wrote:
> If 100 V added in-phase with 100 V is equal to 141.42 V, then what is 100 V
> @ 0 degrees added with 100 V @ 90 degrees?

You have just proven why voltages cannot be added and how you are confused about cause and effect. The voltages DO NOT add directly. The electromagnetic energy adds which then determines the voltage and current given the boundary conditions. If you waded through Maxwell's Equations, you would immediately see the error of your ways.

100v added in-phase with 100v IN SERIES equals 200v. 100v added in-phase with 100v IN PARALLEL equals 100v. If we double the power in a transmission line, we do not double the voltage nor the current because neither is in series or in parallel. It is more complicated than that. We double the energy in the electromagnetic fields which CAUSES the resultant voltage and current to be the square root of two times the original voltage and current.
Your simple-minded approach to adding voltages is invalid. I'll say it once again. You MUST consider the ENERGY in the fields for a valid solution.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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3028. Re: Eleven Mtrs/Freebanders/Feds

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 18:06:33 UTC
From: N3VST <not@chance.com>
Message-ID: <9uBJ6.11048$R2.10234337@newsrump.sjc.telocity.net>
Source record: 163872

Well said Butch
"Butch Magee" <lynyrd@netdoor.com> wrote in message
news:3AF5BF95.AA8DBE50@netdoor.com...
> I remember when 11 meters was a ham band. I remember when the FCC was
> going to regulate the 'new' Citizens Band Radio Program. I remember
> when the Feds were overwhelmed with megawatts of voluminous squalling,
> screaming and cussing and I remember when the fedz just gave up and
> "de-regulated" the Citizens Band, just giving up because they could not
> control the unbelievable mess and couldn't CATCH NOBODY doing anything
> wrong/illegal on 11 meters.
>
> We now have "free-banders". It won't be long now before the fedz just
> give up on the new CB Band. I don't know about the rest of you Hams,
> but I feel threatened that 10 meters is next in line to be de-regulated
> by an impotent and understaffed agency of my government that can and
> will nail my ass if I were to violate rules, but are unable to hammer
> some punk operating totally illegally.
>
> Butch Magee KF5DE
>

3029. Re: Quick disconnect for a G5RV

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 18:12:10 UTC
From: Ken Jacobs <kjacobs@eudoramail.com>
Message-ID: <_zBJ6.88$Qx.14625@newsread1.prod.itd.earthlink.net>
Source record: 163873

Thanks Dave,
The Wireman may get some in after the Dayton show.

"KC1DI" <elbc@pivot.net> wrote in message
news:3af679b1_1@news.cybertours.com...
>
> "Ken Jacobs" <tekwrite@mindspring.com> wrote in message
> news:Sj_I6.123$PX6.30749@newsread1.prod.itd.earthlink.net...
> > I am putting up a G5RV dipole. I have to make one splice anyway to
splice
> > new coax running to the house into the coax already attached to the
> antenna.
> > That is about 100 feet from the house. I would like to have some kind of
> > quick disconnect (for storms) that is also waterproof.
> >
> > I have two barrel connectors and four PLT-259 connectors.
> >
> > Thanks.
> >
> > Ken
> >
> Hi Ken ,
> The Best WX proof Quick disconect that I'm aware of is an N Type connector
> that is a one twist disconect.. don't exactly know where you might find
them
> in today's market. but would try sources like the Wireman , RadioWorks ,
> Davis R.F. Etc.
> Happy hunting
> Dave kc1di
>
>
>
>

3030. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 18:13:25 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <9BBJ6.9356$t12.693357@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163874

"Walter Maxwell" <w2du@iourney.com> wrote in message
news:3af6d456.10783686@news.journey.com...
> On Mon, 07 May 2001 16:45:39 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>
> >> Gentlemen:
> >>
> >> I would like to lay rest to Steve's erroneous claim that reflected
voltage
> >adds to the
> >> source voltage to establish the total forward power, and refute with
proof
> >that
> >> reflected power adds to the source power to establish the total forward
> >power when
> >> a transmission line is terminated in a mismatch.
> >>
> >> Assume a lossless 50-ohm line terminated in a pure 150-ohm load. The
> >result is a
> >> reflection coefficient magnitude rho of 0.5, a power reflection
> >coefficient rho*2 of
> >> 0.25, and a power transmission coefficient (1 - rho*2) = (1 - 0.25) and
an
> >SWR of
> >> 2:1. The forward power increase factor is 1/(1 - rho*2), which Steve
> >earlier
> >> vehemently denied in extended correspondence with me, but has
apparently
> >> discovered it is correct, because he uses this expression in his QEX
> >Jan/Feb 2001
> >> QEX article. Consequently, the forward-power increase factor for rho =
0.5
> >is
> >> 1/0.75 = 1.33333. Thus, when the source power is 100 watts the total
> >forward
> >> power is 133.333 watts. 100 watts plus 33.3333 watts must equal 133.33
> >watts.
> >> There can be no argument here! Therefore reflected power ADDS to the
> >source
> >> power to establish the total forward power.
> >>
> >
> >Why do you continually misrepresent my technical statements.
>

> I have not misrepresented your technical statements. I have tons of your
statements
> received in your emails that say precisely what I'm now saying.
> >
> >The relationship Pfwd = Pdel /(1 - |rhoA|^2) is not based on the
> >re-reflections that occur at the input of the transmission line. It does
> >not validate the concept of total power re-reflection or power addition
at
> >the input to the transmission line.
>
> This is only your opinion and it is wrong.
> >
> >The relationship Pfwd = Pdel / (1 - |rhoA|^2) is simply derived from the
> >relationship Pdel = Pfwd - Pref. It is a steady state relationship valid
> >independent of an impedance match or impedance mismatch in the system.
> >
> >Let's assume we have a lossless transmission line. The forward power at
the
> >line input is Pfwd. The reflected power at the line input is Pref. The
> >forward power arriving at the antenna is Pfwd (lossless line). The
> >reflected power at the antenna is Pref = Pfwd |rhoA|^2. The reflected
power
> >arriving at the line input is Pref = Pfwd |rhoA|^2. Now, the delivered
> >power, Pdel = Pfwd - Pref. Rewriting, we have Pdel = Pfwd - Pfwd
|rhoA|^2 =
> >Pfwd (1 - |rhoA|^2). This can be re-written as Pfwd = Pdel / (1 -
> >|rhoA|^2). This relationship is not a validation of power addition at
the
> >line input. In fact, this relationship is valid when an impedance match
> >does not exist. Are you now going to tell us that a total re-reflection
of
> >power occurs even when a Zo match does not exist?
>
> It's only your opinion that a Zo match does not exist, and again, your
opinion is wrong.
> >
> >> So now let's examine the arithmetic considering the addition of powers.
In
> >a
> >> lossless line all power entering the line is absorbed in the load,
> >regardless of the
> >> mismatch. Therefore, in this example, 100 watts supplied by the source
is
> >totally
> >> absorbed in the 150-ohm load. The power transmission coefficient is
0.75,
> >and
> >> 133.33 x 0.75 = 100. Continuing, the power reflection coefficient is
0.25,
> >and

> >> 133.33 x 0.25 = 33.333. 100 watts plus 33.333 watts = 133.33 watts,
ERGO,
> >case
> >> proven.
> >>
> >
> >Case not proven. You just proved that Pdelivered = Pforward -
Preflected.
> >
> >
> >> So now let's examine the arithmetic considering the addition of
voltages.
> >We will
> >> discover that adding the voltages as if they were coming from batteries
in
> >series
> >> yields totally erroneous answers. With 100 watts entering a 50-ohm line
> >the
> >> voltage is 70.71 v. With 33.333 watts of reflected power the reflected
> >voltage on a
> >> 50-ohm line is 40.82 v. The sum of 70.71 and 40.82 = 111.54 v. Now
111.54
> >v on
> >> a 50-ohm line represents 248.8 watts. According to Steve's
> >voltage-addition
> >> method this means that the total forward power is 248.8 watts.
> >>
> >
> >Again, a misrepresentation of my technical position. I never said that
the
> >forward power on the line should be 248.8 Watts. I agree that the
forward
> >power on the line is 133.33 Watts.
>
> As I said above, I have tons of data in your email responses to me that
the total forward
> power is 248.8 watts and that the reflected voltage is 40.82 v., based on
your own
> calculations. You have apparently changed your mind concerning the total
forward power now
> that you agree that the power is 133.33 watts, the correct value.
> >
> >The problem that you have with the concept of voltage addition is that
you
> >still fail to understand how to correctly determine the forward source
> >voltage and the re-reflected voltage at the transmission line input. The
> >forward source voltage at the transmission line input is not 70.71 V and
the
> >re-reflected voltage is not 40.82 V. The correct forward source voltage
at

> >the transmission line input is 61.24 V and the correct re-reflected
voltage
> >is 20.41 V. These two voltages add in-phase to a total voltage of 81.65
V
> >for a total forward power of 133.33 Watts. If you had any serious
interest
> >in understanding this you would ask me how I determined these voltages,
we
> >would compare this with Johnson's discussion, and this disagreement would
> >end.
>
> Will you please show me and the others on this news group how you get
61.24 volts on a
> 50-ohm line with a source delivering 100 watts? If you get 61.24 volts it
is you who has
> the problem of correctly determining the voltage across a 50-ohm line with
100 watts
> delivered by the generator. Voltage across the line is the sqr root of the
power-Zo
> product, which is the sqr root of 100 x 50, which equals 70.71 volts. So
again I ask you,
> how do you get 61.24 volts?
> >

I will respond in the "Reflections" thread.

> >
> >> So now let's see what happens when we apply the voltage and power
> >reflection
> >> coefficients and the power transmission coefficient.
> >>
> >> The power transmission coefficient is 0.75, which when multiplied by
248.8
> >=
> >> 186.6 watts absorbed in the 150-ohm load. This is 86.6 watts more than
the
> >100
> >> watts delivered by the source, an impossibility.
> >>
> >> The voltage reflection coefficient of 0.5, when multiplied by 111.54 =
> >55.77 v.
> >> This is 14.95 volts more than that with 33.333 watts on the line.
> >>
> >> The power reflection coefficient of 0.25, when multiplied by 248.8 =
62.2
> >watts.
> >> This is 28.9 watts more than the 33.33 watts actually reflected.
> >>
> >>
> >These calculations and statements have nothing to do with my technical
> >position. They are not a correct application of the concepts that I have

> >been discussing.
> >
> These numbers are precisely the ones you submitted to me in past email correspondence when
> you first disagreed with my conclusion. Why would I change them?
>
> >> With Steve's method the expression is (Vfwd + Vref)*2/Zo-wrong!
> >>
> >
> >THIS IS NOT MY EXPRESSION. Why do you continue to misrepresent my technical
> >position.
>
> This is PRECISELY the expression you used. When I told you it should be (Vfwd^2/Zo +
> Vref^2/Zo) you slapped me down with some such statement that I'm incompetent.
>
> >
> >> Using the correct method the expression is (Vfwd*2)/Zo + (Vref*2)/Zo =
> >total
> >> forward power.
> >>
> >
> >This is not a correct expression. It does not correctly account for the
> >fact the we must add complex voltages with vector addition.
>
> It is the correct expression, and vector addition is unneeded, because the phase of the
> re-reflected voltage and current are already at zero phase relative to the forward waves.
> If you understood the reflection mechanics occurring at the match point you would realize
> that there are no complex voltages or currents involved after the re-reflection. This is
> the very point in my QEX Mar/Apr 1998 that you fail to grasp. And you called me
> incompetent!
> >
> >We must consider the differences that occur when Vfwd and Vref have
> >differing phase angles.
> >
> As I just said, there are NO differing phase angles after re-reflection.
>
> >> As I said at the beginning of this post, this should lay to rest the
> >erroneous method
> >> of adding the reflected voltage to the forward voltage to obtain the total
> >forward
> >> power.

> >>
> >> Walt, W2DU
> >>
> >
> >Are you willing to stop the blustering and work an example together with
> >voltages?
>
> Your continued harping on using voltage instead of power is the only
blustering here. You
> are still barking up the wrong tree. As long as you continue to be
unrealistic I see no
> further point in our discussion, because, as I said earlier, it has become
fruitless. We
> are exactly where we were two years ago.
>
> Walt, W2DU
>

3031. Re: Eleven Mtrs/Freebanders/Feds

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 18:15:28 UTC
From: N3VST <not@chance.com>
Message-ID: <xCBJ6.11052$R2.10240015@newsrump.sjc.telocity.net>
Source record: 163875

Gee I followed two guys at the bottom of 10 meters one night for more than an hour. At the point these two were ready to exchange email addresses, some "clown" starts sending CW, of course as soon as the freebanders were gone so was this ham. It is easy enough to get an IP address and a name from someone after a quick little exchange of email. However some fool screwed things up thinking he was doing us all a favor by sending CW to get rid of them. So that ham was successful in getting rid of them in the short term, for them to return in the long term. Thanks to whoever he was, since he never did send his call.

I was able to track that one of the freebanders was an hour from home, which was austin TX, and the other lived in denver CO.
"Rick Littlefield" <k1bqt@aol.com> wrote in message
news:20010506184115.12079.00002289@ng-cr1.aol.com...
> >...I feel threatened that 10 meters is next in line to be de-regulated by an
> impotent and understaffed agency....<
>
> Most of the FBOMs I've heard on 10 meters are mobile--in trucks--constantly in
> motion. Do you propose the fed interdict by sending Blackhawks to blow them
> off the road? Sometimes ya gotta pick your battles...
>
> Or get creative. If we expect the government to do everything for everybody, we
> either get disappointed on a good day or totalitarianism on a bad day. While I
> appreciate your frustration, I think Mr. Hollingsworth is doing a far better
> job for us than we've enjoyed for a long time--and "impotent" is not at term
> I'd associate with his efforts.
>
> Perhaps your could help by tracking some of this activity and sharing the
> information via the many channels available to us ...rather than busting his
> chops. I think proaction is preferable to whining. How about you?
>
> 73
>
> Rick K1BQT

3032. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 18:23:19 UTC
From: w2du@iourney.com
Message-ID: <3af6e19c.14181922@news.journey.com>
Source record: 163876

On Mon, 07 May 2001 17:09:54 GMT, "VE9SRB" <srbest@att.net> wrote:

>Walter, it is physically impossible in any transmission line system to have
>the rearward voltage go to zero and yet still have a rearward current. If
>the rearward traveling voltage goes to zero, the rearward traveling current
>goes to zero as well. This is not the same as the total voltage and
>current. It is possible to have the total voltage go to 0 while the total
>current does not.

Steve, your last statement is clear evidence that your understanding of reflection
mechanics is flawed, because your statement is not true.
>
>> Second, a forward source power of 75 watts and a re-reflected power of
>8.33 watts
>> combining to obtain 133.33 watts of forward power is absurd from both a
>practical and
>> mathematical viewpoint. Steve, it is obvious that you are a distinguished
>mathematician.
>> How can you live with yourself with such a ridiculous statement?
>
>Because I know how to add two complex voltages together. I also know that
>the total forward voltage is the *vector* sum of the forward source voltage
>and the re-reflected voltage. I also know that the total forward power is
>determined from the total forward voltage.

This is fine if you know the total forward voltage.
>
>The one concept that you fail to grasp here is that the forward source power
>delivered to the transmission line is not 100 Watts. The forward source
>voltage delivered to the transmission line at the tuner output is not 70.71
>V. Johnson was very clear as to how to correctly determine the forward
>source voltage.

Then you'll have to direct me to where Johnson says that 100 watts is not delivered to the
transmission line when the source power is 100 watts.
>
>To see this, we would have to work an example together, step by step. For
>some reason you refuse to do this.
>
>> >Now the basics:
>> >
>> >1. It is my opinion that wave reflections in a transmission line occur
>at
>> >any impedance discontinuity relative to the transmission line Zo. The
>> >reflected voltage is equal to the incident voltage times rho: Vref = rho

>Vi.
>> >The total voltage at the impedance discontinuity is equal to the incident
>> >voltage times (1 + rho): Vtot = (1 + rho) Vi. The reflected power at
>any
>> >impedance discontinuity is equal to the incident power time |rho|^2: Pref
>=
>> >|rho|^2 Pi. The power transmitted or delivered to the impedance
>> >discontinuity is equal to the incident power times (1 + |rho|^2): Pdel =
>(1
>> >+ |rho|^2) Pi. These concepts are consistent with the discussion in
>> >Johnson's text. Do you concur?
>>
>> No Steve, I do not concur.
>>
>> First, the total voltage at the discontinuity is not (1 + rho). If this
>were the case the
>> total voltage would be 1.5 times the source voltage when the mismatch is
>3:1. Far to high.
>> For 100 watts delivered to the 50-ohm input to the network the source
>voltage is 70.71
>> volts. 1.5 x 70.71 = 106.07 volts, 24.42 volts too high.
>>
>> The real total voltage is square root of the expression 1/(1 - rho^2)
>times the source
>> voltage. The sqr root of the expression 1/(1 - |rho|^2) equals the forward
>voltage
>> increase factor, the same as the expression 1/(1 - |rho|^2) equals the
>forward power
>> increase factor. Let's check it out: The voltage increase factor for a 3:1
>SWR (rho = 0.5)
>> is 1.1547, for a total voltage of 81.650 v when multiplied by the source
>voltage 70.71
>> volts for 100 watts delivered to the 50-ohm network input.
>>
>> Let's check this total voltage value out. 81.65^2 divided by (Zo = 50) =
>133.33 watts, the
>> precise value when using the forward power increase factor 1/(1 - rho^2)=
>1/(1 - 0.25) =
>> 1.3333. (100 x 1.3333 = 133.33 watts.
>>
>> Second, the total forward power, or as you say, Pdel, is not (1 +
>|rho|^2). Let's see why.
>> Continuing with a 3:1 SWR and rho 0.5, we get (1 + |rho|^2) = 1.25 as the
>power increase
>> factor. This would mean to total forward power would be only 125 watts
>with a 100 watt
>> source. But we know from above that the total forward power is 133.33
>watts.
>>
>> Now let's verify that the forward power increase factor is 1/(1 -

>|rho|^2). Recall that
>> during our earlier and continuing controversy on this point you vehemently
>refused to
>> agree that this expression returns the forward power increase factor.
>However, you must
>> have had a change of mind, because in your QEX article Jan/Feb 2001, you
>specify this
>> expression as the forward power increase factor. If I remember correctly
>it is your Eq 36.
>> Consequently, if the correct factor is 1/(1 - |rho|^2) it certainly cannot
>be (1 +
>> |rho|^2), because for rho = 0.5, the resulting values are 1.3333 and 1.25,
>respectively.
>>
>> My explanation above shows why your opinion is incorrect.
>>
>
>The detailed analysis you describe above has nothing to do with the point I
>was making regarding a rearward or forward wave arriving at an impedance
>discontinuity or termination.
>
>If a forward voltage of 70.71 V arrives at a termination with a 3:1 SWR
>(|rho| = 0.5) the reflected voltage is equal to 35.355 V and the total
>voltage is equal to 106.065 V. This is very fundamental transmission line
>theory. That was the point of my discussion. Do you now disagree with
>these statements?

Yes, I certainly do disagree with these statements. Apparently you and I went to two separate schools of engineering that could not have taught the same concepts, because what you are saying is not what I learned.
>
>> >2. Johnson clearly indicates that reflections and re-reflections are the
>> >direct result of the impedance discontinuity the wave sees when it
>reaches
>> >the *end* of the transmission line. The forward wave will be reflected
>> >based on the impedance it sees at the output end of the line and the
>> >reflected wave will be re-reflected based upon the impedance it sees at
>the
>> >input end of the line. From page 16 - "Thus, a terminating impedance
>> >different from Zo will give rise to a reflected wave which travels away
>from
>> >the termination. The reflection, upon reaching the other end of the
>line,
>> >will itself be reflected if the terminating impedance at that end is
>> >different than Zo." From page 19 - "A wave of voltages of this value
>> >travels to the receiving end [load end], where it is reflected with the
>> >coefficient, Kr. The reflection travels back to the generator end of the
>> >line, where it is reflected with the coefficient Kg." These statements
>are
>> >technically correct. Do you concur?

>>
>> I concur with everything Johnson says, in fact he is one of my two idols
>concerning
>> transmission lines. Chipman is the other.
>> >
>
>No you do not concurr with everything Johnson says. In his analysis,
>Johnson adds voltages together. You have clearly stated that adding
>voltages is incorrect and meaningless.
>
>> >3) You made a recent statement in the NG as follows: "Steve's problem
>with
>> >addition of voltages or powers on a transmission line is that it is NOT
>the
>> >voltages that add, it's power, even though Steve denies that this is
>true.
>> >His misconception on this issue is why his powers don't add up correctly.
>> >Everything comes out correctly when powers are added, but never come out
>> >correctly by adding voltages."
>> >
>> >You clearly state that voltages on a transmission line do not add. You
>also
>> >clearly state that everything does not come out correctly by adding
>> >voltages. Emphasis on never come out correctly by adding voltage.
>> >
>> >Let's look at Johnson's opinion on the addition of voltages in a
>> >transmission line. Pages 98 - 101. Note
>> >that Johnson's entire wave reflection analysis is done with voltage not
>> >power. Johnson first defines the initial sending-end voltage: "When the
>> >generator is first connected to the line, it sees an impedance equal to
>Zo
>> >until the arrival of the first reflection from the load. Therefore, for
>the
>> >first few moments the sending end voltage of the line will be Eg Zo / (Zo
>+
>> >Zg). This wave, which we will imagine to flow forevermore out of the
>> >generator, will be propagated down the line." There are two significant
>> >point here. First, the forward driving voltage delivered to the
>> >transmission line by the source is a direct function of Zo - nothing
>else.
>> >Johnson also notes that this wave flows forevermore out of the generator.
>> >This is the forward driving voltage applied to the transmission line by
>the
>> >transmitter. It, in and of itself, never changes. The only voltage
>> >changing the total forward driving voltage at the line input are the
>> >re-reflections created at the line input. Let's continue: "As the wave
>> >reaches the load, it will be reflected with the reflection coefficient Kr
>> >and will thus give rise to a second wave which will travel back towards
>the
>> >generator. ... This wave reaches the generator ... and is reflected there

>> >with the coefficient Kg. The new reflection is propagated to the right
>> >[towards the load] ... Continuing in this way, we find an infinite series
>of
>> >reflections, each smaller than the last. The sum is convergent and
>> >represents the steady state which is finally established." Apparently
>> >Johnson is of the opinion that addng voltages in a transmission line to
>> >establish the steady state is correct. You disagree with my addition of
>> >voltage, do you disagree with Johnson's?
>>
>> I agree with Johnson explicitly. What I do not agree with is your
>intrepretation of
>> Johnson.
>>
>> My Johnson is still in Florida, and will be until after Dayton. However, I
>can see the top
>> of page 100 clearly from memory where Johnson's equation there derives the
>voltage of the
>> standing wave at any point on the line. If you were to integrate all the
>voltage values
>> along the line derived from Johnson's equation, the result will be a
>pattern of the
>> standing wave.
>>
>> Johnson's equations on pages 99 and 100 do not in any way derive the
>forward power in the
>> line. However, the geometric series progression on page 99 converges to
>1/(1 - a), as you
>> well know. And when 'a' is assigned the value of |rho|^2 we get the
>expression 1(1 -
>> |rho|^2) that you must agree is the correct expression for the forward
>power increase
>> factor, because you said so in eq 36 in your QEX article. Apparently you
>changed your
>> opinion on this point, because you disagreed with me concerning it
>earlier.
>>
>
>The "a" in Johnson's equation is not |rhoA|^2 at all. You should notice
>that it also includes the reflection coefficient of the generator. Neither
>reflection coefficient is expressed as a magnitude because he is using
>voltage, not power, in the analysis. Johnson's formula very clearly
>indicates the re-reflected *voltage* at the generator must be *added* to the
>forward (applied) source voltage. Although Johnson does this, you have
>clearly indicated that this is an incorrect approach.

The geometric series progression in Johnson that converges at 1/(1 - a) is a general expression, and not restricted to voltage. Therefore, substituting rho^2 for 'a' is legitimate. It is also precisely what you used in Eq 36 of your QEX article. You can'g have it both ways.
>

>Johnson does not derive the forward power in the line because he knows that
>powers do not add as you claim them to. Johnson derives the
>total voltage at any point on the line. The total voltage at any point on
>the line is the sum of the forward voltage and the rearward voltage.
>
>In deriving the total voltage, Johnson clearly discusses the fact that the
>total forward voltage at the generator is the sum of the forward (applied)
>source voltage plus the re-reflected voltages at the input end of the
>transmission line.
>
>If you look at Johnson's formula you would clearly see the component that
>makes up the total forward voltage. Your error in your analysis of the
>system is that you misinterpret Johnson's definition of forward (applied)
>source voltage. You incorrectly assume that the delivered power (voltage)
>is the forward source power (voltage), when it is not.
>
>
>> I must also point out an error in your use of the 1/(1 - a) expression in
>QEX. The
>> expression is only valid for values less than 1. You failed to make that
>statement in your
>> article when you presented the geometric progression.
>> >
>
>There are no errors in my QEX formulas. If you look at them closely and
>then add the forward and rearward voltage expressions to arrive at the total
>voltage expression, you would see that they match Johnson's formula exactly.
>
No Steve, you have not matched Johnson's formula 1/(1 - a) exactly until you include the
limitation that this formula is valid only for values of 'a' less than 1. You omitted this
important factor in your QEX article.
>
>> >On determining the total forward power in the transmission line. Johnson
>> >defines the total forward voltage traveling in the transmission line as
>E+,
>> >which is "the net incident [forward] wave composed of the sum [he adds
>> >voltages] of
>> >all the individual waves that travel towards the load.." To determine
>the
>> >total forward power traveling in the line, Johnson (see pages 149 - 150)
>> >uses the expression |E+|^2 / Zo. To determine the total forward power in
>> >the line, Johnson first determines the total forward voltage (the net sum
>of
>> >the forward source voltage, determined as the voltage delivered to Zo,
>and
>> >the voltage re-reflections). He does not determine the total forward
>power
>> >through the addition of power. When I determine the total forward power
>> >from the addition of forward voltage, you indicate that I have a problem
>and

>> >don't understand the basic concepts. My approach to determining the
>total
>> >forward power is consistent with Johnson's. Is Johnson incorrect as
>well?
>> >Do you concurr with Johnson's approach?
>>
>> Since I wont have my copy of Johnson until after Dayton I can't see what
>he does on the
>> pages you referenced. I would never consider Johnson incorrect, but the
>voltages you use
>> to determine the forward power are not correct, so I must assume you are
>not interpreting
>> Johnson correctly, as you did not earlier also
>>
>> Your method of adding voltages involved adding the source voltage 70.71 v
>(100 watts) and
>> the re-reflected voltage of 40.82 v resulting in 111.54 total volts.
>Squaring 111.54 and
>> dividing by (Zo = 50) results in a total forward power of 248.8
>watts---incorrect.The
>> transmission coefficient 0.75 times 248.8 = 186.8 watts delivered to the
>150-ohm load,
>> this is 86.6 watts more than the source power. Obviously and evidently
>248.8 watts is
>> incorrect because you used the voltage method incorrectly.
>>
>> I should be painfully clear to you now that voltages DON'T ADD at the
>re-reflection
>> point--powers DO.
>> >
>> >4) If the forward source voltage in a 50 ohm transmission line is 100 V,
>> >what is the forward source power?
>>
>> 200 Watts
>> >
>> >5) If the re-reflected voltage in a 50 ohm transmission line is 100 V,
>what
>> >is the re-reflected power?
>>
>> The answer is indeterminate because you have not defined the necessary
>givens. What is the
>> source power, and what is the value of mismatch teminating the line?
>> >
>
>You know the re-reflected voltage is 100 V. The source power has nothing to
>do with the answer. The value of the mismatch has nothing to do with the
>answer because the re-reflected voltage is defined as 100 V. The
>re-reflected power is 200 W.
>
>

>> >6) If the forward source voltage is 100 V and the re-reflected voltage
>is
>> >100 V and these voltages are in-phase, what is the total forward voltage?
>> >What is the total forward power?
>>
>> The total forward power is zero, because the termination on the line is
>either a short or
>> an open circuit. This line termination is determined because the total
>forward voltage is
>> reflected, and no power is delivered to a short or open circuit.
>> >
>
>Actually, this was a poor choice of voltages. I'm not going to ask this
>again.
>
>> >7) If the forward source power is 200 W and the re-reflected power is 200
>W,
>> >what it the total forward power? What is the total forward voltage?
>>
>> This is not a practical question. It again is concerned with a totally
>reflecting load.
>> >
>>
>
>Poor choice of power levels. I'm not going to ask this again.
>
>
>> >I think that this pretty much covers the basics for now. After we
>discuss
>> >these issues, we can take a look at the above example and see if our
>> >analysis and approach is consistent with Johnson's technical discussions
>or
>> >not.
>> >
>> >Steve VE9SRB
>> >
>> I believe I have achived the goal of my challenge, Steve, so what say now?
>>
>> Walt, W2DU
>> >
>
>Nothing has been achieved at this point. You do not even remotely
>understand my technical position and it is clear you do not understand
>Johnson's. Let's stop the mutual blustering and work through an example
>using voltages. Willing to do this here?
>
>Steve VE9SRB

There is no need to continue this harangue Steve, because it is evident that you are not about to see things realistically, and you are not about to persuade me that you are

right. So let's discontinue this immediately. I'm sure the others on this NG are either laughing themselves to death or are bored to death. I don't want to prolong their misery, so SK.

Walt, W2DU
>
>

3033. helpneeded: combine signal from ant and dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 18:24:41 UTC
From: "J. Sun" <jsun@lucent.com>
Message-ID: <9d6p9m$324@nntpb.cb.lucent.com>
Source record: 163878
Cross-posted to: rec.video.satellite.tvro,rec.radio.amateur.antenna

Hi !,

I have a outdoor TV ant and a Ku band sat dish
(MPEG2/DVB, not DBS).
The output of LNB is 950-1450 MHz.

What is the right way to combine the signals
and feed the internal cable (prewired in
the house) so that I can watch
programs from the air and satellite.

Rus

3034. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 18:30:32 UTC
From: Gene <webmaster@zylay.com>
Message-ID: <3AF6E9C8.C0788842@zylay.com>
Source record: 163877
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

W6RCecilA wrote:
>
> Gene wrote:
> >
> > > > How serious a crime is it? Your assignment - think of all the crimes you can,
> > > > where does freebanding fit it?
> > >
> > > That's a pretty good question. Unless I'm missing something, I would
> > > rank it right up there with driving on the shoulder of the road where
> > > such is illegal.
> >
> > I don't see where it's that minor at all. If one of my kids got hurt
> > because of someone driving down the side of the road, I'd hunt them down
> > and slowly kill them.
>
> I'm with you, Gene. If you think I said "right down there", you are
> mistaken. I ride a bicycle. Vehicles driving on the shoulder are
> deadly weapons. What gave you the idea I consider it minor?

Maybe not you personally. Just making a point that while many people
might consider something a very minor violation of the law, it might not
be so minor (and perhaps even for a very good reason) to another person.
--
Ride to eat, eat to ride. __O
_-\<,_
Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
Please visit http://www.tfn.net/~gfloyd7/cmn/

3035. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 18:32:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF6EA3B.1E75312D@IEEE.org>
Source record: 163879

Walter Maxwell wrote:
> You have already shown in your last post in the 'standing wave' thread that your voltage
> approach is incorrect, unless you can explain satisfactorily how 100 watts on a 50-ohm
> line yields 61.24 volts instead of 70.71 v. Why should we continue when the primary given
> is aleady incorrect?

I can see both sides of this issue so maybe I can explain. Process steps
are being omitted from the discussion.

61.24v is the voltage that makes it past the physical 50/150 ohm Z0-match
transistion point. 9.47v doesn't make it past the Z0-match point. That
doesn't mean the energy associated with that 9.47v doesn't make it past
the Z0-match point. That 9.47v is canceled before it can appear on the
feedline back to the transmitter.

That 9.47v, trying to be reflected from the physical 50/150 ohm transition
point, is canceled by 9.47v of reflected voltage arriving out of phase back
from the mismatched load. This is destructive interference and the phasor
addition of these two voltages takes them to zero. However, there is 25w
associated with each of those two voltages and that 50w has to go somewhere.
The conservation of energy principle says that energy is dumped into the
electromagnetic fields.

The energy equation must balance. Here are the energy components.

100 joules/sec is generated. These are the component energies.

75 joules/sec flows past the match point unimpeded

25 joules/sec tries to be reflected from the match point but is
instead canceled by part of the reflected energy
arriving back from the load.

33.33 joules/sec is reflected from the mismatched load.

8.33 joules/sec is re-reflected outright at the 150/50 ohm point

25 joules/sec is used to cancel the above 25 joules/sec through
a destructive interference process.

The 50 joules/sec of energy used in the destructive interference process
adds to the electromagnetic fields of the 75 joules/sec and the 8.33
joules/sec to yield the total forward electromagnetic field containing
133.33 joules/sec. This divides into an electric field and a magnetic
field related by the Z0 of the transmission line.
--
http://www.mindspring.com/~w6rca

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3036. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 18:50:39 UTC
From: kb7qhc@home.com
Message-ID: <3af6edbf.945009581@news.seanet.com>
Source record: 163880

On Mon, 07 May 2001 11:01:50 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>Steve, the vector addition of voltages just does not work when the
>voltages have been canceled by destructive interference.

Hi Cecil,

I think Steve has clearly argued just such a possibility being
revealed in the computation. In fact he has argued this specifically
to the matter of destructive interference.

Your statement appears to be a self contradiction. In other words,
how can you reveal interference by NOT performing vector math?

73's
Richard Clark, KB7QHC

3037. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 18:52:55 UTC
From: kb7qhc@home.com
Message-ID: <3af7ee9d.945231741@news.seanet.com>
Source record: 163881

On Mon, 07 May 2001 12:47:59 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>VE9SRB wrote:
>> We must consider the differences that occur when Vfwd and Vref have
>> differing phase angles.
>
>The only relative phase angles possible at a Z0-match are zero degrees
>and 180 degrees, so simple plus or minus signs can be used. No need
>for phase angles and trig functions. Keeping it as simple as possible
>exposes all sorts of illogic.

Hi Cecil,

Steve has approached this in the simpler manner. You in turn are
adding conditions (tests for 0 or 180 degree phases which are
naturally handled by the math already).

Hence, through these imposed and unnecessary conditions, yes, illogic
is forcing its way into the thread.

73's
Richard Clark, KB7QHC

3038. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 18:55:52 UTC
From: kb7qhc@home.com
Message-ID: <3af8ef20.945362709@news.seanet.com>
Source record: 163883

On Mon, 07 May 2001 12:57:28 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

> If you waded through Maxwell's Equations, you would immediately
>see the error of your ways.

Hi Cecil,

This says nothing. Why don't you quote the problematic math instead
of suggesting it? To present a subjectively perceived error with a
broad sweep of the hand adds nothing but a metaphysical layer to the
discussion.

73's
Richard Clark, KB7QHC

3039. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 18:56:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF6EFD0.65E32A71@IEEE.org>
Source record: 163882

Walter Maxwell wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >Why don't you two start by agreeing that the destructive interference
> >pattern at a Z0-match causes both the voltages and currents, involved
> >in the destructive interference, to go to zero? No agreement is possible
> >until you two agree on that point.
>
> Cecil, I must disagree with your last statement, because at the match point voltage and
> current never go to zero simultaneously, only one or the other. At a short the voltage
> goes to zero and current is maximum. Conversely, at an open the current goes to zero and
> voltage is maximum.

I'm not talking about the total voltage, Walt. Consider just the voltages and currents involved in the destructive interference process. The voltages involved in the destructive interference pattern are 180 degrees out of phase and therefore they cancel. The currents involved in the destructive interference pattern are 180 degrees out of phase and therefore they cancel. That's the way destructive interference works. It wouldn't be destructive interference otherwise. This concept is absolutely key to this discussion.

100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load

The reflections at the 'X' match point will shift the current phase by 180 degrees from the voltage. The reflections at the load will shift the voltage by 180 degrees from the current. The two voltages are 180 degrees out of phase with each other when they encounter each other so they will cancel to zero. The two currents are 180 degrees out of phase with each other when they encounter each other so they will cancel to zero. At the match point we have these two components.

+--------> reflected voltage at 'X' (from generated power)

<--------+ part of reflected voltage back from the load

These voltage components add to zero

<--------+ reflected current at 'X' (from generated power)

+--------> part of reflected current back from the load

These current components add to zero

This is what happens to the destructive interference voltage and current components. They both go to zero.
--
http://www.mindspring.com/~w6rca

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3040. Re: helpneeded: combine signal from ant and dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 19:22:35 UTC
From: Eric <knipbody@homebody.com>
Message-ID: <3AF6F5C4.B8327645@homebody.com>
Source record: 163884
Cross-posted to: rec.video.satellite.tvro,rec.radio.amateur.antenna

"J. Sun" wrote:

> I have a outdoor TV ant and a Ku band sat dish
> (MPEG2/DVB, not DBS).
> The output of LNB is 950-1450 MHz.
>
> What is the right way to combine the signals
> and feed the internal cable (prewired in
> the house) so that I can watch
> programs from the air and satellite.

One way is with a diplexer, such as the V902 at

http://www.channelplus.com/misc.htm

--
[Remove bodies from address for email.]
{Friends don't let friends cross post.}

3041. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 19:25:43 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF6F6B7.C3A37F55@bwcc.com>
Source record: 163885

Dick Carroll wrote:
> Reg Edwards wrote:
> > Use any substantial conductor you fancy to lead lightning down to
> > ground.
> ...and if you use the conductor that provides the lowest impedance path
> that you can get, it leaves that much less of the lightning energy
> available to look for an *additional* path through your ham station....

Lightning energy is being carried by electrons which need to get to earth.
Lightning is not really comparable to sinusoidal alternating current.
My earlier statement was that providing a low resistance path between the tower and the shack is not a goal.
The goal is to provide a ground rod set for lightning at the tower, a ground rod set for lightning and fault current at the shack, and a conductor for 60 Hz between to two ground rods sets so that said 60 Hz doesn't prefer to ride on the coax shield.

I have direct burial AC feeder cable buried in my front lawn that has a bare stranded aluminum conductor.
It is approved for direct burial in dirt.
Neither the UL nor the power company seems concerned that the aluminum will corrode or waste away.

3042. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 19:32:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF6F85A.443DFE28@eznec.com>
Source record: 163886

WWVB transmits at 60 kHz. I don't know how directly your results would apply to more typical amateur uses. I'd think WWV measurements would be of more interest.

Roy Lewallen, W7EL

W6RCecilA wrote:
>
> I have my 20m-10m dipole on a Rohn tower fed with 300 ohm twin-
> lead. I can run relative receive strength measurements on WWVB
> with the feedline on standoffs VS taped to the tower for a
> distance of about ten feet. Care to estimate the difference,
> if any, in receive signal strength?
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3043. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 19:34:34 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9d6t72$qc6$1@plutonium.btinternet.com>
Source record: 163888

Peter O. Brackett wrote
> I agree. Those graphs of "additional line losses due to
deviations of VSWR
> from unity, are incorrect!
==========

The fundamental error was equivalent to assuming that conductor loss and dielectric loss per unit length are equal. This condition is what Heaviside described as "The Distortionless Line". Zo is purely resistive which has some computational advantages. So the graph applies only to that very special case. But that special case never occurs. In practice, at HF, nearly all line loss occurs in the line conductors. Dielectric loss is negligible.

One of the consequences of that assunption is that loss (watts per metre of length) is uniformly distributed along the line regardless of standing waves. Conductor loss is at a maximum where there's a current maximum. Dielectric loss is at a maximum where there's a voltage maximum. Maximum volts and maximum current are displaced from each other by 1/4-wavlength. So when the two types of loss have the same magnitude then the watts are indeed uniformly distributed versus length. There are no hot spots.

When, as in real lines, dielectric loss is negligible the distribution of watts vs length is entirely different. It varies along the line as the current squared. Its maximum and minimum values are displaced from each other by 1/4-wavelength. Intuitively, for the same VSWR and total length of line, line loss depends on where on the line the maximum and minumum values are actually located. On a line less than 1/4-wave long both a maximum and a minimum value cannot exist. With a high VSWR it is possible to have a loss which is less than the normal Zo-matched attenuation.

Another way of looking at the problem is to observe that when loss occurs only in the line conductors, Zo cannot be a pure resistance. It might be said that the impedance angle is small enough to be neglected. However, because the angle is that of the line's power factor, when considering line loss the angle of Zo is amongst the most important parameters.

With relatively short lines used by amateurs, 100 feet or less, attenuation is so small large percentage errors can occur when calculating it from several much larger quantities. Approximations for the larger quantities are unsafe.

The Smith Chart is of no use in this application. It suffers from
the same assumption of a distortionless line with purely real Zo.

The exact calculation of line loss with a mismatched termination
requires the following steps -

(1) Define the real line by Zo, conductor resistance or dimensions,
TanDelta of dielectric, velocity, actual length.

(2) Terminate the line with Zt = Rt+jXt

(3) Calculate reflection coefficient

(4) Calculate VSWR

(5) Transform reflection coefficient, phase and magnitude, to near
end of line

(6) Calculate line input impedance Zin = Rin+jXin

(7) Send 1 amp into the line. Pin = Rin watts

(8) Calculate current into termination. Pout = Sqr(It)*Rt

(9) Line loss with SWR = 10*Log(Pin/Pout) dB

(10) Power dissipated in line = Pin - Pout watts

It may be possible to approximately generalise the results of the
foregoing by a simple formulae like -

(dB with SWR) = (dB when matched) * SWR

I'll look into it.

See programs COAXPAIR, RJELINE2, RJELINE3.

Program COAXRATE computes line loss, dB and watts versus SWR, for
the purpose computing temperature rise and setting power ratings.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

3044. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 19:35:50 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <qOCJ6.9418$t12.698487@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163889

"Walter Maxwell" <w2du@iourney.com> wrote in message
news:3af6dcad.12918726@news.journey.com...
> On Mon, 07 May 2001 17:11:58 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>
> >Let's work a simple example together with voltages and see how it all
works
> >out? I'll pick a simple example, fair enough?
>
> >Steve
>
> You have already shown in your last post in the 'standing wave' thread
that your voltage
> approach is incorrect, unless you can explain satisfactorily how 100 watts
on a 50-ohm
> line yields 61.24 volts instead of 70.71 v. Why should we continue when
the primary given
> is aleady incorrect?
>
> Walt l
>
>

100 Watts on a 50 ohm line does not yield a voltage of 61.24 V. I never
said it did.

I was going to provide a detailed example, however, given your decision to
end the discussion (as you stated in the standing wave ratio thread - see
quote below), I will not continue further.:

>
> There is no need to continue this harangue Steve, because it is evident
that you are not
> about to see things realistically, and you are not about to persuade me
that you are
> right. So let's discontinue this immediately. I'm sure the others on this
NG are either
> laughing themselves to death or are bored to death. I don't want to
prolong their misery,
> so SK.
>
> Walt, W2DU
> >

Thank you for your time.

Steve VE9SRB

3045. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 19:37:06 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <CPCJ6.9419$t12.698566@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163890

"Walter Maxwell" <w2du@iourney.com> wrote in message
news:3af6e19c.14181922@news.journey.com...
> On Mon, 07 May 2001 17:09:54 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>
> >Walter, it is physically impossible in any transmission line system to
have
> >the rearward voltage go to zero and yet still have a rearward current.
If
> >the rearward traveling voltage goes to zero, the rearward traveling
current
> >goes to zero as well. This is not the same as the total voltage and
> >current. It is possible to have the total voltage go to 0 while the
total
> >current does not.
>
> Steve, your last statement is clear evidence that your understanding of
reflection
> mechanics is flawed, because your statement is not true.
> >

I assume that you are saying that this statement is incorrect: "It is
possible to have the total voltage go to 0 while the total current does
not."

Since you don't believe me lets take a look at the basic equations from
Chipman for *total* voltage and current magnitude on a transmission line
terminated with an open circuit (as an example). See Chipman page 157

|V(d)| = A Cos(bd) b = beta, d is position along the line.

|I(d)| = A Sin(bd)

When bd is such that Cos(bd) = 0, the total voltage magnitude goes to zero.
The total current magnitude is at its maximum value. This is a short
circuit line impedance. When bd is such that Sin(bd) = 0, the total current
magnitude goes to zero. The total voltage magnitude is at its maximum
value. This is an open circuit line impedance.

My reflection mechanics are quite correct, thank you.

> >> Second, a forward source power of 75 watts and a re-reflected power of
> >8.33 watts
> >> combining to obtain 133.33 watts of forward power is absurd from both a
> >practical and
> >> mathematical viewpoint. Steve, it is obvious that you are a

distinguished
> >mathematician.
> >> How can you live with yourself with such a ridiculous statement?
> >
> >Because I know how to add two complex voltages together. I also know
that
> >the total forward voltage is the *vector* sum of the forward source
voltage
> >and the re-reflected voltage. I also know that the total forward power
is
> >determined from the total forward voltage.
>
> This is fine if you know the total forward voltage.
> >
> >The one concept that you fail to grasp here is that the forward source
power
> >delivered to the transmission line is not 100 Watts. The forward source
> >voltage delivered to the transmission line at the tuner output is not
70.71
> >V. Johnson was very clear as to how to correctly determine the forward
> >source voltage.
>
> Then you'll have to direct me to where Johnson says that 100 watts is not
delivered to the
> transmission line when the source power is 100 watts.
> >

I did not inferr that Johnson said this.

> >To see this, we would have to work an example together, step by step.
For
> >some reason you refuse to do this.
> >
> >> >Now the basics:
> >> >
> >> >1. It is my opinion that wave reflections in a transmission line
occur
> >at
> >> >any impedance discontinuity relative to the transmission line Zo. The
> >> >reflected voltage is equal to the incident voltage times rho: Vref =
rho
> >Vi.
> >> >The total voltage at the impedance discontinuity is equal to the
incident
> >> >voltage times (1 + rho): Vtot = (1 + rho) Vi. The reflected power at
> >any
> >> >impedance discontinuity is equal to the incident power time |rho|^2:
Pref
> >=
> >> >|rho|^2 Pi. The power transmitted or delivered to the impedance
> >> >discontinuity is equal to the incident power times (1 + |rho|^2):

Pdel =
> >(1
> >> >+ |rho|^2) Pi. These concepts are consistent with the discussion in
> >> >Johnson's text. Do you concur?
> >>
> >> No Steve, I do not concur.
> >>
> >> First, the total voltage at the discontinuity is not (1 + rho). If this
> >were the case the
> >> total voltage would be 1.5 times the source voltage when the mismatch
is
> >3:1. Far to high.
> >> For 100 watts delivered to the 50-ohm input to the network the source
> >voltage is 70.71
> >> volts. 1.5 x 70.71 = 106.07 volts, 24.42 volts too high.
> >>
> >> The real total voltage is square root of the expression 1/(1 - rho^2)
> >times the source
> >> voltage. The sqr root of the expression 1/(1 - |rho|^2) equals the
forward
> >voltage
> >> increase factor, the same as the expression 1/(1 - |rho|^2) equals the
> >forward power
> >> increase factor. Let's check it out: The voltage increase factor for a
3:1
> >SWR (rho = 0.5)
> >> is 1.1547, for a total voltage of 81.650 v when multiplied by the
source
> >voltage 70.71
> >> volts for 100 watts delivered to the 50-ohm network input.
> >>
> >> Let's check this total voltage value out. 81.65^2 divided by (Zo = 50)
=
> >133.33 watts, the
> >> precise value when using the forward power increase factor 1/(1 -
rho^2)=
> >1/(1 - 0.25) =
> >> 1.3333. (100 x 1.3333 = 133.33 watts.
> >>
> >> Second, the total forward power, or as you say, Pdel, is not (1 +
> >|rho|^2). Let's see why.
> >> Continuing with a 3:1 SWR and rho 0.5, we get (1 + |rho|^2) = 1.25 as
the
> >power increase
> >> factor. This would mean to total forward power would be only 125 watts
> >with a 100 watt
> >> source. But we know from above that the total forward power is 133.33
> >watts.
> >>
> >> Now let's verify that the forward power increase factor is 1/(1 -

> >|rho|^2). Recall that
> >> during our earlier and continuing controversy on this point you
vehemently
> >refused to
> >> agree that this expression returns the forward power increase factor.
> >However, you must
> >> have had a change of mind, because in your QEX article Jan/Feb 2001,
you
> >specify this
> >> expression as the forward power increase factor. If I remember
correctly
> >it is your Eq 36.
> >> Consequently, if the correct factor is 1/(1 - |rho|^2) it certainly
cannot
> >be (1 +
> >> |rho|^2), because for rho = 0.5, the resulting values are 1.3333 and
1.25,
> >respectively.
> >>
> >> My explanation above shows why your opinion is incorrect.
> >>
> >
> >The detailed analysis you describe above has nothing to do with the point
I
> >was making regarding a rearward or forward wave arriving at an impedance
> >discontinuity or termination.
> >
> >If a forward voltage of 70.71 V arrives at a termination with a 3:1 SWR
> >(|rho| = 0.5) the reflected voltage is equal to 35.355 V and the total
> >voltage is equal to 106.065 V. This is very fundamental transmission
line
> >theory. That was the point of my discussion. Do you now disagree with
> >these statements?
>
> Yes, I certainly do disagree with these statements. Apparently you and I
went to two
> separate schools of engineering that could not have taught the same
concepts, because what
> you are saying is not what I learned.
> >

I understand that you did not learn this.

A 150 ohm termination represents a 3:1 SWR (Zo = 50 ohms). The reflection coefficient for this termination, rho is 0.5.

If a forward voltage, VF, arrives at this termination, the reflected voltage is equal to rho times VF. The total voltage developed at the termination is equal to the incident voltage plus the reflected voltage Vtotal = VF (1 + rho).

If a forward or incident voltage of 70.71 V arrives at a 150 ohm termination from a 50 ohm line, what do you believe the reflected and total voltages to be?

>> >2. Johnson clearly indicates that reflections and re-reflections are the
> >> >direct result of the impedance discontinuity the wave sees when it
> >reaches
> >> >the *end* of the transmission line. The forward wave will be reflected
> >> >based on the impedance it sees at the output end of the line and the
> >> >reflected wave will be re-reflected based upon the impedance it sees at
> >the
> >> >input end of the line. From page 16 - "Thus, a terminating impedance
> >> >different from Zo will give rise to a reflected wave which travels away
> >from
> >> >the termination. The reflection, upon reaching the other end of the
> >line,
> >> >will itself be reflected if the terminating impedance at that end is
> >> >different than Zo." From page 19 - "A wave of voltages of this value
> >> >travels to the receiving end [load end], where it is reflected with the
> >> >coefficient, Kr. The reflection travels back to the generator end of the
> >> >line, where it is reflected with the coefficient Kg." These statements
> >are
> >> >technically correct. Do you concur?
> >>
> >> I concur with everything Johnson says, in fact he is one of my two idols
> >concerning
> >> transmission lines. Chipman is the other.
> >> >
> >
> >No you do not concurr with everything Johnson says. In his analysis,
> >Johnson adds voltages together. You have clearly stated that adding
> >voltages is incorrect and meaningless.
> >
> >> >3) You made a recent statement in the NG as follows: "Steve's problem
> >with
> >> >addition of voltages or powers on a transmission line is that it is NOT
> >the
> >> >voltages that add, it's power, even though Steve denies that this is
> >true.
> >> >His misconception on this issue is why his powers don't add up correctly.

> >> >Everything comes out correctly when powers are added, but never come
out
> >> >correctly by adding voltages."
> >> >
> >> >You clearly state that voltages on a transmission line do not add.
You
> >also
> >> >clearly state that everything does not come out correctly by adding
> >> >voltages. Emphasis on never come out correctly by adding voltage.
> >> >
> >> >Let's look at Johnson's opinion on the addition of voltages in a
> >> >transmission line. Pages 98 - 101. Note
> >> >that Johnson's entire wave reflection analysis is done with voltage
not
> >> >power. Johnson first defines the initial sending-end voltage: "When
the
> >> >generator is first connected to the line, it sees an impedance equal
to
> >Zo
> >> >until the arrival of the first reflection from the load. Therefore,
for
> >the
> >> >first few moments the sending end voltage of the line will be Eg Zo /
(Zo
> >+
> >> >Zg). This wave, which we will imagine to flow forevermore out of the
> >> >generator, will be propagated down the line." There are two
significant
> >> >point here. First, the forward driving voltage delivered to the
> >> >transmission line by the source is a direct function of Zo - nothing
> >else.
> >> >Johnson also notes that this wave flows forevermore out of the
generator.
> >> >This is the forward driving voltage applied to the transmission line
by
> >the
> >> >transmitter. It, in and of itself, never changes. The only voltage
> >> >changing the total forward driving voltage at the line input are the
> >> >re-reflections created at the line input. Let's continue: "As the
wave
> >> >reaches the load, it will be reflected with the reflection coefficient
Kr
> >> >and will thus give rise to a second wave which will travel back
towards
> >the
> >> >generator. ... This wave reaches the generator ... and is reflected
there
> >> >with the coefficient Kg. The new reflection is propagated to the
right
> >> >[towards the load] ... Continuing in this way, we find an infinite

series
> >of
> >> >reflections, each smaller than the last. The sum is convergent and
> >> >represents the steady state which is finally established." Apparently
> >> >Johnson is of the opinion that addng voltages in a transmission line
to
> >> >establish the steady state is correct. You disagree with my addition
of
> >> >voltage, do you disagree with Johnson's?
> >>
> >> I agree with Johnson explicitly. What I do not agree with is your
> >intrepretation of
> >> Johnson.
> >>
> >> My Johnson is still in Florida, and will be until after Dayton.
However, I
> >can see the top
> >> of page 100 clearly from memory where Johnson's equation there derives
the
> >voltage of the
> >> standing wave at any point on the line. If you were to integrate all
the
> >voltage values
> >> along the line derived from Johnson's equation, the result will be a
> >pattern of the
> >> standing wave.
> >>
> >> Johnson's equations on pages 99 and 100 do not in any way derive the
> >forward power in the
> >> line. However, the geometric series progression on page 99 converges to
> >1/(1 - a), as you
> >> well know. And when 'a' is assigned the value of |rho|^2 we get the
> >expression 1(1 -
> >> |rho|^2) that you must agree is the correct expression for the forward
> >power increase
> >> factor, because you said so in eq 36 in your QEX article. Apparently
you
> >changed your
> >> opinion on this point, because you disagreed with me concerning it
> >earlier.
> >>
> >
> >The "a" in Johnson's equation is not |rhoA|^2 at all. You should notice
> >that it also includes the reflection coefficient of the generator.
Neither
> >reflection coefficient is expressed as a magnitude because he is using
> >voltage, not power, in the analysis. Johnson's formula very clearly
> >indicates the re-reflected *voltage* at the generator must be *added* to
the
> >forward (applied) source voltage. Although Johnson does this, you have

> >clearly indicated that this is an incorrect approach.
>
> The geometric series progression in Johnson that converges at 1/(1 - a) is
a general
> expression, and not restricted to voltage. Therefore, substituting rho^2
for 'a' is
> legitimate. It is also precisely what you used in Eq 36 of your QEX
article. You can'g
> have it both ways.
> >
> >Johnson does not derive the forward power in the line because he knows
that
> >powers do not add as you claim them to. Johnson derives the
> >total voltage at any point on the line. The total voltage at any point
on
> >the line is the sum of the forward voltage and the rearward voltage.
> >
> >In deriving the total voltage, Johnson clearly discusses the fact that
the
> >total forward voltage at the generator is the sum of the forward
(applied)
> >source voltage plus the re-reflected voltages at the input end of the
> >transmission line.
> >
> >If you look at Johnson's formula you would clearly see the component that
> >makes up the total forward voltage. Your error in your analysis of the
> >system is that you misinterpret Johnson's definition of forward (applied)
> >source voltage. You incorrectly assume that the delivered power
(voltage)
> >is the forward source power (voltage), when it is not.
> >
> >
> >> I must also point out an error in your use of the 1/(1 - a) expression
in
> >QEX. The
> >> expression is only valid for values less than 1. You failed to make
that
> >statement in your
> >> article when you presented the geometric progression.
> >> >
> >
> >There are no errors in my QEX formulas. If you look at them closely and
> >then add the forward and rearward voltage expressions to arrive at the
total
> >voltage expression, you would see that they match Johnson's formula
exactly.
> >
> No Steve, you have not matched Johnson's formula 1/(1 - a) exactly until
you include the
> limitation that this formula is valid only for values of 'a' less than 1.

You omitted this
> important factor in your QEX article.
> >
> >> >On determining the total forward power in the transmission line.
Johnson
> >> >defines the total forward voltage traveling in the transmission line
as
> >E+,
> >> >which is "the net incident [forward] wave composed of the sum [he adds
> >> >voltages] of
> >> >all the individual waves that travel towards the load.." To determine
> >the
> >> >total forward power traveling in the line, Johnson (see pages 149 -
150)
> >> >uses the expression |E+|^2 / Zo. To determine the total forward power
in
> >> >the line, Johnson first determines the total forward voltage (the net
sum
> >of
> >> >the forward source voltage, determined as the voltage delivered to Zo,
> >and
> >> >the voltage re-reflections). He does not determine the total forward
> >power
> >> >through the addition of power. When I determine the total forward
power
> >> >from the addition of forward voltage, you indicate that I have a
problem
> >and
> >> >don't understand the basic concepts. My approach to determining the
> >total
> >> >forward power is consistent with Johnson's. Is Johnson incorrect as
> >well?
> >> >Do you concurr with Johnson's approach?
> >>
> >> Since I wont have my copy of Johnson until after Dayton I can't see
what
> >he does on the
> >> pages you referenced. I would never consider Johnson incorrect, but the
> >voltages you use
> >> to determine the forward power are not correct, so I must assume you
are
> >not interpreting
> >> Johnson correctly, as you did not earlier also
> >>
> >> Your method of adding voltages involved adding the source voltage 70.71
v
> >(100 watts) and
> >> the re-reflected voltage of 40.82 v resulting in 111.54 total volts.
> >Squaring 111.54 and
> >> dividing by (Zo = 50) results in a total forward power of 248.8

> >watts---incorrect.The
> >> transmission coefficient 0.75 times 248.8 = 186.8 watts delivered to
the
> >150-ohm load,
> >> this is 86.6 watts more than the source power. Obviously and evidently
> >248.8 watts is
> >> incorrect because you used the voltage method incorrectly.
> >>
> >> I should be painfully clear to you now that voltages DON'T ADD at the
> >re-reflection
> >> point--powers DO.
> >> >
> >> >4) If the forward source voltage in a 50 ohm transmission line is 100
V,
> >> >what is the forward source power?
> >>
> >> 200 Watts
> >> >
> >> >5) If the re-reflected voltage in a 50 ohm transmission line is 100
V,
> >what
> >> >is the re-reflected power?
> >>
> >> The answer is indeterminate because you have not defined the necessary
> >givens. What is the
> >> source power, and what is the value of mismatch teminating the line?
> >> >
> >
> >You know the re-reflected voltage is 100 V. The source power has nothing
to
> >do with the answer. The value of the mismatch has nothing to do with the
> >answer because the re-reflected voltage is defined as 100 V. The
> >re-reflected power is 200 W.
> >
> >
> >> >6) If the forward source voltage is 100 V and the re-reflected
voltage
> >is
> >> >100 V and these voltages are in-phase, what is the total forward
voltage?
> >> >What is the total forward power?
> >>
> >> The total forward power is zero, because the termination on the line is
> >either a short or
> >> an open circuit. This line termination is determined because the total
> >forward voltage is
> >> reflected, and no power is delivered to a short or open circuit.
> >> >
> >
> >Actually, this was a poor choice of voltages. I'm not going to ask this

> >again.
> >
> >> >7) If the forward source power is 200 W and the re-reflected power is
200
> >W,
> >> >what it the total forward power? What is the total forward voltage?
> >>
> >> This is not a practical question. It again is concerned with a totally
> >reflecting load.
> >> >
> >>
> >>
> >Poor choice of power levels. I'm not going to ask this again.
> >>
> >>
> >> >I think that this pretty much covers the basics for now. After we
> >discuss
> >> >these issues, we can take a look at the above example and see if our
> >> >analysis and approach is consistent with Johnson's technical
discussions
> >or
> >> >not.
> >> >
> >> >Steve VE9SRB
> >> >
> >> I believe I have achived the goal of my challenge, Steve, so what say
now?
> >>
> >> Walt, W2DU
> >> >
> >>
> >Nothing has been achieved at this point. You do not even remotely
> >understand my technical position and it is clear you do not understand
> >Johnson's. Let's stop the mutual blustering and work through an example
> >using voltages. Willing to do this here?
> >>
> >Steve VE9SRB
>

Given your technical statements on reflection mechanics above, this is an
acceptable conclusion.

Steve VE9SRB

3046. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 19:43:59 UTC
From: sparksw4eas@mindspring.com
Message-ID: <9d6tu1$1gg$1@slb6.atl.mindspring.net>
Source record: 163891
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Amen Gene! 73 Sparks

3047. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 19:54:11 UTC
From: kb7qhc@home.com
Message-ID: <3af9f9f7.948137749@news.seanet.com>
Source record: 163893

On Mon, 07 May 2001 17:53:15 GMT, w2du@iourney.com (Walter Maxwell)
wrote:

>No Steve, we don't even remotely understand your technical position because it is fatally
>flawed. It is also becoming more and more clear to me that you don't understand Johnson
>either, because you are consistently misinterpreting his statements.
>>
>>Why don't you two start by agreeing that the destructive interference
>>pattern at a Z0-match causes both the voltages and currents, involved
>>in the destructive interference, to go to zero? No agreement is possible
>>until you two agree on that point.
>
>Cecil, I must disagree with your last statement, because at the match point voltage and
>current never go to zero simultaneously

Hi All,

This bodes ill in that there are three versions of the same argument
floating out here with no apparent grounding between them. And as
always, the length of each posting gives the impression of the one
with the greatest lung power wins if they can recite the entirety of
their equations in one breath.

To this point all I've seen is "t'ain't so," and each of your
characterizations of what and how someone ELSE is thinking. Perhaps
you gentlemen should take up answering the psychic hot line Almost
100% of the conversation is taken up in talking past everyone else
rather than responding.

No doubt I will be added as a fourth to be 'splained to with what each
of you consider to be killer logic (I will admit these "logics" have
every characteristic of death warmed over).

73's
Richard Clark, KB7QHC

3048. Re: Eleven Mtrs/Freebanders/Feds

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 19:56:51 UTC
From: Gerry T <radgtman58@hotmail.com>
Message-ID: <9d6umdssv1@news.chatlink.com>
Source record: 163892

How many of you saw the note in CQ magazine about a new government radio location system that can find a hf transmitter broadcasting a fraction of a watt for less than a second? I suspect that "freebanders" and high power CBrs will have problems of their own. Heavy fines will pay FCC well.

"Butch Magee" <lynyrd@netdoor.com> wrote in message news:3AF5BF95.AA8DBE50@netdoor.com...
> I remember when 11 meters was a ham band. I remember when the FCC was
> going to regulate the 'new' Citizens Band Radio Program. I remember
> when the Feds were overwhelmed with megawatts of voluminous squalling,
> screaming and cussing and I remember when the fedz just gave up and
> "de-regulated" the Citizens Band, just giving up because they could not
> control the unbelievable mess and couldn't CATCH NOBODY doing anything
> wrong/illegal on 11 meters.
>
> We now have "free-banders". It won't be long now before the fedz just
> give up on the new CB Band. I don't know about the rest of you Hams,
> but I feel threatened that 10 meters is next in line to be de-regulated
> by an impotent and understaffed agency of my government that can and
> will nail my ass if I were to violate rules, but are unable to hammer
> some punk operating totally illegally.
>
> Butch Magee KF5DE
>

3049. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:00:51 UTC
From: kb7qhc@home.com
Message-ID: <3afafde8.949146901@news.seanet.com>
Source record: 163894

On Mon, 07 May 2001 18:23:19 GMT, w2du@iourney.com (Walter Maxwell)
wrote:

>
>Steve, your last statement is clear evidence that your understanding of reflection
>mechanics is flawed, because your statement is not true.

Hi Walt,

This repeated characterization is both tedious and bares nothing new
to the matter at hand. A 400 line posting should hardly follow this
statement above if you have no faith from the beginning.

73's
Richard Clark, KB7QHC

3050. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:04:32 UTC
From: kb7qhc@home.com
Message-ID: <3afbff10.949442946@news.seanet.com>
Source record: 163895

On Mon, 07 May 2001 12:41:22 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Your statement confuses cause and effect. The total forward voltage is
>determined from the total forward energy, not vice versa. The energy
>involved in the destructive interference pattern MUST be taken into
>account. It adds to the electric fields and the magnetic fields and
>helps to determine the magnitude of the voltage and current.

Hi Cecil,

This is more of the "t'ain't so" rhetoric. If you have the choice of
demonstration and simple editorialization, the editorialization above
adds nothing to the dialog.

Your one contribution is to eliminate the tuner with a hi-z line in
its place. That is arguable, the stuff above is just noise.

73's
Richard Clark, KB7QHC

3051. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:09:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF700F7.4BF49C@IEEE.org>
Source record: 163896

Richard Clark wrote:
> I think Steve has clearly argued just such a possibility being
> revealed in the computation. In fact he has argued this specifically
> to the matter of destructive interference.
>
> Your statement appears to be a self contradiction. In other words,
> how can you reveal interference by NOT performing vector math?

I'm not advocating not performing vector math, Richard. But when two of the vector math voltages disappear, the associated energy does NOT disappear. That's the error Steve is making. He assumes that when two voltages undergo destructive interference and disappear that he can then turn around and ignore the associated energy. That is certainly an invalid assumption and is the root of his assertion that 75 joules plus 8.33 joules is equal to 133.33 joules. He is completely ignoring the 50 joules that was involved in taking the two reflected voltages to zero by destructive interference. He thinks because the voltages disappeared, the energy associated with the voltages disappeared. Nothing could be farther from the truth.

Here's what Steve is saying in essence. The power associated with 35.355v in a piece of 50 ohm coax is (35.355)^2/50 = 25w. If we vector add two 35.355v phasors that are 180 degrees out of phase with each other, we get zero volts. So he is saying that, since the voltages add to zero, the powers associated with each of those voltages add to zero. That is so blatently false, I get upset just thinking about it. TAKING THE VOLTAGES TO ZERO DOES NOT TAKE THE ENERGY TO ZERO. The 25w associated with each of those voltages has to go somewhere when the voltages cancel to zero. That energy goes into the electromagnetic fields. There is no place else for it to go. It joins the forward power and heads back toward the load, indistinguishable from the re-reflected power.

Consider that when the EM field of an antenna goes to near zero because of destructive interference, the EM field somewhere else is increased. You squeeze the balloon down to nothing in one place and it increases its size in another place. Energy cannot just disappear.
--
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3052. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:11:30 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF70172.7787FE6B@IEEE.org>
Source record: 163897

Richard Clark wrote:
> Steve has approached this in the simpler manner. You in turn are
> adding conditions (tests for 0 or 180 degree phases which are
> naturally handled by the math already).
>
> Hence, through these imposed and unnecessary conditions, yes, illogic
> is forcing its way into the thread.

Dang Richard, I cannot believe that you are agreeing with Steve that
75 joules plus 8.33 joules is equal to 133.33 joules. Has the whole
world gone crazy?
--
http://www.mindspring.com/~w6rca

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3053. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:18:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF70324.7662B211@IEEE.org>
Source record: 163898

Richard Clark wrote:
> This says nothing. Why don't you quote the problematic math instead
> of suggesting it? To present a subjectively perceived error with a
> broad sweep of the hand adds nothing but a metaphysical layer to the
> discussion.

I can't do Maxwell's equations in ASCII, Richard, so I will rely on the conservation of energy principle. Steve is trying to violate it, pure and simple. 75 joules plus 8.33 joules is simply not ever equal to 133.33 joules, noway, nohow, nowhere, nowhen.

If V1^2/Z0 + V2^2/Z0 is the total energy associated with two voltages and those two voltages undergo destructive interference, the resulting energy is NOT (V1-V2)^2/Z0 = zero, but that is what Steve would have us believe. I can't believe that you agree with Steve that a violation of the conservation of energy principle happens at a Z0-match.
--
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3054. Re: helpneeded: combine signal from ant and dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:36:13 UTC
From: boerio@arocknid.com
Message-ID: <1HDJ6.544$7O2.10372@typhoon.aracnet.com>
Source record: 163899
Cross-posted to: rec.video.satellite.tvro,rec.radio.amateur.antenna

"J. Sun" <jsun@lucent.com> writes:

>Hi !,

>I have a outdoor TV ant and a Ku band sat dish
>(MPEG2/DVB, not DBS).
>The output of LNB is 950-1450 MHz.

>What is the right way to combine the signals
>and feed the internal cable (prewired in
>the house) so that I can watch
>programs from the air and satellite.

>Rus

I have a signal combiner that I got from my friendly satellite repair/service company. It puts the satellite feed on Ch 3 and then the regular broadcast stuff is on whatever channel it's on.

I used to have a signal combiner for Ch 4, but a local TV station started transmitting there, and I had to get the new one.

I can look up the details on it if you need, and don't think it was more than $20.

- Jeff

3055. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:44:49 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF70941.69855086@IEEE.org>
Source record: 163900

K7MEM wrote:
> You can use the fact that you are dyslexic as an excuse to not
> do something, or just view it as something to overcome.

Just like you can use the fact that you are five foot tall as
an excuse not to be able to dunk a basketball, or just view
it as something to overcome. Let us know when you can dunk
a basketball.
--
http://www.mindspring.com/~w6rca

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3056. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:47:08 UTC
From: kb7qhc@home.com
Message-ID: <3af70983.952117031@news.seanet.com>
Source record: 163901

On Mon, 07 May 2001 15:09:27 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>That's the error Steve is making. He assumes that when

Hi Cecil,

I find such observations both tiring and poor argument. It presumes
too much where there is already more than enough presumption going
around.

73's
Richard Clark, KB7QHC

3057. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:50:12 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF70A84.E0C56387@IEEE.org>
Source record: 163902

Roy Lewallen wrote:
> WWVB transmits at 60 kHz. I don't know how directly your results would
> apply to more typical amateur uses. I'd think WWV measurements would be
> of more interest.

I thought WWV had changed its call to WWVB. Is that incorrect?
--
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3058. Re: Portable 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:50:42 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AF70AA2.2781E494@rupert.tds-az.lmco.com>
Source record: 163831

Gary Boyer wrote:
>
> Does anyone have a suggestion on how to use a 2 meter base rig in the
> house....I am looking for a suggestion on a cheap antenna to use inside the
> house with my base station. I am only going to use it for local or area
> repeaters....thanks.. I am strapped for funds so don't want to purchase a
> mobile/ car antenna..Gary..K8BY

When I first got on 2 Meters I constructed a simple folded dipole from
38" or 39" of 300 ohm TV twinlead. I used a 25" or 26" length of RG-58
to make a 4:1 balun and then fed it with RG-58. Then I just hung it
on the wall with a couple of tacks. It worked great and I used it
for years till it fell down. If you want vertical polarization, just
hang it vertically.

All these pieces were scraps that I had on hand so the antenna
didn't cost anything.

--
Martin E. Meserve, K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore
my responses may not be as timely as you, or I, would like them to
be. If I seem to be ignoring you, send me another E-Mail to jog my
memory. Opinions are my own and do not reflect the opinions of my
employer.

3059. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:52:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF70AF2.82C4D677@IEEE.org>
Source record: 163904

VE9SRB wrote:
> I was going to provide a detailed example, however, given your decision to
> end the discussion (as you stated in the standing wave ratio thread - see
> quote below), I will not continue further.:

Then how about answering some of my questions, Steve? You stopped
responding to any of my postings. One wonders why?
--
http://www.mindspring.com/~w6rca

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3060. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:52:10 UTC
From: 2w8ji@akorn.net
Message-ID: <3af708d0.356176914@news.accessunited.com>
Source record: 163903

On Mon, 07 May 2001 17:19:13 GMT, la8ak@online.no (J M Noeding) wrote:

>3x 2el - it is fullwave yagies, haven't checked the gain, but believe

How is it fullwave yagis?

The elements are shortened (are they not?) by folding.

A full-wave yagi would be almost 70 feet across on 20 meters, and 35 feet across on ten meters. That antenna is nothing like a full-wave yagi.

>it is 10-12dB. And when you make an array of 6x 2el yagies on 30MHz
>(and higher) it looks rather impressive, the vertical yagies are
>stacked horisontally 1/2 wave apart (see Knickebein)

I guess we must be talkking about diffrent antennas. You are describing a very big antenna. Big antennas, properly configured, have big gain. Small antennas do not. They are, like it or not, small antennas.

>I don't know the theory, but it is mentioned in "The Secret War" by
>Prof. R.V.Jones, I believe it is something in the effect of switching
>the two 3x 2el yagy arrays with 500Hz rate, you achieve a DF effect.
>It would be interesting to check it out on 2m towards the local
>repeater, but used for listening to the carrier with an AM receiver

You can measure what amounts to phase shifts and get direction by switching elements, but that has nothing to do with receiving ability. It simply tells you direction at the sacrifice of readability.

This thread was about two-way communications applications (as opposed to DFing), and gain of small antennas like the Hex beam and other small-space antennas.

73 Tom

3061. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:54:26 UTC
From: 2w8ji@akorn.net
Message-ID: <3af70ae8.356713033@news.accessunited.com>
Source record: 163905

On Mon, 07 May 2001 07:41:40 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>I'll post the overlaid radiation patterns so you can judge for
>yourself. They are not there now but by tomorrow, May 8, they
>will be at http://people.delphi.com/cecilmoore/40mtri.htm

You don't need to, I figured out what you are saying.

You are comparing a low horizontaly polarized dipole to a vertically
polarized antenna. It makes sense to me now.

73 Tom

3062. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:55:08 UTC
From: kb7qhc@home.com
Message-ID: <3af809e9.952219098@news.seanet.com>
Source record: 163907

On Mon, 07 May 2001 15:11:30 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> Steve has approached this in the simpler manner. You in turn are
>> adding conditions (tests for 0 or 180 degree phases which are
>> naturally handled by the math already).
>>
>> Hence, through these imposed and unnecessary conditions, yes, illogic
>> is forcing its way into the thread.
>
>Dang Richard, I cannot believe that you are agreeing with Steve that
>75 joules plus 8.33 joules is equal to 133.33 joules. Has the whole
>world gone crazy?

Hi Cecil,

Now you have turned to doing my thinking for me (am I agreeing? is
that the focus?). I find this entire exercise a futile effort by the
three of you. Walt has clearly dismissed the consideration of every
approach (both of yours and Steve's) outside of his own.

You have managed to hold your line count under 200, even under 100.
You have managed in an attempt to simplify the situation at hand, but
no one seems to want to go there.

This feels like some variant of dodge-ball where you are in the middle
for the carom shots to nail the other guy.

73's
Richard Clark, KB7QHC

3063. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:55:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF70BC9.8AC5E047@IEEE.org>
Source record: 163906

Richard Clark wrote:
> This bodes ill in that there are three versions of the same argument
> floating out here with no apparent grounding between them.

Why, Richard? Are there only ever two sides to an argument. I disagree
with Steve on some things and with Walt on others. There's no
guarantee that any one of us is 100% right. I'm in learning mode.
If I'm never wrong, I never learn a thing.
--
http://www.mindspring.com/~w6rca

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3064. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:57:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF70C41.E7F80039@IEEE.org>
Source record: 163909

Richard Clark wrote:
> Your one contribution is to eliminate the tuner with a hi-z line in
> its place. That is arguable, the stuff above is just noise.

Now wait just a minute, Richard. My most important contribution is the
reminder that the conservation of energy principle still exists and
75 joules plus 8.33 joules cannot equal 133.33 joules.
--
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3065. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 20:59:32 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9d726h$1mc$1@uranium.btinternet.com>
Source record: 163908

Cec, not enough info. You didn't even give frequency.

Assuming F=20 MHz. 18 AWG wire in the line. Thickness of wire
insulation = 1/2 wire diameter. Aluminium, not steel mast.

When taped to mast the loss in the 9 feet section will increase by
roughly 0.3 dB. Which by itself would not be noticed.

BUT, depending whereabouts in the system the 9 feel length is
located there may be severe mistuning of tuner + line + antenna.
This is mainly due to the large distributed capacitance of each
wire to the metal mast.

Go over to transmit on the lowest HF frequency, tune up on full
power if the mismatch allows you to do so. Feel the 9 feet section
for an increase in temperature. If there's anything overheating it
will be somewhere else.

THEN go over to receive and compare WWV with what you usually get.

But I wouldn't recommend taping 300-ohm ribbon to anything except
for the purpose of performing funny little experiments.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

W6RCecilA <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF6A9E6.F393485E@IEEE.org...
> Reg Edwards wrote:
> > Yes Dick, you did. It is often said that 2 or 3 times the width
of
> > the line is enough. My point is that it is MORE than enough.
>
> I have my 20m-10m dipole on a Rohn tower fed with 300 ohm twin-
> lead. I can run relative receive strength measurements on WWVB
> with the feedline on standoffs VS taped to the tower for a
> distance of about ten feet. Care to estimate the difference,
> if any, in receive signal strength?
> --
> http://www.mindspring.com/~w6rca
>
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3066. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 21:04:33 UTC
From: John O'Flaherty <oflahert@roast.net>
Message-ID: <3AF70DE1.6D7A6C27@roast.net>
Source record: 163910

"Peter O. Brackett" wrote:

> Cecil:
>
> Yes I saw your example demonstrating Kirchoff's laws... but you didn't write
> the equation down, as I always try to do. A diagram in ASCII without an in
> line
> equation could be misinterperted depending upon the "font" set up in your
> email reader.
>
> Is that how I missed your invisible transmission line? Heh, heh.
>
> Cecil, transmission line theory does work well at DC and so does lumped
> circuit theory work at AC...
>
> You just have to know how to apply them in each domain. That takes
> "judgement".
>
> For example, it just takes a whole lotta little lumps to "get close" to a
> distributed system. Sometimes you gotta use judgement to know what a "lotta
> little lumps" needs to be. i.e. How many little lumps to use.
>
> However, if you will note the number of "segments" that EZNEC chooses to
> approximate antennas, (those are it's "lotta little lumps")... it's not a
> great number, and thinking about things that way, i.e. as a lotta little
> lumped network elements, often gives a lot more useful and valid insight
> than
> using...
>
> that silly ficticious "REFLECTED POWER" model invented by some poor
> misguided engineer, long since forgotten by the way, that has ficticious
> powers sloshing up and down a transmission line bouncing off reflection
> points, etc... way more complicated than it need to be!
>
> Cecil, the ONLY energy bouncing around in a distributed transmission line is
> that bouncing back and forth, most likely latterally rather than
> longitudinally, between the distributed capacitance dC, and the distributed
> inductance dL per unit length.
>
> The only "end to end energy surges" that occur on a transmission line are
> while the line is "charging" to its' steady state. Surely that transient
> event lasts no more than a few microseconds for the usual amateur radio
> installation. Why continue to carry that "visualization" of a short
> transient event on to the steady state to explain and visualize steady state

> behavior?
>
> During the steady state there is nothing more nor less than a
> steady progression of power down the line from source [generator] to sink
> [load] just as in a DC circuit. It's just not sensible or appropriate, no
> matter how
> correct it is "mathematically" to "imagine" a ficticious power bouncing up
> and down
> the line.
>

Sorry, it's not correct to say that power is progressing down a line. Energy may be doing so. Power is just how fast energy is doing so. It's important to be precise about these things, isn't it?

john

3067. Re: helpneeded: combine signal from ant and dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 21:05:02 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AF70DFE.446B9B3D@rupert.tds-az.lmco.com>
Source record: 163834
Cross-posted to: rec.video.satellite.tvro,rec.radio.amateur.antenna

boerio@arocknid.com wrote:
>
> "J. Sun" <jsun@lucent.com> writes:
>
> >Hi !,
>
> >I have a outdoor TV ant and a Ku band sat dish
> >(MPEG2/DVB, not DBS).
> >The output of LNB is 950-1450 MHz.
>
> >What is the right way to combine the signals
> >and feed the internal cable (prewired in
> >the house) so that I can watch
> >programs from the air and satellite.
>
> >Rus
>
> I have a signal combiner that I got from my friendly satellite
> repair/service company. It puts the satellite feed on Ch 3 and then the
> regular broadcast stuff is on whatever channel it's on.
>
> I used to have a signal combiner for Ch 4, but a local TV station started
> transmitting there, and I had to get the new one.
>
> I can look up the details on it if you need, and don't think it was more
> than $20.
>
> - Jeff

The combiner that you have works very good, but is intended for use
after the decoder box. I think Rus wants one that goes before the
decoder box. Another poster gave a link to a diplexer, which is what
he really needs. A combiner should cost about $20 but a diplexer
will cost around $30 and you will need two of them. One to combine
the signals from the antenna/LNB end and then another one to
separate them at the decoder/TV end. You will also experience about
10 db of signal loss from the antenna.

--
Martin E. Meserve, K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore
my responses may not be as timely as you, or I, would like them to

be. If I seem to be ignoring you, send me another E-Mail to jog my memory. Opinions are my own and do not reflect the opinions of my employer.

3068. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 21:07:44 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AF70EA0.794BDF32@rupert.tds-az.lmco.com>
Source record: 163835

W6RCecilA wrote:
>
> K7MEM wrote:
> > You can use the fact that you are dyslexic as an excuse to not
> > do something, or just view it as something to overcome.
>
> Just like you can use the fact that you are five foot tall as
> an excuse not to be able to dunk a basketball, or just view
> it as something to overcome. Let us know when you can dunk
> a basketball.
> --
> http://www.mindspring.com/~w6rca

What a defeatist attitude. You just have to learn to jump higher!

--
Martin E. Meserve K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore
my responses may not be as timely as you, or I, would like them to
be. If I seem to be ignoring you, send me another E-Mail to jog my
memory. Opinions are my own and do not reflect the opinions of my
employer.

3069. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 21:08:34 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF70ED2.91214FA3@IEEE.org>
Source record: 163911

VE9SRB wrote:
>
> "Walter Maxwell" <w2du@iourney.com> wrote in message
> news:3af6e19c.14181922@news.journey.com...
> > On Mon, 07 May 2001 17:09:54 GMT, "VE9SRB" <srbest@att.net> wrote:
> > >If a forward voltage of 70.71 V arrives at a termination with a 3:1 SWR
> > >(|rho| = 0.5) the reflected voltage is equal to 35.355 V and the total
> > >voltage is equal to 106.065 V. This is very fundamental transmission
> line
> > >theory. That was the point of my discussion. Do you now disagree with
> > >these statements?
> >
> > Yes, I certainly do disagree with these statements. Apparently you and I
> went to two
> > separate schools of engineering that could not have taught the same
> concepts, because what
> > you are saying is not what I learned.
> > >
>
> I understand that you did not learn this.

Steve, you are describing the foot of an elephant while Walt is describing the tail. Please use Ockham's razor to trim the disagreement down to a single small topic. Here's what I would suggest.

Look at the destructive interference pattern at a Z0-match. Here's my question:

Why do you think it's possible for the associated energy to go to zero just because two voltages cancel to zero?
--
http://www.mindspring.com/~w6rca

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3070. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 21:09:02 UTC
From: kb7qhc@home.com
Message-ID: <3af90bcf.952705698@news.seanet.com>
Source record: 163912

On Mon, 07 May 2001 15:18:44 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

> that is what Steve would have us
>believe.

Hi Cecil,

This is more characterization and less presentation. It does nothing
to add to the argument's coherence nor is it compelling proof.

>I can't believe that you agree with Steve that a violation of
>the conservation of energy principle happens at a Z0-match.
is nothing more than a plea leveraging me to choose a side, not an
argument.

What little math you had to offer is so far out of context that it is
meaningless. I would suggest that both you and Steve work that out
along a model that is agreeable to both of you (and confine all
discussion to it alone).

Of the single point argued about two waves canceling at one point begs
the observation that these two waves must cancel at every point. IS
THE WHOLE LINE A SHORT? These issues have become so myopic and
provincial that I find glaring contradictions throughout.

There seems to be no point in their enumeration given that it would
undoubtedly provoke 400 line proofs of less than clear arguments.
Further, I have no hope of being responded to, to the point of my or
any objection, when the current retort is "you just don't get it."

73's
Richard Clark, KB7QHC

3071. Antenna tuner question.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 21:29:02 UTC
From: Bill Russell <willy@global2000.net>
Message-ID: <7d4eft8rq6a0fb49n9g0pmn9s085foh57a@4ax.com>
Source record: 163913

I will be needing a GOOD antenna tuner for various antennas. The primary antenna being a 135 foot dipole fed with 450 ohm ladder line. I hope to also have a sloper or 2 fed with coax for single band operation. Power will vary from 100 watts to the full limit. My question is.....which tuner will be the best for my needs, the old reliable Johnson KW matchbox or the Pulstar AT4K. I know the Pulstar is a bit pricey but u get what u pay for!!!!!

Thanks in advance
Bill

3072. Re: Antenna tuner question.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 21:38:19 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <TxX3Ouod4mFd1uDZBDviuLd36+Bo@4ax.com>
Source record: 163914

Bill Russell <willy@global2000.net> wrote:

>I will be needing a GOOD antenna tuner for various antennas. The
>primary antenna being a 135 foot dipole fed with 450 ohm ladder line.
>I hope to also have a sloper or 2 fed with coax for single band
>operation. Power will vary from 100 watts to the full limit. My
>question is........which tuner will be the best for my needs, the old
>reliable Johnson KW matchbox or the Pulstar AT4K. I know the Pulstar
>is a bit pricey but u get what u pay for!!!!!
>
>Thanks in advance
>Bill

Hmmm, who is Pulstar?

Bob
k5qwg

3073. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 21:41:23 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <UBfa7qADax96EAa2@ifwtech.com>
Source record: 163915

Tom W8JI wrote:
>On Mon, 07 May 2001 17:19:13 GMT, la8ak@online.no (J M Noeding) wrote:
>
>>3x 2el - it is fullwave yagies, haven't checked the gain, but believe
>
>How is it fullwave yagis?

You're talking about two different antennas, but both called "X-beams".

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

3074. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 21:56:56 UTC
From: Ian Jackson <ianjackson@g3ohx.demon.co.uk>
Message-ID: <sSP7ZFAoox96Ews4@g3ohx.demon.co.uk>
Source record: 163916
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

In article <ktjcft8ni9nqv9252pdggfjdkq2k6sn4hr@4ax.com>, Walt Davidson <walt@f1racing.co.uk> writes
>On Mon, 07 May 2001 01:05:50 GMT, billsohl@mindspring.com (Bill Sohl)
>wrote:
>
>>And for most people, they are speeding just staying with
>>the flow of traffic on American highways. Interstae 80 in NJ
>>is 55 for 30 miles before NYC. The AVERAGE flow of traffic
>>is usually 65/70 or higher. Anyone doing 55 is (or should
>>be) in the extreme right lane.
>
>The speed limit on most UK motorways is 70 mph. If you drive at 70
>mph even in the center lane, you have people tailgating you, flashing
>their headlights and sounding their horn. Eventually they will
>overtake you on the wrong side. The average speed on motorways is
>probably 85 mph.
>
>73 de G3NYY
>
If they can overtake you on the wrong side, then you have NO business sitting in the middle lane. There are no 'slow' and 'fast' lanes on British motorways. The Rule of the Road applies - you 'drive on the left and overtake on the right'. If lane #1 is clear, you should use it, no matter how fast you are going (provided that you are not constantly having to move into lane #2 or #3 to overtake). It is not your job to try and be a policeman, and create an obstruction by driving at the legal limit in the middle of the road.

Anyway, Walt, you used to ride a motorcycle. We car drivers KNOW that motoring laws don't apply to motorcyclists. When did YOU ever stick to the speed limits???
Ian. ;*)

PS
I think that the UK motorway limit should generally be 80mph (but rigourously enforced) but, in built-up areas, as low as 10mph where conditions call for it. Unfortunately, in the UK it is very difficult to put in place a limit of less than 30mph (I think it takes an Act of Parliament, or even an Act of God).

3075. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 22:01:51 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF71B4F.CCF8D852@IEEE.org>
Source record: 163917

Richard Clark wrote:
> Of the single point argued about two waves canceling at one point begs
> the observation that these two waves must cancel at every point. IS
> THE WHOLE LINE A SHORT?

Do you really not understand? If two waves cancel at one point, they cannot possibly cancel at every point. It's sorta like being saved. Once canceled, always canceled. Do you agree that destructive interference can affect (and effect) an antenna's radiation pattern? Do you believe that just because destructive interference happens at one point in space that it must happen at all points in space? Such a belief clearly violates the conservation of energy principle.

Do you agree that if destructive interference happens, the energy in the fields cannot be lost and constructive interference is required to happen elsewhere?

Is this stuff so esoteric that nobody in the world (except me) understands?

Consider the following lossless Z0-matched antenna system with a Z0-match at 'X':

100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load

There is no reflected power on the coax, the voltage on the coax is 70.71v, and the current on the coax is 1.414a. When these values reach the Z0-match point at 'X', a reflection occurs that is instantaneously canceled. If the Z0-match didn't exist, 25w would be reflected. That equates to 35.355 volts reflected volts on the coax. The 35.355 volts reflected actually happens but never gets off the ground as follows:

We know that steady-state reflected power on the twinlead equals 33.33w because we can measure it. We know that 8.33w will be re-reflected by the real 150/50 ohm transition. So 33.33w - 8.33w = 25w will not stop at the Z0-match point and will try to flow right through it onto the coax.

Fortunately (or unfortunately depending on which side you're on) the voltage associated with this 25w value is 180 degrees out of phase with the previously mentioned reflected voltage. And the current associated with this 25w value is 180 degrees out of phase with the previously mentioned reflected current. Both of these component voltages and currents go to zero. But the energy is not destroyed.

So the original voltage associated with the 25w of reflected power is canceled by the voltage associated with the 25w of reflected power newly arriving from the load. The only exception is the modulation that may

be different between the two cycles. For continuous waves, the destructive interference is 100% effective.

And the original current associated with the 25w of reflected power is canceled by the current associated with the 25w of reflected power newly arriving from the load. The only exception is the modulation that may be different between the two cycles. For continuous waves, the destructive interference is 100% effective.

But just because voltages and currents are canceled does not mean that the associated energy is canceled.

Richard, have you ever squeezed a balloon?
--
http://www.mindspring.com/~w6rca

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3076. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 22:03:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF71BAA.2AC5EC55@IEEE.org>
Source record: 163819

Tom W8JI wrote:
>
> On Mon, 07 May 2001 07:41:40 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >I'll post the overlaid radiation patterns so you can judge for
> >yourself. They are not there now but by tomorrow, May 8, they
> >will be at http://people.delphi.com/cecilmoore/40mtri.htm
>
> You don't need to, I figured out what you are saying.

Too late, Tom, it's already done. Make me feel good and click on it. :-)
--
http://www.mindspring.com/~w6rca

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3077. Re: Antenna tuner question.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 22:04:12 UTC
From: Bill Russell <willy@global2000.net>
Message-ID: <5u6eftc4jkv6tvl4lmkbuk7rqpe8hnlhuq@4ax.com>
Source record: 163918

On Mon, 07 May 2001 21:38:19 GMT, Bob Miller <bamiller@texas.net>
wrote:

>Bill Russell <willy@global2000.net> wrote:
>
>>I will be needing a GOOD antenna tuner for various antennas. The
>>primary antenna being a 135 foot dipole fed with 450 ohm ladder line.
>>I hope to also have a sloper or 2 fed with coax for single band
>>operation. Power will vary from 100 watts to the full limit. My
>>question is.....which tuner will be the best for my needs, the old
>>reliable Johnson KW matchbox or the Pulstar AT4K. I know the Pulstar
>>is a bit pricey but u get what u pay for!!!!!
>>
>>Thanks in advance
>>Bill
>
>Hmmm, who is Pulstar?

http://www.palstarinc.com/palmain.htm>
>Bob
>k5qwg

3078. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 22:05:21 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF71C21.9F002709@IEEE.org>
Source record: 163820

John O'Flaherty wrote:
> Sorry, it's not correct to say that power is progressing down a line. Energy may
> be doing so. Power is just how fast energy is doing so. It's important to be
> precise about these things, isn't it?

(Snicker, snicker) Peter makes that faux pas about once a week. :-)
--
http://www.mindspring.com/~w6rca

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3079. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 22:10:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF71D61.9481E204@IEEE.org>
Source record: 163821

Richard Clark wrote:
> I find such observations both tiring and poor argument. It presumes
> too much where there is already more than enough presumption going
> around.

I'm trying to diagnose the error in Steve's assertion that 75 joules
plus 8.33 joules equals 133.33 joules. Do you agree with Steve's
implied assertion that the conservation of energy principle doesn't
apply to a Z0-match? If so, why? If not, why not?
--
http://www.mindspring.com/~w6rca

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3080. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 22:13:45 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF71E19.86395526@IEEE.org>
Source record: 163822

Richard Clark wrote:
> You have managed to hold your line count under 200, even under 100.
> You have managed in an attempt to simplify the situation at hand, but
> no one seems to want to go there.

Assuming that we are all rational, intelligent creatures, there's got to
be a middle ground somewhere and I have nothing else to do.
--
http://www.mindspring.com/~w6rca

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3081. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 22:43:48 UTC
From: kb7qhc@home.com
Message-ID: <3af823a2.1848528@news.seanet.com>
Source record: 163824

On Mon, 07 May 2001 17:10:41 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> I find such observations both tiring and poor argument. It presumes
>> too much where there is already more than enough presumption going
>> around.
>
>I'm trying to diagnose the error in Steve's assertion that 75 joules
>plus 8.33 joules equals 133.33 joules. Do you agree with Steve's
>implied assertion that the conservation of energy principle doesn't
>apply to a Z0-match? If so, why? If not, why not?

Hi Cecil,

This is the perpetuation of a presumption. I find nothing complete
enough to respond to insofar as agreeing or disagreeing with it.
Knowing full well there are vectors involved and finding no
correlating discussion of their contribution (in spite of disclaimers
of interference not being taken care of by the various parties), nor
any attention paid to phase (the same thing) I suspect all such
derivations as being faulty.

This artifice of complication to joules adds nothing but complexity
that is unnecessary. If you feel compelled to use these units, it
belies an underlying weakness that needs to be attended to before the
three of you should proceed.

Getting the three of you to that point is similar to herding cats.

73's
Richard Clark, KB7QHC

3082. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 22:47:20 UTC
From: kb7qhc@home.com
Message-ID: <3af92540.2262803@news.seanet.com>
Source record: 163825

On Mon, 07 May 2001 17:13:45 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> You have managed to hold your line count under 200, even under 100.
>> You have managed in an attempt to simplify the situation at hand, but
>> no one seems to want to go there.
>
>Assuming that we are all rational, intelligent creatures, there's got to
>be a middle ground somewhere and I have nothing else to do.

Hi Cecil,

Well this appears to be a commonality between you and Steve, this
leaves only Walt. Given that Walt find's faults with your proxy
postings, it is incumbent upon him to clear this up and accept this
middle ground. I don't buy his "voice in the wilderness" as a
compelling technical argument.

73's
Richard Clark, KB7QHC

3083. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 22:58:58 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9d79bi$b5d$0@208.206.142.69>
Source record: 163826

W6RCecilA wrote:
>
> Roy Lewallen wrote:
> > WWVB transmits at 60 kHz. I don't know how directly your results would
> > apply to more typical amateur uses. I'd think WWV measurements would be
> > of more interest.
>
> I thought WWV had changed its call to WWVB. Is that incorrect?

It has used WWVB on the 60kHz freq. for a long time, and WWV on HF.

3084. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:04:56 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <sSFJ6.38780$2_.13560363@news3.rdc1.on.home.com>
Source record: 163827
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> No it's for revenue enhansment. The cities need the money and most
> cities use "traffic" for generating money as a lot of it isn't paid
> for by residents. GOD help you if you violate in Royal Oak,Mi as they
> have a brand new court bldg that is NOT paid for! Royal Oak police
> allowed a video to be made once and it was broadcast, the sargent is
> giving the beat cops hell so they will PRODUCE more. $$$

Well think of the logistics. The average officer gives out what 10 tickets a day around 75$ a pop. 750$. Now his salary is 240$ a day. He will probably pay 50$ in gas for the touring he does. Administration as well is probably another 100$. So figure after all that he clears 350$. That is being very generous. In bumwad idaho (not an insult just my way of saying nowhere) they proably have 2 cops out per day and chances are they will split those 10 tickets between the two since population is small. Now the police pay 800$ a day for that 750$ income from tickets ... tell me where that makes sense that they do it for the profit ?

3085. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:07:34 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <WUFJ6.38791$2_.13566909@news3.rdc1.on.home.com>
Source record: 163829
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> Not idiots...just common evryday people that recognize BAD
> law when they see it and act accordingly.

Tell me how its a bad law ? People speed, simple physics will tell you that that increases kinetic energy and momentum thus increasing stopping distances. People already don't leave enough room at the slower speeds and keep the same distances at the faster ones. So not only were they doomed from the start before they started speeding since every accident that could happen with buddy in front would result in them being involved, but, now their stopping distances are even greater and they will impact with a higher velocity.

3086. Re: tractor beam success with LASER

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:09:02 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF72B0E.7A494A3A@bwcc.com>
Source record: 163828

http://news.bbc.co.uk/hi/english/sci/tech/newsid_1310000/1310771.stm

3087. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:11:13 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <IYFJ6.38806$2_.13576566@news3.rdc1.on.home.com>
Source record: 163832
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> WHY? Do you believe for one second that the speed
> limits on American highways are realistic? Do they have
> any resemblemce to reality. Is 70 mph across Kansas
> logical when there is visibility to the horizon, light traffic
> and not a bend in the load for miles ahead?

First off its law. You hams don't like those cb'ers breaking the law because of some little arbitrary thing like needing a licence to operate (having the sheet of paper does not make you a better op) but yet you find the "arbitrary" speed laws rediculous? They are there to lower the risk of accidents. Car's do not handle as well at the higher velocities, reaction times are required to be far faster etc etc etc ... They do have engineers and such who do determine hte maximum velocity that is safe on a particular road given its conditions or give it the max of 55 (its 65 now isnt it ?) since that is about what the average driver can safely handle.

3088. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:12:06 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <aZFJ6.8867$4f7.696740@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163830

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF70AF2.82C4D677@IEEE.org...
> VE9SRB wrote:
> > I was going to provide a detailed example, however, given your decision
to
> > end the discussion (as you stated in the standing wave ratio thread -
see
> > quote below), I will not continue further.:
>
> Then how about answering some of my questions, Steve? You stopped
> responding to any of my postings. One wonders why?
> --
> http://www.mindspring.com/~w6rca
>
>

I was wrestling your tag team partner. Sorry.

Ask away. I would be happy to go through an example with you.

Steve

3089. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:16:35 UTC
From: Rough Rider <roughrider@home.com>
Message-ID: <n1GJ6.53673$B22.13704741@news1.rdc2.pa.home.com>
Source record: 163833
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Sideband, I will put a cup out for you since you are begging to be correct about full quieting. Notice Cecils definition, frequency modulation recievers, does this give you enough of a hint- that it is FM only. Do yourself a favor while studying for the ham test don't just memorize the answers actually learn what the question mean. If it was fill in the blanks the ham population would decrease by two fold.

"Sideband" <sideband@spam.me.not> wrote in message news:3AF6B5C7.501194DA@spam.me.not...
> So it could apply to an unmodulated AM signal, then? If so, my statement
> was correct. If not, I stand corrected. I hope someone will let me know
> which it is.
>
> -SSB
>
> W6RCecilA wrote:
> >
> > Sideband wrote:
> > > I don't recall ever hearing/being told/reading that Full Quieting
> > > applied only to FM. I could be wrong.
> >
> > From the IEEE Dictionary: "quieting sensitivity (frequency-modulation
> > receivers) The minimum unmodulated signal input for which the output
> > signal-noise ratio does not exceed a specified limit, under specified
> > conditions."
> >
> > Note the "unmodulated" requirement which would prohibit this term
> > from being used associated with SSB.
> > --
> > http://www.mindspring.com/~w6rca
> >
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3090. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:17:20 UTC
From: kb7qhc@home.com
Message-ID: <3afa2627.2493515@news.seanet.com>
Source record: 163837

On Mon, 07 May 2001 17:01:51 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Do you really not understand? If two waves cancel at one point, they
>cannot possibly cancel at every point. It's sorta like being saved.

Hi Cecil,

We now have appeals to religious experience as a technical proof?

With the religion stripped away, there is really a problem here with
this single observation that two completely out-of-phase (180 degree)
waves traveling the same path that cancel at one point are NOT
overlying every other point along that same path with similar
cancellations. Congruency exists everywhere if it exists anywhere -
that, or your underlying precepts are seriously in trouble. This is
the same fault I have observed in Walt's premise for some time now.

If you find some fault or error in my interpretation, it is not MY
fault of your (the plural your) presentation. I do, however, note
that I and others are dismissed if you (the plural you) sense that
your (the plural you) argument does not sway me and that this is
handled with assignments of blame and ignorance instead of patience
and tutelage. In other words: condescension.

Your (the singular you) statements are full of "do I believe?" pleas
that are totally uncalled for. Leave my own system of beliefs outside
of your argument unless you are trying to invent a faith based physics
of wave mechanics.

>
>Richard, have you ever squeezed a balloon?

Your question is hardly necessary, and again adds nothing. My
experience is not at issue here and any attempt to focus on it is
tacit admission that argument is flagging elsewhere.

Given that I have not offered to support any of these views presented
so far, means that you (the plural you) have to answer my objections,
or simply ignore me with the hubris of a hollow, rhetorical
achievement.

Please note my objections are that the three of you have failed to
clearly define the boundaries of your argument. I am not interested
in speculative half statements parading as killer logic.

73's
Richard Clark, KB7QHC

3091. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:19:39 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <f4GJ6.38846$2_.13598101@news3.rdc1.on.home.com>
Source record: 163836
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF693E8.EF77E40@spam.me.not...
> Maybe I've got my definitions confused, but isn't full quieting when a
> transmitted carrier is strong enough to cover all background noise at
> the receiver?

AM always has background noise

3092. Re: Antenna tuner question.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:23:11 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3af72c41.23622800@news.aepnet.org>
Source record: 163838

On Mon, 07 May 2001 18:04:12 -0400, Bill Russell
<willy@global2000.net> wrote:

>On Mon, 07 May 2001 21:38:19 GMT, Bob Miller <bamiller@texas.net>
>wrote:
>
>>Bill Russell <willy@global2000.net> wrote:
>>
>>>I will be needing a GOOD antenna tuner for various antennas. The
>>>primary antenna being a 135 foot dipole fed with 450 ohm ladder line.
>>>I hope to also have a sloper or 2 fed with coax for single band
>>>operation. Power will vary from 100 watts to the full limit. My
>>>question is.....which tuner will be the best for my needs, the old
>>>reliable Johnson KW matchbox or the Pulstar AT4K. I know the Pulstar
>>>is a bit pricey but u get what u pay for!!!!!

Seems to me that if you need a fan to cool the inductor, you ought to
be thinking of a better way. RF watts are hard to come by. Blowing
them away on a stream of air seems kind of silly.

Wes Stewart N7WS

>>>
>>>Thanks in advance
>>>Bill
>>
>>Hmmm, who is Pulstar?
>
>
>http://www.palstarinc.com/palmain.htm>
>>Bob
>>k5qwg
>

3093. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:28:19 UTC
From: sparky@cet.com
Message-ID: <3af72f09.1543502@news.cet.com>
Source record: 163839
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Mon, 07 May 2001 10:42:49 GMT, billsohl@mindspring.com (Bill Sohl)
wrote:

>On Mon, 07 May 2001 09:16:27 GMT, "Rob St.Denis"
><tstdenis3160@home.com> wrote:
>
>>Just because there are a lot of idiots out there that do it doesn't make it
>>right!
>
>Not idiots...just common evryday people that recognize BAD
>law when they see it and act accordingly.
>
>Cheers,
>Bill K2UNK

Probably the same common, everyday people that recognized a BAD
presidential candidate and voted him into office - twice.

3094. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:35:26 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF7313E.A315327C@eznec.com>
Source record: 163840

John O'Flaherty wrote:
>
> Sorry, it's not correct to say that power is progressing down a line. Energy may
> be doing so. Power is just how fast energy is doing so. It's important to be
> precise about these things, isn't it?
>
> john

Oops, another person who's not allowed to talk about current flow. From
now on it's charge flow for you, John.

Roy Lewallen, W7EL

3095. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:53:30 UTC
From: w2du@iag.net
Message-ID: <3af73381.35147038@news.journey.com>
Source record: 163841

On Mon, 07 May 2001 20:00:51 GMT, kb7qhc@home.com (Richard Clark) wrote:

>On Mon, 07 May 2001 18:23:19 GMT, w2du@iourney.com (Walter Maxwell)
>wrote:
>
>>
>>Steve, your last statement is clear evidence that your understanding of reflection
>>mechanics is flawed, because your statement is not true.
>
>Hi Walt,
>
>This repeated characterization is both tedious and bares nothing new
>to the matter at hand. A 400 line posting should hardly follow this
>statement above if you have no faith from the beginning.
>
>73's
>Richard Clark, KB7QHC

Sorry Richard, chalk it up to my frustration. And I left the earlier lines in for the reader to have reference to my statements that are in controversy without having to look into a previous post to correlate my position with the statements with which I disagree.

Walt, W2DU

3096. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-07 23:53:59 UTC
From: richardharrison@webtv.net
Message-ID: <11746-3AF73597-42@storefull-116.iap.bryant.webtv.net>
Source record: 163845

We should accept the fact that the Bird wattmeter works pretty well. Why?

Bird says: "At any one point on a transmission line, the voltage E is the sum of the forward and reflected voltages Ef + Er and the current I is Ef/Zo - Er/Zo (Since the reflected wave travels in the opposite direction, Ir = -Er/Zo)."

On the premise above, Bird shows their directional coupling gives a voltage sample in the forward diection proportional to: j omega M/Zo (2Ef), and a voltage sample in the reverse direction proportional to: j omega M/Zo (2Er).

A capacitive load compensates for the frequency sensitivity of the samples above.

Meter calibration produces an output indication in RF watts.

The Bird works because only simple arithmetic is involved with the voltage and power in a particular direction, and the two directions are either in-phase or out-of-phase between their volts and amps in a particular direction.

To get the true forward power from a Bird wattmeter at any point in a line, the reflected power is simply subtracted from the forward power.

This metering is a clear indication of what happens in the transmission line.

Best regards, Richard Harrison, KB5WZI

3097. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 00:03:00 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <UIGJ6.8925$4f7.701911@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163842

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF70324.7662B211@IEEE.org...
> Richard Clark wrote:
> > This says nothing. Why don't you quote the problematic math instead
> > of suggesting it? To present a subjectively perceived error with a
> > broad sweep of the hand adds nothing but a metaphysical layer to the
> > discussion.
>
> I can't do Maxwell's equations in ASCII, Richard, so I will rely on the
> conservation of energy principle. Steve is trying to violate it, pure
> and simple. 75 joules plus 8.33 joules is simply not ever equal to
> 133.33 joules, noway, nohow, nowhere, nowhen.
>
> If V1^2/Z0 + V2^2/Z0 is the total energy associated with two voltages
> and those two voltages undergo destructive interference, the resulting
> energy is NOT (V1-V2)^2/Z0 = zero, but that is what Steve would have us
> believe. I can't believe that you agree with Steve that a violation of
> the conservation of energy principle happens at a Z0-match.
> --

The law of conservation of energy requires that the total energy or power delivered to a system be equal to the total power consumed (for lack of a better word) by the system. As you correctly state, it also requires that the total *net* power "flowing" into the Zo match be equal to the total net power "flowing" out of the Zo match.

However, it is the traveling voltage and current that carry the energy, not the other way around. It is also the relationships between multiple voltages and currents within the system that establish the energy levels. The law of conservation of energy does not require that 100 W forward + 33.33 W forward equal 133.33 W.

At the Zo match point, there are two steady state rearward voltages. These two voltages, traveling in the same direction, are 180 degrees out of phase. As a result, the vector addition of these voltages results in a net wave with 0 V, 0 A and 0 W. It is a net steady state result. In the example that we have been describing, the power associated with these voltages is 25 W. Through the cancellation of these two rearward traveling waves, we "lost" 50 W of total power flowing out of the Zo match.

On the other side of the Zo match there are two steady state forward traveling waves. The forward source wave, which is 75 W not 100 W. Note that the forward source wave is established by the fact that the applied source wave only sees the Zo of the second transmission at the termination. That's why a reflection is established there in the first place. The other

forward wave is a re-reflected wave of 8.33 W. The total forward power (energy) must be established through the vector addition of forward voltages. 75 W = 61.24 V, 8.33 W = 20.41 V. The total voltage is 81.65 V, which translates into 133.33 W of power. This vector addition of voltage provides the mechanism necessary to cause the necessary total energy to flow out of the Zo match.

The correct relationships between vector voltage addition and resulting power establish the steady state match and the total forward power on the right side of the Zo match. If the voltages did not add in this manner, the law of conservation of energy would not be satisfied at the Zo match point.

Let's consider a case without a Zo match point.

100w XMTR---50 ohm coax---X---3/4WL 150 ohm twinlead---50 ohm load

In this case, the steady state line impedance at X is 450 ohms. Assuming that there is still 100 Watts of forward power before X, the reflected power at X is 64 W and the net power delivered to the 150 ohm line is 36 W. The forward power in the 150 ohm line is 48 W and the reflected power in the 150 ohm line is 12 W.

Do we assume that even without the Zo match that the 12 W of reflected power is added to the 36 W of delivered power to create a total forward power of 48 W. No. This is not a valid assumption, just as it is not valid with the Zo match case.

I should be doing this with voltages, but I will do it with power.

Here, the forward power arriving at X is 100 W. This forward source wave still only sees the 150 ohm line as a termination. As a result, there is 25 W of reflected power in the 50 ohm line and 75 W of forward source in the 150 ohm line. Let's relate this to the steady state conditions described above.

There is 12 W of reflected power in the 150 ohm line. The re-reflected power at X is 3 W (12 * .25). This re-reflected power (actually voltage) is now 180 degrees out of phase with the forward source wave of 75 W (check the sign of the reflection coefficient). 75 W "added" 180 degrees out of phase with 3 W equals 48 W [Ptotal = P1 + P2 - 2 Sqrt(P1) Sqrt(P2)].

At the same time, there is 9 W of rearward power transmitted into the 50 ohm line. This rearward power is in-phase with the 25 W of source reflected power. These two rearward powers add in-phase to a total of 64 Watts of rearward net steady state power [Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2)].

Nothing in the analysis that I have described is inconsistent with the analysis of the Zo match. It is also consistent with vector voltage addition, wave reflection coefficients, and the law of conservation of energy (net power into X = net power out of X).

Steve VE9SRB

3098. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 00:05:17 UTC
From: Don Putnick <dputnick@alumni.caltech.edu>
Message-ID: <3AF7383D.2025B1A6@alumni.caltech.edu>
Source record: 163844

Let's go down a different path than constitution, law, knowledge, and skill. Let's talk directly about respect. You're not going to gain it through defending yourself. Respect is earned, not entitled. You'll earn it by setting a respectable example. When freebanders start performing the same public services that amateurs do, you might start turning some heads.

Twistedhed wrote:
> I am posting here because of some of the nasty things I have read in this
> group and in QRZ discussions regarding freebanders. We who use the frequencies
> from 27.405 to 28.000 have more in common with hams than you might think.
> We are good operators and have knowledge of propagation and skip conditions.
> We use Yasus, Kenwoods and Icomm radios just like you do, so we know technical
> issues as well or better. However, the attitude of some hams toward us is
> rude and condescending. We are treated like 2nd class citizens. This should
> not be. We have the same rights under the constitution as legal hams do.
> For those that do not wish to be under Uncle Sam's thumb, freebanding is
> a viable alternative to getting a ham radio license. What I am saying is
> that maybe the next time you meet a freebander it might be wise to talk with
> him before you condemn him.
> This article ought to clarify things, as I am the author:
http://sporadic1.tripod.com/page7.html
> I am QRT and standing by. (No flames answered. Please reply via email)
> Unit 2711, Florida

3099. Re: Portable 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 00:09:21 UTC
From: Giovanni Cascella <giovanni.cascella@libero.it>
Message-ID: <ROGJ6.326$B87.17972@news.infostrada.it>
Source record: 163843

> Does anyone have a suggestion on how to use a 2 meter base rig in the
> house....I am looking for a suggestion on a cheap antenna to use inside
the
> house with my base station. I am only going to use it for local or area
> repeaters....thanks.. I am strapped for funds so don't want to purchase a
> mobile/ car antenna..Gary..K8BY
>

Why don't you try a full wave length loop ???
Take a few meters of coaxial cable, solder a 1 wave length (about 2 meter)
of tick copper wire between the center and the shield. Shape the copper
wire to obtain a loop and sustain it with an insulating support (a PVC tube,
a wooden stick, etc). Solder a PL259 connector to the opposite side of the
cable, put it into the radio and transmit. Adjust loop length to obtain
minimum SWR. It can work vertical or horizontal polarization according
the orientation of the loop.

Mine work just fine and also resonate on 70 cm band.

Giovanni Cascella, IW0HAB.

3100. Re: 40M Delta Loop Advice Needed:

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 00:22:12 UTC
From: Bill Ogden <wogden@attglobal.net>
Message-ID: <3af73dfd_1@news1.prserv.net>
Source record: 163846

Thank you all for the comments. My original question was real, not just a troll.

My diamond loop is a full wave on 20 meters, fed with ladder line at the bottom. It should be close to square. Actually, there will be two loops, at right angles to other, with a relay to switch between them. The top point of the diamond has another relay to open/close the loops. I believe the "open" mode will work better on 17 & 15 meters.

If the whole thing does not work well, I can always use the mast for an inverted V. I have no way to do A/B tests, except against a Butternut vertical and a very low 30m dipole. However, I think a real dud will make itself known after a while.

It seemed to me that the loops would put (or receive) more energy at reasonable takeoff angles, whereas a dipole radiates as well straight up and straight down as it does at more useful angles. Perhaps this is why some people say a loop is quieter. I listen a lot, and reception is more important to me than transmission.

The mast is 65' of 2" aluminum. Yet another relay will connect the top of the mast to a homemade coil and a capacity hat. The first shot at coil winding will be a pure guess, but I hope I can adjust it for a reasonable feed on 160 meters.

In the hopes that the combination (vertical for 160-40 and loops for 30-10) will work fairly well, I am using good aluminum 6061, dacron guy ropes, etc. The tubing sure is expensive if you simply go to a metal supply house and order it; likewise the rope.

I should have a better feel for the results in a few weeks.

Bill
W2WO

3101. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 00:55:55 UTC
From: richardharrison@webtv.net
Message-ID: <23580-3AF7441B-134@storefull-115.iap.bryant.webtv.net>
Source record: 163851

Dick Carroll wrote:
"The installation was 50 years old, though it had been retrofitted a few times. At the time it was built modern lightning schemes were unknown."

That is unarguable. What is arguable is if the knowledge available at the time of construction was adequate to protect the installation had it been used. I think the answer is a resounding yes.

Early in 1949 I started work in broadcasting. I worked in three stations in that year, KPRC, KXYZ, and KTHT. The first two were built in the 1930`s and KTHT was about one year old when I went to work there in 1949.

None of these stations ever suffered lightning damage when taking many direct hits during every year. In fact they only dropped from the air for an instant, to extinguish any follow-through arcing when hit, and were returned to the air automatically following an arc kill.

In 1949 there were already thousands of AM broadcast stations. Some were improperly protected against lightninmg, but the vast majority, like the stations I worked at, were almost perfectly protected against lightning damage, and so it was almost unheard of.

Ben Franklin figured how to protect structures against lightning over 200 years ago. The rest is just elaboration.

Best regards, Richard Harrison, KB5WZI

3102. Re: Antenna tuner question.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:01:51 UTC
From: 2w8ji@akorn.net
Message-ID: <3af7440d.371343983@news.accessunited.com>
Source record: 163848

On Mon, 07 May 2001 17:29:02 -0400, Bill Russell
<willy@global2000.net> wrote:

>I will be needing a GOOD antenna tuner for various antennas. The
>primary antenna being a 135 foot dipole fed with 450 ohm ladder line.
>I hope to also have a sloper or 2 fed with coax for single band
>operation. Power will vary from 100 watts to the full limit. My
>question is.....which tuner will be the best for my needs, the old
>reliable Johnson KW matchbox or the Pulstar AT4K. I know the Pulstar
>is a bit pricey but u get what u pay for!!!!!

The Ameritron ATR30 will handle mucho power without a blower huffing
on the inductor.

Without a blower, 4-5 kW CW is safe into reasonable loads, so
efficiency is very high.

The Johnson KW matchbox is OK, but has a restricted matching range
because it has a fixed link. What I do with mine is bring an extra tap
on the link out on the rear on the unused connector for the receiver.

My Johnson KW Matchboxes are all in the barn, because I use ATR30's
now.

3103. Re: Antenna tuner question.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:09:45 UTC
From: 2w8ji@akorn.net
Message-ID: <3af745ef.371826635@news.accessunited.com>
Source record: 163849

On Mon, 07 May 2001 21:38:19 GMT, Bob Miller <bamiller@texas.net>
wrote:

>Hmmm, who is Pulstar?
>
>Bob
>k5qwg

He means Palstar, from Paul Hurvnek (sp?).

Viewstar in the 80's, Vectronics in the 90's, Palstar in the 2000's

Check the history, I think that's all of the names.

73 Tom

3104. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:13:44 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9d7h4i$q97$1@plutonium.btinternet.com>
Source record: 163850

More on line loss in the presence of SWR.

In the handbooks we would like to find the answer to the question -

"If the line loss is x dBs when the SWR is 1-to-1, what is the loss
y dBs when the SWR is N-to-1 ?"

But there is NO answer to this question because there is
insufficient information. The missing information, in effect, is
where on the line are the current nodes and anti-nodes - the places
at which maximum and minimum power dissipation occurs ?

As the locations of maxes and mins are shifted up and down the line
the relative number of maxes and mins contained in the line length
will change and so will the line loss - all for the same SWR !

When attempting to find y dBs by calculation the mathematician
immediately runs into a dead end - there are four different values
of line terminating impedance which will give the same SWR on the
line : R1 + jX1, R1 - jX1, R2 + jX2, R2 - jX. Which of the
four is he to use. They will not all give the same answer.

IF he attempts to find a value for the reflection coefficient due
to the load he runs into another dead end - he can calculate only
the magnitude of rho. He has no idea of the all-important phase
angle of rho which can lie in any of the four quadrants. He can
proceed no further.

Except to find some method of approximation and setting bounds on
the errors.

Program RJELINE3 (bottom right-hand corner of screen) computes
exact line loss and Zo-matched line loss for SWR shown at bottom
left-hand corner of screen. For reasons related to those discussed
above it is not possible to enter SWR directly into the program -
SWR is varied by varying the terminating impedance at top right of
the screen.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

3105. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:14:36 UTC
From: richardharrison@webtv.net
Message-ID: <23579-3AF7487C-343@storefull-115.iap.bryant.webtv.net>
Source record: 163854

Denver Braughler wrote:
"Lightning is not really comparable to sinusoidal current."

Oh yeah? Where does all that static in your radio come from, then?

Denver also wrote:
"Neither the UL nor the power company seems concerned that the aluminum
will corrode or waste away."

Zinc is usually used as an anode to protect steel. Aluminum is eaten
away too rapidly. The only less noble common metal is magnesium.

Lots of luck.

Best regards, Richard Harrison, KB5WZI

3106. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:23:54 UTC
From: "Dennis P. Stahr" <irfutures@earthlink.net>
Message-ID: <KUHJ6.638$W4.97741@newsread2.prod.itd.earthlink.net>
Source record: 163852

Thank you Don!

Dennis

"Don Putnick" <dputnick@alumni.caltech.edu> wrote in message
news:3AF7383D.2025B1A6@alumni.caltech.edu...
> Let's go down a different path than constitution, law, knowledge, and
> skill. Let's talk directly about respect. You're not going to gain
> it through defending yourself. Respect is earned, not entitled.
> You'll earn it by setting a respectable example. When freebanders
> start performing the same public services that amateurs do, you might
> start turning some heads.
>
> Twistedhed wrote:
> > I am posting here because of some of the nasty things I have read in
this
> > group and in QRZ discussions regarding freebanders. We who use the
frequencies
> > from 27.405 to 28.000 have more in common with hams than you might
think.
> > We are good operators and have knowledge of propagation and skip
conditions.
> > We use Yasus, Kenwoods and Icomm radios just like you do, so we know
technical
> > issues as well or better. However, the attitude of some hams toward us
is
> > rude and condescending. We are treated like 2nd class citizens. This
should
> > not be. We have the same rights under the constitution as legal hams do.
> > For those that do not wish to be under Uncle Sam's thumb, freebanding is
> > a viable alternative to getting a ham radio license. What I am saying is
> > that maybe the next time you meet a freebander it might be wise to talk
with
> > him before you condemn him.
> > This article ought to clarify things, as I am the author:
http://sporadic1.tripod.com/page7.html
> > I am QRT and standing by. (No flames answered. Please reply via email)
> > Unit 2711, Florida
>

3107. Re: HF DF capability

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:39:23 UTC
From: richardharrison@webtv.net
Message-ID: <12292-3AF74E4B-109@storefull-111.iap.bryant.webtv.net>
Source record: 163858

rbigg wrote:
"Need some ideas as to how to get HF DF capability reasonably easily and inexpensively."

You`ve ruled out the Adcock receiving system which is the best but not cheap and easy.

Try MFJ for a shielded loopstick.

Best regards, Richard Harrison, KB5WZI

3108. Re: Antenna tuner question.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:46:04 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d7j45$d1v$1@slb6.atl.mindspring.net>
Source record: 163853

Bill:

I have an ATR-30 and I like it. Best tuner I've used yet. And I've had a few, Homebrew, Dentron, Heath, MFJ, still have a couple of MFJ's, theyr'e alright, but ATR-30 is most impressive.

Only downside is the cross needle meters say SWR rather than VSWR and, they are labeled in Watts rather than volts, same as all the rest!

-Peter K1PO

"Tom W8JI" <2w8ji@akorn.net> wrote in message
news:3af7440d.371343983@news.accessunited.com...
> On Mon, 07 May 2001 17:29:02 -0400, Bill Russell
> <willy@global2000.net> wrote:
>
> >I will be needing a GOOD antenna tuner for various antennas. The
> >primary antenna being a 135 foot dipole fed with 450 ohm ladder line.
> >I hope to also have a sloper or 2 fed with coax for single band
> >operation. Power will vary from 100 watts to the full limit. My
> >question is........which tuner will be the best for my needs, the old
> >reliable Johnson KW matchbox or the Pulstar AT4K. I know the Pulstar
> >is a bit pricey but u get what u pay for!!!!!
>
>
> The Ameritron ATR30 will handle mucho power without a blower huffing
> on the inductor.
>
> Without a blower, 4-5 kW CW is safe into reasonable loads, so
> efficiency is very high.
>
> The Johnson KW matchbox is OK, but has a restricted matching range
> because it has a fixed link. What I do with mine is bring an extra tap
> on the link out on the rear on the unused connector for the receiver.
>
> My Johnson KW Matchboxes are all in the barn, because I use ATR30's
> now.

3109. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:46:57 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d7j5q$c8b$1@slb7.atl.mindspring.net>
Source record: 163855

Yep!

-Peter K1PO

"John O'Flaherty" <oflahert@roast.net> wrote in message
news:3AF70DE1.6D7A6C27@roast.net...
> "Peter O. Brackett" wrote:
>
> > Cecil:
> >
> > Yes I saw your example demonstrating Kirchoff's laws... but you didn't
write
> > the equation down, as I always try to do. A diagram in ASCII without an
in
> > line
> > equation could be misinterperted depending upon the "font" set up in
your
> > email reader.
> >
> > Is that how I missed your invisible transmission line? Heh, heh.
> >
> > Cecil, transmission line theory does work well at DC and so does lumped
> > circuit theory work at AC...
> >
> > You just have to know how to apply them in each domain. That takes
> > "judgement".
> >
> > For example, it just takes a whole lotta little lumps to "get close" to
a
> > distributed system. Sometimes you gotta use judgement to know what a
"lotta
> > little lumps" needs to be. i.e. How many little lumps to use.
> >
> > However, if you will note the number of "segments" that EZNEC chooses to
> > approximate antennas, (those are it's "lotta little lumps")... it's not
a
> > great number, and thinking about things that way, i.e. as a lotta little
> > lumped network elements, often gives a lot more useful and valid insight
> > than
> > using...
> >
> > that silly ficticious "REFLECTED POWER" model invented by some poor
> > misguided engineer, long since forgotten by the way, that has ficticious
> > powers sloshing up and down a transmission line bouncing off reflection
> > points, etc... way more complicated than it need to be!

> >
> > Cecil, the ONLY energy bouncing around in a distributed transmission
line is
> > that bouncing back and forth, most likely latterally rather than
> > longitudinally, between the distributed capacitance dC, and the
distributed
> > inductance dL per unit length.
> >
> > The only "end to end energy surges" that occur on a transmission line
are
> > while the line is "charging" to its' steady state. Surely that
transient
> > event lasts no more than a few microseconds for the usual amateur radio
> > installation. Why continue to carry that "visualization" of a short
> > transient event on to the steady state to explain and visualize steady
state
> > behavior?
> >
> > During the steady state there is nothing more nor less than a
> > steady progression of power down the line from source [generator] to
sink
> > [load] just as in a DC circuit. It's just not sensible or appropriate,
no
> > matter how
> > correct it is "mathematically" to "imagine" a ficticious power bouncing
up
> > and down
> > the line.
> >
>
> Sorry, it's not correct to say that power is progressing down a line.
Energy may
> be doing so. Power is just how fast energy is doing so. It's important to
be
> precise about these things, isn't it?
>
> john
>

3110. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:47:44 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d7j78$m1p$1@slb7.atl.mindspring.net>
Source record: 163856

Cecil:

Hey, speak English so that we can all understand.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF71C21.9F002709@IEEE.org...
> John O'Flaherty wrote:
> > Sorry, it's not correct to say that power is progressing down a line.
Energy may
> > be doing so. Power is just how fast energy is doing so. It's important
to be
> > precise about these things, isn't it?
>
> (Snicker, snicker) Peter makes that faux pas about once a week. :-)
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3111. Re: Eleven Mtrs/Freebanders/Feds

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:50:16 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF750D8.66850230@spam.me.not>
Source record: 163857

Isn't intentionally interfering with a radio transmission against FCC
rules?

-SSB

N3VST wrote:
>
> Gee I followed two guys at the bottom of 10 meters one night for more than
> an hour. At the point these two were ready to exchange email addresses,
> some "clown" starts sending CW, of course as soon as the freebanders were
> gone so was this ham. It is easy enough to get an IP address and a name
> from someone after a quick little exchange of email. However some fool
> screwed things up thinking he was doing us all a favor by sending CW to get
> rid of them. So that ham was successful in getting rid of them in the short
> term, for them to return in the long term. Thanks to whoever he was, since
> he never did send his call.
>
> I was able to track that one of the freebanders was an hour from home, which
> was austin TX, and the other lived in denver CO.
> "Rick Littlefield" <k1bqt@aol.com> wrote in message
> news:20010506184115.12079.00002289@ng-cr1.aol.com...
> > >...I feel threatened that 10 meters is next in line to be de-regulated by
> an
> > impotent and understaffed agency....<
> >
> > Most of the FBOMs I've heard on 10 meters are mobile--in
> trucks--constantly in
> > motion. Do you propose the fed interdict by sending Blackhawks to blow
> them
> > off the road? Sometimes ya gotta pick your battles...
> >
> > Or get creative. If we expect the government to do everything for
> everybody, we
> > either get disappointed on a good day or totalitarianism on a bad day.
> While I
> > appreciate your frustration, I think Mr. Hollingsworth is doing a far
> better
> > job for us than we've enjoyed for a long time--and "impotent" is not at
> term
> > I'd associate with his efforts.
> >
> > Perhaps your could help by tracking some of this activity and sharing the
> > information via the many channels available to us ...rather than busting
> his
> > chops. I think proaction is preferable to whining. How about you?

> >
> > 73
> >
> > Rick K1BQT

3112. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:53:35 UTC
From: richardharrison@webtv.net
Message-ID: <12291-3AF7519F-277@storefull-111.iap.bryant.webtv.net>
Source record: 163862

John O`Flaherty wrote:
"Sorry, it`s not correct to say that power is progressing down a
line..... It`s important to be precise about these things, isn`t it?"

Not at all. It`s one of those victimless crimes.

Best regards, Richard Harrison, KB5WZI

3113. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:54:19 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF751CB.B955FE6C@spam.me.not>
Source record: 163859
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Now, there, Hand, yer just showin yer igernence, tin-fur! I ne'er said
it were horizontal, roge-o?

:-{P~

-SSB

Gene wrote:
>
> > "> Hit Wilson's site and read up on what a Wilson Silver Load is....
> > >
> > > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
> > > top loaded coil antenna.
> >
> > Runs chills up and down my spine just thinking about
> > a Wilson Silver Load. Gives me the urge to run and
> > buy two, and co-phase them on the sidemirrors for
> > anudder 10dB or so.. Ten Fer.
>
> That's a big 10-fer good buddy. I'm sure you gets lots of horizontal
> gain with a 4-ft-long half-wave antenna. These dumbasses don't even
> recognize marketing hype when it's served to them on a silver platter.
>
> --
> Ride to eat, eat to ride. __O
> _-\<,_
> Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
> Please visit http://www.tfn.net/~gfloyd7/cmn/

3114. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 01:57:06 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d7joqrlc1@slb0.atl.mindspring.net>
Source record: 163860

Reg:

You are very observant.

Yep, with 25 Ohms load, you are correct VSWR is still 2 and in that case rho is indeed negative.

And so for that matter is the "reflected voltage". b = V - IR.

That all seems to fit the theory perfectly.

Anything wrong with all of that?

Just for fun...

Let's add some loss, say a 1/2 Ohm or so, to the transmission line, and then calculate the exess loss in the line due to deviations of VSWR from unity at the load. Then, why not plot a graph of excess loss (dB) in the 3 foot lossy transmission line against VSWR? Might even publish it in a handbook for posterity.

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:9d6jqi$87t$1@uranium.btinternet.com...
> Does your argument still work OK when the load resistance is 25
> ohms ? The VSWR is still 2:1 but Rho is negative.
> ---
> Reg
>
>

3115. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 02:02:37 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9d7k3teuc0@208.206.142.69>
Source record: 163861

W6RCecilA wrote:
>
> K7MEM wrote:
> > You can use the fact that you are dyslexic as an excuse to not
> > do something, or just view it as something to overcome.
>
> Just like you can use the fact that you are five foot tall as
> an excuse not to be able to dunk a basketball, or just view
> it as something to overcome. Let us know when you can dunk
> a basketball.

Any five footer can dunk a basketball, from a stepladder. All he needs
is the tools and the drive to use them.

3116. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 02:16:43 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d7ktj$c3e$1@slb6.atl.mindspring.net>
Source record: 163863

Richard:

Did it occur to you that perhaps all three are correct, simply because they are discussing fictional entities.

IMHO... this "technical discussion" is similar to the Cardinals in Rome discussing how many angels can fit on the head of a pin....

There is no "reflected power", it is a fiction.

I say stop trying to build rationalizations, visualizations, and models for a fictional power that is superflouous, and of little utility.

Indeed there is no need for the concept of "reflected power" in the steady state. The so-called "reflected power" becomes congruent with a "real" power only when a perfect match is reached and the reflected power is zero.

Discuss values of the reflection coefficient, and of the reflected voltage if necessary, there you will have agreement. But wander into the "realm" of fictional powers, and confusion and obfuscations reign supreme. Contrary to Cecil's assertion, there simply is no "energy" causing a reflected voltage. The reflected voltage b = V - IR is itself a fictional quantity, a mere indication of the difference between the actual voltage and the ficticious voltage IR, which serves as a measure of the "Euclidean distance" in volts from a "match" point.

Nothing more nothing less.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF70BC9.8AC5E047@IEEE.org...
> Richard Clark wrote:
> > This bodes ill in that there are three versions of the same argument
> > floating out here with no apparent grounding between them.
>
> Why, Richard? Are there only ever two sides to an argument. I disagree
> with Steve on some things and with Walt on others. There's no
> guarantee that any one of us is 100% right. I'm in learning mode.
> If I'm never wrong, I never learn a thing.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3117. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 02:26:30 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d7lfv$n7r$1@slb7.atl.mindspring.net>
Source record: 163864

Cecil:

The conservation of energy principle does not apply if... the energies in question are "ficticious".

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF71D61.9481E204@IEEE.org...
> Richard Clark wrote:
> > I find such observations both tiring and poor argument. It presumes
> > too much where there is already more than enough presumption going
> > around.
>
> I'm trying to diagnose the error in Steve's assertion that 75 joules
> plus 8.33 joules equals 133.33 joules. Do you agree with Steve's
> implied assertion that the conservation of energy principle doesn't
> apply to a Z0-match? If so, why? If not, why not?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3118. HF DF capability

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 02:35:35 UTC
From: rb <rbigg@seii.net>
Message-ID: <9d7eu2$iv7$1@news.chatlink.com>
Source record: 163847

Need some ideas as to how to get HF DF capability reasonably easily and inexpensively. There are several of us who would like to have df capability as a standby mode on our hf xcvrs. Is there any commercial source of this type stuff which uses modern technology? Most of the df stuff I know of is VHF and higher---"fox" hunt stuff.

3119. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 02:51:27 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9d7mvf$pt3$0@208.206.142.69>
Source record: 163865

W6RCecilA wrote:
>
> Richard Clark wrote:
> > You have managed to hold your line count under 200, even under 100.
> > You have managed in an attempt to simplify the situation at hand, but
> > no one seems to want to go there.
>
> Assuming that we are all rational, intelligent creatures, there's got to
> be a middle ground somewhere and I have nothing else to do.

You gotta wonder what Lord Kelvin would think if he could read all
this.
Do you suppsoe he'd still make his famous statement about "If you can't
put the numbers to it you really don't understand"???

Dick

3120. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 02:53:12 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF75F98.72A6FD2C@bwcc.com>
Source record: 163866

Richard Harrison wrote:
> Denver Braughler wrote:
>> Lightning is not really comparable to sinusoidal current.
> Oh yeah? Where does all that static in your radio come from, then?
Not from sinusoidal 60 Hz AC, that is for sure!

> Denver also wrote:
>> Neither the UL nor the power company seems concerned that the aluminum
>> will corrode or waste away.
> Aluminum is eaten away too rapidly.
> Lots of luck.
Thanks.

3121. Re: Eleven Mtrs/Freebanders/Feds

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 02:55:31 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF76023.CE942EBF@bwcc.com>
Source record: 163867

Sideband wrote:
> Isn't intentionally interfering with a radio transmission against FCC
> rules?
I'm sure that means a legal transmission. :)

3122. Re: HF DF capability

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 03:08:41 UTC
From: 2w8ji@akorn.net
Message-ID: <3af76294.379160579@news.accessunited.com>
Source record: 163868

On Mon, 7 May 2001 19:35:35 -0700, "rb" <rbigg@seii.net> wrote:

>Need some ideas as to how to get HF DF capability reasonably easily and
>inexpensively. There are several of us who would like to have df capability
>as a standby mode on our hf xcvrs. Is there any commercial source of this
>type stuff which uses modern technology? Most of the df stuff I know of is
>VHF and higher---"fox" hunt stuff.

It takes a fractional wave size array to DF HF signals, and it must be
in the clear. There are a dozen ways to do it.

How much room and time do you have to build something?

3123. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 03:25:13 UTC
From: billsohl@mindspring.com
Message-ID: <3af7666c.2467862@news.mindspring.com>
Source record: 163769
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Mon, 07 May 2001 23:07:34 GMT, "Rob St.Denis"
<tstdenis3160@home.com> wrote:

>> Not idiots...just common evryday people that recognize BAD
>> law when they see it and act accordingly.
>
>Tell me how its a bad law ? People speed, simple physics will tell you that
>that increases kinetic energy and momentum thus increasing stopping
>distances.

It is bad law because people do not want the government
telling them how to live their lives and to what degree of
risk they can/should afford themselves. No one is mandated
to drive 70 MPH. If you don't want to drive a that speed,
then don't.

>People already don't leave enough room at the slower speeds and
>keep the same distances at the faster ones. So not only were they doomed
>from the start before they started speeding since every accident that could
>happen with buddy in front would result in them being involved, but, now
>their stopping distances are even greater and they will impact with a higher
>velocity.

Sign up with the Naderites then and push for a rollback
of highway speeds if you feel so strongly about it.

Cheers,
Bill K2UNK

3124. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 03:26:40 UTC
From: billsohl@mindspring.com
Message-ID: <3af7672b.2658424@news.mindspring.com>
Source record: 163770
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Mon, 07 May 2001 23:28:19 GMT, sparky@cet.com (Sparky) wrote:

>On Mon, 07 May 2001 10:42:49 GMT, billsohl@mindspring.com (Bill Sohl)
>wrote:
>
>>On Mon, 07 May 2001 09:16:27 GMT, "Rob St.Denis"
>><tstdenis3160@home.com> wrote:
>>
>>>Just because there are a lot of idiots out there that do it doesn't make it
>>>right!
>>
>>Not idiots...just common evryday people that recognize BAD
>>law when they see it and act accordingly.
>>
>>Cheers,
>>Bill K2UNK
>
>Probably the same common, everyday people that recognized a BAD
>presidential candidate and voted him into office - twice.

If you mean Clinton, you sure have that wrong. The safety nazis
love Cintonites because they all want to tell you and me how
we should live our lives.

Cheers,
Bill K2UNK

3125. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 03:31:50 UTC
From: billsohl@mindspring.com
Message-ID: <3af767ab.2786570@news.mindspring.com>
Source record: 163771
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Mon, 07 May 2001 06:58:11 -0400, helmsman <> wrote:

>On Mon, 07 May 2001 10:45:27 GMT, billsohl@mindspring.com (Bill Sohl)
>wrote:
>>
>>WHY? Do you believe for one second that the speed
>>limits on American highways are realistic? Do they have
>>any resemblemce to reality. Is 70 mph across Kansas
>>logical when there is visibility to the horizon, light traffic
>>and not a bend in the load for miles ahead?
>>
>>Cheers,
>>Bill K2UNK
>
>The intrastate highways were engineered for 70 mph even in the city,
>and I do miss the days of "no speed limit zone".

They were engineered for 70 when cars of far less technological
ability as to road handling were the norm. I-70 across Kansas
could easily sustain speeds well over 70 today even though the
road itself was engineered years ago.

>Problem is with fuel
>economy,

Fuel economy is an issue that impacts only ME. It is
none of the gov'ts business if I drive in a manner that
costs me fuel economy.

>doing away with frames,

Actually, todays "frameless" cars are better than those with frames in
the same accident.

>lawyers and millions of idiots who
>can't control there machine at speed.

Few speeding accidents ever involve other cars. Most
accidents are caused by non-speeding factors (alcohol,
reckless driving, etc.).

Cheers,
Bill K2UNK

3126. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 03:36:29 UTC
From: billsohl@mindspring.com
Message-ID: <3af768d4.3083405@news.mindspring.com>
Source record: 163772
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Mon, 07 May 2001 23:11:13 GMT, "Rob St.Denis"
<tstdenis3160@home.com> wrote:

>> WHY? Do you believe for one second that the speed
>> limits on American highways are realistic? Do they have
>> any resemblemce to reality. Is 70 mph across Kansas
>> logical when there is visibility to the horizon, light traffic
>> and not a bend in the load for miles ahead?
>
>First off its law. You hams don't like those cb'ers breaking the law
>because of some little arbitrary thing like needing a licence to operate
>(having the sheet of paper does not make you a better op) but yet you find
>the "arbitrary" speed laws rediculous? They are there to lower the risk of
>accidents.

More that they are there to garner revenue.

>Car's do not handle as well at the higher velocities, reaction
>times are required to be far faster etc etc etc ...

If YOU can't handle it, then don't. No one is forcing anyone to
drive 70.

>They do have engineers
>and such who do determine hte maximum velocity that is safe on a particular
>road given its conditions or give it the max of 55

Nope, the national 55 in effect for some 15 years had NOTHING to do
with safety when imposed. Since it has been lifted, highway detaths
per year are STILL dropping.

>(its 65 now isnt it ?)
>since that is about what the average driver can safely handle.

Many states it is now 70 or even 75. In NJ people routinely
drive 70-75 everywhere on the highway...totally ignoring
the posted 55 or 65 limits.

Cheers,
Bill K2UNK

3127. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 03:49:23 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d7qbdvmu1@slb1.atl.mindspring.net>
Source record: 163773

Reg:

Excellent analysis. You make very good points. I like your suggested "simple" formula idea. I think it has merit and should be pursued. Here's my thoughts on that subject.

The situation, of only the distributed inductance being considered lossy, and the capacitance being close to ideal, is often called "semi-uniform" loss as opposed to "uniform" loss in the "filter literature".

[i.e. Considering the primary line distributed parameters R, L, C, G, visualize a residual R as being in series with L, and G being across the C.] In the case of G = 0, as you point out the line can no longer be considered distortionless or lossless since with G = 0, and R finite non-zero Heaviside's criterion for distortionless transmission cannot be satisfied.

Reg, there are some interesting relationships between stored energies and sensitivities that were first elucidated, at least to me, in Blostein, M. L., "Sensitivity analysis of parasitic effects in resistance terminated LC two ports", IEEE Trans., Vol. CT-14, pp. 21 - 25, March 1967.

In that brilliant paper Meyer gives an amazing and very general formula, from his ingenious sensitivity analysis, for the residual incremental excess attenuation in such cases of lossless networks with "incremental" or "parasitic" uniform and semi-uniform losses.

Near a reflection zero, where rho is small, Blostein shows that this incremental additional attenuation for uniform losses will be approximately (in Np):

Incremental Additional Loss(Np) = tau*R/L = tau*G/C

Where tau is the"slope" of the phase characteristic (i.e. the maximum of the group delay) at the "reflection zero" or "match frequency".

In the case of semi-uniform losses the incremental attenuation deviation will be one half of this value.

Recall that tau can be shown to be directly proportional to the energy stored in the line at that reflection zero frequency. Note that if R or G is zero then the excess loss is zero as expected. Also the longer the line, the more energy it stores and the larger tau is, so that longer lines, with more stored energy will have larger additional attenuation than shorter lines. All intuitively satisfying.

I have often wondered what relationship the maximum group delay value "tau" has to the VSWR, since... if that could be "discovered" one could have a very simple formula for those additional incremental losses near a

reflection zero in terms of VSWR. But near a reflection zero, the VSWR deviation from unity is very small and so it's effect is probably insignificant.

But the reflection coefficients, and so I presume VSWR effects, do show up in a second term in Meyer's brilliant formula which is only significant a long way from the reflection zeros where rho becomes large. And what is strange to me, is that the second term is zero for the distortionless line, but not for a semi-uniform lossy case!

This second term which is only significant when rho is large [rho1 is the "front end" and rho2 is the "back end" reflection coefficient, and Im denotes the taking of the imaginary part] takes the form:

Incremental Addtional Loss (Np) = (R/L - G/C) Im[rho1 + rho2]/4

This second term in Blostein's formula is significant when the reflection coefficients are large, and VSWR is large. Note that if you have a distortionless line, R/L = G/C then the incremental attenuation is zero, but if say G/C is zero and R/L is non-zero you will have an increment of loss which is directly proportional to the Imaginary part of the sum of the back and front end reflection coefficients. And hence should be strongly correlated with VSWR.

Of course since Blostein's formula are all based upon incremental differential analysis, or sensitivity analyis, they may not hold exactly if the incremental attenuation becomes too large...

Still these "amazing" formulae offer the "hope" of simple approximate formulae for the extra losses.

I believe it's worth a try to establish a simple "rule of thumb" formula for this.

Regards,

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:9d6t72$qc6$1@plutonium.btinternet.com...
>
> Peter O. Brackett wrote
> > I agree. Those graphs of "additional line losses due to
> deviations of VSWR
> > from unity, are incorrect!
> ==========
>
> The fundamental error was equivalent to assuming that conductor
> loss and dielectric loss per unit length are equal. This condition
> is what Heaviside described as "The Distortionless Line". Zo is
> purely resistive which has some computational advantages. So the
> graph applies only to that very special case. But that special case
> never occurs. In practice, at HF, nearly all line loss occurs in

> the line conductors. Dielectric loss is negligible.
>
> One of the consequences of that assunption is that loss (watts per
> metre of length) is uniformly distributed along the line regardless
> of standing waves. Conductor loss is at a maximum where there's a
> current maximum. Dielectric loss is at a maximum where there's a
> voltage maximum. Maximum volts and maximum current are displaced
> from each other by 1/4-wavlength. So when the two types of loss
> have the same magnitude then the watts are indeed uniformly
> distributed versus length. There are no hot spots.
>
> When, as in real lines, dielectric loss is negligible the
> distribution of watts vs length is entirely different. It varies
> along the line as the current squared. Its maximum and minimum
> values are displaced from each other by 1/4-wavelength.
> Intuitively, for the same VSWR and total length of line, line loss
> depends on where on the line the maximum and minumum values are
> actually located. On a line less than 1/4-wave long both a maximum
> and a minimum value cannot exist. With a high VSWR it is possible
> to have a loss which is less than the normal Zo-matched
> attenuation.
>
> Another way of looking at the problem is to observe that when loss
> occurs only in the line conductors, Zo cannot be a pure resistance.
> It might be said that the impedance angle is small enough to be
> neglected. However, because the angle is that of the line's power
> factor, when considering line loss the angle of Zo is amongst the
> most important parameters.
>
> With relatively short lines used by amateurs, 100 feet or less,
> attenuation is so small large percentage errors can occur when
> calculating it from several much larger quantities. Approximations
> for the larger quantities are unsafe.
>
> The Smith Chart is of no use in this application. It suffers from
> the same assumption of a distortionless line with purely real Zo.
>
> The exact calculation of line loss with a mismatched termination
> requires the following steps -
>
> (1) Define the real line by Zo, conductor resistance or dimensions,
> TanDelta of dielectric, velocity, actual length.
>
> (2) Terminate the line with Zt = Rt+jXt
>
> (3) Calculate reflection coefficient
>
> (4) Calculate VSWR
>
> (5) Transform reflection coefficient, phase and magnitude, to near

> end of line
>
> (6) Calculate line input impedance Zin = Rin+jXin
>
> (7) Send 1 amp into the line. Pin = Rin watts
>
> (8) Calculate current into termination. Pout = Sqr(It)*Rt
>
> (9) Line loss with SWR = 10*Log(Pin/Pout) dB
>
> (10) Power dissipated in line = Pin - Pout watts
>
> It may be possible to approximately generalise the results of the
> foregoing by a simple formulae like -
>
> (dB with SWR) = (dB when matched) * SWR
>
> I'll look into it.
>
> See programs COAXPAIR, RJELINE2, RJELINE3.
>
> Program COAXRATE computes line loss, dB and watts versus SWR, for
> the purpose computing temperature rise and setting power ratings.
> ----
> **********
> Regards, Reg, G4FGQ
> Free radio design & modelling software
> http://www.btinternet.com/~g4fgq.regp
>
> **********
>
>
>

3128. Undertruck mount OK for an Icom AT-4 tuner?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 03:52:02 UTC
From: jeffreys@cyburban.com
Message-ID: <3af76cd6$0$41095$45beb828@newscene.com>
Source record: 163774

Hello gang,

Going HF mobile for the first time! Bought an Icom IC-706 MKIIG and an AT-4 (a weatherproof tuner for whips), a 8-foot CB whip and an Alpha Delta big-ass spring mount (my description).

Believe it or not, my Suburban doesn't have a lot of space to cleanly install both boxes. So I was thinking I could fabricate a steel enclsoure for the AT-4 unit. The steel fabricated would also provide the support for the 8-foot whip and it would be mounted to the frame).

So my question is: Will the bumping around of the box outside of the car (but firmly attached) be a problem? The AT-4 is weatherproof but is it very shockproof? The dealer indicated that he has many customers attaching these things on trucks (18-wheelers) outside and inside. Even some RV's.

Would you do this configuration?

Thanks for your input.

Jeffrey Steinberg, K2MIT
Scarsdale, NY

3129. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 03:54:09 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d7qk9$h4k$1@slb3.atl.mindspring.net>
Source record: 163775

Cecil:

Stop messing with fictional powers, it will drive you nuts!

Come on over to the "dark side" with me.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF71E19.86395526@IEEE.org...
> Richard Clark wrote:
> > You have managed to hold your line count under 200, even under 100.
> > You have managed in an attempt to simplify the situation at hand, but
> > no one seems to want to go there.
>
> Assuming that we are all rational, intelligent creatures, there's got to
> be a middle ground somewhere and I have nothing else to do.
> --
> http://www.mindspring.com/~w6rca
>
>
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3130. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 03:58:25 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d7qs9far1@slb6.atl.mindspring.net>
Source record: 163776

Cecil:

It can if the "energies" are fictcious.

There is no reason on earth for preserving or conserving "reflected energy"
it's just a fiction. Reflected voltage is more real than reflected energy
or reflected power, since it doesn't have to obey a "conservation" law which
applies only to "real" power and energy.

All you really need are I and V. Ignore those false powers.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF70324.7662B211@IEEE.org...
> Richard Clark wrote:
> > This says nothing. Why don't you quote the problematic math instead
> > of suggesting it? To present a subjectively perceived error with a
> > broad sweep of the hand adds nothing but a metaphysical layer to the
> > discussion.
>
> I can't do Maxwell's equations in ASCII, Richard, so I will rely on the
> conservation of energy principle. Steve is trying to violate it, pure
> and simple. 75 joules plus 8.33 joules is simply not ever equal to
> 133.33 joules, noway, nohow, nowhere, nowhen.
>
> If V1^2/Z0 + V2^2/Z0 is the total energy associated with two voltages
> and those two voltages undergo destructive interference, the resulting
> energy is NOT (V1-V2)^2/Z0 = zero, but that is what Steve would have us
> believe. I can't believe that you agree with Steve that a violation of
> the conservation of energy principle happens at a Z0-match.
> --
> http://www.mindspring.com/~w6rca
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3131. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 03:59:50 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d7quudca1@nntp9.atl.mindspring.net>
Source record: 163777

Cecil:

That energy is not real!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF71B4F.CCF8D852@IEEE.org...
> Richard Clark wrote:
> > Of the single point argued about two waves canceling at one point begs
> > the observation that these two waves must cancel at every point. IS
> > THE WHOLE LINE A SHORT?
>
> Do you really not understand? If two waves cancel at one point, they
> cannot possibly cancel at every point. It's sorta like being saved. Once
> canceled, always canceled. Do you agree that destructive interference
> can affect (and effect) an antenna's radiation pattern? Do you believe
> that just because destructive interference happens at one point in space
> that it must happen at all points in space? Such a belief clearly violates
> the conservation of energy principle.
>
> Do you agree that if destructive interference happens, the energy in
> the fields cannot be lost and constructive interference is required to
> happen elsewhere?
>
> Is this stuff so esoteric that nobody in the world (except me)
understands?
>
> Consider the following lossless Z0-matched antenna system with a Z0-
> match at 'X':
>
> 100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load
>
> There is no reflected power on the coax, the voltage on the coax
> is 70.71v, and the current on the coax is 1.414a. When these values
> reach the Z0-match point at 'X', a reflection occurs that is
> instantaneously canceled. If the Z0-match didn't exist, 25w would
> be reflected. That equates to 35.355 volts reflected volts on the
> coax. The 35.355 volts reflected actually happens but never gets
> off the ground as follows:
>
> We know that steady-state reflected power on the twinlead equals 33.33w
> because we can measure it. We know that 8.33w will be re-reflected by
> the real 150/50 ohm transition. So 33.33w - 8.33w = 25w will not stop
> at the Z0-match point and will try to flow right through it onto the coax.

>
> Fortunately (or unfortunately depending on which side you're on) the
> voltage associated with this 25w value is 180 degrees out of phase with
> the previously mentioned reflected voltage. And the current associated
> with this 25w value is 180 degrees out of phase with the previously
> mentioned reflected current. Both of these component voltages and
> currents go to zero. But the energy is not destroyed.
>
> So the original voltage associated with the 25w of reflected power is
> canceled by the voltage associated with the 25w of reflected power newly
> arriving from the load. The only exception is the modulation that may
> be different between the two cycles. For continuous waves, the destructive
> interference is 100% effective.
>
> And the original current associated with the 25w of reflected power is
> canceled by the current associated with the 25w of reflected power newly
> arriving from the load. The only exception is the modulation that may
> be different between the two cycles. For continuous waves, the destructive
> interference is 100% effective.
>
> But just because voltages and currents are canceled does not mean that
> the associated energy is canceled.
>
> Richard, have you ever squeezed a balloon?
> --
> http://www.mindspring.com/~w6rca
>
>
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3132. Re: Antenna tuner question.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:01:45 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AF76FA9.71E28DE1@oio.net>
Source record: 163778

Bill,
If the only choices are between the KW Matchbox and the Palstar, thats a hard choice! Primarily because if a tuner has to use a blower to keep it cool, it just isn't a very good tuner (no matter what it costs)! If you broaden your choices, there are a number of good tuners available. It's sort of like Fords and Chevroletes(sp), as many opinions as people you ask...
'Doc

3133. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:17:00 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AF7733C.62FBEDF9@oio.net>
Source record: 163779

W6RCecilA,
Resistance, or impedance??
'Doc

3134. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:23:10 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9d7sbe$fg6$0@208.206.142.69>
Source record: 163780

Richard Clark wrote:
>
> On Mon, 07 May 2001 17:13:45 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >Richard Clark wrote:
> >> You have managed to hold your line count under 200, even under 100.
> >> You have managed in an attempt to simplify the situation at hand, but
> >> no one seems to want to go there.
> >
> >Assuming that we are all rational, intelligent creatures, there's got to
> >be a middle ground somewhere and I have nothing else to do.
>
> Hi Cecil,
>
> Well this appears to be a commonality between you and Steve, this
> leaves only Walt. Given that Walt find's faults with your proxy
> postings, it is incumbent upon him to clear this up and accept this
> middle ground. I don't buy his "voice in the wilderness" as a
> compelling technical argument.

I'm waiting for someone to explain how, if Walt is wrong, there is no
reflected energy ever gets back to the transmitter side of the tuner,
while the forward power wattmeter shows the added value of the reflected
power along with the incident power. So far all Steve's mathematical
gymnastics haven't done it.
Lord Kelvin would be dismayed.

Dick

3135. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:26:01 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF77559.EFFED8FD@IEEE.org>
Source record: 163781

VE9SRB wrote:
> Ask away. I would be happy to go through an example with you.

I think you and I agree that destructive interference occurs at a
Z0-match point. We've been using the following lossless example
where 'X' marks the Z0-match point:

100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load

35.355v at 0.7071a tries to be reflected back toward the XMTR.
There's no reflected power on the coax so we know that voltage
and current, which are 180 degrees out of phase, suffer destructive
interference by their mirror image phasors reflected back from the
load. The result is 35.355v - 35.355v = 0 and 0.7071a - 0.7071a = 0

Those particular voltages cancel each other and those particular
currents cancel each other. There was 25 watts of power contained
in each of those two sets of waves. Where does the energy in those
50 watts go? Doesn't it seem odd that 50 watts is exactly what we
need to balance the energy equation where for each second:

75 joules (not reflected) plus 8.33 joules (re-reflected) plus
50 joules (destructive interference) equals 133.33 joules (forward power)
--
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3136. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:29:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF77613.EA71EADE@IEEE.org>
Source record: 163782

"Peter O. Brackett" wrote:
> Contrary to
> Cecil's assertion, there simply is no "energy" causing a reflected voltage.

Therefore, Smith Charts don't work since they depend on reflected waves.
--
http://www.mindspring.com/~w6rca

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3137. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:34:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF7775D.2B651CD6@IEEE.org>
Source record: 163783

Richard Clark wrote:
> This artifice of complication to joules adds nothing but complexity
> that is unnecessary.

On the contrary, it is an application of Ockham's Razor. When dealing with joules, the conservation of energy principle cannot be denied, at least not by rational folk. There no need to complicate the model with forward and reflected waves of voltages and currents. Buckets of energy are easy for everyone to understand.
--
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3138. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:37:30 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF7780A.BBF773DF@IEEE.org>
Source record: 163784

"Peter O. Brackett" wrote:
> The conservation of energy principle does not apply if... the energies in
> question are "ficticious".

We've already been down that road, Peter, and you agreed with me that
reflected energy is real. You said, "Cecil, you do understand."
Remember the one second long transmission line containing 300 joules
from a 100 joule/sec source?
--
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3139. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:49:35 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9d7tsvkdn0@208.206.142.69>
Source record: 163785

Denver Braughler wrote:
>
> Dick Carroll wrote:
> > Reg Edwards wrote:
> > > Use any substantial conductor you fancy to lead lightning down to
> > > ground.
> > ...and if you use the conductor that provides the lowest impedance path
> > that you can get, it leaves that much less of the lightning energy
> > available to look for an *additional* path through your ham station....
>
> Lightning energy is being carried by electrons which need to get to earth.
> Lightning is not really comparable to sinusoidal alternating current.

Sure lightning is an alternating current, at a very high frequency.
Can't you hear all the harmonics on your HF receiver when sgtorms are
about? Also, how else would you explain the fact that the lightning bolt
itself acts as a huge transformer primary winding and every other
conductor within its influence acts as a secondary winding, inducing
voltage (sometimes very high voltages) that itself can -and often does-
destroy electronics? My house nor antennas have ever been struck, but I
have had electronics damaged from the induced high voltage pulse that
came in on the AC wiring.

Lightning is a complex phenomena, but it is just aother form of
electricity, and it does posses the characteristics of AC and RF. DC is
steady state, and lightning is certainly not that. It VARIES in
intensity- very quickly. Call a lightning strike a very fast half -
cycle. Similar to a capacitor charging.

> My earlier statement was that providing a low resistance path between the >tower and the
shack is not a goal.

MY goal is to keep any lightning strike that happens to hit my tower or
its antennas (160 through 40 meter dipoles, HF tribander at 60 ft,
2meter yagi and 5/8 wave ground plane at 70 ft, all sitting on a 1400ft
MSl hill) from following my feedlines to the house. I do that by
disconnecting all the lines outside the house, throwing them out into
the yard 15 feet or so, and providing a GOOD low impedance route to
ground *at the tower*. Even at that, I know I'm not exempt.

> The goal is to provide a ground rod set for lightning at the tower, a ground rod set for
lightning and fault current at the shack, and a conductor for 60 Hz between to two ground
rods sets so that said 60 Hz doesn't prefer to ride on the coax shield.
>

I'm not at all concerned about the 60 hz current riding my coax shield from the house out to the tower (it's 100 feet from the house). I *AM* very concerned about lightning riding my coax shield from the tower to the AC 60hz ground at the house. In fact, that is the very route taken by most lightning strikes which impact hams and other radio installations, outside those induced into the AC power wiring as described earlier. The AC ground looks like a very attractive low impedance ground to any lightning strike and so that is where it usually goes when plans give it a good low impedance ground closer to the strike point have not been made and that path installed.

> I have direct burial AC feeder cable buried in my front lawn that has a bare stranded aluminum conductor.
> It is approved for direct burial in dirt.
> Neither the UL nor the power company seems concerned that the aluminum will corrode or waste away.

That depends mostly on the local soil composition. Here it will last forever. Other places where the soil is acidic or alkali it won't last months.

Dick

3140. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:54:54 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF77C1E.983C75D8@IEEE.org>
Source record: 163787

Richard Clark wrote:
> Your (the singular you) statements are full of "do I believe?" pleas
> that are totally uncalled for. Leave my own system of beliefs outside
> of your argument unless you are trying to invent a faith based physics
> of wave mechanics.

Maybe the Texan language is at fault, Richard. Down here thinking and
believing are interchangable.
--
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3141. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:56:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF77C62.ABD44ED8@IEEE.org>
Source record: 163788

"Peter O. Brackett" wrote:
>
> Cecil:
> That energy is not real!

In another posting you said reflected energy was real. Have you changed
your mind?
--
http://www.mindspring.com/~w6rca

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3142. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:56:17 UTC
From: sparky@cet.com
Message-ID: <3af77b97.372885@news.cet.com>
Source record: 163786
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Tue, 08 May 2001 03:26:40 GMT, billsohl@mindspring.com (Bill Sohl)
wrote:

>If you mean Clinton, you sure have that wrong. The safety nazis
>love Cintonites because they all want to tell you and me how
>we should live our lives.
>
>Cheers,
>Bill K2UNK

Attack the example or address the issue: ad populum is still a logical
fallacy.

3143. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:57:42 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF77CC6.92F2E4F2@IEEE.org>
Source record: 163789

"Peter O. Brackett" wrote:
> All you really need are I and V.

The I's and V's are the results. The energies are the cause.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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3144. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 04:59:45 UTC
From: w9wi@linux1.localdomain
Message-ID: <slrn9fes4u.mac.w9wi@linux1.localdomain>
Source record: 163790
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Mon, 07 May 2001 23:19:39 GMT, Rob St.Denis <tstdenis3160@home.com> wrote:
>"Sideband" <sideband@spam.me.not> wrote in message
>news:3AF693E8.EF77E40@spam.me.not...
>> Maybe I've got my definitions confused, but isn't full quieting when a
>> transmitted carrier is strong enough to cover all background noise at
>> the receiver?
>
>AM always has background noise

But so does FM. True, the noise vs. signal curve is different but it's
still there.

The cited definition does specify FM, but really the concept of "full
quieting" is not at all meaningless on AM. Especially when you consider the
effects of AGC, which will back off receiver gain and take the channel noise
with it.

It's a bit more of a stretch, but really the concept of quieting isn't
completely meaningless for SSB either, again considering AGC effects.
--
Doug Smith W9WI
Pleasant View (Nashville), TN EM66
http://www.w9wi.com

3145. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 05:05:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF77E7E.4A7B2477@IEEE.org>
Source record: 163791

```
Dick Carroll wrote:
>
> W6RCecilA wrote:
> >
> > K7MEM wrote:
> > > You can use the fact that you are dyslexic as an excuse to not
> > > do something, or just view it as something to overcome.
> >
> > Just like you can use the fact that you are five foot tall as
> > an excuse not to be able to dunk a basketball, or just view
> > it as something to overcome. Let us know when you can dunk
> > a basketball.
>
> Any five footer can dunk a basketball, from a stepladder. All he needs
> is the tools and the drive to use them.

So cheating is allowed when dunking basketballs? Then why not with
Morse code?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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```

3146. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 05:06:07 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF77EBF.97A50E70@bwcc.com>
Source record: 163792

Dick Carroll wrote:
> Sure lightning is an alternating current, at a very high frequency.
I disagree.
In AC the electrons drift very slowly.
Lightning is a complex arcing discharge.

> Can't you hear all the harmonics on your HF receiver when storms are
> about?
That is always. Lightning strikes the earth about 60 times a second.

> Also, how else would you explain the fact that the lightning bolt
> itself acts as a huge transformer primary winding and every other
> conductor within its influence acts as a secondary winding, inducing
> voltage (sometimes very high voltages) that itself can -and often does-
> destroy electronics?
Hello. I NEVER said that lightning was DC.
I said that it was not comparable to 60 Hz AC in the manner in which it moves energy.

> My house nor antennas have ever been struck, but I
> have had electronics damaged from the induced high voltage pulse that
> came in on the AC wiring.
Just because it passes through a transformer doesn't make it sinusoidal.

> Lightning is a complex phenomena, but it is just another form of
> electricity,
Oh great. How many forms of electricity are there?

> and it does posses the characteristics of AC and RF.
No, it does not possess all those characteristics.

> DC is steady state, and lightning is certainly not that.
Excuse me, but it would be appropriate for you to point out where I ever said that
lightning was DC.

> It VARIES in intensity- very quickly.
No kidding!

> Call a lightning strike a very fast half -
> cycle. Similar to a capacitor charging.
A huge capacitor.

> I do that by disconnecting all the lines outside the house,
> throwing them out into the yard 15 feet or so, and providing
> a GOOD low impedance route to ground *at the tower*.
Correct: at the tower.

> I'm not at all concerned about the 60 hz current riding my coax shield
> from the house out to the tower (it's 100 feet from the house).
The case cited was 35'.

> That depends mostly on the local soil composition. Here it will last
> forever. Other places where the soil is acidic or alkali it won't last
> months.
Thank you.
At least we can agree on that.

3147. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 05:11:55 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF7801B.380E33CC@eznec.com>
Source record: 163793

This is an interesting analysis. But many years ago I noticed that the formulas in the ARRL Handbook can be derived by using the (contentious) concept of forward and reverse power. The total loss can be calculated by assuming the same fraction of forward and reverse powers are lost, and that this fraction is equal to the fraction of power lost when the line is matched. No assumption needs to be made about how the loss is distributed between the center conductor and dielectric. Although I noticed this relationship long ago, I've never taken the time to convince myself of its validity or to verify it by measurement. The actual loss will, as you say, depend on the length of the cable and its termination, so the forward-reverse power calculation must at best be valid only for lines that are an integral number of half wavelengths long. Thanks for providing the food for thought.

Roy Lewallen, W7EL

Reg Edwards wrote:
>
> Peter O. Brackett wrote
> > I agree. Those graphs of "additional line losses due to
> deviations of VSWR
> > from unity, are incorrect!
> ==========
>
> The fundamental error was equivalent to assuming that conductor
> loss and dielectric loss per unit length are equal. This condition
> is what Heaviside described as "The Distortionless Line". Zo is
> purely resistive which has some computational advantages. So the
> graph applies only to that very special case. But that special case
> never occurs. In practice, at HF, nearly all line loss occurs in
> the line conductors. Dielectric loss is negligible.
> . . .

3148. FERRITE ROD ANTENNA

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 05:47:49 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9d81afmkg1@bob.news.rcn.net>
Source record: 163794

i have a ferrite rod ant with 4 colored leads. the colors are green, red, black & white. what is the significance of these colored leads?

3149. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 06:03:35 UTC
From: JR <jr@some.net>
Message-ID: <3AF77DBD.B4813F55@some.net>
Source record: 163795
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

An AM carrier without modulation looks just like an FM carrier without modulation. So it seems to me that "quieting sensitivity" could apply to an AM receiver as well although the term "full quieting" is generally understood to apply to FM.

Rough Rider wrote:
>
> Sideband, I will put a cup out for you since you are begging to be correct
> about full quieting. Notice Cecils definition, frequency modulation
> recievers, does this give you enough of a hint- that it is FM only. Do
> yourself a favor while studying for the ham test don't just memorize the
> answers actually learn what the question mean. If it was fill in the blanks
> the ham population would decrease by two fold.
>

3150. Re: Eleven Mtrs/Freebanders/Feds

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 08:08:06 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF7A966.9F4A4A31@spam.me.not>
Source record: 163796

Hrm. To my recollection it doesn't specify... but then again, I could be
wrong.

-SSB

Denver Braughler wrote:
>
> Sideband wrote:
> > Isn't intentionally interfering with a radio transmission against FCC
> > rules?
> I'm sure that means a legal transmission. :)

3151. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 08:13:31 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF7AAAB.D597E6CF@spam.me.not>
Source record: 163797
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Ok...

I stand corrected.

Allow me to rephrase what I'd originally stated, then..

My 2 watt AM carrier covered up all the background noise on the other
guy's CB, which was roughly 20 miles away, according to his signal
report.

-SSB

JR wrote:
>
> An AM carrier without modulation looks just like an FM carrier without
> modulation. So it seems to me that "quieting sensitivity" could apply to
> an AM receiver as well although the term "full quieting" is generally
> understood to apply to FM.
>
> Rough Rider wrote:
> >
> > Sideband, I will put a cup out for you since you are begging to be correct
> > about full quieting. Notice Cecils definition, frequency modulation
> > recievers, does this give you enough of a hint- that it is FM only. Do
> > yourself a favor while studying for the ham test don't just memorize the
> > answers actually learn what the question mean. If it was fill in the blanks
> > the ham population would decrease by two fold.
> >

3152. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 10:07:28 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <AzPJ6.43771$2_.15204332@news3.rdc1.on.home.com>
Source record: 163798
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> It is bad law because people do not want the government
> telling them how to live their lives and to what degree of
> risk they can/should afford themselves. No one is mandated
> to drive 70 MPH. If you don't want to drive a that speed,
> then don't.

Still doesn't stop that idiot who is going to end up losing control of his car because he feels he should drive whatever speed he wants (since there wouldn't be any limit for him to abide by) and then crashing into my car. See believe it or not, MOST laws are there for the protection of OTHER people, not the offender.

Ya can't drive drunk under law because you are a danger to others, not yourself.

3153. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 10:09:43 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <HBPJ6.43783$2_.15205767@news3.rdc1.on.home.com>
Source record: 163799
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> If you mean Clinton, you sure have that wrong. The safety nazis
> love Cintonites because they all want to tell you and me how
> we should live our lives.

The amusing thing is ... the laws you do enjoy are exactly that. You know
like: murder, rape, robbery, assault, stalking, etc etc etc ....

The laws are there because the average person is too stupid to realise just
what is good and what isnt

3154. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 10:13:26 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <aFPJ6.43802$2_.15208823@news3.rdc1.on.home.com>
Source record: 163801
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> If YOU can't handle it, then don't. No one is forcing anyone to
> drive 70.

My ability to handle the road is irreevant. Fact is there will be 10 idiots out there that will take full advantage of a no speed limit idea that can't handle the road well at 65 let alone 70+ and end up killing off a great deal of the population ...

> Nope, the national 55 in effect for some 15 years had NOTHING to do
> with safety when imposed. Since it has been lifted, highway detaths
> per year are STILL dropping.

What source did you get that info from?

> Many states it is now 70 or even 75. In NJ people routinely
> drive 70-75 everywhere on the highway...totally ignoring
> the posted 55 or 65 limits.

And New Jersey (Joisey I should say) is a state to model after?

3155. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 10:15:46 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <mHPJ6.43814$2_.15210556@news3.rdc1.on.home.com>
Source record: 163802
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

All hale the brit for thinking he is the all mighty internet cop and has
every right to tell people just how they can post

All hale the brit for thinking he is the all mighty internet cop and has
every right to tell people just how they can post

All hale the brit for thinking he is the all mighty internet cop and has
every right to tell people just how they can post
> You are referring to "top-posting", I assume?

All hale the brit for thinking he is the all mighty internet cop and has
every right to tell people just how they can post

All hale the brit for thinking he is the all mighty internet cop and has
every right to tell people just how they can post

All hale the brit for thinking he is the all mighty internet cop and has
every right to tell people just how they can post

3156. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 10:17:53 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <lJPJ6.43826$2_.15211996@news3.rdc1.on.home.com>
Source record: 163800
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

A signal report comming from a cb'er, a lets turn up mic gain until its completely distorted, then put an echo on it and a loud roger beep so that I get out better, radio operator ... there's usefull

--
Rob St.Denis

"Sideband" <sideband@spam.me.not> wrote in message news:3AF7AAAB.D597E6CF@spam.me.not...
> Ok...
>
> I stand corrected.
>
> Allow me to rephrase what I'd originally stated, then..
>
> My 2 watt AM carrier covered up all the background noise on the other
> guy's CB, which was roughly 20 miles away, according to his signal
> report.
>
> -SSB
>
> JR wrote:
> >
> > An AM carrier without modulation looks just like an FM carrier without
> > modulation. So it seems to me that "quieting sensitivity" could apply to
> > an AM receiver as well although the term "full quieting" is generally
> > understood to apply to FM.
> >
> > Rough Rider wrote:
> > >
> > > Sideband, I will put a cup out for you since you are begging to be correct
> > > about full quieting. Notice Cecils definition, frequency modulation
> > > recievers, does this give you enough of a hint- that it is FM only. Do
> > > yourself a favor while studying for the ham test don't just memorize the
> > > answers actually learn what the question mean. If it was fill in the blanks
> > > the ham population would decrease by two fold.
> > >

3157. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 11:23:12 UTC
From: hamish@cloud.net.au
Message-ID: <AGQJ6.119$25.1308@news1.eburwd1.vic.optushome.com.au>
Source record: 163803
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

In rec.radio.amateur.dx Sparky <sparky@cet.com> wrote:
> Probably the same common, everyday people that recognized a BAD
> presidential candidate and voted him into office - twice.

Unlike George Dubya, who didn't actually get voted in at all?

Hamish
--
Hamish Moffatt VK3SB <hamish@debian.org> <hamish@cloud.net.au>

3158. Re: DC Power supply question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 12:00:36 UTC
From: Ron Hardin <rhhardin@mindspring.com>
Message-ID: <3AF7DFE4.27AF@mindspring.com>
Source record: 163805
Cross-posted to: alt.radio.scanner,rec.radio.amateur.antenna,rec.radio.scanner,rec.radio.shortwave

Sycho_Graphics wrote:
>
> I am tired of all the wall warts and want to power my radios with a DC power
> supply my question is how many amps is enough? What I want to power is the
> following (AOR 8000, BC 780xlt, RadioShack DX-398, two Cobra CB radio's {one
> base, one portable}), but I want some room for future expansion.
>
> Sorry for the newbie question, but I am a newbie :)

I am happy with an Astron SS-18 12v. which has ample you'd think for all that and
runs cool.

Remember to fuse the cords to each device for current that the device needs.
Also fast-blow fuses work better because they don't heat up themselves.
Get a multiple fuse block or so and lots of fuses.

DC supplies can easily start fires if something partially shorts otherwise.
Wall warts either have high internal resistance to limit current, or have
a breaker themselves. Real supplies can burn up wires without exceeding
their rated capacity, so the fuse on the supply itself is not a protection.
--
Ron Hardin
rhhardin@mindspring.com

On the internet, nobody knows you're a jerk.

3159. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 12:04:27 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d8nbv$ej1$1@slb5.atl.mindspring.net>
Source record: 163807

Cecil:

Smith charts do work, and they are nothning more nor less than analogs of those very simple reflection equations.

The Smith chart is a conformal mapping of complex variables often called the bilinear transformation although when applied to reflection dynamics it has Engineer Smith's name attached.

That bilenear transformation or mapping, say between the two complex variables W and Z, is written simply as an algebraic expression:

W = (Z - 1)/(Z + 1).... sorta looks like the formula for reflection coefficient doesn't it?

Most notably from a "geometric" view point the bilinear mapping maps straight lines in the W plane to circles in the Z plane and vice versa.

Now perhaps you can "see" the great utility of this conformal mapping when applied to the problem of reflections since, as you know the reflection coefficient, defined by b = rho*a where b = V - IR and a = V + IR, and it's constituent impedances R and Z are related by the very same type of transformation.

This is what Smith recognized when he suggested using the bilinear mapping for doing geometric manipulations of reflection problems.

Recall that the reflection coefficient rho is related to the load impedance Z and reference resistance R by the very same well known bilinear mapping:

rho = (Z - R)/(Z + R) = (Z/R - 1)/(Z/R + 1)

And so... the Smith Chart is simply a geometric interpertation of the very same equations, describing the operation of the Wheatstone bridge circuit, that calculates that "ficticious" quantity called the reflected voltage "b".
b = ((Z - R)/(Z + R))*a

What?

The Smith Chart is in fact a "validation" of my assertions!

And... dammit, the Smith Chart also works for reflections in DC circuits. No difference from AC.

Cecil, as long as you ascribe "reality" to a ficticious power or energy like "reflected power" it will never obey the law of conservation of energy, simply because it is a "made up" energy. Real energies obey the law of conservation of energy but "made up" energies have no such restrictions.

Cecil you seem to be carrying the "visualizations" of the steady state reflection mechanics too far... but you are not alone.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF77613.EA71EADE@IEEE.org...
> "Peter O. Brackett" wrote:
> > Contrary to
> > Cecil's assertion, there simply is no "energy" causing a reflected voltage.
>
> Therefore, Smith Charts don't work since they depend on reflected waves.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3160. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 12:05:02 UTC
From: sparky@cet.com
Message-ID: <3af7df69.8840343@news.cet.com>
Source record: 163806
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Tue, 08 May 2001 11:23:12 GMT, hamish@cloud.net.au wrote:

>In rec.radio.amateur.dx Sparky <sparky@cet.com> wrote:
>> Probably the same common, everyday people that recognized a BAD
>> presidential candidate and voted him into office - twice.
>
>Unlike George Dubya, who didn't actually get voted in at all?
>
>
>Hamish
>--
>Hamish Moffatt VK3SB <hamish@debian.org> <hamish@cloud.net.au>

Very true. Few people are aware that he was actually appointed to the
office by a committee of Elvis impersonators. GW was the second
choice, but since Barney declined the offer ....

3161. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 12:14:34 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d8nuj$671$1@slb6.atl.mindspring.net>
Source record: 163808

Cecil:

Yes, but that real stored energy is one lump of reflected energy which is quantified during the transient period that initially charges the line.

This real stored energy does not continue to flow as a "reflected energy" or "reflected power" bouncing off impedance discontinuities as you are visualizing it.

Cecil the finite lump or quanta of stored energy, stored in the distributed inductance and capacitance of the line when the line was intiially charged, is not destroyed but is returned to be "dissipated" in the external resistances, when the continuous excitation is removed from the line.

Cecil think of this energy quanta that charges the line, in the same way that you do the energy that is stored in a capacitor when it is charged by a DC source. When the source is disconnected and the capacitor connected to a resistor, the energy charge is then dissipated..

Cecil the energy stored in a distributed line system is not stored or trapped by bouncing between reflection points at impedance discontinuities along the line, it is stored in the distributed inductance and capacitance dynamically in the same way that energy is stored in a tank circuit.

The anlogy of comparing a transmission line to a light beam bouncing off partially silvered mirrors is taking the transmission line analogy too far... especially with respect to the "fiction" called "reflected power".

That's why ya'll are having difficulties... it simply doesn't exist, it's just a "fiction" made up to support a visualization. Stop doing it, it's bad for your mind, it'll drive you crazy.

Best,

-Peter K1PO
"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF7780A.BBF773DF@IEEE.org...
> "Peter O. Brackett" wrote:
> > The conservation of energy principle does not apply if... the energies
in
> > question are "ficticious".
>
> We've already been down that road, Peter, and you agreed with me that
> reflected energy is real. You said, "Cecil, you do understand."
> Remember the one second long transmission line containing 300 joules
> from a 100 joule/sec source?
> --

> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3162. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 12:30:06 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d8orn$5lr$1@slb6.atl.mindspring.net>
Source record: 163809

Roy and Reg:

Reg is correct in that the "exact" way of determining the loss in the R,L,C line is to compute the current I all along the line, and then to do an integration of the I*I*R losses all along the line.

Or in finite element terms do a summation of I*I*R losses over a large enough number of small segments.

Clearly in the presence of standing waves the current I varies along the line. And so does the loss at each point along the line.

One could assume that variation of line current to be sinusoidal and then go out to the end somewhere... say at the antenna end, where I = 0, and then back down the antenna and line assuming that I is a sinusoid spread out along the line, taking into account velocity factors, etc... to get the values of I to put in the "integration" of losses. Even so in a lossy line, clearly the distribution will not be exactly sinusoidal either, and so there will be a small error due to that assumption.

Clearly this kind of thought process shows that the losses do indeed seem to depend upon the distribution of the standing waves along the line in terms of line length expressed in wavelengths, measured from the point where boundary conditions can establish a zero current value, including any antennas present.

Still I believe it's possible to find a simple, but fairly accurate, formula for those losses, without factoring in such "details".

The problem is that no one would have confidence in such a simple formula, unless they could "bound" the errors in any such approximation. So perhaps the approximate formula would have to be accompanied by a bounding error analysis. i.e. accompanied by a statement that states something like " the error in this simple formula is no bigger than the order of some O(line length/lambda) or whatever...

Might make an interesting Master's thesis for some aspiring student of electromagnetics.

-Peter K1PO

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:3AF7801B.380E33CC@eznec.com...
> This is an interesting analysis. But many years ago I noticed that the
> formulas in the ARRL Handbook can be derived by using the (contentious)
> concept of forward and reverse power. The total loss can be calculated
> by assuming the same fraction of forward and reverse powers are lost,

> and that this fraction is equal to the fraction of power lost when the
> line is matched. No assumption needs to be made about how the loss is
> distributed between the center conductor and dielectric. Although I
> noticed this relationship long ago, I've never taken the time to
> convince myself of its validity or to verify it by measurement. The
> actual loss will, as you say, depend on the length of the cable and its
> termination, so the forward-reverse power calculation must at best be
> valid only for lines that are an integral number of half wavelengths
> long. Thanks for providing the food for thought.
>
> Roy Lewallen, W7EL
>
> Reg Edwards wrote:
> >
> > Peter O. Brackett wrote
> > > I agree. Those graphs of "additional line losses due to
> > deviations of VSWR
> > > from unity, are incorrect!
> > ==========
> >
> > The fundamental error was equivalent to assuming that conductor
> > loss and dielectric loss per unit length are equal. This condition
> > is what Heaviside described as "The Distortionless Line". Zo is
> > purely resistive which has some computational advantages. So the
> > graph applies only to that very special case. But that special case
> > never occurs. In practice, at HF, nearly all line loss occurs in
> > the line conductors. Dielectric loss is negligible.
> > . . .

3163. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 12:33:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d8p2b$gd1$1@slb7.atl.mindspring.net>
Source record: 163810

Dick:

Agreed!

BTW... Lord Kelvin, like Wheatstone, also has a bridge circuit named after
him.

I can thus only suppose that Kelvin also knew and understood how to measure
those ficticious reflected voltages... b = V - IR which are the "output" of
a simple Wheatstone bridge circuit used to tell when a "null" in the bridge
is reached.

-Peter K1PO

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9d7sbe$fg6$0@208.206.142.69...
>
>
> Richard Clark wrote:
> >
> > On Mon, 07 May 2001 17:13:45 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> > wrote:
> >
> > >Richard Clark wrote:
> > >> You have managed to hold your line count under 200, even under 100.
> > >> You have managed in an attempt to simplify the situation at hand, but
> > >> no one seems to want to go there.
> > >
> > >Assuming that we are all rational, intelligent creatures, there's got
to
> > >be a middle ground somewhere and I have nothing else to do.
> >
> > Hi Cecil,
> >
> > Well this appears to be a commonality between you and Steve, this
> > leaves only Walt. Given that Walt find's faults with your proxy
> > postings, it is incumbent upon him to clear this up and accept this
> > middle ground. I don't buy his "voice in the wilderness" as a
> > compelling technical argument.
>
>
> I'm waiting for someone to explain how, if Walt is wrong, there is no
> reflected energy ever gets back to the transmitter side of the tuner,
> while the forward power wattmeter shows the added value of the reflected
> power along with the incident power. So far all Steve's mathematical
> gymnastics haven't done it.

> Lord Kelvin would be dismayed.
>
> Dick

3164. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 12:38:01 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d8pah$88v$1@slb0.atl.mindspring.net>
Source record: 163811

Cecil:

The energy that "charged" the line IS real, I never denied that!

The "energy" that you claim is bouncing up and down the line from end to
end, and that you calculate from that danged ficticious reflected power as,
Pr = b*b/R is NOT!

They are not the same!

The only thing they share is a common adjective, "reflected", and that is
unfortunate, since that one little adjective conjurs so much in folks minds
that it clouds their vision of reality.

Sort of like the adjective "imaginary" in the field of complex numbers.
There's nothing imaginary about it.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF77C62.ABD44ED8@IEEE.org...
> "Peter O. Brackett" wrote:
> >
> > Cecil:
> > That energy is not real!
>
> In another posting you said reflected energy was real. Have you changed
> your mind?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3165. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 12:47:05 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d8prhavc1@slb6.atl.mindspring.net>
Source record: 163812

Cecil:

No, no, no... not in this case.

Simply because you have "assumed" a ficticious energy to begin with, one which is actually derived from a mathematical analysis or resolution of voltages, not derived from some source of energy or power!!! What?.

If they were real energies to begin with then you would be absolutely correct. But they are not. That's the whole problem with your premise. You are assuming the powers/energies which you discuss are real when in fact they are fictions! Of course they won't obey conservation of energy laws, they are just not energies, no more than the voltage at your car battey divide by the current at mine is a resistance. It's ficticious.

You miss my whole point. Stop and think. Stop using the adjective "reflected" and "forward" just write down non-suggestive symbols like "a" and "b" and then your mind will be cleared of these misapprenshions.

My point all along has been that the Ficticious Name "reflected" given to the "ficticious power" indicated on instruments is wrong, it is not a power it is a voltage, and it is not "reflected" it is a difference between an actual voltage and a desired result! Period, end of story, no further elaboration required.

The readings of forward and reflected volts produced by those instruments are not energies or powers or even representative of anything but voltages... you guys are just computing or calculating powers and energies from "made up" voltages.

No wonder your conservation of energy law doesn't work!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF77CC6.92F2E4F2@IEEE.org...
> "Peter O. Brackett" wrote:
> > All you really need are I and V.
>
> The I's and V's are the results. The energies are the cause.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3166. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 12:59:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF7EDC2.BD65F60@IEEE.org>
Source record: 163813

"Peter O. Brackett" wrote:
> Still I believe it's possible to find a simple, but fairly accurate, formula
> for those losses, without factoring in such "details".

Would the RMS value of the current standing wave be appropriate?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3167. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 13:04:38 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF7EEE6.61DDA2F9@IEEE.org>
Source record: 163814

"Peter O. Brackett" wrote:
> The energy that "charged" the line IS real, I never denied that!

A certain amount of the energy that charged the line is named
"reflected energy" and, as you say, it is real. What's in a name?
A rose by any other name, ...
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3168. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 13:05:02 UTC
From: richardharrison@webtv.net
Message-ID: <8119-3AF7EEFE-15@storefull-115.iap.bryant.webtv.net>
Source record: 163816

Peter, K1PO wrote:
"There is no "reflected power", it is a fiction."

A uniform transmission line forces energy to travel with a voltage to current ratio of Zo.

When energy traveling on the line encounters a different impedance, the new impedance either won`t accept all the traveling current at the line voltage, or the line can`t supply all the current the new impedance demands at the line voltage.

In the first case, the load impedance is too high. In the second case, the load impedance is too low.

In the firsty case, current must be reflected at the load. In the second case, voltage must be reflected at the load.

Reflection is the only alternative at an impedance mismatch.

Reflections are fact not fiction.

Best regards, Richard Harrison, KB5WZI

3169. Re: Tower/mast question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 13:13:50 UTC
From: Adam Adkins <km5nNoSpam@earthlink.net>
Message-ID: <MPG.1561ad1126c64bdb98968e@news.earthlink.net>
Source record: 163815

[This followup was posted to rec.radio.amateur.antenna and a copy was
sent to the cited author.]

In article <3af6dbd0$1@news.netnitco.net>, eruuska@netnitco.net says...
> I've tried using a 2m mobile whip on my IC706MkII, and not gotten anywhere
> with it. We're a good 30 miles from the nearest repeater (that I know of),
> and about 20 miles from the nearest potential simplex station. So in my
> effort to increase range, he's getting an IC2100H which can run in excess of
> 50w (compared to 20w on the 706), plus an antenna with additional gain. The
> terrain around here is pretty flat, no big hills or mountains or anything,
> but distance is working against us.
>

You will find that height has everything to do with how well your
antenna will perform on 2m. I have a copper pipe j-pole for 2m right
now, with the top of the antenna at 40 feet, and it works beautifully for
repeater contacts out to 50 miles. I have also carried on SSB contacts
with people who are about 70 miles away.

My support is a push up pole I got from Lowe's, with a standard
yellow TV antenna section clamped to the top of the pole. Obviously, it
has to be guyed, but it's a very inexpensive solution. Total cost for
antenna, support and fancy kevlar cord for guying was about $50.

73,

Adam, KM5N

3170. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 13:30:54 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <iySJ6.10941$t12.799045@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163817

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9d7sbe$fg6$0@208.206.142.69...
>
>
> Richard Clark wrote:
> >
> > On Mon, 07 May 2001 17:13:45 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> > wrote:
> >
> > >Richard Clark wrote:
> > >> You have managed to hold your line count under 200, even under 100.
> > >> You have managed in an attempt to simplify the situation at hand, but
> > >> no one seems to want to go there.
> > >
> > >Assuming that we are all rational, intelligent creatures, there's got
to
> > >be a middle ground somewhere and I have nothing else to do.
> >
> > Hi Cecil,
> >
> > Well this appears to be a commonality between you and Steve, this
> > leaves only Walt. Given that Walt find's faults with your proxy
> > postings, it is incumbent upon him to clear this up and accept this
> > middle ground. I don't buy his "voice in the wilderness" as a
> > compelling technical argument.
>
>
> I'm waiting for someone to explain how, if Walt is wrong, there is no
> reflected energy ever gets back to the transmitter side of the tuner,
> while the forward power wattmeter shows the added value of the reflected
> power along with the incident power. So far all Steve's mathematical
> gymnastics haven't done it.
> Lord Kelvin would be dismayed.
>
> Dick

Dick:

The issue is that to understand it you must go through some of the
mathematical gymnastics and analysis. The simple answer is not a correct
one. If you have some patience and really want to understand what happens
follow the example. All of the analysis is based on voltage superposition
and the fact that wave reflections are a function of the reflection
coefficient seen by the traveling wave.

Here's the example we have been discussing:

100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load

The transmitter is adjusted such that it will deliver 100 Watts of forward power into a Zo load.

When the transmitter is energized there are no reflection on the line. The transmitter sends a forward voltage of magnitude 70.711 V down the transmission line. This forward voltage arrives at the 150 ohm twinlead. At this point, the forward voltage sees an impedance discontinuity between the 50 ohm line and the 150 ohm line. It sees a reflection coefficient equal to 0.5. As a result, there is a reflected voltage created at the discontinuity. The reflected voltage is equal to 35.36 V. The total voltage developed at the discontinuity is equal to the incident + reflected voltage. The total voltage developed at the discontinuity is equal to 106.07 V. This total voltage is transmitted into the 150 ohm twinlead as the forward source voltage. This is the forward source voltage that has an associated forward source power of 75 Watts. (106.07^2 / 150). This *forward* source voltage and *forward* source power never change. The total forward voltage and power in the 150 ohm twinlead will change only as a result of the re-reflections that occur at the discontinuity. So now, the issue is how do we prevent the reflection created at the discontinuity from continuing back to the transmitter.

Let's consider these issues by jumping to the steady state. If we were to consider all of the multiple reflections and re-reflections in the 150 ohm line, all determined from the system reflection coefficients, we would find that the total reflected voltage arriving at the discontinuity is -70.711 V. This represents a total reflected power of 33.33 Watts (70.711^2 /150). The reflection coefficient seen by this reflected voltage is -0.5. Therefore, the re-reflected voltage is equal to +35.36 V. This re-reflected voltage adds to the forward source voltage of 106.07 V to a total forward voltage of 141.42 V. Therefore the total forward power in the 150 ohm line is 133.33 W.

At the same time that a re-reflection is created at the discontinuity a reward voltage is transmitted into the 50 ohm line. The voltage transmitted into the 50 ohm line is equal to the sum of the reflected and re-reflected voltage at the discontinuity. The rearward voltage transmitted into the 50 ohm line is equal to -35.36 V (-70.711 + 35.36). This rearward voltage combines with the reflected voltage created at the discontinuity by the source wave such that the total rearward traveling voltage goes to 0 V.

In the steady state, the impedance match is created through the total cancellation of all rearward voltage, current and power at the discontinuity. At the same time, the total forward power is a direct result of how the forward source voltage and re-reflected voltage combine. The first important point in understanding this is recognizing that the forward source power driving the 150 ohm line is not 100 W, it is 75 Watts. The power delivered to the 150 ohm line is 100 W (Pforward - Preflected). This is the steady state end of process, not the beginning of it.

The other important point is recognizing that the system analysis occurs through voltage superposition, not power addition.

Steve VE9SRB

3171. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 13:37:55 UTC
From: 2w8ji@akorn.net
Message-ID: <3af7f3b0.416314143@news.accessunited.com>
Source record: 163818

On Tue, 08 May 2001 01:06:07 -0400, Denver Braughler
<Braughler@bwcc.com> wrote:
>
>> Call a lightning strike a very fast half -
>> cycle. Similar to a capacitor charging.

Lightning polarity does reverse directions in the wiring, because it "rings" the system. But once it leaves the "air" and enters ciruitry it follows all the rules of electronics. It is a current, just like any other current and is predictable just like any other current.

It also travels the same speed as any other electricity.

From Lightning Protection for Broadcast Facilities:

"There are still a few mysteries to be solved in completely understanding lightning, but once it enters the a wiring system it becomes an electrical current which is both predictable and understandable."

Lightning is something that people like to shroud in mystery, and claim is magic. Like 10dBd gain small quad antennas and other magic.

73 Tom

3172. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 13:41:29 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <dISJ6.10949$t12.799829@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163719

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF77559.EFFED8FD@IEEE.org...
> VE9SRB wrote:
> > Ask away. I would be happy to go through an example with you.
>
> I think you and I agree that destructive interference occurs at a
> Z0-match point. We've been using the following lossless example
> where 'X' marks the Z0-match point:
>
> 100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load
>
> 35.355v at 0.7071a tries to be reflected back toward the XMTR.
> There's no reflected power on the coax so we know that voltage
> and current, which are 180 degrees out of phase, suffer destructive
> interference by their mirror image phasors reflected back from the
> load. The result is 35.355v - 35.355v = 0 and 0.7071a - 0.7071a = 0
>

We are in agreement at this point.

> Those particular voltages cancel each other and those particular
> currents cancel each other. There was 25 watts of power contained
> in each of those two sets of waves. Where does the energy in those
> 50 watts go?

The point is that it really doesn't "go" anywhere. They are both still
there. It's just that the net combination of the two result in 0 *net*
energy traveling in the rearward direction. It's like a multipath fade in
an antenna system. It is the net energy that is zero. The energy in each
remains in tact. In order for the steady state match to be maintained, the
energy from both must be continually present so that the net cancellation
can occur.

>Doesn't it seem odd that 50 watts is exactly what we
> need to balance the energy equation where for each second:
>
> 75 joules (not reflected) plus 8.33 joules (re-reflected) plus
> 50 joules (destructive interference) equals 133.33 joules (forward power)
> --

The energy (power) equation is balanced by the principles of voltage
superposition. It is the vector addition of the forward source voltage
(106.07 V) and the re-reflected voltage (35.36 V) that balances the power
equation. The relationships between voltage and power are consistent with
all of the energy laws.

Steve VE9SRB

3173. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 13:52:21 UTC
From: 2w8ji@akorn.net
Message-ID: <3af7f71a.417187879@news.accessunited.com>
Source record: 163721
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Tue, 08 May 2001 11:23:12 GMT, hamish@cloud.net.au wrote:

>In rec.radio.amateur.dx Sparky <sparky@cet.com> wrote:
>> Probably the same common, everyday people that recognized a BAD
>> presidential candidate and voted him into office - twice.
>
>Unlike George Dubya, who didn't actually get voted in at all?

Face it, George looks like a monkey and is dumb as snot. As bad as Clinton was, and as slug-like as Gore was, the republicans are so bad they can't honestly win against them. Think about that!!!!

A top republican in Atlanta that was heading the impeach Clinton movement resigned recently because he was caught (a second time) exposing himself in a public park...and soliciting sex from an undercover policeMAN (not police WOman).

Republicans are more likely to have sex with Yasser Araofat and his male camel than women. Like they did with congressional pages.

3174. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 13:56:36 UTC
From: richardharrison@webtv.net
Message-ID: <8120-3AF7FB14-2@storefull-115.iap.bryant.webtv.net>
Source record: 163722

Peter, K1PO wrote:
"My point all along has been that the fictitious Name "reflected" given to the "Fictitious power" indicated on instruments is wrong, it is not a power it is a voltage."

Same thing! A reflected excess voltage immediately causes in-phase current flow in Zo, a resistance. Thus a reflected power flows.

Best regards, Richard Harrison, KB5WZI

3175. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 14:17:04 UTC
From: K0HB <K0HB@QWEST.NET>
Message-ID: <AdTJ6.6020$vg1.469364@www.newsranger.com>
Source record: 163723
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

In article <3af7f71a.417187879@news.accessunited.com>, Tom W8JI says...

>Face it, George looks like a monkey and is dumb as snot.

Tom,

Duh-bya Shrub is not as dumb as he acts. He couldn't be!

73, Hans, K0HB

3176. RF Exposure Calculations for yagis

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 14:18:57 UTC
From: Adam Adkins <km5nNoSpam@earthlink.net>
Message-ID: <MPG.1561bc537cbeeae698968f@news.earthlink.net>
Source record: 163724

While doing RF exposure calculations for a multi-yagi, 432 MHz EME station, I discovered that unless you make allowances for the fact that you won't be in front of it, you have to be in the next county to meet the exposure restrictions.

I would guess that the front-to-back ratio has something to do with how much to reduce the gain in the calculation, but don't know how to change the figures. Any suggestions?

The basic figures are 1500 watts output on CW, with average power figured at 300 watts. Antennas are four phased 3.5 wavelength Tonna, 21 element beams. Total gain at the business end should be about 21 dB. Using those figures, one has to be 85 feet away in a controlled environment.
However, since the business end will be pointed up in the air at the moon, how much do I reduce the gain for the computation? Thanks for any assistance, and my apologies for the anti-spam device.

73,

Adam Adkins, KM5N
(remove NoSpam to reply)

3177. Re: Antenna tuner question.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 14:25:19 UTC
From: "Edward A. Feustel" <efeustel@ists.dartmouth.edu>
Message-ID: <3AF801CF.9F2E23FF@ists.dartmouth.edu>
Source record: 163726

You might also want to look at the Bliss Tuner. It is a version of the balanced tuner that appeared in QST in the early 1990s. It costs in the 600's

I guess that the Palstar looks most like the one described in the most recent
ARRL handbook with some additional bells and whistles. You might want to build it.

Ed F., N5EI

Bill Russell wrote:
>
> I will be needing a GOOD antenna tuner for various antennas. The
> primary antenna being a 135 foot dipole fed with 450 ohm ladder line.
> I hope to also have a sloper or 2 fed with coax for single band
> operation. Power will vary from 100 watts to the full limit. My
> question is........which tuner will be the best for my needs, the old
> reliable Johnson KW matchbox or the Pulstar AT4K. I know the Pulstar
> is a bit pricey but u get what u pay for!!!!!
>
> Thanks in advance
> Bill

--

3178. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 14:32:26 UTC
From: JerryL <jlockett@onemain.com>
Message-ID: <9d8vvv$h0j2k$1@ID-55752.news.dfncis.de>
Source record: 163725
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

How about some technical data proving your claim about republicans not liking to have sex with women? Statements like this cast a 'lot of doubt' about your abilities in other areas, such as electronics etc. I mean this is such obvious bullshit, it makes me wonder if your learned comments on other things might also be bullshit!

And yea, I'm a new republican, got so disgusted with Clinton and company, I changed parties, and I still like women!

I presume you still support Clinton and hold him in high regard. He was such a outstanding example of a President of the United States, wasn't he, ugh! puke! I don't know about you, but I was totally embarassed and ashamed to have him represent us/me to the entire world...!

de Jerry -n6jp-

"Tom W8JI" <2w8ji@akorn.net> wrote in message news:3af7f71a.417187879@news.accessunited.com...
> On Tue, 08 May 2001 11:23:12 GMT, hamish@cloud.net.au wrote:
>
> Republicans are more likely to have sex with Yasser Araofat and his
> male camel than women. Like they did with congressional pages.

3179. Re: HF DF capability

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 15:08:23 UTC
From: richardharrison@webtv.net
Message-ID: <23807-3AF80BE7-36@storefull-116.iap.bryant.webtv.net>
Source record: 163727

rbigg wrote:
"Need some ideas to get HF DF capability reasonably easily and inexpensively."

Tom, W8JI wrote:
"There are a dozen ways to do it."

Name them!

Best regards, Richard Harrison, KB5WZI

3180. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 15:14:14 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AF80D46.59E2B600@rupert.tds-az.lmco.com>
Source record: 163755

W6RCecilA wrote:
>
> Dick Carroll wrote:
> >
> > W6RCecilA wrote:
> > >
> > > K7MEM wrote:
> > > > You can use the fact that you are dyslexic as an excuse to not
> > > > do something, or just view it as something to overcome.
> > >
> > > Just like you can use the fact that you are five foot tall as
> > > an excuse not to be able to dunk a basketball, or just view
> > > it as something to overcome. Let us know when you can dunk
> > > a basketball.
> > >
> > Any five footer can dunk a basketball, from a stepladder. All he needs
> > is the tools and the drive to use them.
>
> So cheating is allowed when dunking basketballs? Then why not with
> Morse code?
> --
> http://www.mindspring.com/~w6rca

Look Out! Cecil is looking for a fight. It doesn't seem to matter
what you write, he'll find something to pick a fight about. Maybe
we're not paying enough attention to him.

Beware!!

--
Martin E. Meserve, K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore
my responses may not be as timely as you, or I, would like them to
be. If I seem to be ignoring you, send me another E-Mail to jog my
memory. Opinions are my own and do not reflect the opinions of my
employer.

3181. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 15:16:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF80DC5.2C956DCF@IEEE.org>
Source record: 163728

VE9SRB wrote:
> The relationships between voltage and power are consistent with
> all of the energy laws.

Of course, since they are the result of the energy laws. But what happened to your assertion that 75w + 8.33w = 133.33w? Have you changed your mind?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3182. Re: Eleven Mtrs/Freebanders/Feds

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 15:18:27 UTC
From: "Leland C. Scott" <no-spam@junk-mail.net>
Message-ID: <tfg3i4np6llf4a@corp.supernews.com>
Source record: 163729

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF7A966.9F4A4A31@spam.me.not...
> Hrm. To my recollection it doesn't specify... but then again, I could be
> wrong.

By the rules you can't be interfering with an illegal transmission. The Ham
sending CW the other post mentions should have ID'ed to be legal too.
Sending CW over the top of the 10m interlopers was not illegal in of it
self.

--
Leland C. Scott
KC8LDO

Saw this on a Tee-shirt:

"I am a bomb technician. If you see
me running, try to keep up. "

3183. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 15:36:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF81266.D5FAA621@IEEE.org>
Source record: 163730

VE9SRB wrote:
> The
> first important point in understanding this is recognizing that the forward
> source power driving the 150 ohm line is not 100 W, it is 75 Watts. The
> power delivered to the 150 ohm line is 100 W (Pforward - Preflected).

That's a contradiction, Steve. You cannot have it both ways. You cannot have the forward source power at 75 watts with 100 watts delivered to the 150 ohm line. Where did the extra 25 joules/sec come from? All of the 100 joules/sec of the generated energy is delivered to the 150 ohm line. There is nowhere else for it to go. The missing energy is embedded in the resulting voltages whether you realize it or not. The fact that the voltages add up is the *result* of balancing the energy equation.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3184. Re: Portable 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 15:36:12 UTC
From: aduffy@sprint.ca
Message-ID: <3AF8126C.3ADFDF21@sprint.ca>
Source record: 163732

There are quite a few plans for 2m J-Pole antennas on the net and in books from the library. Other ideas are folded wire dipoles, loops, a pair of telescoping antennas in a dipole config (like the ones from a set of rabbit ears). etc. 2m antennas are small enough that you can use just about any style that catches your fancy. Have any 1/2" copper pipe kicking around?

Myself I made a J-Pole from aluminum wire and the white nylon connector blocks at Radio Shack (the type where the wire goes into the block and is held with a set screw, not the type that uses lugs on the wire). It works great indoors, doesn't seem to couple to the walls or bookcase it's mounted to. Easy to tune etc. Being a 1/2 wave or 5/8s wave (I forget which) compensates for being inside the house as well. I even have a 440 version right next to it without any problems.

The best part of Amateur Radio is the experiments :-)

73,
Tony
VA3ATD

> Gary Boyer wrote:
> >
> > Does anyone have a suggestion on how to use a 2 meter base rig in the
> > house....I am looking for a suggestion on a cheap antenna to use inside the
> > house with my base station. I am only going to use it for local or area
> > repeaters....thanks.. I am strapped for funds so don't want to purchase a
> > mobile/ car antenna..Gary..K8BY
>

3185. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 15:41:51 UTC
From: John O'Flaherty <oflahert@roast.net>
Message-ID: <3AF813BF.76B6B8B6@roast.net>
Source record: 163731

Richard Harrison wrote:

> John O`Flaherty wrote:
> "Sorry, it`s not correct to say that power is progressing down a
> line..... It`s important to be precise about these things, isn`t it?"
>
> Not at all. It`s one of those victimless crimes.

Let me reflect on that... oops, bad word choice! :-)
--
john

change roast to burnt bread to reply

3186. Re: REALISTIC Patrolman Direct Entry Programmable 100 CHANNEL PRO-46 HANDHELD SCANNER

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 16:22:18 UTC
From: Stephen M Peterson <stephenmpeterson@hotmail.com>
Message-ID: <_2VJ6.12175$pN1.3992691@typhoon.southeast.rr.com>
Source record: 163735
Cross-posted to:
rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.scanner,rec.radio.shortwave

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1236407693

3187. Re: REALISTIC Patrolman Direct Entry Programmable 100 CHANNEL PRO-46 HANDHELD SCANNER

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 16:22:42 UTC
From: Stephen M Peterson <stephenmpeterson@hotmail.com>
Message-ID: <m3VJ6.12176$pN1.3992807@typhoon.southeast.rr.com>
Source record: 163734
Cross-posted to:
rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.scanner,rec.radio.shortwave

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1236407693

3188. Re: REALISTIC Patrolman Direct Entry Programmable 100 CHANNEL PRO-46 HANDHELD SCANNER

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 16:23:10 UTC
From: Stephen M Peterson <stephenmpeterson@hotmail.com>
Message-ID: <O3VJ6.12177$pN1.3993227@typhoon.southeast.rr.com>
Source record: 163736
Cross-posted to:
rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.scanner,rec.radio.shortwave

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1236407693

>
> It will Pick up 2 way radios, police, Aircraft, Fire, Cell phones,
> Cordless Phones, TV stations, just about anything.
>
> Its range is from 29MHz - 956MHz
>
> This is a well kept scanner in Excellent Condition and works perfectly, It
> was mainly used when
>
> I was in aviation school 1993-5 and kept in the included soft case.
>
> This scanner will do the *Test Mode* holding L/OUT, 2, and 9 at the same
> time at power on to allow
>
> for "Full Spectrum" of frequencies.
>
> I cannot help you with the test mode since I don't use that, but it does
do
> it, you could
>
> look this up on the internet If you were curious.
>
> The date code is * 6A3 * or June 1993 a Good year no doubt.
>
> It was stored in the Box and comes with the Whip Antenna, unused Belt
Clip,
> and AA Holder Battery Pack.
>
> It comes with the everything as if it were new packed in the box with
manual
> and even the receipt from 1993.
>
> It comes with a few extras like the optional Archer Power Supply and Carry
> Case.
>
> Check the Tandy Page for more information.
>
> Shipping will Be $10.00 UPS insured in addition to bid Price in
continental

> US.
>
>
>
> I accept Palpal and Money Orders (US Dollars) only.
>
>
>
> Sold as-is but is in excellent working order will not be DOA. Contact must
> be made within 24hrs from end of auction with address and payment method.
> Payment must be made within 10 days or item will be relisted. I reserve
the
> right to reject bidders with too many negative comments.
>
>
>
> Thanks for looking and Good Luck Bidding!
>
>

3189. Re: REALISTIC Patrolman Direct Entry Programmable 100 CHANNEL PRO-46 HANDHELD SCANNER

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 16:23:40 UTC
From: Stephen M Peterson <stephenmpeterson@hotmail.com>
Message-ID: <g4VJ6.12178$pN1.3993413@typhoon.southeast.rr.com>
Source record: 163737
Cross-posted to:
rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.scanner,rec.radio.shortwave

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1236407693

> It will Pick up 2 way radios, police, Aircraft, Fire, Cell phones,
> Cordless Phones, TV stations, just about anything.
>
> Its range is from 29MHz - 956MHz
>
> This is a well kept scanner in Excellent Condition and works perfectly, It
> was mainly used when
>
> I was in aviation school 1993-5 and kept in the included soft case.
>
> This scanner will do the *Test Mode* holding L/OUT, 2, and 9 at the same
> time at power on to allow
>
> for "Full Spectrum" of frequencies.
>
> I cannot help you with the test mode since I don't use that, but it does
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> it, you could
>
> look this up on the internet If you were curious.
>
> The date code is * 6A3 * or June 1993 a Good year no doubt.
>
> It was stored in the Box and comes with the Whip Antenna, unused Belt
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> and AA Holder Battery Pack.
>
> It comes with the everything as if it were new packed in the box with
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> and even the receipt from 1993.
>
> It comes with a few extras like the optional Archer Power Supply and Carry
> Case.
>
> Check the Tandy Page for more information.
>
> Shipping will Be $10.00 UPS insured in addition to bid Price in
continental
> US.

>
>
>
> I accept Palpal and Money Orders (US Dollars) only.
>
>
>
> Sold as-is but is in excellent working order will not be DOA. Contact must
> be made within 24hrs from end of auction with address and payment method.
> Payment must be made within 10 days or item will be relisted. I reserve
the
> right to reject bidders with too many negative comments.
>
>
>
> Thanks for looking and Good Luck Bidding!
>
>

3190. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 16:26:39 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AF81E3F.61F7A3F9@hiwaay.net>
Source record: 163733

Steve, I have seen this attributed to you, in an earlier post. (If I'm wrong, please say so)- I really wish this were true, because, although I pay the power people in terms of KiloWatt-Hours, the result seems to be, that with the addition of only a passive device, I can pay them for 75 Joules and get the benefit of the heat from 133.3 Joules. If this is so, I stand to save a fortune in heating bills next winter. All I need do is make the passive device, enclose it in a black box, and toast myself.

Note that there is no principle of "voltage superposition" or any other derived relationship that will allow us to create energy by transformation of symbols in equations. It just cant be.

Bill-W4BSG

VE9SRB wrote:

> >
> > 75 joules (not reflected) plus 8.33 joules (re-reflected) plus
> > 50 joules (destructive interference) equals 133.33 joules (forward power)
> > -->
> Steve VE9SRB

3191. Re: DC Power supply question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 16:36:08 UTC
From: Dev <.>
Message-ID: <9d978g01p1d@enews3.newsguy.com>
Source record: 163746
Cross-posted to: alt.radio.scanner,rec.radio.amateur.antenna,rec.radio.scanner,rec.radio.shortwave

well sinc emost of those are receivers. and one is a tx/rx. A 12v atleast or 10 amp. should works. if in doubt buy one that is a 20 amp. just remember that not all of those wall ac adapters will be 12 volts output into the radio. most radios will be between 3.8 - 12. look at the output on your ac adapter to make sure. but I think 10 - 20 amps will suffice.
unless you get nore "tx/rx" transmitters. all should be good. transmitters take more ampers when transmitting. one radio at 12 volts at 50 watts output will take easily 8 to 10 amps.

73, hope this helps

Dev

Ham radio is a hobby that lets you be free
Dev

"Sycho_Graphics" <Sycho_Graphics@msn.com> wrote in message
news:O6erGbC1AHA.302@cpmsnbbsa07...
> I am tired of all the wall warts and want to power my radios with a DC
power
> supply my question is how many amps is enough? What I want to power is
the
> following (AOR 8000, BC 780xlt, RadioShack DX-398, two Cobra CB radio's
{one
> base, one portable}), but I want some room for future expansion.
>
> Sorry for the newbie question, but I am a newbie :)
>
>
>
>

3192. Sorry did not mean to post so many times! thought this was going to one newsgroup! THX

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 16:38:34 UTC
From: Stephen M Peterson <stephenmpeterson@hotmail.com>
Message-ID: <eiVJ6.12185$pN1.4002351@typhoon.southeast.rr.com>
Source record: 163741
Cross-posted to:
rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.scanner,rec.radio.shortwave

[No readable article body recovered]

3193. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 16:38:35 UTC
From: kb7qhc@home.com
Message-ID: <3af81e6f.66053570@news.seanet.com>
Source record: 163738

On Mon, 07 May 2001 23:34:37 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> This artifice of complication to joules adds nothing but complexity
>> that is unnecessary.
>
>On the contrary, it is an application of Ockham's Razor. When dealing
>with joules, the conservation of energy principle cannot be denied,
>at least not by rational folk. There no need to complicate the model
>with forward and reflected waves of voltages and currents. Buckets of
>energy are easy for everyone to understand.

Hi Cecil,

Basically your last statement is an appeal to the lowest common
denominator in your audience (we have simpletons with little patience
for this high math stuff) to add yet more complexity "for their
special needs." Occam would've cut his throat with just such a razor.

The so-called complexity of volts and current are the vernacular of
our past time or trade. We employ tools that measure those very
phenomenon and have been designed for that purpose in this
application. How many Buckets of energy Standing Wave meters are
there on the market? I will bet dollars to donuts they use
conventional I and E measures rather than the enumeration of buckets.

73's
Richard Clark, KB7QHC

3194. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 16:44:24 UTC
From: kb7qhc@home.com
Message-ID: <3af92186.66844357@news.seanet.com>
Source record: 163739

On Tue, 8 May 2001 08:33:39 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Dick:
>
>Agreed!
>
>BTW... Lord Kelvin, like Wheatstone, also has a bridge circuit named after
>him.
>
>I can thus only suppose that Kelvin also knew and understood how to measure
>those ficticious reflected voltages... b = V - IR which are the "output" of
>a simple Wheatstone bridge circuit used to tell when a "null" in the bridge
>is reached.
>
>-Peter K1PO

Hi Peter,

You've leaned on that crutch far too long. You have NOT described a
Wheatstone Bridge (nor Kelvin Bridge by a mile).

You have described a bridge apparatus, true, but it is not an
invention of either Wheatstone nor Kelvin by a long shot.

Please find your authorities for your idea of invention from proper
sources.

73's
Richard Clark, KB7QHC

3195. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 16:50:33 UTC
From: kb7qhc@home.com
Message-ID: <3afb2334.67274525@news.seanet.com>
Source record: 163740

On Tue, 08 May 2001 13:30:54 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"Dick Carroll" <dixie@townsqr.com> wrote in message
>news:9d7sbe$fg6$0@208.206.142.69...
>>
>>
>> Richard Clark wrote:
>> >
>> > On Mon, 07 May 2001 17:13:45 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
>> > wrote:
>> >
>> > >Richard Clark wrote:
>> > >> You have managed to hold your line count under 200, even under 100.
>> > >> You have managed in an attempt to simplify the situation at hand, but
>> > >> no one seems to want to go there.
>> > >
>> > >Assuming that we are all rational, intelligent creatures, there's got
>to
>> > >be a middle ground somewhere and I have nothing else to do.
>> >
>> > Hi Cecil,
>> >
>> > Well this appears to be a commonality between you and Steve, this
>> > leaves only Walt. Given that Walt find's faults with your proxy
>> > postings, it is incumbent upon him to clear this up and accept this
>> > middle ground. I don't buy his "voice in the wilderness" as a
>> > compelling technical argument.
>>
>>
>> I'm waiting for someone to explain how, if Walt is wrong, there is no
>> reflected energy ever gets back to the transmitter side of the tuner,
>> while the forward power wattmeter shows the added value of the reflected
>> power along with the incident power. So far all Steve's mathematical
>> gymnastics haven't done it.
>> Lord Kelvin would be dismayed.
>>
>> Dick
>
>Dick:
>
>The issue is that to understand it you must go through some of the
>mathematical gymnastics and analysis. The simple answer is not a correct
>one. If you have some patience and really want to understand what happens

>follow the example. All of the analysis is based on voltage superposition
>and the fact that wave reflections are a function of the reflection
>coefficient seen by the traveling wave.
>
>Here's the example we have been discussing:
>
>
>100w XMTR---50 ohm coax---X---1/2WL 150 ohm twinlead---50 ohm load
>
>
>The transmitter is adjusted such that it will deliver 100 Watts of forward
>power into a Zo load.
>
>When the transmitter is energized there are no reflection on the line. The
>transmitter sends a forward voltage of magnitude 70.711 V down the
>transmission line. This forward voltage arrives at the 150 ohm twinlead.
>At this point, the forward voltage sees an impedance discontinuity between
>the 50 ohm line and the 150 ohm line. It sees a reflection coefficient
>equal to 0.5. As a result, there is a reflected voltage created at the
>discontinuity. The reflected voltage is equal to 35.36 V. The total
>voltage developed at the discontinuity is equal to the incident + reflected
>voltage. The total voltage developed at the discontinuity is equal to
>106.07 V. This total voltage is transmitted into the 150 ohm twinlead as
>the forward source voltage. This is the forward source voltage that has an
>associated forward source power of 75 Watts. (106.07^2 / 150). This
>*forward* source voltage and *forward* source power never change. The total
>forward voltage and power in the 150 ohm twinlead will change only as a
>result of the re-reflections that occur at the discontinuity. So now, the
>issue is how do we prevent the reflection created at the discontinuity from
>continuing back to the transmitter.
>
>Let's consider these issues by jumping to the steady state. If we were to
>consider all of the multiple reflections and re-reflections in the 150 ohm
>line, all determined from the system reflection coefficients, we would find
>that the total reflected voltage arriving at the discontinuity is -70.711 V.
>This represents a total reflected power of 33.33 Watts (70.711^2 /150). The
>reflection coefficient seen by this reflected voltage is -0.5. Therefore,
>the re-reflected voltage is equal to +35.36 V. This re-reflected voltage
>adds to the forward source voltage of 106.07 V to a total forward voltage of
>141.42 V. Therefore the total forward power in the 150 ohm line is 133.33
>W.
>
>At the same time that a re-reflection is created at the discontinuity a
>reward voltage is transmitted into the 50 ohm line. The voltage transmitted
>into the 50 ohm line is equal to the sum of the reflected and re-reflected
>voltage at the discontinuity. The rearward voltage transmitted into the 50
>ohm line is equal to -35.36 V (-70.711 + 35.36). This rearward voltage
>combines with the reflected voltage created at the discontinuity by the
>source wave such that the total rearward traveling voltage goes to 0 V.
>

>In the steady state, the impedance match is created through the total
>cancellation of all rearward voltage, current and power at the
>discontinuity. At the same time, the total forward power is a direct result
>of how the forward source voltage and re-reflected voltage combine. The
>first important point in understanding this is recognizing that the forward
>source power driving the 150 ohm line is not 100 W, it is 75 Watts. The
>power delivered to the 150 ohm line is 100 W (Pforward - Preflected). This
>is the steady state end of process, not the beginning of it.
>
>The other important point is recognizing that the system analysis occurs
>through voltage superposition, not power addition.
>
>
>Steve VE9SRB
>

Hi Steve,

Another model? Let's get the three of you on the same page as this
one is bound to be dissected and dismembered into non-productive
cat-calls.

73's
Richard Clark, KB7QHC

3196. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 16:53:51 UTC
From: kb7qhc@home.com
Message-ID: <3afc23e7.67453412@news.seanet.com>
Source record: 163742

On 8 May 2001 02:51:27 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>
>
>W6RCecilA wrote:
>>
>> Richard Clark wrote:
>> > You have managed to hold your line count under 200, even under 100.
>> > You have managed in an attempt to simplify the situation at hand, but
>> > no one seems to want to go there.
>>
>> Assuming that we are all rational, intelligent creatures, there's got to
>> be a middle ground somewhere and I have nothing else to do.
>
>
>
> You gotta wonder what Lord Kelvin would think if he could read all
>this.
>Do you suppsoe he'd still make his famous statement about "If you can't
>put the numbers to it you really don't understand"???
>
>Dick

Hi Dick,

I'm afraid it is far more basic than numbers. I would offer this
troubled debate is mired with an understanding "that if you can throw
more numbers at it, it proves you know it."

I would further offer that Cecil is right in that replacing the tuner
with a high-Z line takes out a lot of side issues.

73's
Richard Clark, KB7QHC

3197. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 16:56:05 UTC
From: kb7qhc@home.com
Message-ID: <3afd24c7.67677745@news.seanet.com>
Source record: 163743

On 8 May 2001 04:23:10 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>
>
>Richard Clark wrote:
>>
>> On Mon, 07 May 2001 17:13:45 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
>> wrote:
>>
>> >Richard Clark wrote:
>> >> You have managed to hold your line count under 200, even under 100.
>> >> You have managed in an attempt to simplify the situation at hand, but
>> >> no one seems to want to go there.
>> >
>> >Assuming that we are all rational, intelligent creatures, there's got to
>> >be a middle ground somewhere and I have nothing else to do.
>>
>> Hi Cecil,
>>
>> Well this appears to be a commonality between you and Steve, this
>> leaves only Walt. Given that Walt find's faults with your proxy
>> postings, it is incumbent upon him to clear this up and accept this
>> middle ground. I don't buy his "voice in the wilderness" as a
>> compelling technical argument.
>
>
> I'm waiting for someone to explain how, if Walt is wrong, there is no
>reflected energy ever gets back to the transmitter side of the tuner,
>while the forward power wattmeter shows the added value of the reflected
>power along with the incident power. So far all Steve's mathematical
>gymnastics haven't done it.
> Lord Kelvin would be dismayed.
>
>Dick

Hi Dick,

I think Kelvin would be dismayed all around, but he's as dead as some
of this logic being offered by the ream.

73's
Richard Clark, KB7QHC

3198. DK9SQ 8band vertical?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 17:05:33 UTC
From: on4bam@yahoo.com
Message-ID: <3af82698.44953540@news.easynet.be>
Source record: 163744

Hi,

Has anyone got extra info (pictures?) on the new DK8SQ vertical to be
used with the Fibreglass Telescopic Tower?
It seems to be an excellent travelantenna and the holidayseason is
getting closer....

TIA
73 de ON4BAM (OY/ON4BAM / TFx/ON4BAM in August)

Bye Maurice

Hamradio: ON4BAM / M0CIL http://www.qsl.net/on4bam
Pix and travelstories from Alaska, Schotland
South Africa and IOTA activations
*** remove 'nobrol' to reply ***
Fight Spam! Join CAUCE (Coalition Against Unsolicited Commercial Email)
at http://www.cauce.org/

3199. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 17:10:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF82888.E159EFC4@IEEE.org>
Source record: 163745

Richard Clark wrote:
> The so-called complexity of volts and current are the vernacular of
> our past time or trade.

Problem is, there is no conservation law for voltage and current.
However, there is a conservation law for voltage*current*time
(assuming voltage and current are in phase).

Standby for a thought experiment that should illustrate my basic
point. My subconscious is working on it now.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3200. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 17:44:40 UTC
From: John O'Flaherty <oflahert@roast.net>
Message-ID: <3AF83088.3FE93C07@roast.net>
Source record: 163747

"Peter O. Brackett" wrote:

> Cecil:
>
> Kirchoff's Laws - or the Reflection's Laws?
>
> At least Kirchoff set out to simplify and improve, not to complicate and
> obfuscate.
>
> Reflection, well I shan't say what he has done...
>
> Cecil just for fun...
> .....
> Consider a 50 Ohm battery of open circuit voltage of 1 volt, driving a 100
> Ohm resistor through a lossless 3 foot transmission line. Since the battery
> has a 50 Ohm resistance, and although it really doesn't matter since the
> reference impedance is an arbitrary and perhaps ficticious quantity, let's
> make it somewhat real and take the reference impedance to be R = 50 Ohms.
>
> The reflection coefficient "rho" for this mismatched circuit by the usual
> formula is rho = (Z - R)/(Z + R):
>
> rho = (100 - 50)/(100 + 50) = 50/150 = 1/3
>
> And the VSWR would be 2:1:
>
> VSWR = (1 + rho)/(1 - rho) = (1 + 1/3)/(1 - 1/3) = (4/3)/(2/3) = 2
>
> Summarizing: rho = 1/3 and VSWR = 2.
>
> The voltage across the load will be 100/(100 + 50) = 100/150 = 10/15 = 2/3
> of the battery's open circuit voltage.
>
> In this case since the open circuit voltage is 1 volt, the load voltage V
> will be V = 2/3 volts.
>
> Of course if the 50 Ohm battery had been driving a 50 Ohm resistor it would
> have been perfectly matched and the voltage across the load would have been
> exactly 1/2 that of the battery's open circuit voltage. In that case the
> load voltage would be 1/2 volt. That's if it had been driving a 50 Ohm
> load, which it's not.
>
> Of course that's not the actual load voltage V, that is the voltage IR = 1/2
> volt that would appear across a perfectly matched load R 50 Ohms if it was

> carring the perfectly matched current I = 1/100. Recal that 1/2 volt value
> is a fiction at this point since, the battery is actually connected to a 100
> Ohms, not 50 Ohms!
>
> We just made an assumption, a "fiction" that it could be connected to a 50
> Ohm load resistance.
>
> If that fiction were true, the reflected voltage "b" would be b = V - IR,
> the difference between V the actual voltage across the actual load, in this
> case V = 2/3 volts, and the ficticious voltage IR = 1/2 volts across the
> ficticious load R where R = 50 Ohms.
>
> Thus the reflected voltage b is:
>
> b = V - IR = 2/3 - 1/2 = 4/6 - 3/6 = 1/6 volts .... "the reflected voltage"
>
> The reflected volts b = 1/6 volt is just the difference between V, the
> actual voltage across the load, and IR the ficticious voltage that would be
> across the load if the load were 50 Ohms, which its' not because it's really
> 100 Ohms!
>
> Arithmetically correct? Yes! Mathematically correct,?Yes!
>
> Confusing??? Yes!
>
> Complicated??? Yes!
>
> Heh, heh... you bet!
>
> But that's what all of this danged high falutin "reflected power" theory
> asks you to "assume" as you work your way through this tangled model.
>
> Where the hell is the IR = 1/2 volt in the circuit.
>
> It's nowhere, just a fiction.
>
> And where is the b = 1/6 of a volt of reflected voltage in the circuit.
>
> It's nowhere, just fiction.
>
> Just mathematical quantities defined and calculated to justify some model of
> reality that just doesn't exist. It's a ficticious setup to help us to
> "visualize" things a certain way.
>
> Why do we need reflected voltage, let alone reflected power? We didn't need
> it to compute rho or VSWR? We didn't need it to tell us when we got a
> match?
>
> We computed the reflection coefficient rho = 1/3 and the voltage standing
> wave ratio VSWR = 2, without either the reflected voltage b or, God help us

> the reflected power Pr
>
> What, and where would that power be in this circuit? Pr = b*b/R =
> (1/6*1/6)/50 = (1/36)/50 = 1/1800 Watts of reflected power.
>
> God help us... in which resistor is that power dissipated?
>
> What? Why do we need these fictions?
>
> But I do agree that the reflected voltmeter which computes and displays b =
> V - IR is very helpful since it tells us how far away we are from a match,
> by letting us "see" the difference between the actual voltage and the
> desired ficticious voltage. We find the meters that display b useful
> because we can use them as a "null" indicator. Adjust the tuner for a
> reflected voltage null!
>
> A nice null indicating instrument, but not a power meter, and certainly not
> a
> device that supports a whole theory of ficticious power bouncing up and down
> a line.
>
> Model airplane "buffs" have a voltmeter built on a similar principal at
> their disposal
> that model aircraft battery voltmeter is set up to indicate, on mV scales,
> the
> difference between the current battery voltage on the aircraft and the ideal
> voltage of a fully charged battery. With this "sensitive" null indication
> they can accurately predict how many more "minutes" of flight they have
> left in their batteries. Somewhat similar to how we hams use our so-called
> reflected power meters.
>
> Cecil, I say...
>
> Let's be done with it, change out all the labels on our power meters from
> "reflected
> watts" to read "reflected voltage" and just instruct folks to tune for a
> null
> in the reflected voltage to make the load as close as possible to R, and be
> done with it!
>
> Simplicity is best! Complicity is not!
>
> Come on... join the club... down with "reflected power", how about it?
>
> Heh, heh...
>
> Best,
>

Unfortunately, some of your argument is based on the fictitious 'ohms', which are nothing more than the proportionality between voltage and current. They have no real existence except as mathematical fictions, intermediate results used to predict future balances between voltage and current, based on past balances. How do you measure resistance? You use a meter, which puts a constant CURRENT through a load, and reads the VOLTAGE there that results from that current. I suggest that we relabel all our meters in terms of 'volts', which is actually what they are measuring. Down with ohms. Simplicity is best.
Heh, heh.

--
john

change roast to burnt bread to reply

3201. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 17:49:15 UTC
From: kb7qhc@home.com
Message-ID: <3afa229d.67123889@news.seanet.com>
Source record: 163749

On Tue, 08 May 2001 10:36:06 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>VE9SRB wrote:
>> The
>> first important point in understanding this is recognizing that the forward
>> source power driving the 150 ohm line is not 100 W, it is 75 Watts. The
>> power delivered to the 150 ohm line is 100 W (Pforward - Preflected).
>
>That's a contradiction, Steve. You cannot have it both ways. You cannot
>have the forward source power at 75 watts with 100 watts delivered to
>the 150 ohm line. Where did the extra 25 joules/sec come from? All of
>the 100 joules/sec of the generated energy is delivered to the 150 ohm
>line. There is nowhere else for it to go. The missing energy is embedded
>in the resulting voltages whether you realize it or not. The fact that
>the voltages add up is the *result* of balancing the energy equation.

Hi Cecil,

This is the bane of your unneccessary elaboration of energy units.
You move between power and them without conversion. If such a step is
unneccessary, then the discussion should remain with the units where
it started.

73's
Richard Clark, KB7QHC

3202. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 17:49:21 UTC
From: kb7qhc@home.com
Message-ID: <3afe2fde.70516267@news.seanet.com>
Source record: 163750

On Mon, 7 May 2001 22:16:43 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>Did it occur to you that perhaps all three are correct, simply because they
>are discussing fictional entities.
>

Hi Peter,

I'll tell you what, I have not observed any discussion from them of
your fictional entities, but I might be wrong. If I am, I see little
point in traversing that amalgam of dense writing to visit them once
again.

On the other hand, I feel that they are ALL right about what they
argue; the problem is that each is describing something different and
proclaiming to the top of their collective lung power that it is the
same thing. These are not three blind monks describing an elephant.

73's
Richard Clark, KB7QHC

3203. Re: Tower/mast question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 17:49:22 UTC
From: Eric Ruuska <eruuska@netnitco.net>
Message-ID: <3af8311e@news.netnitco.net>
Source record: 163748

Q: Is this marketed as an antenna mast, or something else? I called the local Home Depot and the guy didn't have anything like this for antenna purposes.

> My support is a push up pole I got from Lowe's, with a standard
>yellow TV antenna section clamped to the top of the pole. Obviously, it
>has to be guyed, but it's a very inexpensive solution. Total cost for
>antenna, support and fancy kevlar cord for guying was about $50.
>
>73,
>
>Adam, KM5N

3204. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 17:52:29 UTC
From: kb7qhc@home.com
Message-ID: <3aff31ba.70992091@news.seanet.com>
Source record: 163753

On Tue, 8 May 2001 08:04:27 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Cecil:
>
>Smith charts do work, and they are nothning more nor less than analogs of
>those very simple reflection equations.
>

Hi Peter,

You maintained that your fiction could be expressed in the existing framework found with AC analysis and was consistent with its precepts. The Smith Chart being such an example conforming to that same analysis, can you explain where DC enters into its operation?

73's
Richard Clark, KB7QHC

3205. ** FA: SGC QMS-II Antenna System **

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 17:55:34 UTC
From: Steve Gray <stevencgray@earthlink.net>
Message-ID: <qqWJ6.818$x62.94009@newsread2.prod.itd.earthlink.net>
Source record: 163752

I am auctioning my SGC QMS-II Antenna System on eBay. The QMS-II covers 1.8 through 30 MHz, and handles 150 watts.

If interested, please see:

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1236371563&r=0&t=0&showTutorial=0&ed=989893290&indexURL=0&rd=1

Thank you!
---Steve
NR3B
stevencgray@earthlink.net

3206. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 17:57:01 UTC
From: Gene <webmaster@zylay.com>
Message-ID: <3AF8336D.6C258B2A@zylay.com>
Source record: 163751
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

GG wrote:
>
> I picked a good analogy, I have no right to use his property just
> because I observe it does not appear to be in use by the owner.

In your case of hte squatter, you stated that noone had noticed him. The major and important difference here is that freebanders have been noticed and lots of people are raising hell about it. To bring your analogy into line with freebanding, the squatter would have had to hold onto the land for the required number of years through either armed force, or simple civil disobediance, not by not being noticed.

> W6RCecilA wrote:
> >
> >
> > You picked a bad analogy. A person did just that on some land in my
> > home county of Madison in Texas. Nobody noticed him living there.
> > After N number of years he was discovered. The case went to court
> > and the trespasser was awarded the property under the Texas homestead
> > laws. So you better keep an eye on your property or some homesteader
> > will wind up owning it. Homesteading is a good description of what the
> > freebanders have done between the CB band and the ham band. Time was
> > when amateur radio operators homesteaded the radio frequencies.
> > --
> > http://www.mindspring.com/~w6rca
> >
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

--
Ride to eat, eat to ride. __O
_-\<,_
Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
Please visit http://www.tfn.net/~gfloyd7/cmn/

3207. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 17:58:47 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9c40$9am$1@slb7.atl.mindspring.net>
Source record: 163754

Bill:

Apparently you can create energy, it's especially easy when you are dealing
with a "ficticious" power.

If only we could siphon off all of that ficticious "reflected power"
indicated on ham's wattmeters around the world and put it to good use...

And to think, presented with all that "free power".... hams keep on trying
to reduce that free reflected power to zero!

What?

I've been keeping my reflected power as high as I can, I figure, not often
you get energy for free!

It's a shame to waste that free "reflected power" and so... I've been
developing a "reflected power" to "real power" converter in my spare timel.
Once I get it perfected, I'll patent it and then I'll try to sell the design
to Martin Jue of MFJ/Vectronics/Ameritron, so he could put it into
production and send me royalties.

I figure Martin can best exploit the market, since he sells most of the
commercial antenna tuners today, and it's those tuners that are metering
that free reflected power right at the collection points.

Heh, heh...

I'll bet Martin never has never stopped to think about all the free
reflected power his tuners are collecting around the world.

-Peter K1PO

"Bill Aycock" <baycock@hiwaay.net> wrote in message
news:3AF81E3F.61F7A3F9@hiwaay.net...
> Steve, I have seen this attributed to you, in an earlier post. (If I'm
> wrong, please say so)- I really wish this were true, because, although I
> pay the power people in terms of KiloWatt-Hours, the result seems to be,
> that with the addition of only a passive device, I can pay them for 75
> Joules and get the benefit of the heat from 133.3 Joules. If this is so,
> I stand to save a fortune in heating bills next winter. All I need do is
> make the passive device, enclose it in a black box, and toast myself.
>
> Note that there is no principle of "voltage superposition" or any other
> derived relationship that will allow us to create energy by
> transformation of symbols in equations. It just cant be.
>
> Bill-W4BSG

>
> VE9SRB wrote:
>
>
> > >
> > > 75 joules (not reflected) plus 8.33 joules (re-reflected) plus
> > > 50 joules (destructive interference) equals 133.33 joules (forward
power)
> > > -->
> > Steve VE9SRB
>

3208. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:02:05 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9ca6$f4p$1@slb2.atl.mindspring.net>
Source record: 163756

Richard:

[snip]
> Reflection is the only alternative at an impedance mismatch.
>
> Reflections are fact not fiction.
>
> Best regards, Richard Harrison, KB5WZI
>
[snip]

Where does that "reflected" power go... can I keep it? Or do I have to give it back? How do I give it back?

-Peter K1PO

3209. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:02:06 UTC
From: twistedhed@webtv.net
Message-ID: <1403-3AF8349E-42@storefull-125.iap.bryant.webtv.net>
Source record: 163758
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.policy

Technical Data:

"JerryL" <jlockett@onemain.com> Group:
rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb
Subject: Re: Respect For Freebanders Date: Tue, May 8,
2001, 7:32am (EDT-3) X-Trace: fu-berlin.de 989332288 17845332
209.165.2.21 (16 [55752])

And since we are on the subject of headers:

It is time for my monthly disclaimer, in case any newbies have arrived
since Leland's last folly with my nic and email.

.
KC8LDO Leland C. Scott forged the original post, it wasn't me. His
number of aliases and forged posts and emails are staggering, but he
especially likes forging me. Please check the headers. Leland C. Scott,
KC8LDO, and Doug Adair, N8wwm, and their many, MANY aliases are
responsible for ninety five point nine percent of the strife on the
rec.radio.cb ng, and probably on many of your amateur forums as well,
especially lately. A good number of posts appearing with no call signs
have been easily identified as the same forgers in the cb ng.

Thank you all for the replies via email, as most were polite and well
written, as were the many offers to assist me in attaining a ham
license, however, I believe in returning things to their rightful
owners, so any additional correspondence should be directed at the
author of the forged post and troll.

After exposing Leland for forging me over a month ago with the
assistance of another licensed amateur, he has waged a personal vendetta
against me.

He searched the web and found an article I wrote on freebanding for a
hobby magazine over a year ago and has posted it numerous times in an
effort to justify his own behavior towards myself and other cbers. He
draws his own inferences and hurls unfounded accusations and insults.
Leland's main line of defense has always been attack his accuser, no
matter who it may be. If anyone would dare suggest Leland may be wrong,
he has no defense other than to attack about "What you did" and it is
usually a lie (from questioning one's sexual preference to threatening
them).

He has repeatedly accused me and others of pirating on amateur frequencies, and nothing could be further from the truth. I understand how an amateur could feel so strongly as to defend his allocated frequencies, but attacking countless individuals behind phony names, forging people, forging email headers in his posts, throwing accusations left and right and refusal to remove anything personal and not on subject off the ng exemplifies what this particular individual and his two cronies are about. He also reported me to my ISP for "forging" (the gall) and was so certain it was me that he made many posts threatening that I was about to lose my internet service. When he received word it wasn't me from my ISP, this sent him into a rage, as it did when I first exposed him. He has accused me of forging for so long (pot, kettle, black) he now accuses my ISP of "lying" to him. I guess the more Leland decides to forge me in your amateur forums, the more frequent I must point out the error of his ways.

I asked Leland and "Sparky" to take whatever personal problem they may have with me to email and I will be glad to debate whatever merit they see fit, but as all will see, these two are more interested in calling names, perpetuating problems between operators and will not cease their childish games....hence the crossposts They don't WANT the strife to go away. I apologize that they feel the need to make you all a part of it, and I was going to ignore most of the emails and what was forged of me, but then the email I received from amateurs was so far from what I expected. Leland forged me and posted that article in a manner to which I would be flamed, and instead, I received email from a great number of amateurs who didn't flame at all.

Quite the opposite, many offered to assist in getting my ticket, and for that I thank you. Turning the tables, if it had been me that were a licensed operator and someone posted an article about freebanding in an amateur format I frequented, I may have been one of the flamers, but as I said, the reaction from amateurs across the land was quite different than what the original author intended. If a post appears to be from me in anything other than the cb ng, please check the headers....if it has any other path than this one, it is a forge. All emails answered. Have a good day.

3210. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:13:21 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF83741.387451A6@spam.me.not>
Source record: 163757
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

I have never run my CB this way. I do have an echo mic on my GrantXL,
but the echo "volume" is barely cracked open. According to three
different modulation meters, I'm set at 99% modulation.

The fellow I was talking to runs his radio in much the same way. He has
a Cobra 148 (same radio, basically), and has his set similarly.

Any more than 100% modulation is going to sound like crap, and probably
bleed over. I know this, and those CB'ers who know this try to avoid
bleeding over, etc...

Now, if you don't mind, I need a nap before I go down to the testing
center to test for my ticket. Have a nice day, Rob, and I hope "huked on
fonix" continues to help your English grammar. ("there's usefull"? Come
On!)

-SSB

"Rob St.Denis" wrote:
>
> A signal report comming from a cb'er, a lets turn up mic gain until its
> completely distorted, then put an echo on it and a loud roger beep so that I
> get out better, radio operator ... there's usefull
>
> --
> Rob St.Denis
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF7AAAB.D597E6CF@spam.me.not...
> > Ok...
> >
> > I stand corrected.
> >
> > Allow me to rephrase what I'd originally stated, then..
> >
> > My 2 watt AM carrier covered up all the background noise on the other
> > guy's CB, which was roughly 20 miles away, according to his signal
> > report.
> >
> > -SSB
> >
> > JR wrote:
> > >
> > > An AM carrier without modulation looks just like an FM carrier without
> > > modulation. So it seems to me that "quieting sensitivity" could apply to

> > > an AM receiver as well although the term "full quieting" is generally
> > > understood to apply to FM.
> > >
> > > Rough Rider wrote:
> > > >
> > > > Sideband, I will put a cup out for you since you are begging to be
> correct
> > > > about full quieting. Notice Cecils definition, frequency modulation
> > > > recievers, does this give you enough of a hint- that it is FM only. Do
> > > > yourself a favor while studying for the ham test don't just memorize
> the
> > > > answers actually learn what the question mean. If it was fill in the
> blanks
> > > > the ham population would decrease by two fold.
> > > >

3211. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:13:23 UTC
From: richardharrison@webtv.net
Message-ID: <3134-3AF83743-26@storefull-118.iap.bryant.webtv.net>
Source record: 163670

I wrote: Where does all that static in your radio come from?

Denver replied: "Not from 60 Hz AC, that is for sure."

A non-sinusoidal waveform can be considered as composed of a particular variety of sinusoidal waveforms. In fact, with filtering it can be resolved into individual sine waves. I remember a Collins Radio "Big Banger" that did just that as a prolific wave generator.

So it is with a lightning stroke. Lots of frequencies are in there.

Best regards, Richard Harrison, KB5WZI

3212. Re: REALISTIC Patrolman Direct Entry Programmable 100 CHANNEL PRO-46 HANDHELD SCANNER

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:16:08 UTC
From: Syd <sa1@ukonline.co.uk>
Message-ID: <9d9d42idl1@uranium.btinternet.com>
Source record: 163759
Cross-posted to:
rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.scanner,rec.radio.shortwave

If its on e-bay why are you boring everyone on here with your crap
Sj

Stephen M Peterson <stephenmpeterson@hotmail.com> wrote in message
news:9d67q1cvm1@ophelia.uncg.edu...
> http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1236147097
>
> It will Pick up 2 way radios, police, Aircraft, Fire, Cell phones,
> Cordless Phones, TV stations, just about anything.
>
> Its range is from 29MHz - 956MHz
>
> This is a well kept scanner in Excellent Condition and works perfectly, It
> was mainly used when
>
> I was in aviation school 1993-5 and kept in the included soft case.
>
> This scanner will do the *Test Mode* holding L/OUT, 2, and 9 at the same
> time at power on to allow
>
> for "Full Spectrum" of frequencies.
>
> I cannot help you with the test mode since I don't use that, but it does
do
> it, you could
>
> look this up on the internet If you were curious.
>
> The date code is * 6A3 * or June 1993 a Good year no doubt.
>
> It was stored in the Box and comes with the Whip Antenna, unused Belt
Clip,
> and AA Holder Battery Pack.
>
> It comes with the everything as if it were new packed in the box with
manual
> and even the receipt from 1993.
>
> It comes with a few extras like the optional Archer Power Supply and Carry
> Case.
>

> Check the Tandy Page for more information.
>
> Shipping will Be $10.00 UPS insured in addition to bid Price in
continental
> US.
>
>
>
> I accept Palpal and Money Orders (US Dollars) only.
>
>
>
> Sold as-is but is in excellent working order will not be DOA. Contact must
> be made within 24hrs from end of auction with address and payment method.
> Payment must be made within 10 days or item will be relisted. I reserve
the
> right to reject bidders with too many negative comments.
>
>
>
> Thanks for looking and Good Luck Bidding!
>
>

3213. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:17:13 UTC
From: la8ak@online.no
Message-ID: <3af72788.964948078@news.online.no>
Source record: 163760

On Mon, 7 May 2001 22:41:23 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.com> wrote:

>Tom W8JI wrote:
>>On Mon, 07 May 2001 17:19:13 GMT, la8ak@online.no (J M Noeding) wrote:
>>
>>>3x 2el - it is fullwave yagies, haven't checked the gain, but believe
>>
>>How is it fullwave yagis?
>
>You're talking about two different antennas, but both called "X-beams".
>
>73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
> 'In Practice' columnist for RadCom (RSGB)
> http://www.ifwtech.com/g3sek

seems that,
the array is somewhere about 2m high x 5m broad for 2m, and perhaps
Ian can confirm if the gain is 8dBd for each half of the array?

73 from LA8AK

3214. FS: WILSON 40-10 METER TRAP VERTICAL ANTENNA

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:18:11 UTC
From: jonweiner@aol.com
Message-ID: <20010508141811.21639.00004133@ng-fi1.aol.com>
Source record: 163761

Wilson model WV-1A. In very good condition. With original instructions. For pick up only at Greenville, SC. Price: $40.

Jon, K1VVC

3215. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:26:43 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9doc$k5i$1@slb2.atl.mindspring.net>
Source record: 163763

Cecil:

rms value, hmmm interesting idea, you may be on to something.

Let me "think" this through....

At a given point on the line say at point x, where there is a differential resistance, say dr = r*dx, there will be a current i(t, x), which is a function of both time and position x on the line. The rms value of i (x,t) will be smaller at some points x than others if there are standing waves present. Otherwise not and this depends upon the front and back end reflection coefficients and and the length of the line relative to a wavelength at the known velocity factor..

The "differential power" dissipated at point x will be dp = i*i*dr. To get the total power, one integrates of all the differential powers along the line from x = 0 to the end of the line say X,

i.e... excuse the lack of "math symbols".

Total Power dissipated in the line = Integral [0,X]{i*i*r*dx)

Clearly to evaluate this integral exactly we need to know the exact functional form of i(x,t) which, will be different for different standing wave patterns.

Now if one wanted to approximate this "exact" integral with a simple formula using say the total resistance R of the line and some convenient single measure of the current i, lets call it J, then perhaps a good choice for J would be the rms value of i with respect to time, but at what point x on the line would you choose to evaluate the time rms value?

Unless perhaps you are suggesting to take a "psuedo" rms value in the x direction, rather than over time t. To do that one would need to know the functional form of i(x). One could assume that the function of i along the x direction is sinusoidal and then use "that" rms value. As we all know an assumption of sinusoidal shape for i would be a farirly close approximation to reality.

Is that what you are suggesting?

Of course a simple formula would have to include a factor that varied somehow as a function of the number or fractions thereof of wavelengths of the line. And there would be need to be a correction factor for say "end effects", i.e. the length of radiating transmission line [a.k.a. antenna] on the end of the line if there were one.

But...in those ideas I think, lies the "elements" of a simple formula for calculating exess attenuation due to VSWR deviations from unity.

Thoughts, comments,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF7EDC2.BD65F60@IEEE.org...
> "Peter O. Brackett" wrote:
> > Still I believe it's possible to find a simple, but fairly accurate, formula
> > for those losses, without factoring in such "details".
>
> Would the RMS value of the current standing wave be appropriate?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3216. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:27:25 UTC
From: Gene <webmaster@zylay.com>
Message-ID: <3AF83A8D.11224D89@zylay.com>
Source record: 163762
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Sideband wrote:
>
> Now, there, Hand, yer just showin yer igernence, tin-fur! I ne'er said
> it were horizontal, roge-o?

Do you even know the difference between horizontal gain and vertical
gain? I never said a word about antenna orientation.

--
Ride to eat, eat to ride. __O
_-\<,_
Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
Please visit http://www.tfn.net/~gfloyd7/cmn/

> :-{P~
>
> -SSB
>
> Gene wrote:
> >
> > > "> Hit Wilson's site and read up on what a Wilson Silver Load is....
> > > >
> > > > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
> > > > top loaded coil antenna.
> > >
> > > Runs chills up and down my spine just thinking about
> > > a Wilson Silver Load. Gives me the urge to run and
> > > buy two, and co-phase them on the sidemirrors for
> > > anudder 10dB or so.. Ten Fer.
> >
> > That's a big 10-fer good buddy. I'm sure you gets lots of horizontal
> > gain with a 4-ft-long half-wave antenna. These dumbasses don't even
> > recognize marketing hype when it's served to them on a silver platter.
> >
> > --
> > Ride to eat, eat to ride. __O
> > _-\<,_
> > Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
> > Please visit http://www.tfn.net/~gfloyd7/cmn/

3217. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:32:43 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF83BCB.243AF4A5@IEEE.org>
Source record: 163764
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Gene wrote:
>
> GG wrote:
> >
> > I picked a good analogy, I have no right to use his property just
> > because I observe it does not appear to be in use by the owner.
>
> In your case of hte squatter, you stated that noone had noticed him. The
> major and important difference here is that freebanders have been
> noticed and lots of people are raising hell about it. To bring your
> analogy into line with freebanding, the squatter would have had to hold
> onto the land for the required number of years through either armed
> force, or simple civil disobediance, not by not being noticed.

The freebanders go relatively unnoticed by the FCC and the FCC is
who matters.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3218. Re: helpneeded: combine signal from ant and dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:34:53 UTC
From: "J. Sun" <jsun@lucent.com>
Message-ID: <9d9e8q$8t8@nntpb.cb.lucent.com>
Source record: 163765
Cross-posted to: rec.video.satellite.tvro,rec.radio.amateur.antenna

Guys,

Thanks for the responses !

ERic,

Thanks for the very useful info !
I guess that at least 6dB loss is inevitable !

Jeff,

My ch. 2, 3 and 4 are either not clean or not available.
Also what Martin said is true for my case.

Martin,

Why is the loss 10dB instead of ~6 dB ?
That's big 4 dB difference !

Rus

"K7MEM" <jda@rupert.tds-az.lmco.com> wrote in message
news:3AF70DFE.446B9B3D@rupert.tds-az.lmco.com...
> boerio@arocknid.com wrote:
> >
> >
> > I have a signal combiner that I got from my friendly satellite
> > repair/service company. It puts the satellite feed on Ch 3 and then the
> > regular broadcast stuff is on whatever channel it's on.
> >
> > I used to have a signal combiner for Ch 4, but a local TV station
started
> > transmitting there, and I had to get the new one.
> >
> > I can look up the details on it if you need, and don't think it was more
> > than $20.
> >
> > - Jeff
>
> The combiner that you have works very good, but is intended for use
> after the decoder box. I think Rus wants one that goes before the
> decoder box. Another poster gave a link to a diplexer, which is what
> he really needs. A combiner should cost about $20 but a diplexer
> will cost around $30 and you will need two of them. One to combine
> the signals from the antenna/LNB end and then another one to
> separate them at the decoder/TV end. You will also experience about

> 10 db of signal loss from the antenna.
>
> --
> Martin E. Meserve, K7MEM
> martin.e.meserve AT lmco.com

3219. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:35:00 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF83C54.91DCC2E@IEEE.org>
Source record: 163767

"Peter O. Brackett" wrote:
> Where does that "reflected" power go... can I keep it? Or do I have to give
> it back? How do I give it back?

The reflected energy creates the conditions necessary for a match
to exist and you give it back when you power down the generator.
--
http://www.mindspring.com/~w6rca

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3220. K5K, D68C QSLs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:36:01 UTC
From: W5GT <dave.routzon@mindspring.com>
Message-ID: <l0XJ6.44968$2U.19405947@news2.rdc2.tx.home.com>
Source record: 163766

Does anyone know when the QSLs will be forthcoming from these DXprditions?
Mine were sent with $ and sase's right away, but nothing back yet!

W5GT

3221. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:37:20 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF83CE0.9024A5B1@spam.me.not>
Source record: 163768
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

And, of course, I never said anything about a half wave antenna, either.

Goes both ways, I guess.

-SSB

Gene wrote:
>
> Sideband wrote:
> >
> > Now, there, Hand, yer just showin yer igernence, tin-fur! I ne'er said
> > it were horizontal, roge-o?
>
> Do you even know the difference between horizontal gain and vertical
> gain? I never said a word about antenna orientation.
>
> --
> Ride to eat, eat to ride. __O
> _-\<,_
> Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
> Please visit http://www.tfn.net/~gfloyd7/cmn/
>
> > :-{P~
> >
> > -SSB
> >
> > Gene wrote:
> > >
> > > "> Hit Wilson's site and read up on what a Wilson Silver Load is....
> > > > >
> > > > > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
> > > > > top loaded coil antenna.
> > > > >
> > > > Runs chills up and down my spine just thinking about
> > > > a Wilson Silver Load. Gives me the urge to run and
> > > > buy two, and co-phase them on the sidemirrors for
> > > > anudder 10dB or so.. Ten Fer.
> > >
> > > That's a big 10-fer good buddy. I'm sure you gets lots of horizontal
> > > gain with a 4-ft-long half-wave antenna. These dumbasses don't even
> > > recognize marketing hype when it's served to them on a silver platter.
> > >
> > > --
> > > Ride to eat, eat to ride. __O

> > > _-\<,_
> > > Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
> > > Please visit http://www.tfn.net/~gfloyd7/cmn/

3222. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:40:23 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9eicqok1@slb5.atl.mindspring.net>
Source record: 163669

Richard:

Oh... Wheatstone and Kelvin and Maxwell and Wein, and... don't have "bridge" circuits named after them?

It seems that back at the turn of the century before the last and in the early part of the 20th century, just about every competent engineer either invented or patented a form of bridge circuit for making measurements.

You will agree that most such bridge circuits rely on the same general principles...

That is all measurement bridges compare a calibrated known quantity (perhaps ficticious, in the sense that it doesn't occur in the cirucuit under test, CUT) against an unknown by means of a circuit setup that enables a "subtraction" to be metered to a "null" with a sensitive bridging a voltmeter placed across the pemanent arms of the circuit as a null indicator.

So where is the "crutch" in the VSWR bridge circuit that sets up the subraction b = V - IR for reflected voltage?

It's just a standard, well known by those "skilled in the art", nay... well known by "all and sundry" for over a Century!

What?

Crutch? No! Old standby? Yes!

Best,

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:3af92186.66844357@news.seanet.com...
> On Tue, 8 May 2001 08:33:39 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Dick:
> >
> >Agreed!
> >
> >BTW... Lord Kelvin, like Wheatstone, also has a bridge circuit named after
> >him.
> >
> >I can thus only suppose that Kelvin also knew and understood how to measure

> >those ficticious reflected voltages... b = V - IR which are the "output"
of
> >a simple Wheatstone bridge circuit used to tell when a "null" in the
bridge
> >is reached.
> >
> >-Peter K1PO
>
> Hi Peter,
>
> You've leaned on that crutch far too long. You have NOT described a
> Wheatstone Bridge (nor Kelvin Bridge by a mile).
>
> You have described a bridge apparatus, true, but it is not an
> invention of either Wheatstone nor Kelvin by a long shot.
>
> Please find your authorities for your idea of invention from proper
> sources.
>
> 73's
> Richard Clark, KB7QHC

3223. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:51:01 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF84015.708E1FCF@IEEE.org>
Source record: 163672

"Peter O. Brackett" wrote:
> Is that what you are suggesting?

I didn't know sentences that end with a '?' were suggestions. :-)
The graphs of standing wave currents that I have seen plotted
are not sinusoids. There has to be a value of current when averaged
over a half wavelength and multiplied by the resistance of the T-line,
would yield the total I^2*R losses for 1/2WL. I'm just wondering if
that would be the RMS value or some other average value.

One wonders how far off the loss value would be if one simply added
all the component energies and used the matched-line loss figure.
For instance, 200w forward power + 100w reflected power = 300w of
power being handled by the feedline. Would the loss under those
conditions be three times the loss of a 100w forward power system?
Or does the two currents flowing in opposite directions have the
effect of decreasing the total losses compared to the two currents
flowing in phase in the same direction? Or can the current maximum
hot spots raise the temperature of the copper enough to change the
resistance by a non-negliglible amount?
--
http://www.mindspring.com/~w6rca

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3224. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:54:12 UTC
From: richardharrison@webtv.net
Message-ID: <8121-3AF840D4-11@storefull-115.iap.bryant.webtv.net>
Source record: 163679

John O`Flaherty wrote:
"Unfortunately, some of your argument is based on the fictitious "ohms", which is nothing more than the proportionality between voltage and current."

Resistive ohms are synonymous with reality in the electrical world. The Zo of a low-loss transmission line is just as real. It limits current and the current that flows is in-phase with the volts across the line.

Get with the program. Accept the IEEE definitions because they are correct.

Best regards, Richard Harrison, KB5WZI

3225. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:55:53 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9ff2$lm1$1@slb0.atl.mindspring.net>
Source record: 163673

Cecil:

I see that we agree on the amount of energy stored in or on the line, heh, heh!

What we don't agree on is what that stored energy in/on the line is doing while it is stored...

(1) You visualize that the stored energy bounces back and forth from end to end of the line like some isolated pulse. Sort of a longitudinal motion of energy up and down the line, bouncing off reflection points at mismatches at the front and back ends of the line.

(2) I visualize that the stored energy is distributed evenly up and down the line and oscillates back and forth between the distributed capacitance and inductance of the line. Sort of a "lateral" motion of energy from "side to side" so to speak on the line.

One of several problems with your visualization is:

(1) It provides no explanation or visualization for the stored energy in the conjugate matched case, [both front end and back end reflection coefficients are zero everywhere] when there are no front or back end reflection points. Here there is still the same amount of energy stored on the line as before, but your visualization does not allow for it. Your visualization only allows for storage in that ficticious "reflected" power.

(2) It provides no explanation or visualization for the stored energy in the Zo matched case, [only either a front end or a back end reflection coefficient is zero and not both]. In this case your visualization is flawed since the stored energy could reflect on one side but not on the other... bad news if you want to use that "trap" for storing energy, it has a big leak on one end! Heh, heh.

While if you visualize, and perhaps come to believe, that the energy stored in the line is held evenly all along the line in the distributed capacitance and distributed inductance of the line, why then you have no such visualization conundrums to worry you.

Thoughts, comments,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF7EEE6.61DDA2F9@IEEE.org...
> "Peter O. Brackett" wrote:
> > The energy that "charged" the line IS real, I never denied that!
>

> A certain amount of the energy that charged the line is named
> "reflected energy" and, as you say, it is real. What's in a name?
> A rose by any other name, ...
> --
> http://www.mindspring.com/~w6rca
>
>
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3226. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 18:56:36 UTC
From: sparky@cet.com
Message-ID: <3af83f7e.1183084@news.cet.com>
Source record: 163671
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.policy

On Tue, 8 May 2001 14:02:06 -0400 (EDT), twistedhed@webtv.net
(Twistedhed) wrote:

<snip incoherent rant>

Who am I this week, twistie? Leland? Dougie? Professor? Griffey? Glen
Sparks? Frank Gilliland? Go away, twit. Everybody is sick and tired of
you and your paranoid delusions.

3227. Re: FERRITE ROD ANTENNA

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:03:12 UTC
From: John Moriarity <k6qq@hdo.net>
Message-ID: <tfggkor7q4he34@corp.supernews.com>
Source record: 163674

"marvin rosen" <n3bqa@starpower.net> wrote in message
news:9d81afmkg1@bob.news.rcn.net...
> i have a ferrite rod ant with 4 colored leads. the colors are green,
red,
> black & white. what is the significance of these colored leads?
>

It's so you can tell them apart ;-)

Sorry, I couldn't resist.

73,

John, K6QQ

3228. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:06:49 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9g3iojf1@slb1.atl.mindspring.net>
Source record: 163675

Richard:

The reflected voltage is not generated in the circuit under test (CUT) it is generated

ONLY IN THE MEASURING INSTRUMENT.

The reflected voltage b = V - IR is a ficticious quantity prepared by the ciruitry within the bridge circuitry withing in the instrument, it does NOT exist on the line. On the line is only the voltage V.

If the reflected voltage causes current to flow and power to be "generated" then it is only within the instrument not in the line or circuit under test.

Reflected voltage and power is a "fiction" used to help with a certain visualization that is generally more appropriate to optics than to HF radio waves.

Sort of like using photons to visualize radiation from an HF antenna. A photon analysis will give all the right answers but does not correspond very closely to our "visualization" of how HF systems work in terms of V and I.

Reflected voltage as indicated on most ham's SWR meters, even though labled "watts", is a perfectly good quantity to observe if one is adjusting a system or "tuner" to match a load to a generator for, that quantity although generated entirely within the meter, gives us a "null" to tune towards... i.e. b = V - IR can be nulled or brought close to zero, by adjusting the impedance Z = V/I until V = IR and the difference b is zero. That's about the best practical use for reflected volts, don't carry it's use over into elaborate visualizations of power sloshing back and forth up and down lines, that lead to fuzzy thinking.

Thoughts, comments,

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:8120-3AF7FB14-2@storefull-115.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "My point all along has been that the fictitious Name "reflected" given
> to the "Fictitious power" indicated on instruments is wrong, it is not a
> power it is a voltage."
>
> Same thing! A reflected excess voltage immediately causes in-phase
> current flow in Zo, a resistance. Thus a reflected power flows.
>
> Best regards, Richard Harrison, KB5WZI

>

3229. Re: HF DF capability

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:07:45 UTC
From: Philip de Cadanet <phil@invest.fsbusiness.co.uk>
Message-ID: <pMkiTmABQE+6Ewks@invest.fsbusiness.co.uk>
Source record: 163683

Cubic/OAR make some rather neat but expensive stuff: www.cubic.com

I have just secured via eBay one of their DF processor/receivers. I'm hoping it has MF/HF capabilities.

Their current product range includes some very compact mobile antenna arrays though I'd hate to ask the price. Typical: 0.5-30MHz)1.5-25MHz optimum) Bearing accuracy 3 degrees rms typical (4 degrees rms max). This mobile set-up is of the low profile ferrite loop array variety.

They offer Adcock arrays also.

Surely something similar could be home-brewed?

Phil G4ZOW

>"Need some ideas to get HF DF capability reasonably easily and
>inexpensively."
>
>Tom, W8JI wrote:
>"There are a dozen ways to do it."
>
>Name them!
>
>Best regards, Richard Harrison, KB5WZI
>

3230. Re: DC Power supply question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:09:02 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AF8444E.1CFBAE39@rupert.tds-az.lmco.com>
Source record: 163625
Cross-posted to: alt.radio.scanner,rec.radio.amateur.antenna,rec.radio.scanner,rec.radio.shortwave

Dev wrote:
>
> well sinc emost of those are receivers. and one is a tx/rx. A 12v atleast or
> 10 amp. should works. if in doubt buy one that is a 20 amp. just remember
> that not all of those wall ac adapters will be 12 volts output into the
> radio. most radios will be between 3.8 - 12. look at the output on your ac
> adapter to make sure. but I think 10 - 20 amps will suffice.
> unless you get nore "tx/rx" transmitters. all should be good. transmitters
> take more ampers when transmitting. one radio at 12 volts at 50 watts output
> will take easily 8 to 10 amps.
>

More to the point is that some of the wall warts may be supplying AC
instead
of DC.

>
> "Sycho_Graphics" <Sycho_Graphics@msn.com> wrote in message
> news:O6erGbC1AHA.302@cpmsnbbsa07...
> > I am tired of all the wall warts and want to power my radios
> > with a DC power supply my question is how many amps is enough?
> > What I want to power is the following (AOR 8000, BC 780xlt,
> > RadioShack DX-398, two Cobra CB radio's {one base, one portable}),
> > but I want some room for future expansion.
> >
> > Sorry for the newbie question, but I am a newbie :)
> >

Since you know what radios you want to power, make an inventory
of the information on each of the wall warts. Each one will list
the output voltage, current, and whether it is AC or DC. In this
list also jot down the type of connector used and, at least for the
DC units, the polarity hookup. Some may use the barrel for negative
and the center pin for positive. Some may do it the other way around.

Assuming that all of the transceivers are within legal limits,
the most you should need at 12 volts would be a 10 Amp power supply.
Radio Shack sells supplies with this rating at prices comparable
to other suppliers. If you really want a cheap one, go to a Ham Fest.
You can pick them up real cheap. The Shack also will have all of
the wire and connectors needed to make up your power distribution
system. If any of the units require AC voltage, The Shack also had
a variety of transformers that will fit the bill.

It is not going to be as easy a buying a power supply and just pluging everything into it. However, once you have your requirements laid out the rest should fall into place.

No, I don't work for Radio Shack, but they are convenient and do have a lot of stuff. Just don't depend on the knowledge of the staff. They usually don't have a clue about what you are talking about.

--
Martin E. Meserve, K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore my responses may not be as timely as you, or I, would like them to be. If I seem to be ignoring you, send me another E-Mail to jog my memory. Opinions are my own and do not reflect the opinions of my employer.

3231. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:10:22 UTC
From: kb7qhc@home.com
Message-ID: <3af8444c.75746387@news.seanet.com>
Source record: 163677

On Tue, 08 May 2001 12:10:32 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> The so-called complexity of volts and current are the vernacular of
>> our past time or trade.
>
>Problem is, there is no conservation law for voltage and current.
>However, there is a conservation law for voltage*current*time
>(assuming voltage and current are in phase).
>
>Standby for a thought experiment that should illustrate my basic
>point. My subconscious is working on it now.

Hi Cecil,

This is NOT a matter of conservation of anything (which is not a "law"
in the first place).

73's
Richard Clark, KB7QHC

3232. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:12:17 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9gds$822$1@slb6.atl.mindspring.net>
Source record: 163676

Hi John:

All we need is a voltmeter?

Nope, I disagree...

If I could have but only one meter, it would be an ammeter, not a voltmeter.

For... is not a voltmeter really just an ammeter with a very high
resistance?

All we really need is Amps, heh, heh...

-Peter K1PO

"John O'Flaherty" <oflahert@roast.net> wrote in message
news:3AF83088.3FE93C07@roast.net...
> "Peter O. Brackett" wrote:
>
> > Cecil:
> >
> > Kirchoff's Laws - or the Reflection's Laws?
> >
> > At least Kirchoff set out to simplify and improve, not to complicate and
> > obfuscate.
> >
> > Reflection, well I shan't say what he has done...
> >
> > Cecil just for fun...
> >
.....
> > Consider a 50 Ohm battery of open circuit voltage of 1 volt, driving a
100
> > Ohm resistor through a lossless 3 foot transmission line. Since the
battery
> > has a 50 Ohm resistance, and although it really doesn't matter since the
> > reference impedance is an arbitrary and perhaps ficticious quantity,
let's
> > make it somewhat real and take the reference impedance to be R = 50
Ohms.
> >
> > The reflection coefficient "rho" for this mismatched circuit by the
usual
> > formula is rho = (Z - R)/(Z + R):
> >
> > rho = (100 - 50)/(100 + 50) = 50/150 = 1/3

> >
> > And the VSWR would be 2:1:
> >
> > VSWR = (1 + rho)/(1 - rho) = (1 + 1/3)/(1 - 1/3) = (4/3)/(2/3) = 2
> >
> > Summarizing: rho = 1/3 and VSWR = 2.
> >
> > The voltage across the load will be 100/(100 + 50) = 100/150 = 10/15 =
2/3
> > of the battery's open circuit voltage.
> >
> > In this case since the open circuit voltage is 1 volt, the load voltage
V
> > will be V = 2/3 volts.
> >
> > Of course if the 50 Ohm battery had been driving a 50 Ohm resistor it
would
> > have been perfectly matched and the voltage across the load would have
been
> > exactly 1/2 that of the battery's open circuit voltage. In that case
the
> > load voltage would be 1/2 volt. That's if it had been driving a 50 Ohm
> > load, which it's not.
> >
> > Of course that's not the actual load voltage V, that is the voltage IR =
1/2
> > volt that would appear across a perfectly matched load R 50 Ohms if it
was
> > carring the perfectly matched current I = 1/100. Recal that 1/2 volt
value
> > is a fiction at this point since, the battery is actually connected to a
100
> > Ohms, not 50 Ohms!
> >
> > We just made an assumption, a "fiction" that it could be connected to a
50
> > Ohm load resistance.
> >
> > If that fiction were true, the reflected voltage "b" would be b = V -
IR,
> > the difference between V the actual voltage across the actual load, in
this
> > case V = 2/3 volts, and the ficticious voltage IR = 1/2 volts across the
> > ficticious load R where R = 50 Ohms.
> >
> > Thus the reflected voltage b is:
> >
> > b = V - IR = 2/3 - 1/2 = 4/6 - 3/6 = 1/6 volts .... "the reflected
voltage"

> >
> > The reflected volts b = 1/6 volt is just the difference between V, the
> > actual voltage across the load, and IR the ficticious voltage that would
be
> > across the load if the load were 50 Ohms, which its' not because it's
really
> > 100 Ohms!
> >
> > Arithmetically correct? Yes! Mathematically correct,?Yes!
> >
> > Confusing??? Yes!
> >
> > Complicated??? Yes!
> >
> > Heh, heh... you bet!
> >
> > But that's what all of this danged high falutin "reflected power" theory
> > asks you to "assume" as you work your way through this tangled model.
> >
> > Where the hell is the IR = 1/2 volt in the circuit.
> >
> > It's nowhere, just a fiction.
> >
> > And where is the b = 1/6 of a volt of reflected voltage in the circuit.
> >
> > It's nowhere, just fiction.
> >
> > Just mathematical quantities defined and calculated to justify some
model of
> > reality that just doesn't exist. It's a ficticious setup to help us to
> > "visualize" things a certain way.
> >
> > Why do we need reflected voltage, let alone reflected power? We didn't
need
> > it to compute rho or VSWR? We didn't need it to tell us when we got a
> > match?
> >
> > We computed the reflection coefficient rho = 1/3 and the voltage
standing
> > wave ratio VSWR = 2, without either the reflected voltage b or, God help
us
> > the reflected power Pr
> >
> > What, and where would that power be in this circuit? Pr = b*b/R =
> > (1/6*1/6)/50 = (1/36)/50 = 1/1800 Watts of reflected power.
> >
> > God help us... in which resistor is that power dissipated?
> >
> > What? Why do we need these fictions?
> >

> > But I do agree that the reflected voltmeter which computes and displays
b =
> > V - IR is very helpful since it tells us how far away we are from a
match,
> > by letting us "see" the difference between the actual voltage and the
> > desired ficticious voltage. We find the meters that display b useful
> > because we can use them as a "null" indicator. Adjust the tuner for a
> > reflected voltage null!
> >
> > A nice null indicating instrument, but not a power meter, and certainly
not
> > a
> > device that supports a whole theory of ficticious power bouncing up and
down
> > a line.
> >
> > Model airplane "buffs" have a voltmeter built on a similar principal at
> > their disposal
> > that model aircraft battery voltmeter is set up to indicate, on mV
scales,
> > the
> > difference between the current battery voltage on the aircraft and the
ideal
> > voltage of a fully charged battery. With this "sensitive" null
indication
> > they can accurately predict how many more "minutes" of flight they have
> > left in their batteries. Somewhat similar to how we hams use our
so-called
> > reflected power meters.
> >
> > Cecil, I say...
> >
> > Let's be done with it, change out all the labels on our power meters
from
> > "reflected
> > watts" to read "reflected voltage" and just instruct folks to tune for a
> > null
> > in the reflected voltage to make the load as close as possible to R, and
be
> > done with it!
> >
> > Simplicity is best! Complicity is not!
> >
> > Come on... join the club... down with "reflected power", how about it?
> >
> > Heh, heh...
> >
> > Best,
> >
>

> Unfortunately, some of your argument is based on the fictitious 'ohms',
which
> are nothing more than the proportionality between voltage and current.
They have
> no real existence except as mathematical fictions, intermediate results
used to
> predict future balances between voltage and current, based on past
balances. How
> do you measure resistance? You use a meter, which puts a constant CURRENT
> through a load, and reads the VOLTAGE there that results from that
current. I
> suggest that we relabel all our meters in terms of 'volts', which is
actually
> what they are measuring. Down with ohms. Simplicity is best.
> Heh, heh.
>
> --
> john
>
> change roast to burnt bread to reply
>
>

3233. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:12:39 UTC
From: richardharrison@webtv.net
Message-ID: <8122-3AF84527-3@storefull-115.iap.bryant.webtv.net>
Source record: 163694

Peter K1PO wrote:
"Where does that "reflected" power go?..."

Just like the fart in the echo chamber, you never hear the end of it.

Best regards, Richard Harrison, KB5WZI

3234. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:13:00 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8453C.5BE44901@IEEE.org>
Source record: 163678

Richard Clark wrote:
> This is the bane of your unneccessary elaboration of energy units.
> You move between power and them without conversion. If such a step is
> unneccessary, then the discussion should remain with the units where
> it started.

Here's the thought experiment that should illustrate what is bothering me. The following values are taken from Steve's example of adding voltages. In fixed-width font.

```
+------------+
106.1v, 0.707a | |
----------------->| | 141.4v, 0.943a
| Combiner |---------------->
35.355v, 0.236a | |
----------------->| |
| |
+------------+
```

The 106.1v, 0.707a corresponds to the 75w that Steve says makes it past the match point in his earlier example. The 35.355v, 0.236a corresponds to the 8.33w of reflected power that is re-reflected. The 141.4v, 0.943a corresponds to the 133.33w of forward power. Z0 is obviously 150 ohms. The "Combiner" is anything in the world that is possible in reality - actual contents undefined but Steve's Z0-match is supposed to meet those requirements.

It is true that 106.1v plus 35.355v equals 141.4v, just like Steve says it does. But I want everyone reading this, including Steve, to tell me what's in the "Combiner" that will allow the voltages to be added in series AND allow the currents to be added in series at the same time.

Also I would like for everyone to explain how 75w plus 8.33w can add up to 133.33w.

A similar simplified 50 ohm example with equal voltages and currents would be:

```
+------------+
50v, 1.0a | |
----------------->| | 100v, 2.0a
| Combiner |---------------->
50v, 1.0a | |
----------------->| |
| |
+------------+
```

--
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3235. Re: Tower/mast question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:15:18 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF845C6.6373C0B8@IEEE.org>
Source record: 163680

Eric Ruuska wrote:
> Q: Is this marketed as an antenna mast, or something else? I called the
> local Home Depot and the guy didn't have anything like this for antenna
> purposes.

What's the IQ of the guy you talked to on the phone?
--
http://www.mindspring.com/~w6rca

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3236. Re: Ticket test suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:16:58 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8462A.F3F597F2@IEEE.org>
Source record: 163682

K7MEM wrote:
> Look Out! Cecil is looking for a fight. It doesn't seem to matter
> what you write, he'll find something to pick a fight about. Maybe
> we're not paying enough attention to him.

Devil's advocates are not necessarily looking for a fight. Could just
be force of habit.
--
http://www.mindspring.com/~w6rca

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3237. Re: Sorry did not mean to post so many times! thought this was going to one newsgroup! THX

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:18:02 UTC
From: "D. Stussy" <kd6lvw@bde-arc.ampr.org>
Message-ID: <Pine.LNX.4.10.10105081917010.3971-100000@exp.bde-arc.ampr.org>
Source record: 163681
Cross-posted to:
rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.scanner,rec.radio.shortwave

And in all those posts, you managed to AVOID posting it in the one group where it's SUPPOSED TO BE - "rec.radio.sale."

None of the above groups are appropriate for offering items for sale, at least according to each group's charter.

3238. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:21:02 UTC
From: 2w8ji@contesting.com
Message-ID: <3af83f94.435744935@news.accessunited.com>
Source record: 163686
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Hi Jerry,

You have poor reading skills OM.

On Tue, 8 May 2001 07:32:26 -0700, "JerryL" <jlockett@onemain.com>
wrote:

>How about some technical data proving your claim about republicans not
>liking to have sex with women?

Never said that. One example is Newt. He had an affair with a female
member of his staff before he resigned..

Here is what I said:

>Republicans are more likely to have sex with Yasser Araofat and his
>male camel than women. Like they did with congressional pages.

>Statements like this cast a 'lot of doubt'
>about your abilities in other areas, such as electronics etc. I mean this
>is such obvious bullshit, it makes me wonder if your learned comments on
>other things might also be bullshit!

What is BS about it?

1.) Bush looks like a monkey

2.) We had a problem in the House and Senate with congressmen and
senators having sex with pages

3.) The Republican heading the "let's get Clinton" group was arrested
TWICE for exposing himself in a park and for soliciting sex with a
male undercover decoy in an Atlanta park

>And yea, I'm a new republican, got so disgusted with Clinton and company, I
>changed parties, and I still like women!

Good for you. We really ought to throw all the bums out.

Before someone whines about Clinton, we should insist he not have an
extramarital affair himself. Before someone heads a crusade to
prosecute someone else for banging a 21 year-old-female and lying
about it, we should make sure he isn't "hanging out" in public parks
trolling for young males.

>I presume you still support Clinton and hold him in high regard. He was such
>a outstanding example of a President of the United States, wasn't he, ugh!

>puke! I don't know about you, but I was totally embarassed and ashamed to
>have him represent us/me to the entire world...!

Frankly, both parties embarass me. I'm ashamed of many of them, and
embarassed that people think either party does not have more than its
fair share of dishonest members and even the occasional pervert.

Why on earth would anyone think that a certain party affiliation means
the people are honest or moral?

We let them all get away with far too much.

Now think about this...it is important. As bad as Gore was...and as
disliked as Clinton was....the best the Republicans could do was Bush.
They fielded a candidate that actually LOST the popular vote to
someone like Gore!!!! Phew!

Embarassing, isn't it?

3239. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:22:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8478D.D80CB70D@IEEE.org>
Source record: 163684

Richard Clark wrote:
> This is NOT a matter of conservation of anything (which is not a "law"
> in the first place).

But it is a matter of getting blood out of a turnip. Please see
my posted concerns.
--
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3240. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:25:35 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9h6o$sd1$1@slb1.atl.mindspring.net>
Source record: 163685

Richard:

Sure, but even though it can be done, plotting 1D DC problems on the 2D Smith Chart is not very interesting, since all of the plots on degenerate to a single line.

A line is just a circle observed on one edge.

However you can plot all of the mismatch calculations on the chart and read off the answers just the same. No problem, try some yourself and you will see.

However, as an interesting, and not only theoretical, just impractical and expensive, aspect of that question.

If you will allow the use of "imaginary resistors" of values jR as well as resistors of value R in your DC circuits, then the Smith Chart for DC matching problems becomes a little more interesting than one line on a 2D chart.

See a thread that I generated up the NG called "Direct Reflections" where I gave an example of a DC mismatch corrected by and imaginary resistor "L-network tuner". Fun... just not practical.

Incidently, I find that many folks poke fun at imaginary resistors and complex circuits until I show them the circuits working in the lab, at which point they invariably slap themselves on the forehead in the Italian style and exclaim, "Why didn't I think of that?".

Of course as ya'll realize there is nothing imaginary at all about imaginary numbers, they are just as real as real numbers and so one can readily build circuits to manipulate complex numbers and variables, i.e. complex voltages and currents in the lab.

If you can simulate or emulate it on a digital computer then you can do so with analog circuits. It's just that it takes a lot of components and hence expense to build a circuit that processes real and imaginary volts and amps simultaneously... a lot of expense for little practical gain, just to prove a point.

All the same, I find it very helpful with "visualizations" of circuit operation to be able to draw schematic diagrams and to make calculations of complex DC circuits.

And it's fun to plot DC Smith Charts as well.

Just no money in it... an intellectual curiosity...

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3aff31ba.70992091@news.seanet.com...
> On Tue, 8 May 2001 08:04:27 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Cecil:
> >
> >Smith charts do work, and they are nothning more nor less than analogs of
> >those very simple reflection equations.
> >
>
> Hi Peter,
>
> You maintained that your fiction could be expressed in the existing
> framework found with AC analysis and was consistent with its precepts.
> The Smith Chart being such an example conforming to that same
> analysis, can you explain where DC enters into its operation?
>
> 73's
> Richard Clark, KB7QHC

3241. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:28:38 UTC
From: John O'Flaherty <oflahert@roast.net>
Message-ID: <3AF848E6.B560E11F@roast.net>
Source record: 163689

Richard Harrison wrote:

> John O`Flaherty wrote:
> "Unfortunately, some of your argument is based on the fictitious "ohms",
> which is nothing more than the proportionality between voltage and
> current."
>
> Resistive ohms are synonymous with reality in the electrical world. The
> Zo of a low-loss transmission line is just as real. It limits current
> and the current that flows is in-phase with the volts across the line.
>
> Get with the program. Accept the IEEE definitions because they are
> correct.
>
> Best regards, Richard Harrison, KB5WZI

But...but... then I'd have to accept reflected power... and I'm not sure my meter scales would stand more than one erasure...
Heh, heh... :-)

--
john

change roast to burnt bread to reply

3242. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:29:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9hecfs1@slb2.atl.mindspring.net>
Source record: 163687

Cecil:

You are onto something... but IMHO you seem to have cause and effect mixed up.

The reflected energy does not create conditions for a match, the impedances do that.

First comes impedances for currents to flow through to get to the match or mismatch, then comes energy and power.

Energy does not create "conditions" of or for a mismatch, unless you mean the human energy expended by the ham twisting knobs on his adjustable antenna tuner as he creates a mismatch by changing the impedances.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF83C54.91DCC2E@IEEE.org...
> "Peter O. Brackett" wrote:
> > Where does that "reflected" power go... can I keep it? Or do I have to give
> > it back? How do I give it back?
>
> The reflected energy creates the conditions necessary for a match
> to exist and you give it back when you power down the generator.
> --
> http://www.mindspring.com/~w6rca
>
>
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3243. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:30:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8493A.ADFD3978@IEEE.org>
Source record: 163688

"Peter O. Brackett" wrote:
> (2) I visualize that the stored energy is distributed evenly up and down the
> line and oscillates back and forth between the distributed capacitance and
> inductance of the line. Sort of a "lateral" motion of energy from "side to
> side" so to speak on the line.

You are obviously talking about the physical charges which most people
will admit don't move very far. However, I am talking about the electro-
magnetic impulse waves which travel at the speed of light. How do you
get something traveling at the speed of light to stop in one place on
the transmission line?
--
http://www.mindspring.com/~w6rca

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3244. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:31:01 UTC
From: John O'Flaherty <oflahert@roast.net>
Message-ID: <3AF84975.AB9253C@roast.net>
Source record: 163691

"Peter O. Brackett" wrote:

> Hi John:
>
> All we need is a voltmeter?
>
> Nope, I disagree...
>
> If I could have but only one meter, it would be an ammeter, not a voltmeter.
>
> For... is not a voltmeter really just an ammeter with a very high
> resistance?
>
> All we really need is Amps, heh, heh...

Why be hampered by amps when you can be bolstered by volts?

--
john

change roast to burnt bread to reply

3245. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:32:35 UTC
From: kb7qhc@home.com
Message-ID: <3af945ba.76112754@news.seanet.com>
Source record: 163690

On Tue, 08 May 2001 11:26:39 -0500, Bill Aycock <baycock@hiwaay.net>
wrote:

>Steve, I have seen this attributed to you, in an earlier post. (If I'm
>wrong, please say so)- I really wish this were true, because, although I
>pay the power people in terms of KiloWatt-Hours, the result seems to be,
>that with the addition of only a passive device, I can pay them for 75
>Joules and get the benefit of the heat from 133.3 Joules. If this is so,
>I stand to save a fortune in heating bills next winter. All I need do is
>make the passive device, enclose it in a black box, and toast myself.
>
>Note that there is no principle of "voltage superposition" or any other
>derived relationship that will allow us to create energy by
>transformation of symbols in equations. It just cant be.
>
>Bill-W4BSG

Hi Bill,

There is a passive device (which you can put into a black box, or any
color box you desire) which will do exactly what you state is your
desire above. AND it has no connections to be made.

>It just cant be.

Oh yes it can.

Take a magnetron magnet (from a scrap microwave oven is suitable) and
place it immediately behind your service meter. You may adorn the
magnet with a box of any color if you wish (as long as it is wood or
non-ferrous). The magnet will saturate the spinning disk that is used
to compute your power drain and upset the calibration (to say the
least).

This of course constitutes theft by defrauding the power utility and
is offered as an "mental exercise" that may be "tested" by any
interested "pupil." Note however that your "pupil" status is no
defense in a court of law.

So, there you have it, a passive device that fully conforms to your
statement. Further, there is no issue of power addition or
subtraction or anything beyond the disk and the field it spins in
(which, by the way, consumes about 5W that you are billed for).

A base canard! some may scream; but magnetics and the control of
fields (especially those that are reflected) has been with us in other
devices for more than half a century.

73's
Richard Clark, KB7QHC

3246. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:40:49 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9i3accl1@slb6.atl.mindspring.net>
Source record: 163692

Richard:

Well, at some moment... "they" will suddenly realize that the "reflected voltage" they are discussing so passionately does not exist anywhere on the line or in the circuit under test.

They will see that the "holy reflected voltage" is merely a value b = V - IR created by circuitry within a lowly measuring instrument.

Reflected voltage simply does not exist on the line. It exists only in the so-called SWR meter.

It's only real value is that it enables one to adjust an impedance Z = V/I to equal a fictional value IR by observing the null in b as Z is adjusted.

At that point they will stop ascribing magical powers and energies to "b" and begin the long journey back to common sense...

They will come to see that energy is stored in distributed inductance and capacitance along the line, not in some magical pulses of energy sloshing back and forth between reflection points on the line.

The analogy that "they" are following in a fuzzy fashion is best saved for the particle folks not the wave folks.

For if we all were to do the analysis in terms of photons instead of V and I their "fuzzy" visualizations would make a bit more sense, as it is, it just leads to endless inconclusive discussions about fictional quantities. Principles of conservation of energy applied to "made up" or fictional powers simply do not apply.

Vand I are all you really need!

Heh, heh...

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:3afe2fde.70516267@news.seanet.com...
> On Mon, 7 May 2001 22:16:43 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >Did it occur to you that perhaps all three are correct, simply because they
> >are discussing fictional entities.
> >

>
> Hi Peter,
>
> I'll tell you what, I have not observed any discussion from them of
> your fictional entities, but I might be wrong. If I am, I see little
> point in traversing that amalgam of dense writing to visit them once
> again.
>
> On the other hand, I feel that they are ALL right about what they
> argue; the problem is that each is describing something different and
> proclaiming to the top of their collective lung power that it is the
> same thing. These are not three blind monks describing an elephant.
>
> 73's
> Richard Clark, KB7QHC

3247. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:41:51 UTC
From: kb7qhc@home.com
Message-ID: <3afa4a51.77287313@news.seanet.com>
Source record: 163693

On Tue, 08 May 2001 14:22:53 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> This is NOT a matter of conservation of anything (which is not a "law"
>> in the first place).
>
>But it is a matter of getting blood out of a turnip. Please see
>my posted concerns.

Hi Cecil,

Given that the post count is heading towards the high 400's, looking
for your concerns would drain the turnip of any blood it might have.

You, and we, would be better served if the scope of this discussion
were reined in instead of spinning on endlessly.

Try to focus your efforts on something productive rather than
cornering your opponent in these box-canyon triumphs. Proving someone
wrong does not prove anything right. As this topic is Walt centric
and associated with a particular paradigm of his, proving other
statements wrong does not attend the subject.

The burden of proof is with Walt. If he cannot provide a compelling
argument, it matters not a whit about other's errors.

73's
Richard Clark, KB7QHC

3248. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:45:45 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9ici$5f0$1@slb7.atl.mindspring.net>
Source record: 163695

Cecil:

You are correct...

The standing wave is not sinusoidal, it is however related to the sinusoids
and I was guilty of sloppy wording there, just trying to establish a general
directions towards a simple formula. I'd go back and clean up the details
later...

Your are correct also...

The resistance tempco of copper is about +2.2 parts per thousand and so it
is not inconceivable that the resistance along the line is non-constant
either expecially with very high VSWR.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF84015.708E1FCF@IEEE.org...
> "Peter O. Brackett" wrote:
> > Is that what you are suggesting?
>
> I didn't know sentences that end with a '?' were suggestions. :-)
> The graphs of standing wave currents that I have seen plotted
> are not sinusoids. There has to be a value of current when averaged
> over a half wavelength and multiplied by the resistance of the T-line,
> would yield the total I^2*R losses for 1/2WL. I'm just wondering if
> that would be the RMS value or some other average value.
>
> One wonders how far off the loss value would be if one simply added
> all the component energies and used the matched-line loss figure.
> For instance, 200w forward power + 100w reflected power = 300w of
> power being handled by the feedline. Would the loss under those
> conditions be three times the loss of a 100w forward power system?
> Or does the two currents flowing in opposite directions have the
> effect of decreasing the total losses compared to the two currents
> flowing in phase in the same direction? Or can the current maximum
> hot spots raise the temperature of the copper enough to change the
> resistance by a non-negliglible amount?
> --
> http://www.mindspring.com/~w6rca
>
>
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3249. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:53:29 UTC
From: kb7qhc@home.com
Message-ID: <3afb4c1a.77744480@news.seanet.com>
Source record: 163696

On Tue, 08 May 2001 14:13:00 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> This is the bane of your unneccessary elaboration of energy units.
>> You move between power and them without conversion. If such a step is
>> unneccessary, then the discussion should remain with the units where
>> it started.
>
>Here's the thought experiment that should illustrate what is bothering
>me. The following values are taken from Steve's example of adding
>voltages. In fixed-width font.
>
> +------------+
> 106.1v, 0.707a | |
>----------------->| | 141.4v, 0.943a
> | Combiner |---------------->
> 35.355v, 0.236a | |
>----------------->| |
> | |
> +------------+
>
>The 106.1v, 0.707a corresponds to the 75w that Steve says makes it past the
>match point in his earlier example. The 35.355v, 0.236a corresponds to the
>8.33w of reflected power that is re-reflected. The 141.4v, 0.943a corresponds
>to the 133.33w of forward power. Z0 is obviously 150 ohms. The "Combiner" is
>anything in the world that is possible in reality - actual contents undefined
>but Steve's Z0-match is supposed to meet those requirements.
>
>It is true that 106.1v plus 35.355v equals 141.4v, just like Steve says it
>does. But I want everyone reading this, including Steve, to tell me what's
>in the "Combiner" that will allow the voltages to be added in series AND
>allow the currents to be added in series at the same time.
>
>Also I would like for everyone to explain how 75w plus 8.33w can add up to
>133.33w.
>
>A similar simplified 50 ohm example with equal voltages and currents
>would be:
>
> +------------+
> 50v, 1.0a | |
>----------------->| | 100v, 2.0a
> | Combiner |---------------->

> 50v, 1.0a | |
>----------------->| |
> | |
> +------------+

Hi Cecil,

We move toward even greater complexity now! We exchanged the units of energy for a combiner? This razor is exceedingly dull. To put an argument in someone else's mouth is fraught with the probability of endless discussion about the shape of the table next followed by a debate about the arrangement of the deck chairs.

In other words, stick to the given architecture or abandon the argument. The only alternative is for you ALL to agree on a common circuit for consideration, AND it should be stripped of all extraneous detail. In other, other words, convince them to use your model above - not me. If you cannot sign them on, then there is something fishy about their "special needs" - or your concerns. If you three cannot come to as basic a consideration as this, then it is no surprise the three of you cannot agree on anything (and there was never any point in my looking for your concerns).

73's
Richard Clark, KB7QHC

3250. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 19:56:21 UTC
From: kb7qhc@home.com
Message-ID: <3afc4ecb.78433090@news.seanet.com>
Source record: 163697

On Tue, 8 May 2001 15:06:49 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>The reflected voltage is not generated in the circuit under test (CUT) it is
>generated
>
>ONLY IN THE MEASURING INSTRUMENT.
>

Hi Peter,

This is specious reasoning. You have crippled arguing your own logic
if you impose this on others.

73's
Richard Clark, KB7QHC

3251. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:02:38 UTC
From: JerryL <jlockett@onemain.com>
Message-ID: <9d9jb3$gi7e2$1@ID-55752.news.dfncis.de>
Source record: 163699
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Well I may have 'poor reading skills' but I take issue with you painting all people of a certain grouping with the same paint brush about their sexual perferences...There are wierdo's in any group, but not the whole group, and there is a hellva difference between Joe Blow congressman or anyone else and the President of the United States..No matter what, the President should keep him or herself above reproach in all matters, or at least be decrete about it for crying out loud and then lying about it on the national media, sheesh! To much!!!

As for ....the best the Republicans could do was Bush. They fielded a candidate that actually LOST the popular vote to someone like Gore!!!! Phew!...the last I heard on the evening news was that 'all the big time newspapers' that paid to finish the recount down in Florida, much to their chagrin, finally admitted that Bush won anyhow no matter how Gore and company tried to slant it!! As a note of interest, I didn't vote for either Bush or Gore, my candidate lost out early on....!

de jerry -n6jp-

"Tom W8JI" <2w8ji@contesting.com> wrote in message
news:3af83f94.435744935@news.accessunited.com...
> Hi Jerry,
>
> You have poor reading skills OM.
>
> On Tue, 8 May 2001 07:32:26 -0700, "JerryL" <jlockett@onemain.com>
> wrote:
>
> >How about some technical data proving your claim about republicans not
> >liking to have sex with women?
>
> Never said that. One example is Newt. He had an affair with a female
> member of his staff before he resigned..
>
> Here is what I said:
>
> >Republicans are more likely to have sex with Yasser Araofat and his
> >male camel than women. Like they did with congressional pages.
>
> >Statements like this cast a 'lot of doubt'
> >about your abilities in other areas, such as electronics etc. I mean
this
> >is such obvious bullshit, it makes me wonder if your learned comments on

> >other things might also be bullshit!
>
> What is BS about it?
>
> 1.) Bush looks like a monkey
>
> 2.) We had a problem in the House and Senate with congressmen and
> senators having sex with pages
>
> 3.) The Republican heading the "let's get Clinton" group was arrested
> TWICE for exposing himself in a park and for soliciting sex with a
> male undercover decoy in an Atlanta park
>
> >And yea, I'm a new republican, got so disgusted with Clinton and company,
I
> >changed parties, and I still like women!
>
> Good for you. We really ought to throw all the bums out.
>
> Before someone whines about Clinton, we should insist he not have an
> extramarital affair himself. Before someone heads a crusade to
> prosecute someone else for banging a 21 year-old-female and lying
> about it, we should make sure he isn't "hanging out" in public parks
> trolling for young males.
>
> >I presume you still support Clinton and hold him in high regard. He was
such
> >a outstanding example of a President of the United States, wasn't he,
ugh!
> >puke! I don't know about you, but I was totally embarassed and ashamed
to
> >have him represent us/me to the entire world...!
>
> Frankly, both parties embarass me. I'm ashamed of many of them, and
> embarassed that people think either party does not have more than its
> fair share of dishonest members and even the occasional pervert.
>
> Why on earth would anyone think that a certain party affiliation means
> the people are honest or moral?
>
> We let them all get away with far too much.
>
> Now think about this...it is important. As bad as Gore was...and as
> disliked as Clinton was....the best the Republicans could do was Bush.
> They fielded a candidate that actually LOST the popular vote to
> someone like Gore!!!! Phew!
>
> Embarassing, isn't it?

3252. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:03:38 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AF8511A.B6DD57BA@bwcc.com>
Source record: 163698

Tom W8JI wrote:
> From Lightning Protection for Broadcast Facilities:
>
> "There are still a few mysteries to be solved in completely
> understanding lightning, but once it enters the a wiring system it
> becomes an electrical current which is both predictable and
> understandable."

This depends on what is meant by entering.
The charge flowing on the outside of the wiring, St. Elmo's fire, and such has not entered the wiring system.
More likely what has "entered" the wiring system did so through magnetic coupling, not static discharge.

3253. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:22:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8556A.2166E12C@IEEE.org>
Source record: 163700

"Peter O. Brackett" wrote:
> The reflected energy does not create conditions for a match, the impedances
> do that.

I meant it in the sense that if you drain off the reflected energy,
no match is possible.
--
http://www.mindspring.com/~w6rca

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3254. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:26:00 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF85658.2BB40ED4@IEEE.org>
Source record: 163703

Richard Clark wrote:
> The burden of proof is with Walt.

The burden of proof of what is with Walt? All I'm trying to prove
is that 75w plus 8.33w doesn't equal 133.33w and I don't know why
that even needs a proof.
--
http://www.mindspring.com/~w6rca

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3255. Re: Kirchhoff's Laws

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:26:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9kopnnv1@slb4.atl.mindspring.net>
Source record: 163701

All:

An illustrious west coast ham sent me a private email outlining his preference for voltmeters over ammeters, especially if he could have only one instrument.

As a hint, his instrument does not even require a spring or "taught band".

And he has convinced me... I'm now converted to "Volts are all you really need".

I'll let him weigh in with the reason if he wishes to...

-Peter K1PO

"John O'Flaherty" <oflahert@roast.net> wrote in message news:3AF84975.AB9253C@roast.net...
> "Peter O. Brackett" wrote:
>
> > Hi John:
> >
> > All we need is a voltmeter?
> >
> > Nope, I disagree...
> >
> > If I could have but only one meter, it would be an ammeter, not a voltmeter.
> >
> > For... is not a voltmeter really just an ammeter with a very high
> > resistance?
> >
> > All we really need is Amps, heh, heh...
>
> Why be hampered by amps when you can be bolstered by volts?
>
> --
> john
>
> change roast to burnt bread to reply
>
>

3256. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:26:04 UTC
From: W4NTI <w4nti@nospammindspring.com>
Message-ID: <9d9kno$cq0$1@slb4.atl.mindspring.net>
Source record: 163702
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Actually you can run good sounding audio at more than 100%. This requires a modulation scheme other than you have in your 'CB' set. So this leads me to ask this....how can a meter read 'modulation' in the first place?

I was under the impression that in order to read Peak Power, than one needs a O-scope, one that is calibrated preferably.

Not to mention the fact, that unless you are running class C RF, and class B AF (for AM) then you can NOT ACHIEVE 99% anyway.

Dan/W4NTI

"Sideband" <sideband@spam.me.not> wrote in message news:3AF83741.387451A6@spam.me.not...
> I have never run my CB this way. I do have an echo mic on my GrantXL,
> but the echo "volume" is barely cracked open. According to three
> different modulation meters, I'm set at 99% modulation.
>
> The fellow I was talking to runs his radio in much the same way. He has
> a Cobra 148 (same radio, basically), and has his set similarly.
>
> Any more than 100% modulation is going to sound like crap, and probably
> bleed over. I know this, and those CB'ers who know this try to avoid
> bleeding over, etc...
>
> Now, if you don't mind, I need a nap before I go down to the testing
> center to test for my ticket. Have a nice day, Rob, and I hope "huked on
> fonix" continues to help your English grammar. ("there's usefull"? Come
> On!)
>
> -SSB
>
>
>
> "Rob St.Denis" wrote:
> >
> > A signal report comming from a cb'er, a lets turn up mic gain until its
> > completely distorted, then put an echo on it and a loud roger beep so
that I
> > get out better, radio operator ... there's usefull
> >
> > --
> > Rob St.Denis
> >

> > "Sideband" <sideband@spam.me.not> wrote in message
> > news:3AF7AAAB.D597E6CF@spam.me.not...
> > > Ok...
> > >
> > > I stand corrected.
> > >
> > > Allow me to rephrase what I'd originally stated, then..
> > >
> > > My 2 watt AM carrier covered up all the background noise on the other
> > > guy's CB, which was roughly 20 miles away, according to his signal
> > > report.
> > >
> > > -SSB
> > >
> > > JR wrote:
> > > >
> > > > An AM carrier without modulation looks just like an FM carrier
without
> > > > modulation. So it seems to me that "quieting sensitivity" could
apply to
> > > > an AM receiver as well although the term "full quieting" is
generally
> > > > understood to apply to FM.
> > > >
> > > > Rough Rider wrote:
> > > > >
> > > > > Sideband, I will put a cup out for you since you are begging to be
> > correct
> > > > > about full quieting. Notice Cecils definition, frequency
modulation
> > > > > recievers, does this give you enough of a hint- that it is FM
only. Do
> > > > > yourself a favor while studying for the ham test don't just
memorize
> > the
> > > > > answers actually learn what the question mean. If it was fill in
the
> > blanks
> > > > > the ham population would decrease by two fold.
> > > > >

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3257. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:31:10 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9l1l$i8l$1@slb3.atl.mindspring.net>
Source record: 163704

Richard:

Heh, heh.

I wonder, is there such a thing as a fart anechoic chamber, where you will
hear it only once and be done with it?

Clearly this NG is not reflection anechoic...

but maybe someplace...

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:8122-3AF84527-3@storefull-115.iap.bryant.webtv.net...
> Peter K1PO wrote:
> "Where does that "reflected" power go?..."
>
> Just like the fart in the echo chamber, you never hear the end of it.
>
> Best regards, Richard Harrison, KB5WZI
>

3258. Re: Tower/mast question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:32:08 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3AF859B5.8050801@aol.com>
Source record: 163710

Lowe's carries the 30 ft. mast in stock at the newer(i.e. larger) stores. It is heavy gauge galvanized, in the stores TV area with other TV goodies (300 ohm wire, 75 ohm coax).It is sold as a TV mast. If they don't have it in the rack they can order it. $40.00 locally.

Home Depot does not stock a 30 ft. push up. (At least not the three in this area......) They only have the smaller, lighter gauge Shack type of mast.

I would guess an ACE Hardware could order one for you, but there will be price creep.

Congrats to your son, hope he has fun and doesn't get run off by the "geezer" crowd.

73,
W4KAZ

3259. Re: Tower/mast question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:34:02 UTC
From: Eric Ruuska <eruuska@netnitco.net>
Message-ID: <3af857b8@news.netnitco.net>
Source record: 163705

Hehe, we didn't discuss it, but I suspect it was in the mid-double digits.

Back to the original subject, is there any reason I can't use galvanized pipe as a mast for up to, say, 40 feet, guyed appropriately of course? What would one use for the base of such a mast? My thinking is to put a short stub of larger pipe in concrete, with the mast held in place by gravity.

Thanks,
Eric Ruuska
KB9ZHN

W6RCecilA wrote in message <3AF845C6.6373C0B8@IEEE.org>...
>Eric Ruuska wrote:
>> Q: Is this marketed as an antenna mast, or something else? I called the
>> local Home Depot and the guy didn't have anything like this for antenna
>> purposes.
>
>What's the IQ of the guy you talked to on the phone?

3260. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:34:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8583A.1EC5B23@IEEE.org>
Source record: 163706

Richard Clark wrote:
> In other words, stick to the given architecture or abandon
> the argument.

The above example simplifies the discussion down to the only point
with which I disagree. You are trying to prohibit my only point
of disagreement from the discussion. Why would you do that?
--
http://www.mindspring.com/~w6rca

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3261. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:42:16 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9lmg$6pe$1@slb7.atl.mindspring.net>
Source record: 163707

All:

What was that line about "wrestling with pigs"...

Lets see now... if I recall it went something like the following...

"Never wrestle with pigs, you will get very dirty and the pigs like it!"

The problem with this advice in our case is that pigs rarely have an
advanced technical education...

I wonder, is the same advice true of "wrestling" with engineers, technicians
and scientists?

Or... are "we" a cut above the "pig kingdom"?

Speaking of King... why can't we all just "get along"?

Come on guys... y'all can communicate better than this... just do it!

To put ya'll into a better mood, everybody just sing along for a few moments
to the tune of "All you really need is love", altogether now....

"All you really need are V and I... "

Have we broken Guiness record yet for the USENET's longest thread?

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3afb4c1a.77744480@news.seanet.com...
> On Tue, 08 May 2001 14:13:00 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >Richard Clark wrote:
> >> This is the bane of your unneccessary elaboration of energy units.
> >> You move between power and them without conversion. If such a step is
> >> unneccessary, then the discussion should remain with the units where
> >> it started.
> >
> >Here's the thought experiment that should illustrate what is bothering
> >me. The following values are taken from Steve's example of adding
> >voltages. In fixed-width font.
> >
> > +------------+
> > 106.1v, 0.707a | |
> >----------------->| | 141.4v, 0.943a
> > | Combiner |----------------->

> > 35.355v, 0.236a | |
> >----------------->| |
> > | |
> > +------------+
> >
> >The 106.1v, 0.707a corresponds to the 75w that Steve says makes it past
the
> >match point in his earlier example. The 35.355v, 0.236a corresponds to
the
> >8.33w of reflected power that is re-reflected. The 141.4v, 0.943a
corresponds
> >to the 133.33w of forward power. Z0 is obviously 150 ohms. The "Combiner"
is
> >anything in the world that is possible in reality - actual contents
undefined
> >but Steve's Z0-match is supposed to meet those requirements.
> >
> >It is true that 106.1v plus 35.355v equals 141.4v, just like Steve says
it
> >does. But I want everyone reading this, including Steve, to tell me
what's
> >in the "Combiner" that will allow the voltages to be added in series AND
> >allow the currents to be added in series at the same time.
> >
> >Also I would like for everyone to explain how 75w plus 8.33w can add up
to
> >133.33w.
> >
> >A similar simplified 50 ohm example with equal voltages and currents
> >would be:
> >
> > +------------+
> > 50v, 1.0a | |
> >----------------->| | 100v, 2.0a
> > | Combiner |----------------->
> > 50v, 1.0a | |
> >----------------->| |
> > | |
> > +------------+
>
> Hi Cecil,
>
> We move toward even greater complexity now! We exchanged the units of
> energy for a combiner? This razor is exceedingly dull. To put an
> argument in someone else's mouth is fraught with the probability of
> endless discussion about the shape of the table next followed by a
> debate about the arrangement of the deck chairs.
>
> In other words, stick to the given architecture or abandon the
> argument. The only alternative is for you ALL to agree on a common

> circuit for consideration, AND it should be stripped of all extraneous
> detail. In other, other words, convince them to use your model above
> - not me. If you cannot sign them on, then there is something fishy
> about their "special needs" - or your concerns. If you three cannot
> come to as basic a consideration as this, then it is no surprise the
> three of you cannot agree on anything (and there was never any point
> in my looking for your concerns).
>
> 73's
> Richard Clark, KB7QHC

3262. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:45:20 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AF85ADF.B34D313D@hiwaay.net>
Source record: 163708

Richard- within the letter of what I wrote, you are RIGHT! Let me amend the statement to "I draw and pay for 75 Joules from them, and get the benefit of 133.3 Joules" THe possibility of just faking the values read by the meter-reader was not my intent, nor was it in the context of the reference. However, as you saw, it was within the statements I made.

You are a master at finding nits to pick- that is NOT a negative statement. I admire your reading comprehension skills. (unlike those of another sometimes resident of these lists.)

Bill-W4BSG

Richard Clark wrote:
>
> On Tue, 08 May 2001 11:26:39 -0500, Bill Aycock <baycock@hiwaay.net>
> wrote:
>
> >Steve, I have seen this attributed to you, in an earlier post. (If I'm
> >wrong, please say so)- I really wish this were true, because, although I
> >pay the power people in terms of KiloWatt-Hours, the result seems to be,
> >that with the addition of only a passive device, I can pay them for 75
> >Joules and get the benefit of the heat from 133.3 Joules. If this is so,
> >I stand to save a fortune in heating bills next winter. All I need do is
> >make the passive device, enclose it in a black box, and toast myself.
> >
> >Note that there is no principle of "voltage superposition" or any other
> >derived relationship that will allow us to create energy by
> >transformation of symbols in equations. It just cant be.
> >
> >Bill-W4BSG
>
> Hi Bill,
>
> There is a passive device (which you can put into a black box, or any
> color box you desire) which will do exactly what you state is your
> desire above. AND it has no connections to be made.
>
> >It just cant be.
>
> Oh yes it can.
>
> Take a magnetron magnet (from a scrap microwave oven is suitable) and
> place it immediately behind your service meter. You may adorn the
> magnet with a box of any color if you wish (as long as it is wood or
> non-ferrous). The magnet will saturate the spinning disk that is used

> to compute your power drain and upset the calibration (to say the
> least).
>
> This of course constitutes theft by defrauding the power utility and
> is offered as an "mental exercise" that may be "tested" by any
> interested "pupil." Note however that your "pupil" status is no
> defense in a court of law.
>
> So, there you have it, a passive device that fully conforms to your
> statement. Further, there is no issue of power addition or
> subtraction or anything beyond the disk and the field it spins in
> (which, by the way, consumes about 5W that you are billed for).
>
> A base canard! some may scream; but magnetics and the control of
> fields (especially those that are reflected) has been with us in other
> devices for more than half a century.
>
> 73's
> Richard Clark, KB7QHC

3263. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:47:40 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9m0k$c3t$1@slb0.atl.mindspring.net>
Source record: 163709

Cecil:

Simple...

In a DC circuit with a battery feeding a resistive load over a 10 foot line with a capacitor bridged across the line at the 5 foot point, there is power proceeding down the line from the generator to the load, at the speed of light if you will, but the energy sitting in the capacitor is still sitting there in place half way down the line is it not?

What's different between that and a lossless LC tank circuit bridged across the line holding stored, oscillating, energy?

That's what's happening at each differential section of the transmission line as the delivered energy/power passes by.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF8493A.ADFD3978@IEEE.org...
> "Peter O. Brackett" wrote:
> > (2) I visualize that the stored energy is distributed evenly up and down the
> > line and oscillates back and forth between the distributed capacitance and
> > inductance of the line. Sort of a "lateral" motion of energy from "side to
> > side" so to speak on the line.
>
> You are obviously talking about the physical charges which most people
> will admit don't move very far. However, I am talking about the electro-
> magnetic impulse waves which travel at the speed of light. How do you
> get something traveling at the speed of light to stop in one place on
> the transmission line?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3264. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 20:51:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF85C5B.D1F644B4@IEEE.org>
Source record: 163711

Richard Clark wrote:
> In other words, stick to the given architecture or abandon the
> argument.

OK, Richard, here is the given architecture. Exactly how can
106.1*0.707 + 35.355*0.236 = 141.4*0.943 ??????????

```
+------------+
106.1v, 0.707a | | 141.4v, 0.943a
------------------>| |---------------->
Generated power | Z0-match | forward power
not reflected at | |
the Z0-match point | |<----------------
| | 35.355v, 0.236a
+------------+ Re-reflected power
```

--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3265. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 21:02:14 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9msc$ja7$1@slb5.atl.mindspring.net>
Source record: 163712

Richard:

No, I don't believe so...

I have proven that the reflected voltage "b" indicated on the so-called SWR meters is generated solely inside the instrument.

It is imcumbent upon those who claim that the reflected voltage is actually on the line as a constituient of V to prove it.

Unfortunately for them, that proof is impossible, since there is actually an infinite number of ways in which V can be resolved into sums all of them could be in support of some "mathematical model" of reality.

It's like asking someone to prove that the only constituents of the number 5 are 3 and 2! Clearly there are an infinite number of ways that 5 can be decomposed into sums and differences.

What makes any particular decomposition sacred above all others?

One can "say" that an observed voltage V on a line is composed of Vref + Vfwd, but that doesn't make it so! Especially when you have to produce an elaborate contivance called a reflected voltage bridge, a.k.a. SWR meter, to measure it!

One could construct an elaborate mathematical model based upon this resolution of V... but that doesn't make it so...

It's sort of like some mystical accountant taking 5 = 3 + 2, and then running off with the value 3 to construct a whole new theory of 3...

All of it mathematically correct, but irelevant, confusing and obscure...

Here I'll start it for you...

3 = 1 + 2 from this we can deduce that 2 = 3 - 1, which proves that 5 was equal to 3 + 2, then of course we have the powers of 3, say 3*3 = 9 and how about 1*1 = 1 and 2*2 = 4 and so that ultimately 1 + 4 = 9 Whoooops... !!! Starting with an innocent sum and then squaring stuff gets messy...

No wonder those poor reflection zealots get confused and run long endless arguments about funny powers and such!

Don't fall for that ficticious stuff unless it has a practical use.

Make things no more complicated than they need to be and then quit!

Simple is best.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3afc4ecb.78433090@news.seanet.com...
> On Tue, 8 May 2001 15:06:49 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >The reflected voltage is not generated in the circuit under test (CUT) it
is
> >generated
> >
> >ONLY IN THE MEASURING INSTRUMENT.
> >
>
> Hi Peter,
>
> This is specious reasoning. You have crippled arguing your own logic
> if you impose this on others.
>
> 73's
> Richard Clark, KB7QHC

3266. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 21:03:10 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF85F0E.6A2E506C@IEEE.org>
Source record: 163713

"Peter O. Brackett" wrote:
> What's different between that and a lossless LC tank circuit bridged across
> the line holding stored, oscillating, energy?
>
> That's what's happening at each differential section of the transmission
> line as the delivered energy/power passes by.

Peter, you are like a blind person in the middle of a bucket brigade
who has no idea what is happening at each end. Have you never watched
ocean waves break against the shore? The individual water molecules
are going primarily up and down but the wave energy can break your
neck. Tsunamis are only about a foot tall in the middle of the
ocean but have killed thousands when they hit the shore. What happens
to the individual charges is relatively unimportant. Most of the action
is in the wave energy.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3267. Re: helpneeded: combine signal from ant and dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 21:06:01 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AF85FB9.3F54BC7E@rupert.tds-az.lmco.com>
Source record: 163644
Cross-posted to: rec.video.satellite.tvro,rec.radio.amateur.antenna

J. Sun wrote:
>
> Guys,
>
> Thanks for the responses !
>
> ERic,
>
> Thanks for the very useful info !
> I guess that at least 6dB loss is inevitable !
>
> Jeff,
>
> My ch. 2, 3 and 4 are either not clean or not available.
> Also what Martin said is true for my case.
>
> Martin,
>
> Why is the loss 10dB instead of ~6 dB ?
> That's big 4 dB difference !
>
> Rus

No, you are correct. I was working with a diagram that had
multiple decoder boxes and contained an extra splitter for
the local channels. If you only have one decoder and one
antenna feed you will need two diplexers with a loss
of ~6 db. My mistake.

However, if you are already down ~6 db, another 4 db isn't
going to make that much difference. At 6 db you have already
lost 75% of your original signal. A possible way around
this problem would be to put an amplifier on the antenna,
before it goes into the diplexer, to make up for the loss
that is going to be experienced. A small amplifier to cover
those lower channels shouldn't be to difficult to put together.
The amplifier could be powered throught the coax.

> "K7MEM" <jda@rupert.tds-az.lmco.com> wrote in message
> news:3AF70DFE.446B9B3D@rupert.tds-az.lmco.com...
> > boerio@arocknid.com wrote:
> > >
> > >
> > > I have a signal combiner that I got from my friendly satellite

> > > repair/service company. It puts the satellite feed on Ch 3 and then the
> > > regular broadcast stuff is on whatever channel it's on.
> > >
> > > I used to have a signal combiner for Ch 4, but a local TV station
> started
> > > transmitting there, and I had to get the new one.
> > >
> > > I can look up the details on it if you need, and don't think it was more
> > > than $20.
> > >
> > > - Jeff
> >
> > The combiner that you have works very good, but is intended for use
> > after the decoder box. I think Rus wants one that goes before the
> > decoder box. Another poster gave a link to a diplexer, which is what
> > he really needs. A combiner should cost about $20 but a diplexer
> > will cost around $30 and you will need two of them. One to combine
> > the signals from the antenna/LNB end and then another one to
> > separate them at the decoder/TV end. You will also experience about
> > 10 db of signal loss from the antenna.
> >
> > --
> > Martin E. Meserve, K7MEM
> > martin.e.meserve AT lmco.com

--
Martin E. Meserve, K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore
my responses may not be as timely as you, or I, would like them to
be. If I seem to be ignoring you, send me another E-Mail to jog my
memory. Opinions are my own and do not reflect the opinions of my
employer.

3268. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 21:31:54 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9ojilcd1@slb7.atl.mindspring.net>
Source record: 163714

Cecil:

Where are you headed with that one?

If you drain off the reflected energy, a good thing I suppose, what effect
does that have on the match?

A match is just some sulpher and saltpeter on the end of a small stick!

What?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF8556A.2166E12C@IEEE.org...
> "Peter O. Brackett" wrote:
> > The reflected energy does not create conditions for a match, the
impedances
> > do that.
>
> I meant it in the sense that if you drain off the reflected energy,
> no match is possible.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3269. Re: ** FA: SGC QMS-II Antenna System **

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 21:32:20 UTC
From: Ken Bessler <kg0wx@yahoo.com>
Message-ID: <3AF865E4.1D68@yahoo.com>
Source record: 163715

Steve Gray wrote:
>
> I am auctioning my SGC QMS-II Antenna System on eBay. The QMS-II covers 1.8
> through 30 MHz, and handles 150 watts.
>
> If interested, please see:
>
> http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1236371563&r=0&t=0&sh
> owTutorial=0&ed=989893290&indexURL=0&rd=1
>
> Thank you!
> ---Steve
> NR3B
> stevencgray@earthlink.net

For those having trouble with the above URL due to line wrap;

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1236371563

73's
--

Ken Bessler, Ham Callsign KGï¿½WX
Design Services Company
http://kg0wx.users.50megs.com/
Smoke free since 9/30/96!
ICQ# 63379650ï¿½

3270. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 21:35:40 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9d9oqr$nb6$1@slb1.atl.mindspring.net>
Source record: 163716

Cecil:

I never said that the stored energy can't break your neck.

What?

Disconnect the battery and the load from that 10 foot power cable with the
cap in the middle, and you will see sparks if you touch the leads together.

What?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF85F0E.6A2E506C@IEEE.org...
> "Peter O. Brackett" wrote:
> > What's different between that and a lossless LC tank circuit bridged
across
> > the line holding stored, oscillating, energy?
> >
> > That's what's happening at each differential section of the transmission
> > line as the delivered energy/power passes by.
>
> Peter, you are like a blind person in the middle of a bucket brigade
> who has no idea what is happening at each end. Have you never watched
> ocean waves break against the shore? The individual water molecules
> are going primarily up and down but the wave energy can break your
> neck. Tsunamis are only about a foot tall in the middle of the
> ocean but have killed thousands when they hit the shore. What happens
> to the individual charges is relatively unimportant. Most of the action
> is in the wave energy.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3271. Re: FERRITE ROD ANTENNA

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 21:36:50 UTC
From: Ken Bessler <kg0wx@yahoo.com>
Message-ID: <3AF866F2.7628@yahoo.com>
Source record: 163717

John Moriarity wrote:
>
> "marvin rosen" <n3bqa@starpower.net> wrote in message
> news:9d81afmkg1@bob.news.rcn.net...
> > i have a ferrite rod ant with 4 colored leads. the colors are green,
> red,
> > black & white. what is the significance of these colored leads?
> >
>
> It's so you can tell them apart ;-)
>
> Sorry, I couldn't resist.
>
> 73,
>
> John, K6QQ

That's evil - you should be spanked for that!
--

Ken Bessler, Ham Callsign KGï¿½WX
Design Services Company
http://kg0wx.users.50megs.com/
Smoke free since 9/30/96!
ICQ# 63379650ï¿½

3272. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 21:37:33 UTC
From: Gary Danaher <gdanaher@home.com>
Message-ID: <3AF86719.37E410C6@home.com>
Source record: 163718
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Take a hard look at what Dubya is doing/not doing with the oil companies right now, think back to what he had to say about the oil business during his campaign, and then take a look at the the modern Bush oil pricing structure. Now, aren't you proud to have voted for such a guy? I didn't think he could sell out in such a short order, but I underestimated the fool.

K0HB wrote:

> In article <3af7f71a.417187879@news.accessunited.com>, Tom W8JI says...
>
> >Face it, George looks like a monkey and is dumb as snot.
>
> Tom,
>
> Duh-bya Shrub is not as dumb as he acts. He couldn't be!
>
> 73, Hans, K0HB

3273. Re: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 21:46:45 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <7cq0YNBFIG+6EAXk@ifwtech.com>
Source record: 163620

J M Noeding wrote:
>On Mon, 7 May 2001 22:41:23 +0100, "Ian White, G3SEK"
><G3SEK@ifwtech.com> wrote:
>
>>Tom W8JI wrote:
>>>On Mon, 07 May 2001 17:19:13 GMT, la8ak@online.no (J M Noeding) wrote:
>>>
>>>>3x 2el - it is fullwave yagies, haven't checked the gain, but believe
>>>
>>>How is it fullwave yagis?
>>
>>You're talking about two different antennas, but both called "X-beams".
>>
>>73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
>> 'In Practice' columnist for RadCom (RSGB)
>> http://www.ifwtech.com/g3sek
>
>seems that,
>the array is somewhere about 2m high x 5m broad for 2m, and perhaps
>Ian can confirm if the gain is 8dBd for each half of the array?

Sorry, I only know that more than one so-called 'X beam' exists, but am
not really familiar with the one you describe - and certainly not
familiar enough to estimate the gain.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

3274. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 21:49:58 UTC
From: Ryan KC8PMX <kc8pmx@tm.net>
Message-ID: <aSZJ6.97$gA.27440@monger.newsread.com>
Source record: 163619

One question, what would happen if a ham operator used his/her callsign as an identifier on the LEGAL cb frequencies. (assume all other operation is completely legal). Is it legal to identify with your callsign there? (sorry, not up to much on my 11meter knowledge here)

I have one in my truck that I use about 2 times per year mainly to find out road conditions etc, because it seems NO ONE uses 146.520 anymore.....
--

Ryan, KC8PMX

Check out www.qsl.net/w8kea

Amateur Radio Is Fun!!! Ask me!

> >Hams can still go there, use your callsign
> >and follow all the rules.
>
> *ANYBODY can go there. And you don't need to use your ham call sign. You don't
> need ANY call sign. Furthermore, when a ham goes to 11 meters, he "checks his
> license at the door". He/she has no more "authority" or rights than anyone else
> on 11 meters.
>
> > If we hams again populate this band maybe we can win it back, for
> >sole amateur use.
>
> CB is a designated set of frequencies and those operating in the United States
> and many other places are doing so with the permission and blessing of their
> government. How would you like it if roles were reversed? Try this: Okay,
> all CBers report to ten meters and begin operating. CBers might win the band
> for themselves. Don't like it? Tough. CBers operate on 11 meters with
> exactly the same authority as YOU operate on 10 meters!

3275. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 21:58:33 UTC
From: David Edwards <ham@cybercomm.net>
Message-ID: <9d9q3202knr@enews3.newsguy.com>
Source record: 163634
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.policy

How is this of any interest to anyone??

"Twistedhed" <twistedhed@webtv.net> wrote in message
news:1403-3AF8349E-42@storefull-125.iap.bryant.webtv.net...
Technical Data:

"JerryL" <jlockett@onemain.com> Group:
rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb
Subject: Re: Respect For Freebanders Date: Tue, May 8,
2001, 7:32am (EDT-3) X-Trace: fu-berlin.de 989332288 17845332
209.165.2.21 (16 [55752])

And since we are on the subject of headers:

It is time for my monthly disclaimer, in case any newbies have arrived
since Leland's last folly with my nic and email.

.
KC8LDO Leland C. Scott forged the original post, it wasn't me. His
number of aliases and forged posts and emails are staggering, but he
especially likes forging me. Please check the headers. Leland C. Scott,
KC8LDO, and Doug Adair, N8wwm, and their many, MANY aliases are
responsible for ninety five point nine percent of the strife on the
rec.radio.cb ng, and probably on many of your amateur forums as well,
especially lately. A good number of posts appearing with no call signs
have been easily identified as the same forgers in the cb ng.

Thank you all for the replies via email, as most were polite and well
written, as were the many offers to assist me in attaining a ham
license, however, I believe in returning things to their rightful
owners, so any additional correspondence should be directed at the
author of the forged post and troll.

After exposing Leland for forging me over a month ago with the
assistance of another licensed amateur, he has waged a personal vendetta
against me.

He searched the web and found an article I wrote on freebanding for a
hobby magazine over a year ago and has posted it numerous times in an
effort to justify his own behavior towards myself and other cbers. He
draws his own inferences and hurls unfounded accusations and insults.
Leland's main line of defense has always been attack his accuser, no
matter who it may be. If anyone would dare suggest Leland may be wrong,

he has no defense other than to attack about "What you did" and it is usually a lie (from questioning one's sexual preference to threatening them).

He has repeatedly accused me and others of pirating on amateur frequencies, and nothing could be further from the truth. I understand how an amateur could feel so strongly as to defend his allocated frequencies, but attacking countless individuals behind phony names, forging people, forging email headers in his posts, throwing accusations left and right and refusal to remove anything personal and not on subject off the ng exemplifies what this particular individual and his two cronies are about. He also reported me to my ISP for "forging" (the gall) and was so certain it was me that he made many posts threatening that I was about to lose my internet service. When he received word it wasn't me from my ISP, this sent him into a rage, as it did when I first exposed him. He has accused me of forging for so long (pot, kettle, black) he now accuses my ISP of "lying" to him. I guess the more Leland decides to forge me in your amateur forums, the more frequent I must point out the error of his ways.

I asked Leland and "Sparky" to take whatever personal problem they may have with me to email and I will be glad to debate whatever merit they see fit, but as all will see, these two are more interested in calling names, perpetuating problems between operators and will not cease their childish games....hence the crossposts They don't WANT the strife to go away. I apologize that they feel the need to make you all a part of it, and I was going to ignore most of the emails and what was forged of me, but then the email I received from amateurs was so far from what I expected. Leland forged me and posted that article in a manner to which I would be flamed, and instead, I received email from a great number of amateurs who didn't flame at all.

Quite the opposite, many offered to assist in getting my ticket, and for that I thank you. Turning the tables, if it had been me that were a licensed operator and someone posted an article about freebanding in an amateur format I frequented, I may have been one of the flamers, but as I said, the reaction from amateurs across the land was quite different than what the original author intended. If a post appears to be from me in anything other than the cb ng, please check the headers....if it has any other path than this one, it is a forge. All emails answered. Have a good day.

3276. Re: homebuilt dish

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 21:58:34 UTC
From: LAPORTE CLAUDE <cl.laporte@belgacom.net>
Message-ID: <3af86bfd$0$3119$456d72a3@news.skynet.be>
Source record: 163621

"LAPORTE CLAUDE" <cl.laporte@belgacom.net> schreef in bericht news:...
> Hello ,
>
> I want to make a dish myself (+/- 2meter).
> anyone out there who has some experience on this.
> where can i find a good (easy to use) program for calculating the parabol?
> it will be used for Meosat and Inmarsat.
> Every answer or hint will bring me a step forward.
>
> Thanks and have a nice day
> 73
> ON1AGG
>
> test
>

3277. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 22:00:17 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3af85bfc.250095513@news.aepnet.com>
Source record: 163623

On Tue, 8 May 2001 14:02:05 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
wrote:

>Richard:
>
>[snip]
>> Reflection is the only alternative at an impedance mismatch.
>>
>> Reflections are fact not fiction.
>>
>> Best regards, Richard Harrison, KB5WZI
>>
>[snip]
>
>Where does that "reflected" power go... can I keep it? Or do I have to give
>it back? How do I give it back?

You can use it to heat up the thermisors in a power sensor. Remember my little
experimental setup that your were going to dismantle with your fictitious logic?
Whatever happened to your response?

Oh, I almost forgot. You want to talk about the weather in Tucson instead.

At 2055 UTC, temp: 99 deg. F (37.2 C. for you metric fans). RH: 10%. "It's a
dry heat."

Since you want to talk about the weather and sticking with the title of the
thread... If there is heavy cloud cover here, I've noticed that the ground
temperature is reduced. Apparently there is a frequency sensitive discontinuity
(reflection) in the path between the source (the sun) and the load (the surface
of the Earth). Is the energy that is reflected off the cloud tops and back into
space "real" or "fictitious?"

Wes Stewart N7WS
?
>
>-Peter K1PO
>
>

3278. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 22:04:46 UTC
From: kb7qhc@home.com
Message-ID: <3aff6d60.86262128@news.seanet.com>
Source record: 163622

On Tue, 08 May 2001 15:26:00 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> The burden of proof is with Walt.
>
>The burden of proof of what is with Walt? All I'm trying to prove
>is that 75w plus 8.33w doesn't equal 133.33w and I don't know why
>that even needs a proof.

Hi Cecil,

Quite so.

73's
Richard Clark, KB7QHC

3279. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 22:08:02 UTC
From: kb7qhc@home.com
Message-ID: <3b006d99.86319180@news.seanet.com>
Source record: 163624

On Tue, 08 May 2001 15:34:02 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> In other words, stick to the given architecture or abandon
>> the argument.
>
>The above example simplifies the discussion down to the only point
>with which I disagree. You are trying to prohibit my only point
>of disagreement from the discussion. Why would you do that?

Hi Cecil,

Because it branches the argument into regions that do nothing. If
your only point requires the change of the scenario, you are no longer
arguing the scenario. Simplify only if you can get the others to sign
on, otherwise you are out in your own orbit.

73's
Richard Clark, KB7QHC

3280. Re: Tower/mast question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 22:21:20 UTC
From: Sycho_Graphics <Sycho_Graphics@msn.com>
Message-ID: <uBqpl1A2AHA.301@cpmsnbbsa07>
Source record: 163519

The "geezers" are dropping like fly's. Soon they will al be gone :)

"kazering" <kazeringue@aol.com> wrote in message
news:3AF859B5.8050801@aol.com...
> Lowe's carries the 30 ft. mast in stock at the newer(i.e.
> larger) stores. It is heavy gauge galvanized, in the stores
> TV area with other TV goodies (300 ohm wire, 75 ohm coax).It
> is sold as a TV mast. If they don't have it in the rack
> they can order it. $40.00 locally.
>
> Home Depot does not stock a 30 ft. push up. (At least not
> the three in this area......) They only have the smaller,
> lighter gauge Shack type of mast.
>
> I would guess an ACE Hardware could order one for you, but
> there will be price creep.
>
> Congrats to your son, hope he has fun and doesn't get run
> off by the "geezer" crowd.
>
> 73,
> W4KAZ
>

3281. Feeding of multi band delta loop.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 22:26:32 UTC
From: "g0nmy@callnetuk_dot_com" <g0nmy@callnetuk_dot.com>
Message-ID: <3af8755a@eeyore.callnetuk.com>
Source record: 163626

Hi all,
a friend of mine is going to build a delta loop who's fundamental
freq is 40mtrs, but also wants to use it on other higher bands as well.

Well we I have a few questions if anyone can offer explanations I would be
pleased to hear from you.

First the loop will be in a triangular shape, and fed at the corner which
would give vertical polarisation, and a good
low angle of radiation.

Now as far as I am aware the impedence Zo of the delta loop is 100 Ohms, but
the info we found says to feed it with
450 Ohm ladder line cable that hooks into a 4: to 1: balun, then then into
50 Ohm unbalanced coax.

But my friends ATU has a built in 4:1 balun for feeding balanced feeder.

SO question one.
Does the feeder become part of the antenna at higher bands and radiate? or
is the high impedance used to STOP the
feeder radiating?

Would we have any problems by using the inbuilt balun in the atu ? as I
thought it would be much better using balanced line
straight through.?

Others have said to cut the antenna 5% smaller and feed it with 75 Ohm cable
but wouldn't this make it single banded
or are we missing something?

N.B we are talking a multi-band atu tunerable delta loop.
Cheers Mark.

3282. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 22:32:21 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <Vt_J6.3716$tv4.342214@paloalto-snr1.gtei.net>
Source record: 163627

"Ryan KC8PMX" <kc8pmx@tm.net> wrote in message
news:aSZJ6.97$gA.27440@monger.newsread.com...
> One question, what would happen if a ham operator used his/her callsign
as
> an identifier on the LEGAL cb frequencies. (assume all other operation
is
> completely legal).
> <SNIP>

Why on earth would you even want to? That's giving the freebanders and
bootleggers an "E" ticket to raise hell on the ham bands at your expense
(using your call).

73 de W6DKN

3283. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 22:38:57 UTC
From: kb7qhc@home.com
Message-ID: <3b016e80.86550342@news.seanet.com>
Source record: 163628

On Tue, 08 May 2001 15:51:39 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> In other words, stick to the given architecture or abandon the
>> argument.
>
>OK, Richard, here is the given architecture. Exactly how can
>106.1*0.707 + 35.355*0.236 = 141.4*0.943 ??????????
>
> +------------+
> 106.1v, 0.707a | | 141.4v, 0.943a
>------------------->| |---------------->
> Generated power | Z0-match | forward power
> not reflected at | |
> the Z0-match point | |<----------------
> | | 35.355v, 0.236a
> +------------+ Re-reflected power

Hi Cecil,

What are the phase relationships? This is not complete because you
(or the original author?) have discarded that information by rendering
the phasors into magnitudes (a completely unnecessary step). You have
a component labeled Z0-match above which contains phase critical
information that you (or the original author?) have now buried inside
it through its black box status. You have also discarded the critical
transmission line information. I also see nothing but an open to the
right, but the numbers clearly reveal a load of some value other than
open.

This underlines the necessity of getting all members of the argument
on the same page, and stop this fumbling around projecting one's
thoughts into another's mind. You have satisfied your own agenda
insofar as the "original architecture" goes, but you have not
duplicated the original architecture of the topic. This simply
amounts to a forming an ambush in that box canyon, not a complete nor
even partial proof of the topic.

As long as each of you keep taking pot shots at each other, this
mexican standoff portends no resolution.

73's
Richard Clark, KB7QHC

3284. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 22:42:27 UTC
From: Rough Rider <roughrider@home.com>
Message-ID: <nD_J6.55922$B22.14196297@news1.rdc2.pa.home.com>
Source record: 163629
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

You are correct there Jerry as much as they cried and whined Bush still came out on top after the Newspapers finished counting. Tom by what percentage did Bush lose the popular vote? Pretty miniscual wouldnt you say. Last time I looked this country elects presidents on electroal votes. Since the democrats had dead people voting and convicts perhaps we should have a recount .

"JerryL" <jlockett@onemain.com> wrote in message
news:9d9jb3$gi7e2$1@ID-55752.news.dfncis.de...
> Phew!...the last I heard on the evening news was that 'all the big time
> newspapers' that paid to finish the recount down in Florida, much to their
> chagrin, finally admitted that Bush won anyhow no matter how Gore and
> company tried to slant it!! As a note of

3285. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 22:45:41 UTC
From: Rough Rider <roughrider@home.com>
Message-ID: <pG_J6.55923$B22.14197800@news1.rdc2.pa.home.com>
Source record: 163632
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Bill I travel the NJ turnpike in excess of 80 mph daily. And cars still pass me. Then you have the idiot who rides the left lane doing 55-65, and not passing anyone.

"Bill Sohl" <billsohl@mindspring.com> wrote in message news:3af768d4.3083405@news.mindspring.com...
> On Mon, 07 May 2001 23:11:13 GMT, "Rob St.Denis"
> <tstdenis3160@home.com> wrote:
>
> >> WHY? Do you believe for one second that the speed
> >> limits on American highways are realistic? Do they have
> >> any resemblemce to reality. Is 70 mph across Kansas
> >> logical when there is visibility to the horizon, light traffic
> >> and not a bend in the load for miles ahead?
> >
> >First off its law. You hams don't like those cb'ers breaking the law
> >because of some little arbitrary thing like needing a licence to operate
> >(having the sheet of paper does not make you a better op) but yet you find
> >the "arbitrary" speed laws rediculous? They are there to lower the risk of
> >accidents.
>
> More that they are there to garner revenue.
>
> >Car's do not handle as well at the higher velocities, reaction
> >times are required to be far faster etc etc etc ...
>
> If YOU can't handle it, then don't. No one is forcing anyone to
> drive 70.
>
> >They do have engineers
> >and such who do determine hte maximum velocity that is safe on a particular
> >road given its conditions or give it the max of 55
>
> Nope, the national 55 in effect for some 15 years had NOTHING to do
> with safety when imposed. Since it has been lifted, highway detaths
> per year are STILL dropping.
>
> >(its 65 now isnt it ?)
> >since that is about what the average driver can safely handle.
>

> Many states it is now 70 or even 75. In NJ people routinely
> drive 70-75 everywhere on the highway...totally ignoring
> the posted 55 or 65 limits.
>
> Cheers,
> Bill K2UNK
>

3286. Re: REALISTIC Patrolman Direct Entry Programmable 100 CHANNEL PRO-46 HANDHELD SCANNER

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 22:45:43 UTC
From: John <uglyjohn@mindspring.com>
Message-ID: <4otgftcujc954tb4sdsd37opnrlrasj4e3@4ax.com>
Source record: 163630
Cross-posted to:
rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.misc,rec.radio.scanner,rec.radio.shortwave

On Tue, 8 May 2001 19:16:08 +0100, "Syd" <sa1@ukonline.co.uk> wrote:

It's been removed by E-bay, ya dumbass.

3287. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 22:46:25 UTC
From: kb7qhc@home.com
Message-ID: <3b0276b8.88654899@news.seanet.com>
Source record: 163631

On Tue, 8 May 2001 15:40:49 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>They will see that the "holy reflected voltage" is merely a value b = V - IR
>created by circuitry within a lowly measuring instrument.
>

Hi Peter,

Both I and Wes have measured the heat of the reflected power. Any
fiction that burns is more serious than your science of DC reflection.
You still have a lot of water to carry.

73's
Richard Clark, KB7QHC

3288. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 22:49:48 UTC
From: Rough Rider <roughrider@home.com>
Message-ID: <gK_J6.55926$B22.14199866@news1.rdc2.pa.home.com>
Source record: 163633
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

No you shouldn't say that, it is New Jersey(Jerzee), perhaps if you knew how to speak correctly you would be able to say the name of the state correctly. Which state do you think we should model? Oh that's right you aren't from the USA, what the hell would you know.
.

"Rob St.Denis" <tstdenis3160@home.com> wrote in message news:aFPJ6.43802$2_.15208823@news3.rdc1.on.home.com...

> And New Jersey (Joisey I should say) is a state to model after?
>
>

3289. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 23:04:48 UTC
From: Rough Rider <roughrider@home.com>
Message-ID: <kY_J6.55932$B22.14207967@news1.rdc2.pa.home.com>
Source record: 163635
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.equipment,rec.radio.amateur.policy

Pure and simple BS from a known admitted freebander such as yourself twistie. You are a paranoied person who has accused many people of various things with not 1 shred of proof. I forgot you are a Saint and could do no wrong.
"Twistedhed" <twistedhed@webtv.net> wrote in message news:1403-3AF8349E-42@storefull-125.iap.bryant.webtv.net...
Technical Data:

"JerryL" <jlockett@onemain.com> Group: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb
Subject: Re: Respect For Freebanders Date: Tue, May 8, 2001, 7:32am (EDT-3) X-Trace: fu-berlin.de 989332288 17845332 209.165.2.21 (16 [55752])

And since we are on the subject of headers:

It is time for my monthly disclaimer, in case any newbies have arrived since Leland's last folly with my nic and email.

.
KC8LDO Leland C. Scott forged the original post, it wasn't me. His number of aliases and forged posts and emails are staggering, but he especially likes forging me. Please check the headers. Leland C. Scott, KC8LDO, and Doug Adair, N8wwm, and their many, MANY aliases are responsible for ninety five point nine percent of the strife on the rec.radio.cb ng, and probably on many of your amateur forums as well, especially lately. A good number of posts appearing with no call signs have been easily identified as the same forgers in the cb ng.

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I asked Leland and "Sparky" to take whatever personal problem they may have with me to email and I will be glad to debate whatever merit they see fit, but as all will see, these two are more interested in calling names, perpetuating problems between operators and will not cease their childish games....hence the crossposts They don't WANT the strife to go away. I apologize that they feel the need to make you all a part of it, and I was going to ignore most of the emails and what was forged of me, but then the email I received from amateurs was so far from what I expected. Leland forged me and posted that article in a manner to which I would be flamed, and instead, I received email from a great number of amateurs who didn't flame at all.

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3290. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 23:11:17 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <p2%J6.47480$2_.16353523@news3.rdc1.on.home.com>
Source record: 163636
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

> Now, if you don't mind, I need a nap before I go down to the testing
> center to test for my ticket. Have a nice day, Rob, and I hope "huked on
> fonix" continues to help your English grammar. ("there's usefull"? Come
> On!)

I appologize for my use of vernacular and spelling errors ... I don't
usually spend much time on my posts ...

3291. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 23:15:31 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <n6%J6.47509$2_.16364374@news3.rdc1.on.home.com>
Source record: 163637
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

"Rough Rider" <roughrider@home.com> wrote in message
news:gK_J6.55926$B22.14199866@news1.rdc2.pa.home.com...
> No you shouldn't say that, it is New Jersey(Jerzee), perhaps if you knew
how
> to speak correctly you would be able to say the name of the state
correctly.
> Which state do you think we should model? Oh that's right you aren't from
> the USA, what the hell would you know.

Don't need to live there ... spend enough time in the hamptons and driving
to and fro in the upper east states ... And from my experience inahbitants
in NJ do pronounce it Joisey rather than Jersey

3292. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 23:33:42 UTC
From: Rough Rider <roughrider@home.com>
Message-ID: <qn%J6.55965$B22.14224558@news1.rdc2.pa.home.com>
Source record: 163638
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Thats funny as a lifetime inhabitant I have never heard anyone who lived
here call it that. The only "people" I have heard say it are outsiders such
as yourself who have no clue
and mimic what others say.

"Rob St.Denis" <tstdenis3160@home.com> wrote in message
news:n6%J6.47509$2_.16364374@news3.rdc1.on.home.com...
> "Rough Rider" <roughrider@home.com> wrote in message
> news:gK_J6.55926$B22.14199866@news1.rdc2.pa.home.com...
> > No you shouldn't say that, it is New Jersey(Jerzee), perhaps if you knew
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> > to speak correctly you would be able to say the name of the state
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> > Which state do you think we should model? Oh that's right you aren't
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> > the USA, what the hell would you know.
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> Don't need to live there ... spend enough time in the hamptons and driving
> to and fro in the upper east states ... And from my experience inahbitants
> in NJ do pronounce it Joisey rather than Jersey
>
>

3293. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 23:44:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF884C2.3D06080D@IEEE.org>
Source record: 163639

Richard Clark wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >The burden of proof of what is with Walt? All I'm trying to prove
> >is that 75w plus 8.33w doesn't equal 133.33w and I don't know why
> >that even needs a proof.
>
> Hi Cecil,
>
> Quite so.

Then why are you and so many other learned gentlemen on this newsgroup
so silent on the subject of Steve's Voodoo Science? Here it is again:

```
+------------+
106.1v, 0.707a | | 141.4v, 0.943a
------------------->| |---------------->
Generated power | Z0-match | forward power
not reflected at | |
the Z0-match point | |<----------------
| | 35.355v, 0.236a
+------------+ Re-reflected power
```

--
http://www.mindspring.com/~w6rca

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3294. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 23:49:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8861A.A7CBC9CD@IEEE.org>
Source record: 163640

Richard Clark wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >The above example simplifies the discussion down to the only point
> >with which I disagree. You are trying to prohibit my only point
> >of disagreement from the discussion. Why would you do that?
>
> Because it branches the argument into regions that do nothing. If
> your only point requires the change of the scenario, you are no longer
> arguing the scenario. Simplify only if you can get the others to sign
> on, otherwise you are out in your own orbit.

This *IS* the same argument, Richard. Why are so willing to allow Steve
to get away with Voodoo Science? I'm beginning to smell a rat. Here it
is again:

```
+------------+
106.1v, 0.707a | | 141.4v, 0.943a
------------------->| |---------------->
Generated power | Z0-match | forward power
not reflected at | |
the Z0-match point | |<----------------->
| | 35.355v, 0.236a
+------------+ Re-reflected power
```

Note that the re-reflected power values are after re-reflection. The
arrow indicates it is a source of power to the Z0-match.

Richard, please explain how

106.1v*0.707a + 35.355v*0.236a = 141.4v*0.943a

Why are you avoiding this issue?
--
http://www.mindspring.com/~w6rca

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3295. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 23:51:49 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF88695.4A2B0B4C@IEEE.org>
Source record: 163641

```
Richard Clark wrote:
>
> On Tue, 08 May 2001 15:51:39 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >Richard Clark wrote:
> >> In other words, stick to the given architecture or abandon the
> >> argument.
> > >
> > >OK, Richard, here is the given architecture. Exactly how can
> > >106.1*0.707 + 35.355*0.236 = 141.4*0.943 ??????????
> > >
> > > +------------+
> > > 106.1v, 0.707a | | 141.4v, 0.943a
> > >------------------>| |---------------->
> > > Generated power | Z0-match | forward power
> > > not reflected at | |
> > > the Z0-match point | |<----------------->
> > > | | 35.355v, 0.236a
> > > +------------+ Re-reflected power
>
> Hi Cecil,
>
> What are the phase relationships?

Everything is in phase, Richard. Why are you avoiding the issue?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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```

3296. FYI Antenna Engineer Position

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 23:56:43 UTC
From: fractenna@aol.com
Message-ID: <20010508195643.07954.00000178@ng-cu1.aol.com>
Source record: 163642

Hi All--

Since many firms are now helping people get job info by posting on this newzgroup, I thought I'd pass along the URL of a new listing. Hope this is useful to some here. Looks like quite a few guys and gals are out of jobs recently with CA, CO, and Wash/VA especially hard hit.

http://www.fractenna.com/jobs.html

73,
Phil
de N1ZKT

3297. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-08 23:59:02 UTC
From: k1bqt@aol.com
Message-ID: <20010508195902.02953.00002377@ng-da1.aol.com>
Source record: 163643

Hi Peter--

>Where does that "reflected" power go... can I keep it? Or do I have to give it back?<

Cripe sakes, mate! We got a kid in engineerin' school and we're coughing up big bucks 'ere! You telling me he's learnt a bunch of puckie that's nuthin' but malaka? Ouch! You've gotta be kidding, OM!

> How do I give it back?<

You don't. You have to give it up.

Rick K1BQT

3298. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 00:11:21 UTC
From: Harold <hsnyder@houston.flightlessbird.com>
Message-ID: <JW%J6.18836$hu.5287412@typhoon.austin.rr.com>
Source record: 163648

Or they can pick up calls from the news groups?

Harold
WD?KCA

"W6DKN" <w6dkn@qsl.net> wrote in message
news:Vt_J6.3716$tv4.342214@paloalto-snr1.gtei.net...
> "Ryan KC8PMX" <kc8pmx@tm.net> wrote in message
> news:aSZJ6.97$gA.27440@monger.newsread.com...
> > One question, what would happen if a ham operator used his/her callsign
> as
> > an identifier on the LEGAL cb frequencies. (assume all other operation
> is
> > completely legal).
> > <SNIP>
>
> Why on earth would you even want to? That's giving the freebanders and
> bootleggers an "E" ticket to raise hell on the ham bands at your expense
> (using your call).
>
> 73 de W6DKN
>
>

3299. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 00:14:15 UTC
From: kb7qhc@home.com
Message-ID: <3af88808.93086170@news.seanet.com>
Source record: 163645

On Tue, 08 May 2001 18:44:02 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>> >The burden of proof of what is with Walt? All I'm trying to prove
>> >is that 75w plus 8.33w doesn't equal 133.33w and I don't know why
>> >that even needs a proof.
>>
>> Hi Cecil,
>>
>> Quite so.
>
>Then why are you and so many other learned gentlemen on this newsgroup
>so silent on the subject of Steve's Voodoo Science? Here it is again:
>
> +------------+
> 106.1v, 0.707a | | 141.4v, 0.943a
>------------------>| |---------------->
> Generated power | Z0-match | forward power
> not reflected at | |
> the Z0-match point | |<----------------
> | | 35.355v, 0.236a
> +------------+ Re-reflected power

Hi Cecil,

I have taken Steve to task for the same reasons I have taken both you
and Walt to task. As none of you has changed anything (and it really
requires all of you to sign on), it hardly matters insofar as to the
whys and wherefores of my comments. I will note that at least Steve
has not characterized others with opprobriums such as Voodoo Science.
However, I may have missed those occurrences in that I hesitate to
commit myself to reading 300 and 400 line posts that talk past each
other. This single posting of mine right here stands to be the 600th
entry in this thread that has yet to even start with a coherent,
single focus problem.

Cecil, I am here to be convinced and I am getting poor quality
innuendo and strained re-hashes of others' positions. None of this is
satisfactory regardless of the perceived heinous nature of any
particular error of commission you may feel needs to be aired.

If the three of you cannot start from a fresh beginning, just what do
you think you are accomplishing without going that far? Whatever

sense of achievement gained pales in comparison to the general topic so steadfastly avoided.

73's
Richard Clark, KB7QHC

3300. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 00:23:46 UTC
From: kb7qhc@home.com
Message-ID: <3af98bed.94083915@news.seanet.com>
Source record: 163647

On Tue, 08 May 2001 18:49:46 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>> >The above example simplifies the discussion down to the only point
>> >with which I disagree. You are trying to prohibit my only point
>> >of disagreement from the discussion. Why would you do that?
>>
>> Because it branches the argument into regions that do nothing. If
>> your only point requires the change of the scenario, you are no longer
>> arguing the scenario. Simplify only if you can get the others to sign
>> on, otherwise you are out in your own orbit.
>
>This *IS* the same argument, Richard. Why are so willing to allow Steve
>to get away with Voodoo Science? I'm beginning to smell a rat. Here it
>is again:
>
> +------------+
> 106.1v, 0.707a | | 141.4v, 0.943a
>------------------>| |---------------->
> Generated power | Z0-match | forward power
> not reflected at | |
> the Z0-match point | |<----------------
> | | 35.355v, 0.236a
> +------------+ Re-reflected power
>
>
>Note that the re-reflected power values are after re-reflection. The
>arrow indicates it is a source of power to the Z0-match.
>
>Richard, please explain how
>
>106.1v*0.707a + 35.355v*0.236a = 141.4v*0.943a
>
>Why are you avoiding this issue?

Hi Cecil,

I have responded with an enquiry for missing data. Where is my
avoidance when it is up to you to convince? Your having failed to
provide for me does not incur any obligation on my part to respond to
half proposals.

It is indeed strange when a participant in a debate demands the audience must provide either basis or proof for the participant's cause. I am not here to fill in the holes in anyone's logic (which are considerable all around). I am here, to be convinced - absolutely no one has come close.

73's
Richard Clark, KB7QHC

3301. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 00:25:28 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <Y70K6.52433$Ce4.4294516@news1.rdc1.ct.home.com>
Source record: 163646

I believe it is not legal to do so.

"Ryan KC8PMX" <kc8pmx@tm.net> wrote in message
news:aSZJ6.97$gA.27440@monger.newsread.com...
> One question, what would happen if a ham operator used his/her callsign as
> an identifier on the LEGAL cb frequencies. (assume all other operation is
> completely legal). Is it legal to identify with your callsign there?
> (sorry, not up to much on my 11meter knowledge here)
>
> I have one in my truck that I use about 2 times per year mainly to find
out
> road conditions etc, because it seems NO ONE uses 146.520 anymore......
> --
>
>
> Ryan, KC8PMX
>
> Check out www.qsl.net/w8kea
>
> Amateur Radio Is Fun!!! Ask me!
>
>
>
>
>
> > >Hams can still go there, use your callsign
> > >and follow all the rules.
> >
> > *ANYBODY can go there. And you don't need to use your ham call sign. You
> don't
> > need ANY call sign. Furthermore, when a ham goes to 11 meters, he
"checks
> his
> > license at the door". He/she has no more "authority" or rights than
anyone
> else
> > on 11 meters.
> >
> > > If we hams again populate this band maybe we can win it back, for
> > >sole amateur use.
> >
> > CB is a designated set of frequencies and those operating in the United
> States
> > and many other places are doing so with the permission and blessing of

> their
> > government. How would you like it if roles were reversed? Try this:
> Okay,
> > all CBers report to ten meters and begin operating. CBers might win the
> band
> > for themselves. Don't like it? Tough. CBers operate on 11 meters with
> > exactly the same authority as YOU operate on 10 meters!
>
>
>

3302. New Key

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 00:29:13 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF88F59.F70FC234@spam.me.not>
Source record: 163649

Gents and Ladies:

I'm proud to announce, (and yes, I'm tooting my own horn here) that I've just passed both the Technician and General Written Elements. I'll have my callsign by Thursday or Friday, but it's probably going to be a KC8R?? or an early KC8S?? according to AA5GO, W8DYH and WB8HRO, the three fine VE's who oversaw my testing and gave me the good news.

Now I just gotta get the code requirement licked. But KC8HEZ said he'd help me out with that over the air, once I get a radio.

Anyone got an inexpensive 2M set they're not using that they'd be willing to part with?

-SSB

3303. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 00:32:08 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF89008.82FC20DF@spam.me.not>
Source record: 163650

As soon as I get my 2M set (I just passed my Tech and General written elements) I'll be there with ya, Ryan. Won't know my call until Thurs or Fri....

-SSB

Ryan KC8PMX wrote:
>
> One question, what would happen if a ham operator used his/her callsign as
> an identifier on the LEGAL cb frequencies. (assume all other operation is
> completely legal). Is it legal to identify with your callsign there?
> (sorry, not up to much on my 11meter knowledge here)
>
> I have one in my truck that I use about 2 times per year mainly to find out
> road conditions etc, because it seems NO ONE uses 146.520 anymore......
> --
>
> Ryan, KC8PMX
>
> Check out www.qsl.net/w8kea
>
> Amateur Radio Is Fun!!! Ask me!
>
> > >Hams can still go there, use your callsign
> > >and follow all the rules.
> >
> > *ANYBODY can go there. And you don't need to use your ham call sign. You
> don't
> > need ANY call sign. Furthermore, when a ham goes to 11 meters, he "checks
> his
> > license at the door". He/she has no more "authority" or rights than anyone
> else
> > on 11 meters.
> >
> > > If we hams again populate this band maybe we can win it back, for
> > >sole amateur use.
> >
> > CB is a designated set of frequencies and those operating in the United
> States
> > and many other places are doing so with the permission and blessing of
> their
> > government. How would you like it if roles were reversed? Try this:
> Okay,
> > all CBers report to ten meters and begin operating. CBers might win the
> band

> > for themselves. Don't like it? Tough. CBers operate on 11 meters with
> > exactly the same authority as YOU operate on 10 meters!

3304. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 00:37:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF89144.BCFA5651@IEEE.org>
Source record: 163651

Richard Clark wrote:
> If the three of you cannot start from a fresh beginning, just what do
> you think you are accomplishing without going that far?

A fresh beginning? You want another 600 postings on the subject?
--
http://www.mindspring.com/~w6rca

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3305. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 00:41:35 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <3n0K6.3905$tv4.414505@paloalto-snr1.gtei.net>
Source record: 163652

"Harold" <hsnyder@houston.flightlessbird.com> wrote in message
news:JW%J6.18836$hu.5287412@typhoon.austin.rr.com...
> Or they can pick up calls from the news groups?
>
> Harold
> WD?KCA

Sure, if they want to work for it, but why pour gas on an open fire... ?

73 de W6DKN

3306. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 00:43:23 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9da3qk$gq3$1@slb7.atl.mindspring.net>
Source record: 163653

Wes:

It's real of course.

I never said that there are no such things as reflections, of course there are.

It's just that the so-called "reflected power" Pr = b*b/R has been defined in such a way that it is ficticious. i.e. not present in the circuit under test.

You don't compute the value of the energy or power in reflected sunlight from a measurement or reading of a voltmeter across a bridge circuit.

Radiant energy or power measured directly is real enough, and it doesn't matter if it arrives at the sensor directly or by reflection. I have no problem with any of that, and certainly it does not invalidate any of my arguments that Pr = b*b/R is ficticious.

The whole typical ham VSWR setup, just measures VSWR, actually b = V - IR within the meter, at one point and in one direction only, towards the antenna near the transmitter output.

There is never any mention of front and back end reflection coefficients. Just one reflection coefficient... etc.. i.e. the rho computed looking into the tuner from the transmitter where we adjust for zero reflected power, but looking back from the output of the tuner towards the transmitter we usually make no measurements at all.

In fact hams generally only arrange for an impedance match in one direction not in both... etc... etc... When tuned up, there is no reflected voltage at the transmitter output.

Hams generally never know what the match or VSWR condition or reflection coefficient is on the line side of the tuner looking back at the transmitter... and so I ask, ... on that side of the tuner where is the generator for and the load for the so-called reflected power? Does it only exist on the antenna side of the tuner, and what consumes it? The antenna radiates all the power sent to it...

Wes... I applogize for seeming to "blow you off" earlier, but I really lost track of your example... please cut and paste your earlier example or send it to me privately so that I can comment on it for you.

I love that "dry heat"...

Best,

-Peter K1PO

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
news:3af85bfc.250095513@news.aepnet.com...
> On Tue, 8 May 2001 14:02:05 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com>
> wrote:
>
> >Richard:
> >
> >[snip]
> >> Reflection is the only alternative at an impedance mismatch.
> >>
> >> Reflections are fact not fiction.
> >>
> >> Best regards, Richard Harrison, KB5WZI
> >>
> >[snip]
> >
> >Where does that "reflected" power go... can I keep it? Or do I have to
give
> >it back? How do I give it back?
>
> You can use it to heat up the thermisors in a power sensor. Remember my
little
> experimental setup that your were going to dismantle with your fictitious
logic?
> Whatever happened to your response?
>
> Oh, I almost forgot. You want to talk about the weather in Tucson
instead.
>
> At 2055 UTC, temp: 99 deg. F (37.2 C. for you metric fans). RH: 10%.
"It's a
> dry heat."
>
> Since you want to talk about the weather and sticking with the title of
the
> thread... If there is heavy cloud cover here, I've noticed that the
ground
> temperature is reduced. Apparently there is a frequency sensitive
discontinuity
> (reflection) in the path between the source (the sun) and the load (the
surface
> of the Earth). Is the energy that is reflected off the cloud tops and
back into
> space "real" or "fictitious?"
>
> Wes Stewart N7WS
> ?
> >

> >-Peter K1PO
> >
> >
>
>

3307. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 00:50:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF89464.DFDAA3D7@IEEE.org>
Source record: 163654

Richard Clark wrote:
> I have responded with an enquiry for missing data. Where is my
> avoidance when it is up to you to convince? Your having failed to
> provide for me does not incur any obligation on my part to respond to
> half proposals.

I have spent many hours carefully drawing ASCII pictures for you,
Richard. What more do you require?

> It is indeed strange when a participant in a debate demands the
> audience must provide either basis or proof for the participant's
> cause. I am not here to fill in the holes in anyone's logic (which
> are considerable all around). I am here, to be convinced - absolutely
> no one has come close.

Then you have not been paying attention. All this happens in a Z0=150
ohm line. One more time:

The 75w of power that makes it past the Z0-match to contribute to the
forward power is 106.07v and 0.707a, both at zero degrees.

The 8.33w of power that is re-reflected to join the forward power is
35.355v and 0.236a, both at zero degrees.

The 133.33w of forward power is the sum of the two quantities above
and is 141.4v and 0.943a, both at zero degrees.

106.07v + 35.355v = 141.4v and 0.707a + 0.236a = 0.943a

Steve says this proves what he says is true. But

106.07*0.707 + 35.355*0.236 = 141.4*0.943 is just not true.
He comes up 50 watts short of balancing the energy equation.

75w + 8.33w does not equal 133.33w I don't know how to say
it any plainer.
--
http://www.mindspring.com/~w6rca

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3308. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 00:54:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8953E.B4B0B160@IEEE.org>
Source record: 163655

"Peter O. Brackett" wrote:
>
> Cecil:
>
> Where are you headed with that one?
>
> If you drain off the reflected energy, a good thing I suppose, what effect
> does that have on the match?

The match disappears and becomes a mismatch. The point is that reflected
energy performs a function in the successful achievement of a match.
--
http://www.mindspring.com/~w6rca

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3309. Re: New Key

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 01:02:11 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <nG0K6.52517$Ce4.4302912@news1.rdc1.ct.home.com>
Source record: 163656

Congratulations, and welcome aboard!

"Sideband" <sideband@spam.me.not> wrote in message
news:3AF88F59.F70FC234@spam.me.not...
> Gents and Ladies:
>
> I'm proud to announce, (and yes, I'm tooting my own horn here) that I've
> just passed both the Technician and General Written Elements. I'll have
> my callsign by Thursday or Friday, but it's probably going to be a
> KC8R?? or an early KC8S?? according to AA5GO, W8DYH and WB8HRO, the
> three fine VE's who oversaw my testing and gave me the good news.
>
> Now I just gotta get the code requirement licked. But KC8HEZ said he'd
> help me out with that over the air, once I get a radio.
>
> Anyone got an inexpensive 2M set they're not using that they'd be
> willing to part with?
>
> -SSB

3310. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 01:05:21 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9da53p$q0q$1@slb6.atl.mindspring.net>
Source record: 163657

Rick:

Hi.

Heh, heh...I agree, if my kids were still in college and interested in em, I too would be worried, our pedagogues need to be careful with the young... I hate to put down our institutions of higher learning because they do have a difficult job with limited resources and there are many dedicated teachers among their staff, however when it comes to em... I am not impressed with many of them today.

Rick, if I were you I would try to find out just who was teaching my kid electromagnetics at college and what his/her qualifications are... Was em their graduate speciality? If not, then how far ahead of the class are they in the textbook, etc... I'd question them myself to see how well they understand the "Scattering Formalism" and it's relationship to "reality". Then if I found a "quality of teacher" problem I would complain to the college dean! Heh, heh... Guess where that would lead?

In recent years there have been precious few really good em folks developed in our schools. Too much emphasis these days on computers and digital electronics. And for the undergrads, the first course in em is often "thrown" to the lowest common denominator on the faculty... often not an em specialist.

I recall that one of our NG participants, with a certain attitude, was teaching at a local University in your area, what protects your kid at school from receiving lectures from such appointees?

T
Rick, don't get me wrong, there is nothing wrong with that reflected power formalism, the so called Scattering Formalism is an elegant mathematical framework, but it is so complex that most quickly lose the relationship of the formulas and equations to reality in the midst of all the mathematical pyrotechnics.

The Scattering Formalism, is a seductive theory, in a mathematical sense, and fun for "professors" and other mathematically inclined folks who tend to develop all kinds of inter-related associated and "clever" concepts that have only peripheral practical use, if any. The math is all absolutely correct, (often) but also often not appropriate or useful. The reality of the Physics at play and appropriate "gut level" mathematical modeling of it is much simpler and doesnt' need all of those artificial constructs, especially for beginner level introductions.

But... what can you do? The high priests are in charge. You hear the mass in Latin or not at all! What?

Someone needs to write a book called say, "Transmission Lines and Matching in Plain English" and spell it all out in simple terms instead of "reflectionese".

Thoughts, comments?

-Peter K1PO

"Rick Littlefield" <k1bqt@aol.com> wrote in message news:20010508195902.02953.00002377@ng-da1.aol.com...
> Hi Peter--
>
> >Where does that "reflected" power go... can I keep it? Or do I have to give
> it back?<
>
> Cripe sakes, mate! We got a kid in engineerin' school and we're coughing up
> big bucks 'ere! You telling me he's learnt a bunch of puckie that's nuthin'
> but malaka? Ouch! You've gotta be kidding, OM!
>
> > How do I give it back?<
>
> You don't. You have to give it up.
>
> Rick K1BQT

3311. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 01:25:23 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9da69coch1@nntp9.atl.mindspring.net>
Source record: 163658

Richard:

I too have measured the heat of reflected power. I never have and don't deny that reflections occru, but what the heck does that have to do with what a ham VSWR meter indicates?

Take some very simple examples and follow the details instead of hooting and cat calling....

How do you explain the existence of "reflected power" in a DC circuit in the examples I have given? Where is the error in those examples? Here again...

If a 10 volt 50 Ohm battery supplies power to a 25 Ohm resistor is there a match? If not then, what is the reflected voltage, b = V - IR = 3-1/3 volts. Iis there reflected power? Pr =m b*b/R =- 0.2222 Watts. What is the reflection coefficient? rho = (50 - 25)/(50 + 25) = 1/3. Is there VSWR? VSWR = (1 - rho)/(1 + rho) = 1/2, etc...

Calculate it yourself, don't depend on the high priests of reflection mechanics. All you need is simple DC circuit analysis and open eyes and minds.

How much power is delivered to the load, i.e. dissipated in the 25 Ohm resistor? How much power does the battery put out? Where is the reflected power generated, where is it dissipated? Where do you hook up the thermal sensor to measure the reflected power? What?

Where?

What?

Why?

Simple DC circuit. Easy math and arithmetic. No hidden circuit elements.

Answer those questions, for they are just as applicable at AC as when the DC battery is replaced by an AC generator with an RMS voltage of 10 Volts, etc... at any frequency you choose

Then write them all down on paper complete with schematic diagrams and all for your eyes and minds to see... and then come back and "splain" to me why reflected power is not a fiction! OK?

If the theory works at DC and the same theory and equations are used at AC, RF, HF, whatever, and there is no "reflected power" of value Pr + b*b/R present in the circuit, then what say you? Is it ficticious or not?

Stop kidding yourselves... there are no contradictions here, just understanding. Just do it! And be "free".

Commit yourselves to a much deeper understanding of reflection mechanics and not to a superficial relationship with some "adjectives" used to describe fictional quantities by high priests, no matter how useful they might be?

Or are you afraid when they tell you that you Must hear the mass in Latin?

Gotcha thinkin yet?

Hurts doesn't it?

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b0276b8.88654899@news.seanet.com...
> On Tue, 8 May 2001 15:40:49 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> > >They will see that the "holy reflected voltage" is merely a value b = V -
IR
> > >created by circuitry within a lowly measuring instrument.
> > >
>
> Hi Peter,
>
> Both I and Wes have measured the heat of the reflected power. Any
> fiction that burns is more serious than your science of DC reflection.
> You still have a lot of water to carry.
>
> 73's
> Richard Clark, KB7QHC

3312. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 01:31:23 UTC
From: Chas <wg2a@frontiernet.net>
Message-ID: <9da6iu$j5k$1@node17.cwnet.roc.gblx.net>
Source record: 163660
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Not to mention that most states didn't count their absentee ballots
because they wouldn't change the outcome. Most of those were from our armed
forces that voted almost 3 to 1 in favor of Bush, that could have made up
most of the "popular vote".

"Rough Rider" <roughrider@home.com> wrote in message
news:nD_J6.55922$B22.14196297@news1.rdc2.pa.home.com...
> You are correct there Jerry as much as they cried and whined Bush still
came
> out on top after the Newspapers finished counting. Tom by what percentage
> did Bush lose the popular vote? Pretty miniscual wouldnt you say. Last
time
> I looked this country elects presidents on electroal votes. Since the
> democrats had dead people voting and convicts perhaps we should have a
> recount .
>
>
> "JerryL" <jlockett@onemain.com> wrote in message
> news:9d9jb3$gi7e2$1@ID-55752.news.dfncis.de...
> > Phew!...the last I heard on the evening news was that 'all the big time
> > newspapers' that paid to finish the recount down in Florida, much to
their
> > chagrin, finally admitted that Bush won anyhow no matter how Gore and
> > company tried to slant it!! As a note of
>
>

3313. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 01:32:39 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <lg7hftgdq0db3o3825tf4o5hv2f4i5fgan@4ax.com>
Source record: 163659

On Tue, 08 May 2001 19:37:24 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> If the three of you cannot start from a fresh beginning, just what do
>> you think you are accomplishing without going that far?
>
>A fresh beginning? You want another 600 postings on the subject?

Hi Cecil,

And you find greater value in the past 600? You expect to find a pony
in there somewhere?

73's
Richard Clark, KB7QHC

3314. AM/FM reception in Midtown NYC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 01:48:42 UTC
From: psantucc@dnaco.net
Message-ID: <3af8a1fa$1_5@127.0.0.1>
Source record: 163661
Cross-posted to: alt.radio.pirate,alt.radio.scanner,rec.radio.amateur.antenna

Greetings.

Through an embarassing sequence of contract arrangements, I find myself in an awkward spot. I apologise for how far off-topic my question may be, but I don't know where else to ask. I hope one or more of you can help - this is potentially financially rewarding. Let me explain:

I am a control sytems programmer. Normally, I integrate the media rooms of large corporations under one control system, and I work in the OH-IN-KY tristate.

Now I am obligated to to a home theatre installation in New York City. One of the many things for which I was unprepared was poor radio reception. We can recieve clearly maybe 5 FM, no AM, and no WX stations, on two different tuners, even after a panic trip to the Wiz for some little Jensen amped antennae. Here's what I'm looking for:

1. Information - is this kind of reception just normal? The site is right on the east river in midtown.

2. Information - if you live in a similar area, how do you deal with it? Is there a 'sure thing' product for NYC radio reception?

3. Service - if any of you know of, or work for, a company which offeres antenna installation for AM/FM/WX with guaranteed results, I'm sure my company can make a deal.

I'm coming back to town on 5/23/2001. Good tips are worth a drink of your choice, and of course, a job may be in the offing. Go easy on me - I'm pretty damn ignorant of radio.

Thanks in advance-
Pat Santucci

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3315. Re: New Key

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 02:01:23 UTC
From: ik7565@erols.com
Message-ID: <3AF8A4F3.B4A52C83@erols.com>
Source record: 163662

Check out the nearest hamfest - it's a ham tradition. Should be able to find something cheap. Since you live in 8-land go to Dayton in two weeks for a real eye-opener!

73 de N8IK

Sideband wrote:
>
> Gents and Ladies:
>
> I'm proud to announce, (and yes, I'm tooting my own horn here) that I've
> just passed both the Technician and General Written Elements. I'll have
> my callsign by Thursday or Friday, but it's probably going to be a
> KC8R?? or an early KC8S?? according to AA5GO, W8DYH and WB8HRO, the
> three fine VE's who oversaw my testing and gave me the good news.
>
> Now I just gotta get the code requirement licked. But KC8HEZ said he'd
> help me out with that over the air, once I get a radio.
>
> Anyone got an inexpensive 2M set they're not using that they'd be
> willing to part with?
>
> -SSB

3316. In search of a quality 2m antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 02:01:32 UTC
From: "Ryan Morse (N1QZF)" <ryanbeck@loa.com>
Message-ID: <9daag1rii1@nntpsp2-ld.pvd.loa.net>
Source record: 163663

Hi Guys and Gals,
I'm just starting out with my Technician licence, and I'm looking forward to working the local 2m repeaters, but I'm finding I have trouble tripping them. I live in a valley, and am currently using a Kenwood TM-2550A with a AEA Isopole 2m vertical antenna. I also own a Ringo Ranger, but I'm having problems with that, (I think there's a short, and need to track it down.) My question is, does anyone have a good antenna design or suggestions to help me get my signal out of this hole? Also, I have no manuals with any of my above equipment, (I inherited them from the Grandfather, who became a silent key several years ago,) can anyone give me pointers?
Thanks ahead of time for any help you can offer,

N1QZF

Ryan Morse

3317. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 02:12:18 UTC
From: 2w8ji@contesting.com
Message-ID: <3af8a59e.461871406@news.accessunited.com>
Source record: 163664
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Tue, 08 May 2001 22:42:27 GMT, "Rough Rider" <roughrider@home.com>
wrote:

>You are correct there Jerry as much as they cried and whined Bush still came
>out on top after the Newspapers finished counting. Tom by what percentage
>did Bush lose the popular vote? Pretty miniscual wouldnt you say. Last time
>I looked this country elects presidents on electroal votes. Since the
>democrats had dead people voting and convicts perhaps we should have a
>recount .

Some of us may not like hearing it, but that's how it is. I guess it
will take a tie with Jessie Jackson before people wise up and field
better choices.

3318. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 02:27:14 UTC
From: 2w8ji@contesting.com
Message-ID: <3af8a755.462310443@news.accessunited.com>
Source record: 163665
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Tue, 8 May 2001 21:31:23 -0400, "Chas" <wg2a@frontiernet.net>
wrote:

> Not to mention that most states didn't count their absentee ballots
>because they wouldn't change the outcome. Most of those were from our armed
>forces that voted almost 3 to 1 in favor of Bush, that could have made up
>most of the "popular vote".

I'm embarassed at the quality of candidates we get with this system. I
can't understand why some people feel good about barely squeeking past
Gore, like that is a major accomplishment!

We are lucky Jesse Jackson didn't run, he would have probably won.

3319. My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 02:32:19 UTC
From: Harold <hsnyder@houston.flightlessbird.com>
Message-ID: <T_1K6.20518$hu.5453675@typhoon.austin.rr.com>
Source record: 163668

I am having a very anoying RFI problem and request any comments from Hams that may have experienced and resolved a similar problem.

My station is set up like this..

Rig IC-718---1 Ft. RG-58 coax--low pass filter--1 Ft. RG-58 coax---AL-80A amplifier-----1 Ft. RG-58 coax---low pass filter---1 Ft. RG-58 coax---MFJ Versatuner V--40 Ft. RG-8 coax--dipole antenna in attic. The antenna is an Alpha Delta DX EE with the 40 meter section removed to fit my space.

As installed, the SWR within the General Class band on 20 and 15 Meters is less than 2:1 and the antenna has reasonable SWR for a segment of the 10 meter band.

I live in a restricted area, so getting the antenna outside and in the clear is not a vialble option.

The station grounding goes like this...each piece of equipment mentioned above are grounded to a half inch copper pipe. The copper pipe is routed to ground straight out the wall and down with 8 gauge wire about 15 ft. to the main house ground rod. The total length of the ground wire is about 20 feet.

As installed, I can operate on 20 meters and 10 meters without a peep of RFI. It doesn't matter, with or without the amplifier, my signals on 20 and 10 meters cause no RFI at all.

On 15 meters I interfere seriously with the TV in the house. It is on a coax connection with a Direct TV dish up on the roof. I also have an interference problem with the home burglar alarm.

Thanks for any comments on my problem..

Harold

wd5kca

3320. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 02:32:25 UTC
From: 2w8ji@contesting.com
Message-ID: <3af8aaec.463228975@news.accessunited.com>
Source record: 163666

On Tue, 08 May 2001 16:03:38 -0400, Denver Braughler
<Braughler@bwcc.com> wrote:

>Tom W8JI wrote:
>> From Lightning Protection for Broadcast Facilities:
>>
>> "There are still a few mysteries to be solved in completely
>> understanding lightning, but once it enters the a wiring system it
>> becomes an electrical current which is both predictable and
>> understandable."
>
>This depends on what is meant by entering.
>The charge flowing on the outside of the wiring, St. Elmo's fire, and such has not entered the wiring system.
>More likely what has "entered" the wiring system did so through magnetic coupling, not static discharge.

You win. All the books and references about designing systems are
wrong, and the people doing lightning protection at BC stations are
clueless.

73 Tom

3321. Re: HF DF capability

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 02:38:16 UTC
From: 2w8ji@contesting.com
Message-ID: <3af8ac17.463528295@news.accessunited.com>
Source record: 163667

On Tue, 8 May 2001 20:07:45 +0100, Philip de Cadanet
<phil@invest.fsbusiness.co.uk> wrote:

>Surely something similar could be home-brewed?
>
>Phil G4ZOW

There are many systems that can DF sky-wave signals, but they all take some physical area in the antenna at HF so the null is wide enough and controlled enough to be effective with QSB. Virtually all work on nulling the signal, or measuring phase differences in different antennas.

It all depends on how much time, skill, and room you have.

You will be generally unsucessful with small single antennas because the null is too sharp and is a wide thin slice rather than a point.

Single antennas work great on groundwave, however. No question about that.

3322. Re: In search of a quality 2m antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 02:49:25 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <Ve2K6.49348$2_.17079490@news3.rdc1.on.home.com>
Source record: 163569

a jpole works nice

--
Rob St.Denis

"Ryan Morse (N1QZF)" <ryanbeck@loa.com> wrote in message
news:9daag1rii1@nntpsp2-ld.pvd.loa.net...
> Hi Guys and Gals,
> I'm just starting out with my Technician licence, and I'm looking
> forward to working the local 2m repeaters, but I'm finding I have trouble
> tripping them. I live in a valley, and am currently using a Kenwood
> TM-2550A with a AEA Isopole 2m vertical antenna. I also own a Ringo
Ranger,
> but I'm having problems with that, (I think there's a short, and need to
> track it down.) My question is, does anyone have a good antenna design or
> suggestions to help me get my signal out of this hole? Also, I have no
> manuals with any of my above equipment, (I inherited them from the
> Grandfather, who became a silent key several years ago,) can anyone give
> me pointers?
> Thanks ahead of time for any help you can offer,
>
> N1QZF
>
> Ryan Morse
>
>

3323. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 02:54:36 UTC
From: J Frank Fields <Frank.Fields@boeing.com>
Message-ID: <Mj2K6.48046$2U.20551467@news2.rdc2.tx.home.com>
Source record: 163570
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

I don't want to see this point go unchallenged. The vote
in each state is completely tabulated. To say otherwise is
supreme ignorance. Every vote was counted, and was
submitted. It is a fact that Gore won the popular vote, but
it is also true that this is immaterial to winning the Presidency.

Americans do not vote directly for President. They vote for
Electors. The candidate with the most Electors wins. The
popular vote is an interesting count, but has no bearing on
the Presidential election. It is equal in importance, to the
count of voters complaining of constipation, in relation to
those who have syphilis.

Finally, Bush won the Republican party because he had the
most money. There were other good candidates, but Americans
froze them out of the process by not contributing to their
campaign. Both parties received a fraction of the total votes
possible. More than 50% of voting age Americans never went
to the polls. These same 50% always whine about the result.

"Tom W8JI" <2w8ji@contesting.com> wrote
> "Chas" <wg2a@frontiernet.net> wrote:
>
> > Not to mention that most states didn't count their absentee ballots
> >because they wouldn't change the outcome. Most of those were from our armed
> >forces that voted almost 3 to 1 in favor of Bush, that could have made up
> >most of the "popular vote".
>
> I'm embarassed at the quality of candidates we get with this system. I
> can't understand why some people feel good about barely squeeking past
> Gore, like that is a major accomplishment!
>
> We are lucky Jesse Jackson didn't run, he would have probably won.

3324. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 02:59:11 UTC
From: JerryL <jlockett@onemain.com>
Message-ID: <9dabo4$ha7ga$1@ID-55752.news.dfncis.de>
Source record: 163571
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Yawn....this whole line is a bore... you win Tom, have a nice life with old blow-job BillC!!! I'm gone...!!!

de Jerry -n6jp-

>Your sense of humor sucks as bad as you sense of perspective.
You need to get a life away from thinking Republicans are better
than anyone else..or more moral.

Although it was intended as sarcastic humor, you must be aware
the Republican in Atlanta heading the "crusade" to get Clinton
disbarred for having sex (or whatever) has resigned because he
was caught a second time exposing himself in a public park and
soliciting a young male undercover cop for sex.

Where is Newt? Gone, because he was poking a woman on his
staff.

Frankly, Republicans and Democrats are both very poor examples
of what out public servants should be like. Now go away and stop
bothering me with this silly "Republicans are moral" crap. You can
pretend whatever you like, but don't fault me if you don't like the
>facts.

>73, Tom W8JI
>W8JI@contesting.com

"Tom W8JI" <2w8ji@contesting.com> wrote in message
news:3af8a59e.461871406@news.accessunited.com...
> On Tue, 08 May 2001 22:42:27 GMT, "Rough Rider" <roughrider@home.com>
> wrote:
>
> >You are correct there Jerry as much as they cried and whined Bush still
came
> >out on top after the Newspapers finished counting. Tom by what percentage
> >did Bush lose the popular vote? Pretty miniscual wouldnt you say. Last
time
> >I looked this country elects presidents on electroal votes. Since the
> >democrats had dead people voting and convicts perhaps we should have a
> >recount .
>
> Some of us may not like hearing it, but that's how it is. I guess it
> will take a tie with Jessie Jackson before people wise up and field
> better choices.

3325. Re: HF DF capability

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 03:02:51 UTC
From: mailfrmpa@aol.com
Message-ID: <20010508230251.01134.00000765@ng-fp1.aol.com>
Source record: 163572

do your search on the Adcock anteena, I believe its called.

Makes you wonder about the FCC's claimed DF capability now that the monitoring stations have been closed.

K0MB

3326. Re: In search of a quality 2m antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 03:03:58 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <369B03EB41134B7F.A953A02C2A8BE475.1E24719FBABC12E0@lp.airnews.net>
Source record: 163574

I have pretty god results with a Ringo Ranger II at 60 ft. You should be able to get a manual for your older Ringo and get it going again....here is the contact info for Cushcraft...

Cushcraft Corporation
48 Perimeter Rd.
Manchester N.H. 03103 U.S.A.
603-627-7877
sales@cushcraft.com

http://www.cushcraft.com

Charles T Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

3327. Emulation of the Scattering Formalism

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 03:04:33 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dac3a$rp9$1@slb0.atl.mindspring.net>
Source record: 163573

Cecil:

Reflected energy performs a function? I find that description to be somewhat confusing...

I start to ask questions like?

Does it provide the power to crank the roller inductor?

etc...

When you speak of it that way, it sounds to the "ear" as if you have cause and effect the wrong way round.

The mismatch causes the reflection, the reflection does not cause the mismatch.

Cecil, I can see now why we have these sematic disagreements... your view of the cause and effect of reflection mechanics is almost the opposite of mine.

i.e. reflected power or reflected voltage, be they ficticious or not, can only exist if there is a mismatch and they dissappear when the load is matched to the source. And so I would describe this as follows: The mismatch causes the reflected voltage to exist i.e. be non-zero. Rather than the other way round as you have phrased it.

Be careful... because even the "setup" of the "matrhematical formalism" used to describe these "mechanics", wherein one assumes first a purely resistive incident voltage source delivering power to a matched load resistor, which one then later assumes an "actual" system "inserted" between the load and source, to enable calculations of the "deviations" from perfect matching with the actual load can lead one to cause and effect misinterpertations.

This is indeed why a reference resistance or equivalent is included in every reflected voltmeter, just so this "formalism" of a comparison of the deviations from the perfect match can be made. The reflected voltmeters or VSWR "wattmeters" are set up that way to "emulate" the steps in that mathematical formalism.

I believe that you are attributing to much realism to that mathematical formalism.

Shake yourself loose from it and look at it all in simple terms, and you will be free!

-Peter K1PO

From: "W6RCecilA" <Cecil.A.Moore@IEEE.org>
Subject: Re: Reflections

Date: Tuesday, May 08, 2001 8:54 PM

"Peter O. Brackett" wrote:
>
> Cecil:
>
> Where are you headed with that one?
>
> If you drain off the reflected energy, a good thing I suppose, what effect
> does that have on the match?

The match disappears and becomes a mismatch. The point is that reflected
energy performs a function in the successful achievement of a match.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3328. Cushcraft antenna manuals - FREE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 03:13:11 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <88E3DABAD4DEDF2F.04766B7F6A937A44.2FD1A4A952B4669F@lp.airnews.net>
Source record: 163575

As a follow-up to the fella with the 2M antenna question and for
others here is the URL to download any of Cushcraft's antenna manuals
you may need.

http://www.cushcraft.com/support/tlai.htm

They are in .pdf (Adobe Acrobat) format. Adobe has a free .pdf
reader at this location

http://www.adobe.com/products/acrobat/alternate.html

73 / DX

Charles T Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

3329. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 03:14:55 UTC
From: W4WNT <w4wnt@carolina.rr.com>
Message-ID: <PC2K6.33047$Gx4.6178092@typhoon.southeast.rr.com>
Source record: 163578

Sorry I don't know the configuration of your antenna, but you say you removed the 40m section. It may be causing a problem on 15m (3rd harmonic, all that stuff). Try replacing the 40m section and bending (I'm hoping it's a wire antenna here!) it around the space available.

The other fact is that in-house antennas are known to cause rfi problems on their own.

Good luck,

Bill, W4WNT

Harold <hsnyder@houston.flightlessbird.com> wrote in message news:T_1K6.20518$hu.5453675@typhoon.austin.rr.com...
> I am having a very anoying RFI problem and request any comments from Hams
> that may have experienced and resolved a similar problem.
>
> My station is set up like this..
>
> Rig IC-718---1 Ft. RG-58 coax--low pass filter--1 Ft. RG-58 coax---AL-80A
> amplifier-----1 Ft. RG-58 coax---low pass filter---1 Ft. RG-58 coax---MFJ
> Versatuner V--40 Ft. RG-8 coax--dipole antenna in attic. The antenna is
an
> Alpha Delta DX EE with the 40 meter section removed to fit my space.
>
> As installed, the SWR within the General Class band on 20 and 15 Meters is
> less than 2:1 and the antenna has reasonable SWR for a segment of the 10
> meter band.
>
> I live in a restricted area, so getting the antenna outside and in the
clear
> is not a vialble option.
>
> The station grounding goes like this...each piece of equipment mentioned
> above are grounded to a half inch copper pipe. The copper pipe is routed
to
> ground straight out the wall and down with 8 gauge wire about 15 ft. to
the
> main house ground rod. The total length of the ground wire is about 20
> feet.
>
> As installed, I can operate on 20 meters and 10 meters without a peep of
> RFI. It doesn't matter, with or without the amplifier, my signals on 20
and
> 10 meters cause no RFI at all.

>
> On 15 meters I interfere seriously with the TV in the house. It is on a
> coax connection with a Direct TV dish up on the roof. I also have an
> interference problem with the home burglar alarm.
>
> Thanks for any comments on my problem..
>
>
> Harold
>
> wd5kca
>
>
>
>
>
>

3330. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 03:17:37 UTC
From: Clif Holland <radio.service@verizon.net>
Message-ID: <lF2K6.4138$tv4.527141@paloalto-snr1.gtei.net>
Source record: 163576
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Check the states final tallies. Bush won the Popular vote but did not get a majority (over 50%)

--
Clif

"J Frank Fields" <Frank.Fields@boeing.com> wrote in message news:Mj2K6.48046$2U.20551467@news2.rdc2.tx.home.com...
> I don't want to see this point go unchallenged. The vote
> in each state is completely tabulated. To say otherwise is
> supreme ignorance. Every vote was counted, and was
> submitted. It is a fact that Gore won the popular vote, but
> it is also true that this is immaterial to winning the Presidency.
>
> Americans do not vote directly for President. They vote for
> Electors. The candidate with the most Electors wins. The
> popular vote is an interesting count, but has no bearing on
> the Presidential election. It is equal in importance, to the
> count of voters complaining of constipation, in relation to
> those who have syphilis.
>
> Finally, Bush won the Republican party because he had the
> most money. There were other good candidates, but Americans
> froze them out of the process by not contributing to their
> campaign. Both parties received a fraction of the total votes
> possible. More than 50% of voting age Americans never went
> to the polls. These same 50% always whine about the result.
>
> "Tom W8JI" <2w8ji@contesting.com> wrote
> > "Chas" <wg2a@frontiernet.net> wrote:
> >
> > > Not to mention that most states didn't count their absentee ballots
> > >because they wouldn't change the outcome. Most of those were from our armed
> > >forces that voted almost 3 to 1 in favor of Bush, that could have made up
> > >most of the "popular vote".
> >
> > I'm embarassed at the quality of candidates we get with this system. I
> > can't understand why some people feel good about barely squeeking past
> > Gore, like that is a major accomplishment!
> >
> > We are lucky Jesse Jackson didn't run, he would have probably won.

>
>

3331. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 03:26:15 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9dadcnirm0@208.207.71.137>
Source record: 163577
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Gary Danaher wrote:
>
> Take a hard look at what Dubya is doing/not doing with the oil companies
> right now, think back to what he had to say about the oil business during
> his campaign, and then take a look at the the modern Bush oil pricing
> structure. Now, aren't you proud to have voted for such a guy? I didn't
> think he could sell out in such a short order, but I underestimated the
> fool.
>

Oh, it wasn't up to him. It's just that his "friends" in the oil business know that he'll never use price caps nor controls. They couldn't care less that the extortionary oil price increases will be cause of Bush being evicted in four years. No matter- their additional billions will already be banked and Bush will be fully expendible and ousted at the polls, the economy trashed by universal inflation caused by the fuel price increases which impact *everything*.
So in the midst of record high profits by oil companies, and no sign of anything approaching a REAL shortage of petroleum products, just that allegation by those making the profits, prices rise to record levels (by collusion, no doubt). Nary an 'Out of gas" nor "limited to 10 gallon" sign to be seen (as in '73 when there was a REAL shortage).
Just today, radio news sources "within the oil industry" say that now the pipelines are again full, the 'shortage' is abating, so prices should start to come down, "Except on the West Coast and Midwest where there are special circumstances".(?) Of course, "down" will be somewhere around $1.50-1.75, which was exactly the objective of the entire exercise- get the prices up without just raising them "arbitrarily". (gotta have a 'valid' reason.) Fools that the pubic are, they'll never know what happened.

Sure wish we had a real political party in this good ol' USA. The Demoncrats turned out to be fools and the other side, crooks. Oh, the Clintoon admin. was able to work it both ways.

3332. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 03:44:50 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <3AF8BCEC.475F0527@att.net>
Source record: 163579

"Peter O. Brackett" wrote:

> There is never any mention of front and back end reflection coefficients.
> Just one reflection coefficient... etc.. i.e. the rho computed looking into
> the tuner from the transmitter

> where we adjust for zero reflected power,
^^^^^^^^^^^^^^^^^^^^
>but
> looking back from the output of the tuner towards the transmitter we usually
> make no measurements at all.

What? Slip of the tongue-in-cheek?

72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
Amateur Radio W5YR, in the 55th year and it just keeps getting better!
Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437

3333. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 03:54:26 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9daf1iojs0@208.207.71.137>
Source record: 163580
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

J Frank Fields wrote:
>
> I don't want to see this point go unchallenged. The vote
> in each state is completely tabulated. To say otherwise is
> supreme ignorance.

Or maybe the reverse. News reports (not generally reported by the liberal part of the media who almost universally supported Gore) say that millions of absentee ballots were NOT counted, ever, some 3 million in California alone, simply because they could not affect the outcome in the state in which they were cast. Absentees historically favor conservative candidates. So it could easily be that the popular vote is never going to be known accurately.

And you may ignore another fact, if you wish, but I live in a state where the Democratic machine routinely steals elections in metropolitian areas, and gets away with it. So it happened this time, too, with plenty pf press coverage that wss unavoidable under the circumstances, and do you *really* believe that the Democratic administration installed by that fact will proceed to do a proper job of investigating?

3334. Re: Grounding Question - Connecting to Power Ground

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 04:06:22 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9dafnu$q5n$1@208.207.71.137>
Source record: 163581

Richard Harrison wrote:
>
> Dick Carroll wrote:
> "The installation was 50 years old, though it had been retrofitted a few
> times. At the time it was built modern lightning schemes were unknown."
>
> That is unarguable. What is arguable is if the knowledge available at
> the time of construction was adequate to protect the installation had it
> been used. I think the answer is a resounding yes.
>
> Early in 1949 I started work in broadcasting. I worked in three stations
> in that year, KPRC, KXYZ, and KTHT. The first two were built in the
> 1930`s and KTHT was about one year old when I went to work there in
> 1949.
>
> None of these stations ever suffered lightning damage when taking many
> direct hits during every year. In fact they only dropped from the air
> for an instant, to extinguish any follow-through arcing when hit, and
> were returned to the air automatically following an arc kill.
>
> In 1949 there were already thousands of AM broadcast stations. Some were
> improperly protected against lightninmg, but the vast majority, like the
> stations I worked at, were almost perfectly protected against lightning
> damage, and so it was almost unheard of.
>
> Ben Franklin figured how to protect structures against lightning over
> 200 years ago. The rest is just elaboration.

And 120 quarterwave copper radials in the ground at the tower...

3335. Re: Bush Won. Get Over It. (WAS: Respect For Freebanders)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 04:10:59 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010509001059.05544.00002532@ng-ct1.aol.com>
Source record: 163583

RTFT

3336. Re: In search of a quality 2m antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 04:13:04 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <atghfto319f3tqfgmu4aengamp7nbq8tl4@4ax.com>
Source record: 163584

I don't think any vertical is going to improve much on the AEA Isopole. That's a great antenna. You are going to have to get the vertical higher, or go to a yagi, quad, quagi, etc. or both. If I were in your situation, I would try a 13-element Cushcraft at about 50 or 60 feet. You can always build a 2-meter yagi if money is a problem. There's a nice little 4-element quad in the ARRL Antenna Book made of pine and aluminum ground wire. That should do the job.

Dick - W6CCD

3337. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 04:24:12 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9dagpc$1pq$0@208.207.71.137>
Source record: 163585

Dennis, it's difficult to determine just what you do know from reading
your posts. If you believe that just because lightning isn't sinusoidal
that it acts unlike AC, and design your prevention sytem accordingly,
you're in for a very rude and nasty surprise when your luck plays out.

Evidently you're a late comer here. If you can get into the archives
for this NG you can read more than you ever wanted to know about the
subject of lightning and it's mitigation,and NOT written by me. I don't
know if Dejanews archives, which were bought by Google, still contain
all the old archived files, but if so you'd do well to read a bit. It's
clear to me that you need to do some learning that I've already done.

73, Dick

Denver Braughler wrote:
>
> Dick Carroll wrote:
> > Sure lightning is an alternating current, at a very high frequency.
> I disagree.
> In AC the electrons drift very slowly.
> Lightning is a complex arcing discharge.
>
> > Can't you hear all the harmonics on your HF receiver when storms are
> > about?
> That is always. Lightning strikes the earth about 60 times a second.
>
> > Also, how else would you explain the fact that the lightning bolt
> > itself acts as a huge transformer primary winding and every other
> > conductor within its influence acts as a secondary winding, inducing
> > voltage (sometimes very high voltages) that itself can -and often does-
> > destroy electronics?
> Hello. I NEVER said that lightning was DC.
> I said that it was not comparable to 60 Hz AC in the manner in which it moves energy.
>
> > My house nor antennas have ever been struck, but I
> > have had electronics damaged from the induced high voltage pulse that
> > came in on the AC wiring.
> Just because it passes through a transformer doesn't make it sinusoidal.
>
> > Lightning is a complex phenomena, but it is just another form of
> > electricity,
> Oh great. How many forms of electricity are there?
>
> > and it does posses the characteristics of AC and RF.
> No, it does not possess all those characteristics.

>
> > DC is steady state, and lightning is certainly not that.
> Excuse me, but it would be appropriate for you to point out where I ever said that lightning was DC.
>
> > It VARIES in intensity- very quickly.
> No kidding!
>
> > Call a lightning strike a very fast half -
> > cycle. Similar to a capacitor charging.
> A huge capacitor.
>
> > I do that by disconnecting all the lines outside the house,
> > throwing them out into the yard 15 feet or so, and providing
> > a GOOD low impedance route to ground *at the tower*.
> Correct: at the tower.
>
> > I'm not at all concerned about the 60 hz current riding my coax shield
> > from the house out to the tower (it's 100 feet from the house).
> The case cited was 35'.
>
> > That depends mostly on the local soil composition. Here it will last
> > forever. Other places where the soil is acidic or alkali it won't last
> > months.
> Thank you.
> At least we can agree on that.

3338. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 04:33:07 UTC
From: k9uwa@arrl.net
Message-ID: <9daha3$phl@freepress.concentric.net>
Source record: 163586
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

In article <9daf1iojs0@208.207.71.137>, dixie@townsqr.com says...
>but I live in a state
>where the Democratic machine routinely steals elections in metropolitian
>areas, and gets away with it.

Direct Quote from "Mayor Daley" ...Vote Early and Vote Often!
John k9uwa

3339. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 04:40:28 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9dahns$549$0@208.207.71.137>
Source record: 163587

Wes Stewart wrote:
>
If there is heavy cloud cover here, I've noticed that the ground
> temperature is reduced. Apparently there is a frequency sensitive discontinuity
> (reflection) in the path between the source (the sun) and the load (the surface
> of the Earth). Is the energy that is reflected off the cloud tops and back into
> space "real" or "fictitious?"

The energy is reflected, of course, but it may never be turned into
power, if it travels through space forever and is never termoinated nor
converted to heat.

You guys make me nervous using energy and power interchangably. My
training was to consider them separately.

Dick

3340. Re: AM/FM reception in Midtown NYC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 04:49:25 UTC
From: harvey <harvey@lawrence.csnet.net>
Message-ID: <3AF8CC55.B78BBB6D@lawrence.csnet.net>
Source record: 163582

You've got to play around. No radio shack off the shelf unit will work. I've set up dipoles in windows and ran coax back to my fm radio inside a steel building in midtown and get about 90% of all the local FM's. Never tried WX reception in NYC but I think it can be done. I've also heard of some people attaching wire to the metal window frames which also act as an antenna. Lots of multipath and high RF levels will cause front end overloading but all you can do is experiment. Good Luck!

Pat Santucci wrote:

> Greetings.
>
> Through an embarassing sequence of contract arrangements, I find myself in
> an awkward spot. I apologise for how far off-topic my question may be, but
> I don't know where else to ask. I hope one or more of you can help - this
> is potentially financially rewarding. Let me explain:
>
> I am a control sytems programmer. Normally, I integrate the media rooms of
> large corporations under one control system, and I work in the OH-IN-KY
> tristate.
>
> Now I am obligated to to a home theatre installation in New York City. One
> of the many things for which I was unprepared was poor radio reception. We
> can recieve clearly maybe 5 FM, no AM, and no WX stations, on two different
> tuners, even after a panic trip to the Wiz for some little Jensen amped
> antennae. Here's what I'm looking for:
>
> 1. Information - is this kind of reception just normal? The site is right
> on the east river in midtown.
>
> 2. Information - if you live in a similar area, how do you deal with it? Is
> there a 'sure thing' product for NYC radio reception?
>
> 3. Service - if any of you know of, or work for, a company which offeres
> antenna installation for AM/FM/WX with guaranteed results, I'm sure my
> company can make a deal.
>
> I'm coming back to town on 5/23/2001. Good tips are worth a drink of your
> choice, and of course, a job may be in the offing. Go easy on me - I'm
> pretty damn ignorant of radio.
>
> Thanks in advance-
> Pat Santucci
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----

> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3341. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 06:02:33 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <cnkhft8510u3okeb9ntadd6188h3ikfuql@4ax.com>
Source record: 163588

On Tue, 08 May 2001 18:51:49 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> On Tue, 08 May 2001 15:51:39 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
>> wrote:
>>
>> >Richard Clark wrote:
>> >> In other words, stick to the given architecture or abandon the
>> >> argument.
>> >
>> >OK, Richard, here is the given architecture. Exactly how can
>> >106.1*0.707 + 35.355*0.236 = 141.4*0.943 ??????????
>> >
>> > +------------+
>> > 106.1v, 0.707a | | 141.4v, 0.943a
>> >>------------------>| |---------------->
>> > Generated power | Z0-match | forward power
>> > not reflected at | |
>> > the Z0-match point | |<----------------->
>> > | | 35.355v, 0.236a
>> > +------------+ Re-reflected power
>>
>> Hi Cecil,
>>
>> What are the phase relationships?
>
>Everything is in phase, Richard. Why are you avoiding the issue?

Hi Cecil,

Weren't you the author of the thread "Kirchhoff's Laws?" I'm looking
for the sucker punch in your post.

73's
Richard Clark, KB7QHC

3342. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 06:23:35 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8E267.DC89AEDA@IEEE.org>
Source record: 163589

Dick Carroll wrote:
> You guys make me nervous using energy and power interchangably. My
> training was to consider them separately.

The only difference in energy and power is time and time is a given,
at least for our discussions here.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3343. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 06:25:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8E2D5.FF2B807D@IEEE.org>
Source record: 163590

Richard Clark wrote:
> Weren't you the author of the thread "Kirchhoff's Laws?" I'm looking
> for the sucker punch in your post.

It was to prove that we cannot just willy nilly add voltages.
--
http://www.mindspring.com/~w6rca

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3344. Re: In search of a quality 2m antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 06:29:05 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8E3B1.653DE6D5@IEEE.org>
Source record: 163591

Charles Johnston wrote:
> I have pretty god results with a Ringo Ranger II at 60 ft.

The Ringo Ranger II is OK but isn't "god results" a little
far fetched? :-)
--
http://www.mindspring.com/~w6rca

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3345. Re: Emulation of the Scattering Formalism

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 06:36:09 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8E559.35F7BA68@IEEE.org>
Source record: 163592

"Peter O. Brackett" wrote:
> The mismatch causes the reflection, the reflection does not cause the
> mismatch.

Well Peter, if you really want to get technical, the Big Bang caused
the mismatch.

In a Z0-matched system, the mismatch causes the reflections which, in turn,
cause the match. If the reflections are removed by a circulator/directional-
coupler, a match will not occur. The reflections cause the impedance
transformation up and down the transmission line.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3346. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 06:38:21 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF8E5DD.A823B76D@IEEE.org>
Source record: 163593

Dick Carroll wrote:
> I don't
> know if Dejanews archives, which were bought by Google, still contain
> all the old archived files, but if so you'd do well to read a bit.

Somebody reported that it is back on line and fully functional.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3347. Re: New Key

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 08:43:50 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF90346.7B8D06F@spam.me.not>
Source record: 163594

I forgot to mention something in my haste and excitement last night when
I posted this...

Many thanks for the support and help some of you have shown and given me
over the last months. Without you guys, and KC8HEZ (my Elmer) and the
fine VE's here in Livingston County, I wouldn't be a HAM right now.

73's

-SSB

Sideband wrote:
>
> Gents and Ladies:
>
> I'm proud to announce, (and yes, I'm tooting my own horn here) that I've
> just passed both the Technician and General Written Elements. I'll have
> my callsign by Thursday or Friday, but it's probably going to be a
> KC8R?? or an early KC8S?? according to AA5GO, W8DYH and WB8HRO, the
> three fine VE's who oversaw my testing and gave me the good news.
>
> Now I just gotta get the code requirement licked. But KC8HEZ said he'd
> help me out with that over the air, once I get a radio.
>
> Anyone got an inexpensive 2M set they're not using that they'd be
> willing to part with?
>
> -SSB

3348. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 09:29:55 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AF90E13.2CE22EB5@oio.net>
Source record: 163595

Harold,
I think your problem is due to proximity, primarily. In
your situation I know you can't, but if you could get the
antenna further away fron your TV, dish, etc, I think you'd
'solve' a lot of your problems.
Good luck...
'Doc

3349. Re: Feeding of multi band delta loop.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 09:48:41 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AF91279.184C08C1@oio.net>
Source record: 163596

Mark,
I would try the tuner without using an external balun. It should 'handle' things fine. Since the 450 ohm ladder line is 'low loss', the impedance mismatch at the antenna feedpoint just really doesn't matter that much.
On the non-resonant bands the feedline can radiate. And, as long as you don't have a high voltage lobe in the shack (RF burns), and as long as you have not RFI problems, who cares if the feedline radiates?
I don't think I would cut the antenna 5% short to use 75 ohm coax as a feedline. Your right, it usually makes it a single band antenna.
If you do use an external balun, then coax to the tuner, the coax portion of the feedline must be as short as possible, and of the 'best' quality as possible. If it has to be more than 10-15 feet long, don't do it, it causes problems.
A lot of people use this kind of set up, and it works very well. As you may know, the larger the area 'inside' the loop, the 'better' the loop works (better efficiency).
And last but not least, there will be a number of conflicting posts about this. Have fun sorting it all out...
'Doc

3350. Re: Undertruck mount OK for an Icom AT-4 tuner?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 09:53:50 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AF913AE.53133E4E@oio.net>
Source record: 163597

Jeffrey,
I think that as long as you provide protection for the
tuner, it should work as you want to mount it. If it's
attached to the body of the vehicle it will have the same
'shock' protection as if it were inside the vehicle. I'd
worry more about rocks and other junk from the road hitting
it, and ground clearance...
'Doc

3351. Re: HF DF capability

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 10:16:33 UTC
From: "M.J.Powell" <mike@pickmere.demon.co.uk>
Message-ID: <ckyVjPABkR+6Ewwn@pickmere.demon.co.uk>
Source record: 163604

In article <20010508230251.01134.00000765@ng-fp1.aol.com>, MailfrmPA
<mailfrmpa@aol.com> writes
>do your search on the Adcock anteena, I believe its called.
>
>Makes you wonder about the FCC's claimed DF capability now that the monitoring
>stations have been closed.

Several years ago IIRC Rohde & Schwartz produced a DF set that was
accurate to 0.1 deg on a single Morse 'dot'.

Mike
--
M.J.Powell

3352. HFpack. The HF Portable Group.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 10:25:32 UTC
From: default user <default@user.address>
Message-ID: <3AF91B1C.8D371346@user.address>
Source record: 163598

There is an HF Portable Group now on yahoogroups.
HFpack.

http://groups.yahoo.com/group/hfpack

3353. Looking for VHF & UHF Eggbeater

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 11:17:32 UTC
From: Dr Dave Larsen PhD <doc@volcano.net>
Message-ID: <0G9K6.52454$Cx5.3039572@e420r-sjo3.usenetserver.com>
Source record: 163599

I am looking for a VHF & UHF Eggbeater

Tnx

N6CO
Dave

doc@volcano.net

3354. Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 12:22:34 UTC
From: Serafini <nerva4@mywebpages.com>
Message-ID: <3AF93689.868D1066@mywebpages.com>
Source record: 163600

It exists an experimental proof that the skin effect is NOT a form of
shielding?
I seem to me that the way of skin effect is to expell current and
magnetic field from the inner part of a conductor, might be a form of
shieldind from external EM
fields too.
Antonio

3355. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 12:43:47 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3AF93D73.1000307@aol.com>
Source record: 163602

Try winding the TV coax into a choke balun, right behind the set. About 6 feet of slack in the coax would be needed, with 8 turns. Wind it like an inductor coil, tightly (taping each turn helps).

This may not provide enough impedance to solve the problem, but if you see an improvement in the RFI, ferrite beads may solve the problem.

If the choke doesn't have any effect, your dish may be picking it up, and a high pass filter may be needed. Try to borrow one from another ham first (hate to see you shuck out the bucks, and still have a problem).

I have a neighbor who is a VHF'er. His six meter amp was getting into the cable TV pretty good. The common mode coil chokes were sufficient for that problem. Your set up will be harder to fix with everything so closely spaced.

Question:
With the antenna in the attic, and running the amp, do your light bulbs glow at night? :)

good luck,
W4KAZ

3356. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 12:55:03 UTC
From: billsohl@mindspring.com
Message-ID: <3af93d7d.2720046@news.mindspring.com>
Source record: 163601
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Tue, 08 May 2001 10:07:28 GMT, "Rob St.Denis"
<tstdenis3160@home.com> wrote:

>> It is bad law because people do not want the government
>> telling them how to live their lives and to what degree of
>> risk they can/should afford themselves. No one is mandated
>> to drive 70 MPH. If you don't want to drive a that speed,
>> then don't.
>
>Still doesn't stop that idiot who is going to end up losing control of his
>car because he feels he should drive whatever speed he wants (since there
>wouldn't be any limit for him to abide by) and then crashing into my car.
>See believe it or not, MOST laws are there for the protection of OTHER
>people, not the offender.
>
>Ya can't drive drunk under law because you are a danger to others, not
>yourself.

I have no problem with DWI laws. I do have problems where
speed limits are set lower than anyone rationally drives. I have
never suggested allowing unlimited speeds...although there
are certainly highways in the west that can and have had
only "reasonable and proper" as the limit.

The problem is that the safety nazis want everyone to abide by
their version of what is or should be safe. None of that
crowd trusts anyone as an individual.

Cheers,
Bill K2UNK

3357. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 12:56:59 UTC
From: billsohl@mindspring.com
Message-ID: <3af93e4c.2927339@news.mindspring.com>
Source record: 163603
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

On Tue, 08 May 2001 10:09:43 GMT, "Rob St.Denis"
<tstdenis3160@home.com> wrote:

>> If you mean Clinton, you sure have that wrong. The safety nazis
>> love Cintonites because they all want to tell you and me how
>> we should live our lives.
>
>The amusing thing is ... the laws you do enjoy are exactly that. You know
>like: murder, rape, robbery, assault, stalking, etc etc etc ....
>
>The laws are there because the average person is too stupid to realise just
>what is good and what isnt

That statement alone tells me you are very pro-government and
have little or no respect for individual responsibility unless it is
"enforced" by government. Pretty sad.

Cheers,
Bill K2UNK

3358. Re: In search of a quality 2m antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 13:43:21 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <F0f5OgN=e4kVcGs9sjylr9MDN0jH@4ax.com>
Source record: 163605

"Ryan Morse \(N1QZF\)" <ryanbeck@loa.com> wrote:

>Hi Guys and Gals,
> I'm just starting out with my Technician licence, and I'm looking
>forward to working the local 2m repeaters, but I'm finding I have trouble
>tripping them. I live in a valley, and am currently using a Kenwood
>TM-2550A with a AEA Isopole 2m vertical antenna. I also own a Ringo Ranger,
>but I'm having problems with that, (I think there's a short, and need to
>track it down.) My question is, does anyone have a good antenna design or
>suggestions to help me get my signal out of this hole? Also, I have no
>manuals with any of my above equipment,

You can order copies of manuals for most older ham equipment from a couple of sources:

http://www.w7fg.com/

and

http://www.manualman.com

You should also make sure your transceiver is adjusted correctly, with the correct offsets for your repeaters, and the correct tones, if the repeaters need tones to access them.

A copy of the ARRL Repeater Directory would help you there, although it does have mistakes in it. You can also go to the web site,

http://www.artscipub.com/repeaters/

to get the latest info on repeaters in your area.

You have a good transceiver and good antenna -- I'm guessing you may not have the correct tones programmed for each repeater. If the correct tones are not being transmitted, and a repeater requires them, you won't raise the repeater, regardless.

Good luck!

Bob
k5qwg

> (I inherited them from the
>Grandfather, who became a silent key several years ago,) can anyone give
>me pointers?
> Thanks ahead of time for any help you can offer,
>
>N1QZF

>
>Ryan Morse
>

3359. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 14:05:18 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <y8cK6.13027$t12.982120@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163606

"Bill Aycock" <baycock@hiwaay.net> wrote in message
news:3AF81E3F.61F7A3F9@hiwaay.net...
> Steve, I have seen this attributed to you, in an earlier post. (If I'm
> wrong, please say so)- I really wish this were true, because, although I
> pay the power people in terms of KiloWatt-Hours, the result seems to be,
> that with the addition of only a passive device, I can pay them for 75
> Joules and get the benefit of the heat from 133.3 Joules. If this is so,
> I stand to save a fortune in heating bills next winter. All I need do is
> make the passive device, enclose it in a black box, and toast myself.
>
> Note that there is no principle of "voltage superposition" or any other
> derived relationship that will allow us to create energy by
> transformation of symbols in equations. It just cant be.
>
> Bill-W4BSG
>

Hi Bill:

The Principle of Superposition

"The general principle of superposition applies to linear systems of all types. Applied to electrical networks, it can be stated as follows: If a number of electrical sources exist in a linear network, the resulting current or voltage in any part of the system is equal to the sum of the currents or voltages that would be caused by each source acting separately." Johnson page 244.

In the transmission line problem, the total steady state forward voltage is simply equal to the vector sum of the forward source voltage plus the re-reflected voltage. The total steady state forward power is simply determined from the square of the magnitude of the total steady state forward voltage.

The interpretation problem that exists here relates to several issues

1) Understanding that the forward source voltage is not determined from the steady state net power delivered to the transmission line. Some people want to start with the steady state power delivered to the transmission line and then assume that it represents the forward source power in the transmission line. It does not. The forward source power in the transmission line after the Zo match point is not the same as the steady state power delivered to the Zo match.

2) The hang up here is that everyone seems to struggle with adding two *forward* powers. The 100 W + 33.33 W must equal 133.33 W issue. These are

two forward powers traveling in the same direction in a transmission line. It is the voltage components of these powers that add, not the powers. 100 W has an associated voltage of 70.71 V, 33.33 W has an associated voltage of 40.82 V. 133.33 W has an associated voltage of 81.65 V. Adding 70.71 V in phase with 40.82 V just does not equal 81.65 V.

My statement that 75 W + 8.33 W = 133.33 W is not that same as saying that if you start with 75 W of delivered power and then add 8.33 W of delivered power to it that the total delivered power will become 133.33 W. This is an entirely different issue and concept. My statement is related to two independent voltages adding within a transmission line. Looking at one independently in the system it has an associated power of 75 W. Looking at the other independently, it has an associated power of 8.33 W. But when the two waves combine in phase the total power is 133.33 W.

In virtually every text and reference that discusses transmission line theory, it is clearly indicated that voltages add and that the total forward voltage is determined from the addition of the forward source voltage and the re-reflected voltage. Johnson's discussion of this is clear on pages 98 - 101. There is not one single text (except that of Walt Maxwell) that discusses or claims that a total re-reflection of power occurs at a Zo match or that the total forward power can be determined through the algebraic addition of the forward source power and the re-reflected power. I challenge anyone on this newsgroup to find a non-amateur radio engineering text or reference (not W2DU) that adds forward powers in this manner or claims that a total re-reflection of power occurs at a Zo match point. Note that re-writing Pdel = Pfwd - Pref is not the same concept.

The power addition formula that I describe, Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt (P2) Cos(theta), is valid for determining the total power resulting from the vector addition of two forward or rearward traveling voltages, E1 and E2. Theta is the phase angle between the voltages. Terman uses a similar formula for determining the total voltage magnitude associated with adding the voltage vectors E1 and E2. Terman's formula for determining the magnitude of the total voltage sum is Etotal = Sqrt[E1^2 + E2^2 + 2 E1 E2 Cos(theta)]. This is classic vector addition math. Remember that voltage is determined from the square of the total voltage. Etotal ^2 = E1^2 +E2^2 + 2 E1 E2 Cos(theta). It should be clear at this point how the formula for Ptotal is derived.

At this point, I think that my participation in discussing this serves no further purpose. Sorry to drag this out so long by repeating myself.

Steve VE9SRB

3360. inverted L for 160 m.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 14:23:08 UTC
From: f4ckv@radioamateur.org
Message-ID: <gpcK6.252$cA2.771279@nnrp3.proxad.net>
Source record: 163607

73 to all

it's a big S.O.S. for me.

If I construct an inverted L for 160 m. with this configuration is any
body can tell me more about angle, gain,...

verticaly 12 m.
horizontaly 150 m.
feed with possible self and CV.

thanks for info in advance,please send me mail only.

f4ckv@radioamateur.org

3361. FA: 300 W Cross Needle Tuner, Palstar Model AT300CN NO RESERVE!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 14:36:26 UTC
From: Zindy <zindyjonesz@auswesta.net>
Message-ID: <QBcK6.470$li3.88331@news.uswest.net>
Source record: 163608
Cross-posted to: alt.ham-radio.marketplace,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.swap

This is a real nice tuner, and is like new:

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1236597219

3362. FA: Antenna Rotator Control Box Model H-III / CD-44 NO RESERVE!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 14:36:40 UTC
From: Zindy <zindyjonesz@auswesta.net>
Message-ID: <3CcK6.473$li3.88351@news.uswest.net>
Source record: 163609
Cross-posted to: alt.ham-radio.marketplace,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.swap

Control box in excellent condition:

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1236596598

3363. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 15:07:36 UTC
From: JR <jr@some.net>
Message-ID: <3AF94EB6.1573B77B@some.net>
Source record: 163610
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

I would suggest you forget the echo completely when getting on the ham bands. It may please all the 12 year olds and those who think like 12 year olds on cb, but it doesn't fly on ham radio.

Sideband wrote:
>
> I have never run my CB this way. I do have an echo mic on my GrantXL,
> but the echo "volume" is barely cracked open. According to three
> different modulation meters, I'm set at 99% modulation.
>
> The fellow I was talking to runs his radio in much the same way. He has
> a Cobra 148 (same radio, basically), and has his set similarly.
>
> Any more than 100% modulation is going to sound like crap, and probably
> bleed over. I know this, and those CB'ers who know this try to avoid
> bleeding over, etc...
>
> Now, if you don't mind, I need a nap before I go down to the testing
> center to test for my ticket. Have a nice day, Rob, and I hope "huked on
> fonix" continues to help your English grammar. ("there's usefull"? Come
> On!)
>
> -SSB
>
>

3364. Circuits for 2m S.W.R and Watt Meters.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 15:08:52 UTC
From: Tienie.Venter@eskom.co.za
Message-ID: <9dbmi9$g52$1@nnrp01.ops.uunet.co.za>
Source record: 163612
Cross-posted to: rec.ham-radio,rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,relcom.radio.diagrams,sci.electronics.design,sci.electronics.equipmenttw.bbs.rec.radio.amateur

Hi,
I am looking for circuits to build a S.W.R and Watt meters for 2m. (144 - 146MHz) If anyone can help, please e-mail direct to:-
Tienie.Venter@Eskom.Co.ZA
Thanks,
Tienie ZR6JMV.

3365. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 15:10:05 UTC
From: JWheeler <"kd5bcu at sydcom dot net">
Message-ID: <3af95c70_3@newsfeeds>
Source record: 163611
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

You, sir, assume too much. And you know what happens when you assume. I, for one, do happen to obey speed limits as well as frequency ranges and power contstraints. But thanks for your concern.

JWheeler
kd5bcu
Bob <boob@boob.com> wrote in message

<snip>

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3366. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 15:20:36 UTC
From: Gene <webmaster@zylay.com>
Message-ID: <3AF96044.151D1E70@zylay.com>
Source record: 163613
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

> You, sir, assume too much. And you know what happens when you assume. I,
> for one, do happen to obey speed limits as well as frequency ranges and
> power contstraints. But thanks for your concern.

Don't take it too hard. Some folks simply can't comprehend what it must
be like to drive without constantly paying attention to potential hiding
places for cops rather than the road itself.

--
Ride to eat, eat to ride. __O
_-\<,_
Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
Please visit http://www.tfn.net/~gfloyd7/cmn/

3367. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 15:33:04 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <QqdK6.135076$xN4.8606100@news1.sttls1.wa.home.com>
Source record: 163614

"Serafini" <nerva4@mywebpages.com> wrote in message
news:3AF93689.868D1066@mywebpages.com...
> It exists an experimental proof that the skin effect is NOT a form of
> shielding?
> I seem to me that the way of skin effect is to expell current and
> magnetic field from the inner part of a conductor, might be a form of
> shieldind from external EM
> fields too.
> Antonio
>
>
>
Hi Serafini,

You seem to have a grasp of the theory of skin effect and how it holds the current to the surface of a conductor.

More controversial is the idea that skin effect is so effective at separating the two surfaces of a flat or cylindrical conductor that two separate currents can flow, one on each surface. Keep in mind that separate currents would require a potentially very large voltage difference between the surfaces such as appears across a capacitor.

Most controversial is the idea that coax braid could support two separated currents. Take a careful look at how braid is actually woven and see for your self if two currents could actually exist. I think the idea is a little ridiculous for braid.

73, Roger, W7WKB

3368. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 15:35:48 UTC
From: JWheeler <"kd5bcu at sydcom dot net">
Message-ID: <3af96278_3@newsfeeds>
Source record: 163615
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

That's not completely correct. I believe that the time limit is about 4 years. If I went and 'established' myself on that land for long enough and no one said anything about it, then while I may have been there illegally in the beginning, I do have a legal right to be there, and the courts in Texas will back me up on it. I'm not sure if it falls under homestead or imminent domain, but it is the law, at least here in Texas. I know of people who have lost several feet off of their property line in this very same manner.

JWheeler
kd5bcu
GG <nbc_red@mailcity.com> wrote in message n

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3369. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 15:38:12 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF96464.A4576BAF@IEEE.org>
Source record: 163616

VE9SRB wrote:
> 2) The hang up here is that everyone seems to struggle with adding two
> *forward* powers. The 100 W + 33.33 W must equal 133.33 W issue. These are
> two forward powers traveling in the same direction in a transmission line.
> It is the voltage components of these powers that add, not the powers. 100
> W has an associated voltage of 70.71 V, 33.33 W has an associated voltage of
> 40.82 V. 133.33 W has an associated voltage of 81.65 V. Adding 70.71 V in
> phase with 40.82 V just does not equal 81.65 V.

That's because some of the power is in the magnetic field, Steve. Are you saying that when you combine 50v at one amp (in phase) with 50v at one amp (in phase), you get 100v at two amps (in phase)? It's not true, Steve.

You must add the square root of the sum of the squares of the voltages to get the resulting voltage and you must add the square root of the sum of the squares for current to get the resulting current. In the 50v,1a + 50v,1a addition (inside a 50 ohm feedline) the sum of the voltages will be 70.7v (not 100v) and the sum of the currents will be 1.414a (not 2a)

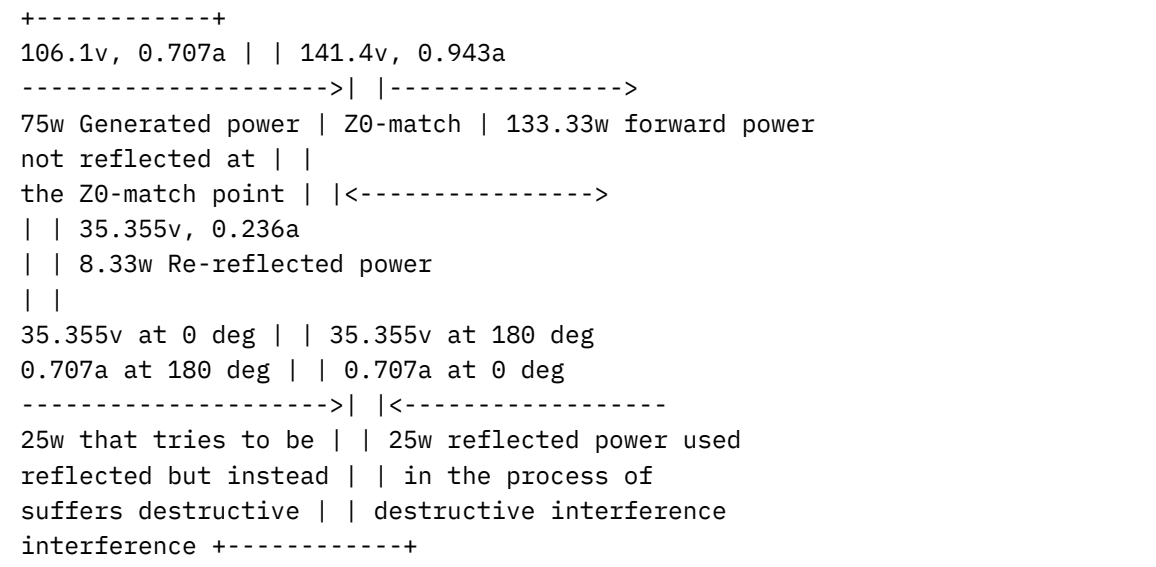
You are taking the known steady-state measured values and performing Voodoo Math on them while completely ignoring the source(s) of power that would balance the energy equation. I certainly hope no newcomer is trying to learn from you.

Since all the following voltages/currents are in phase, assume a phase angle of zero degrees for all. Z0 = 150 ohms.

```
+------------+
106.1v, 0.707a | | 141.4v, 0.943a
---------------------->| |---------------->
75w Generated power | Z0-match | 133.33w forward power
not reflected at | |
the Z0-match point | |<----------------
| | 35.355v, 0.236a
+------------+ 8.33w Re-reflected power
```

You are saying that 75w + 8.33w = 133.33w and that is still nonsense. WITHOUT ANY ADDITIONAL POWER IN THE SYSTEM, 75w + 8.33w adds up to a total of 83.33w. That would mean a forward voltage of 111.8v and a forward current of 0.745a in the 150 ohm line. These are the values that are required, by the conservation of energy principle, to exist IF THERE IS NO OTHER POWER IN THE SYSTEM. We know that those values of forward voltage and current do not agree with the measured values so we know that THERE IS OTHER POWER IN THE SYSTEM, power that you have ignored.

Therefore, only one rational conclusion is possible. YOU HAVE NOT ACCOUNTED FOR ALL THE POWER. In order to balance the energy equation you must include the other 25w of generated power and the other 25w of reflected power. These are the two powers involved in the destructive interference pattern at the Z0-match. So the diagram needs to be changed. (Note that the added voltages and currents exist in the 50 ohm environment but since they completely cancel, there is no 50/150 normalization problem.)


106.1v, 0.707a
141.4v, 0.943a
75w Generated power
Z0-match
133.33w forward power
not reflected at the Z0-match point
35.355v, 0.236a
8.33w Re-reflected power
35.355v at 0 deg
0.707a at 180 deg
35.355v at 180 deg
0.707a at 0 deg
25w that tries to be reflected but instead suffers destructive interference
25w reflected power used in the process of destructive interference

The additional terms include two voltage phasors, equal in magnitude and opposite in phase so they are canceled. Also included are two current phasors, equal in magnitude and opposite in phase so they are canceled. BUT THE POWERS ASSOCIATED WITH THESE CANCELED TERMS DO NOT CANCEL.

THAT ADDITIONAL 25W+25W=50W IS ABSOLUTELY NECESSARY TO GET 133.33 WATTS OF FORWARD POWER. Your assertion that 75w + 8.33w = 133.33w is absolute nonsense.

The correct energy equation is 75w + 25w + 8.33w + 25w = 133.33w

Grouping the terms: (75w + 25w) + (8.33w + 25w) = 133.33w

75 watts plus 25 watts equals the generated power.

8.33 watts plus 25 watts equals the reflected power.

THEREFORE, in this example, THE FORWARD POWER EQUALS THE GENERATED POWER PLUS THE REFLECTED POWER!!!

> The power addition formula that I describe, Ptotal = P1 + P2 + 2 Sqrt(P1)
> Sqrt (P2) Cos(theta), is valid for determining the total power resulting
> from the vector addition of two forward or rearward traveling voltages, E1
> and E2. Theta is the phase angle between the voltages. Terman uses a
> similar formula for determining the total voltage magnitude associated with
> adding the voltage vectors E1 and E2. Terman's formula for determining the
> magnitude of the total voltage sum is Etotal = Sqrt[E1^2 + E2^2 + 2 E1 E2
> Cos(theta)].

You cannot willy nilly apply a voltage equation involving phasors to a power equation involving scalars, Steve. Your power equation, above, obviously violates the conservation of energy principle. To the best of my knowledge, no other author has been ignorant enough to publish your power equation above. If you know of such an author, besides yourself, who has published that power equation above, please produce the reference.

What you are implying is that TWO SCALAR VALUES CAN MAGICALLY BLEND TOGETHER SO THAT THE END RESULT IS GREATER THAN THE SUM OF THE INDIVIDUAL VALUES. I contend that is a blatantly false concept but if you are convinced that you are right, please perform your Voodoo Math on my bank account.
--
http://www.mindspring.com/~w6rca

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3370. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 16:27:07 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <vdeK6.13166$t12.996441@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163617

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF96464.A4576BAF@IEEE.org...
>
> <snip>
>
> What you are implying is that TWO SCALAR VALUES CAN MAGICALLY BLEND
TOGETHER
> SO THAT THE END RESULT IS GREATER THAN THE SUM OF THE INDIVIDUAL VALUES.
> I contend that is a blatantly false concept but if you are convinced that
> you are right, please perform your Voodoo Math on my bank account.
> --

Circuit 1 - This is the forward source voltage acting independently

****
* *
* *
61.24 V 50 Ohms
* *
* *
****

The total power in the 50 ohm resistor is equal to 75 W.

Circuit 2 - This is the re-reflected voltage acting independently

****
* *
* *
20.41 V 50 Ohms
* *
* *
****

The total power in the 50 ohm resistor is equal to 8.33 W.

Circuit 3 - Both voltages are added together in phase. Vtotal = V1 + V2.

****
* *
* *
81.65 V 50 Ohms
* *
* *
****

The total power in the 50 resistor is equal to 133.33 W. Yes Cecil, THE END RESULT IS GREATER THAN THE SUM OF THE INDIVIDUAL VALUES.

Here's a similar concept: if you double the voltage across a resistor the power delivered increases by a factor of 4 not by a factor of 2. Why? because Vtotal = 2 V1 and Ptotal = |Vtotal|^2 / R. You cannot determine Ptotal from V1^2 / R + V1^2 /R as you do.

Here's another similar concept: What's the power gain of a horizontal dipole spaced 1/4 WL over a perfectly reflecting surface? Looking at power addition using your method, Ptotal = Pforward + Preflected, the power gain should be approx 3 dB. Its not, its approx 6 dB. Ptotal = P1 + P1 + 2 Sqrt(P1) Sqrt(P1) = 4 P1. 10 log(4) = 6 dB.

Take care

Steve VE9SRB

3371. Re: Emulation of the Scattering Formalism

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 16:28:02 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dbr6h$827$1@slb4.atl.mindspring.net>
Source record: 163618

Cecil:

Uh... ok, I just needed to get calibrated with your terminology.

Thanks,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF8E559.35F7BA68@IEEE.org...
> "Peter O. Brackett" wrote:
> > The mismatch causes the reflection, the reflection does not cause the
> > mismatch.
>
> Well Peter, if you really want to get technical, the Big Bang caused
> the mismatch.
>
> In a Z0-matched system, the mismatch causes the reflections which, in
turn,
> cause the match. If the reflections are removed by a
circulator/directional-
> coupler, a match will not occur. The reflections cause the impedance
> transformation up and down the transmission line.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3372. Hygain HYTOWER antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 16:36:41 UTC
From: Doug <doug@ycsi.net>
Message-ID: <9dbrmpjj0@63.90.193.150>
Source record: 163520

Looking for one of these, in decent shape with most of the pieces. I've got one, but it's an older model with some but not all of the parts. Would like to find another.

Thanks and 73

Doug, K7YD
Livingston, MT

3373. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 16:52:02 UTC
From: kb7qhc@home.com
Message-ID: <3afa695c.150770236@news.seanet.com>
Source record: 163522

On Wed, 09 May 2001 10:38:12 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>VE9SRB wrote:
>> 2) The hang up here is that everyone seems to struggle with adding two
>> *forward* powers. The 100 W + 33.33 W must equal 133.33 W issue. These are
>> two forward powers traveling in the same direction in a transmission line.
>> It is the voltage components of these powers that add, not the powers. 100
>> W has an associated voltage of 70.71 V, 33.33 W has an associated voltage of
>> 40.82 V. 133.33 W has an associated voltage of 81.65 V. Adding 70.71 V in
>> phase with 40.82 V just does not equal 81.65 V.
>
>That's because some of the power is in the magnetic field, Steve. Are you
>saying that when you combine 50v at one amp (in phase) with 50v at one amp
>(in phase), you get 100v at two amps (in phase)? It's not true, Steve.
>
>You must add the square root of the sum of the squares of the voltages
>to get the resulting voltage and you must add the square root of the sum
>of the squares for current to get the resulting current. In the
>50v,1a + 50v,1a addition (inside a 50 ohm feedline) the sum of the voltages
>will be 70.7v (not 100v) and the sum of the currents will be 1.414a (not 2a)
>
>You are taking the known steady-state measured values and performing
>Voodoo Math on them while completely ignoring the source(s) of power
>that would balance the energy equation. I certainly hope no newcomer
>is trying to learn from you.
>
>Since all the following voltages/currents are in phase, assume a phase
>angle of zero degrees for all. Z0 = 150 ohms.
>
> +------------+
> 106.1v, 0.707a | | 141.4v, 0.943a
>---------------------->| |---------------->
>75w Generated power | Z0-match | 133.33w forward power
> not reflected at | |
> the Z0-match point | |<---------------->
> | | 35.355v, 0.236a
> +------------+ 8.33w Re-reflected power
>
>You are saying that 75w + 8.33w = 133.33w and that is still nonsense.
>WITHOUT ANY ADDITIONAL POWER IN THE SYSTEM, 75w + 8.33w adds up to
>a total of 83.33w. That would mean a forward voltage of 111.8v and
>a forward current of 0.745a in the 150 ohm line. These are the values
>that are required, by the conservation of energy principle, to exist

>IF THERE IS NO OTHER POWER IN THE SYSTEM. We know that those values
>of forward voltage and current do not agree with the measured values
>so we know that THERE IS OTHER POWER IN THE SYSTEM, power that you
>have ignored.
>
>Therefore, only one rational conclusion is possible. YOU HAVE NOT
>ACCOUNTED FOR ALL THE POWER. In order to balance the energy equation
>you must include the other 25w of generated power and the other 25w
>of reflected power. These are the two powers involved in the
>destructive interference pattern at the Z0-match. So the diagram
>needs to be changed. (Note that the added voltages and currents
>exist in the 50 ohm environment but since they completely cancel,
>there is no 50/150 normalization problem.)
>
> +------------+
> 106.1v, 0.707a | | 141.4v, 0.943a
>--------------------->| |---------------->
>75w Generated power | Z0-match | 133.33w forward power
> not reflected at | |
> the Z0-match point | |<----------------->
> | | 35.355v, 0.236a
> | | 8.33w Re-reflected power
> | |
> 35.355v at 0 deg | | 35.355v at 180 deg
> 0.707a at 180 deg | | 0.707a at 0 deg
>--------------------->| |<------------------
>25w that tries to be | | 25w reflected power used
>reflected but instead | | in the process of
>suffers destructive | | destructive interference
>interference +------------+
>
>The additional terms include two voltage phasors, equal in magnitude and
>opposite in phase so they are canceled. Also included are two current
>phasors, equal in magnitude and opposite in phase so they are canceled.
>BUT THE POWERS ASSOCIATED WITH THESE CANCELED TERMS DO NOT CANCEL.
>
>THAT ADDITIONAL 25W+25W=50W IS ABSOLUTELY NECESSARY TO GET 133.33 WATTS
>OF FORWARD POWER. Your assertion that 75w + 8.33w = 133.33w is absolute
>nonsense.
>
>The correct energy equation is 75w + 25w + 8.33w + 25w = 133.33w
>
>Grouping the terms: (75w + 25w) + (8.33w + 25w) = 133.33w
>
>75 watts plus 25 watts equals the generated power.
>
>8.33 watts plus 25 watts equals the reflected power.
>
>THEREFORE, in this example, THE FORWARD POWER EQUALS THE GENERATED POWER
>PLUS THE REFLECTED POWER!!!

>
>> The power addition formula that I describe, Ptotal = P1 + P2 + 2 Sqrt(P1)
>> Sqrt (P2) Cos(theta), is valid for determining the total power resulting
>> from the vector addition of two forward or rearward traveling voltages, E1
>> and E2. Theta is the phase angle between the voltages. Terman uses a
>> similar formula for determining the total voltage magnitude associated with
>> adding the voltage vectors E1 and E2. Terman's formula for determining the
>> magnitude of the total voltage sum is Etotal = Sqrt[E1^2 + E2^2 + 2 E1 E2
>> Cos(theta)].
>
>You cannot willy nilly apply a voltage equation involving phasors to a power
>equation involving scalars, Steve. Your power equation, above, obviously
>violates the conservation of energy principle. To the best of my knowledge,
>no other author has been ignorant enough to publish your power equation above.
>If you know of such an author, besides yourself, who has published that power
>equation above, please produce the reference.
>
>What you are implying is that TWO SCALAR VALUES CAN MAGICALLY BLEND TOGETHER
>SO THAT THE END RESULT IS GREATER THAN THE SUM OF THE INDIVIDUAL VALUES.
>I contend that is a blatantly false concept but if you are convinced that
>you are right, please perform your Voodoo Math on my bank account.

Hi Cecil,

How is it that opprobrium and cat-calls now replace logic? There are
no more than maybe four sentences above that deserve airing. Given
the rest presumes "ignorance" there is no point in lengthy treatments
if in your opinion Steve is incapable of understanding it.

And where is Walt?

Where are HIS references?

I would dearly love to see them both offered, but as you three
continue to talk past each other, I hold no hope of that. I do see
discussion of Johnson from both Walt and Steve, but from my limited
perspective, it appears Walt is hedging his usage of that resource and
doing it selectively. I can neither confirm nor deny their correct
application, being without that tome - so I would offer that they both
recite a more accessible author.

Cecil, on the other hand, you appear to be stuck in a rut of your own
interpretation. I have asked for a complete architecture in regard to
your criticism and have had to draw those elements out one at a time -
tedious to say the least. Your fanciful thread of "Kirchoff's laws"
was a travesty designed to prove a point through manipulation, not
through the evidence of poor application of math offered by either
Steve or Walt. That single thread poisoned the well insofar as my
having any interest in supporting what appears to be more
manipulation.

Steve, I can understand your application of the contentious formula, I can even see how it works. This is not to say I understand WHY it works (or if it is even correctly applied) and I would offer that you too have a less than complete treatment. The one obvious point that Cecil's myopic treatment seems to neglect is that his insistence of 8.3 odd Watts adding to the forward power is insufficient to generate that same 8.3 odd Watts in the first place. In this I maybe wrong, but it requires your response to either his specific challenge (and go no further) or my observation (and go no further).

Frankly I would offer that these issues matter not one whit against the topic of "Virtual Shorts" that seems to have wasted away to a trivial and poorly offered student's aide. NO ONE is actively engaged in that discussion anymore, least of all the proponent.

And as a last comment: the models provided by ALL are too busy with extraneous or hidden detail. I am not enamored with Walt's in that it appears to be a one-trick pony that can't perform to the generality that Walt insists is behind its singular success.

73's
Richard Clark, KB7QHC

3374. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 16:56:19 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF976B3.3F844819@eznec.com>
Source record: 163521

I'm not sure where the controversy is. Independent currents on the two surfaces of a conductor (which is at least several skin depths thick) is entirely consistent with all the several electromagnetics texts I have. As far as I can tell, only one person seems to believe otherwise. Tom, W8JI, measured different currents on the two sides of a plane conductor, and I recently posted measurements showing different currents on the inside and outside of a coaxial cable. No contradictory evidence has been offered. To have a link between currents on the two sides of a conductor (other than the conductive path at the edge) requires a field within the conductor. But as Holt says(*),

"The electric field inside a perfect conductor is zero, for otherwise there would be the absurdity of an infinite drift current. We know from Maxwell's equations that time-varying electric and magnetic fields always accompany one another and, consequently, a time-varying magnetic field cannot exist in a perfect conductor."

Roy Lewallen, W7EL

(*) Charles A. Holt, Introduction to Electromagnetic Fields and Waves, Wiley, 1963, p. 187.

Roger Sparks wrote:
>
> "Serafini" <nerva4@mywebpages.com> wrote in message
> news:3AF93689.868D1066@mywebpages.com...
> > It exists an experimental proof that the skin effect is NOT a form of
> > shielding?
> > I seem to me that the way of skin effect is to expell current and
> > magnetic field from the inner part of a conductor, might be a form of
> > shieldind from external EM
> > fields too.
> > Antonio
> >
> >
> >
> Hi Serafini,
>
> You seem to have a grasp of the theory of skin effect and how it holds the
> current to the surface of a conductor.
>
> More controversial is the idea that skin effect is so effective at
> separating the two surfaces of a flat or cylindrical conductor that two
> separate currents can flow, one on each surface. Keep in mind that separate
> currents would require a potentially very large voltage difference between

> the surfaces such as appears across a capacitor.
>
> Most controversial is the idea that coax braid could support two separated
> currents. Take a careful look at how braid is actually woven and see for
> your self if two currents could actually exist. I think the idea is a
> little ridiculous for braid.
>
> 73, Roger, W7WKB

3375. Re: Tower/mast question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 17:22:37 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <21viftk9gkglnsiesji7jssmtfrl2l5s99@4ax.com>
Source record: 163523

Sorry, but that ain't going to happen. The current pre-geezers will become geezers, the pre-pre geezers will become geezers, and even you, my friend, will become a geezer faster than you could ever imagine.

73, Dick - W6CCD

On Tue, 8 May 2001 18:21:20 -0400, "Sycho_Graphics" <Sycho_Graphics@msn.com> wrote:

>The "geezers" are dropping like fly's. Soon they will al be gone :)
>
>
>"kazering" <kazeringue@aol.com> wrote in message
>news:3AF859B5.8050801@aol.com...

>>
>> Congrats to your son, hope he has fun and doesn't get run
>> off by the "geezer" crowd.
>>
>> 73,
>> W4KAZ
>>
>

3376. Re: Hygain HYTOWER antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 17:31:14 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <f7viftghd79p6b2dqch9ulhh49ptadgjl9@4ax.com>
Source record: 163524

Are you aware that they are being manufactured again?

73, Dick - W6CCD

On 9 May 2001 16:36:41 GMT, Doug <doug@ycsi.net> wrote:

>Looking for one of these, in decent shape with most of the pieces. I've got
>one, but it's an older model with some but not all of the parts. Would like
>to find another.
>
>Thanks and 73
>
>Doug, K7YD
>Livingston, MT
>

3377. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 17:35:00 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3AF97FC4.FF6D5DF@rupert.tds-az.lmco.com>
Source record: 163533
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Gene wrote:
>
> JWheeler wrote:
> > You, sir, assume too much. And you know what happens when you assume. I,
> > for one, do happen to obey speed limits as well as frequency ranges and
> > power contstraints. But thanks for your concern.
>
> Don't take it too hard. Some folks simply can't comprehend what it must
> be like to drive without constantly paying attention to potential hiding
> places for cops rather than the road itself.
>

It works both ways. Some people can't comprehend the peace of mind
that you have when you don't care where the cops are hiding.

All you have to do is go a little slower then all those other
drivers, that are looking over their sholders for cops, and the
cops won't pay any attention to you. In the end, does it really
matter whether you get there a minute or two before me? If you
get there first, do you win? If so, what do you win?

--
Martin E. Meserve, K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore
my responses may not be as timely as you, or I, would like them to
be. If I seem to be ignoring you, send me another E-Mail to jog my
memory. Opinions are my own and do not reflect the opinions of my
employer.

3378. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 17:51:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF9838F.3466C068@IEEE.org>
Source record: 163525

VE9SRB wrote:
> The total power in the 50 ohm resistor is equal to 75 W.
> The total power in the 50 ohm resistor is equal to 8.33 W.
> The total power in the 50 resistor is equal to 133.33 W. Yes Cecil, THE END
> RESULT IS GREATER THAN THE SUM OF THE INDIVIDUAL VALUES.

This is unadulterated bullcrap, Steve, and clearly violates the conservation of energy principle. Here is the mathematical proof based on *ALL* the components we are dealing with, some of which you are choosing to ignore.

100 watts of generated power whose components are:

A. 75 watts is the part of the generated power that makes it past the Z0-match point

B. 25 watts is the part of the generated power that would be reflected if it were not subjected to destructive interference

33.33 watts of reflected power whose components are:

C. 8.33 watts re-reflected back toward the load from the Z0-match point

D. 25 watts not re-reflected and subjected to destructive interference

133.33 watts forward power is in a 150 ohm feedline and consists of the combination of A, B, C, D above. The powers add directly because they are scalars and energy cannot be destroyed, but the voltages DO NOT add directly. Here are the voltages associated with A, B, C, D above (normalized to the 150 ohm environment because that's where all four components end up).

A. 106.1 volts, B. 61.24 volts, C. 35.355 volts, D. 61.24 volts

These are the voltages whose electric fields combine to get the 141.4 volts of forward voltage. The math behind the combination is the square root of the sum of the squares. It happens that way because we are not dealing just with electric fields - we are dealing with electromagnetic fields which have a corresponding magnetic component containing some of the energy. You simply cannot deal with voltage alone and completely ignore the corresponding current.

This is the way the electric fields of the component voltages combine to cause the total voltage.

V(A)^2 + V(B)^2 + V(C)^2 + V(D)^2 = V(tot)^2

(106.1)^2 + (61.24)^2 + (35.355)^2 + (61.24)^2 = 20000

The total voltage is the square root of 20000 which is 141.4 volts

It is only a mathematical curiosity that 106.1 + 35.355 = 141.4
and is meaningless in the analysis. You are engaging in Voodoo
Mathematics. You know what the outcome has to be so you are bending
and breaking the rules of physics. You simply cannot be allowed to
get away with such nonsense, Steve.

P(A) + P(B) + P(C) + P(D) = total forward power

P(A) + P(B) = 75 + 25 = 100 watts of generated power

P(C) + P(D) = 8.33 + 25 = 33.33 watts of reflected power

100 watts + 33.33 watts = 133.33 watts of total forward power

For our example, given the existence of a Z0-match,
GENERATED POWER PLUS REFLECTED POWER EQUALS FORWARD POWER!!!
Physics wins out once again.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3379. Re: Circuits for 2m S.W.R and Watt Meters.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 17:55:19 UTC
From: Roger Leone <arleone@inreach.com>
Message-ID: <QxfK6.3147$ca.13282@news.inreach.com>
Source record: 163526

Tienie

Here is one on-line reference...I am sure there are others.

http://hem.passagen.se/sm0vpo/

You will find lots of other useful circuits on Harry's site.

Roger K6XQ

3380. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 18:14:12 UTC
From: w2du@iag.net
Message-ID: <3af9828b.7318603@news.onemain.com>
Source record: 163529

On Wed, 09 May 2001 16:52:02 GMT, kb7qhc@home.com (Richard Clark) wrote:

>On Wed, 09 May 2001 10:38:12 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
>wrote:
>
>>VE9SRB wrote:
>>> 2) The hang up here is that everyone seems to struggle with adding two
>>> *forward* powers. The 100 W + 33.33 W must equal 133.33 W issue. These are
>>> two forward powers traveling in the same direction in a transmission line.
>>> It is the voltage components of these powers that add, not the powers. 100
>>> W has an associated voltage of 70.71 V, 33.33 W has an associated voltage of
>>> 40.82 V. 133.33 W has an associated voltage of 81.65 V. Adding 70.71 V in
>>> phase with 40.82 V just does not equal 81.65 V.

Steve you admit that 100 w + 33.33 w = 133.33, proving that we add powers.

You also show correctly that 70.71 v + 40.82v does not equal the correct total
forward voltage of 81.65 v. How can you then still say that adding the voltages
is correct when it is evident that that is not the case?

>>You must add the square root of the sum of the squares of the voltages
>>to get the resulting voltage and you must add the square root of the sum
>>of the squares for current to get the resulting current.

Steve, this is what I've been trying to persuade you for the last two years!

>>I certainly hope no newcomer
>>is trying to learn from you.
>>
>>Since all the following voltages/currents are in phase, assume a phase
>>angle of zero degrees for all. Z0 = 150 ohms.
>>
>> +------------+
>> 106.1v, 0.707a | | 141.4v, 0.943a
>>---------------------->| |---------------->
>>75w Generated power | Z0-match | 133.33w forward power
>> not reflected at | |
>> the Z0-match point | |<----------------
>> | | 35.355v, 0.236a
>> +------------+ 8.33w Re-reflected power
>>
>>You are saying that 75w + 8.33w = 133.33w and that is still nonsense.
>>WITHOUT ANY ADDITIONAL POWER IN THE SYSTEM, 75w + 8.33w adds up to
>>a total of 83.33w. That would mean a forward voltage of 111.8v and
>>a forward current of 0.745a in the 150 ohm line. These are the values
>>that are required, by the conservation of energy principle, to exist

>>IF THERE IS NO OTHER POWER IN THE SYSTEM. We know that those values
>>of forward voltage and current do not agree with the measured values
>>so we know that THERE IS OTHER POWER IN THE SYSTEM, power that you
>>have ignored.
>>
>>Therefore, only one rational conclusion is possible. YOU HAVE NOT
>>ACCOUNTED FOR ALL THE POWER. In order to balance the energy equation
>>you must include the other 25w of generated power and the other 25w
>>of reflected power. These are the two powers involved in the
>>destructive interference pattern at the Z0-match. So the diagram
>>needs to be changed. (Note that the added voltages and currents
>>exist in the 50 ohm environment but since they completely cancel,
>>there is no 50/150 normalization problem.)
>>
>> +------------+
>> 106.1v, 0.707a | | 141.4v, 0.943a
>>---------------------->| |---------------->
>>75w Generated power | Z0-match | 133.33w forward power
>> not reflected at | |
>> the Z0-match point | |<----------------->
>> | | 35.355v, 0.236a
>> | | 8.33w Re-reflected power
>> | |
>> 35.355v at 0 deg | | 35.355v at 180 deg
>> 0.707a at 180 deg | | 0.707a at 0 deg
>>---------------------->| |<------------------
>>25w that tries to be | | 25w reflected power used
>>reflected but instead | | in the process of
>>suffers destructive | | destructive interference
>>interference +------------+
>>
>>The additional terms include two voltage phasors, equal in magnitude and
>>opposite in phase so they are canceled. Also included are two current
>>phasors, equal in magnitude and opposite in phase so they are canceled.
>>BUT THE POWERS ASSOCIATED WITH THESE CANCELED TERMS DO NOT CANCEL.
>>
>>THAT ADDITIONAL 25W+25W=50W IS ABSOLUTELY NECESSARY TO GET 133.33 WATTS
>>OF FORWARD POWER. Your assertion that 75w + 8.33w = 133.33w is absolute
>>nonsense.
>>
>>The correct energy equation is 75w + 25w + 8.33w + 25w = 133.33w
>>
>>Grouping the terms: (75w + 25w) + (8.33w + 25w) = 133.33w
>>
>>75 watts plus 25 watts equals the generated power.
>>
>>8.33 watts plus 25 watts equals the reflected power.
>>
>>THEREFORE, in this example, THE FORWARD POWER EQUALS THE GENERATED POWER
>>PLUS THE REFLECTED POWER!!!

>>
>>> The power addition formula that I describe, Ptotal = P1 + P2 + 2 Sqrt(P1)
>>> Sqrt (P2) Cos(theta), is valid for determining the total power resulting
>>> from the vector addition of two forward or rearward traveling voltages, E1
>>> and E2. Theta is the phase angle between the voltages. Terman uses a
>>> similar formula for determining the total voltage magnitude associated with
>>> adding the voltage vectors E1 and E2. Terman's formula for determining the
>>> magnitude of the total voltage sum is Etotal = Sqrt[E1^2 + E2^2 + 2 E1 E2
>>> Cos(theta)].
>>
>>You cannot willy nilly apply a voltage equation involving phasors to a power
>>equation involving scalars, Steve. Your power equation, above, obviously
>>violates the conservation of energy principle. To the best of my knowledge,
>>no other author has been ignorant enough to publish your power equation above.
>>If you know of such an author, besides yourself, who has published that power
>>equation above, please produce the reference.
>>
>>What you are implying is that TWO SCALAR VALUES CAN MAGICALLY BLEND TOGETHER
>And where is Walt?
>
>Where are HIS references?
>
>I would dearly love to see them both offered, but as you three
>continue to talk past each other, I hold no hope of that. I do see
>discussion of Johnson from both Walt and Steve, but from my limited
>perspective, it appears Walt is hedging his usage of that resource and
>doing it selectively. I can neither confirm nor deny their correct
>application, being without that tome - so I would offer that they both
>recite a more accessible author.
>

>Frankly I would offer that these issues matter not one whit against
>the topic of "Virtual Shorts" that seems to have wasted away to a
>trivial and poorly offered student's aide. NO ONE is actively engaged
>in that discussion anymore, least of all the proponent.

I beg to differ, Richard, the virtual short and open circuits are totally valid,
as I hope to persuade you. They are responsible for total re-reflection the
reflected power at the matching point, else one would read a non SWR of 1:1 at
the input of the matching device.
>
>And as a last comment: the models provided by ALL are too busy with
>extraneous or hidden detail. I am not enamored with Walt's in that it
>appears to be a one-trick pony that can't perform to the generality
>that Walt insists is behind its singular success.

Richard, the material in my QEX article for Mar/Apr 1998 does NOT apply with
SINGULAR success---it indeed performs generally. If you don't have a copy of it
I'll send you one right after Dayton. My son Bill, W2WM is bringing my station
wagon loaded with all my softward from Florida and we're going to meet at
Dayton, then on to Mt. Pleasant, MI, where I reside from May til November.

So let me say this:

The concept of virtual shorts and opens is not new, nor is it my idea. I learned this from several of the finest transmission-line authorities in the country while working with them at the RCA Laboratories in Princeton under the direction of the well-known Dr. George H. Brown. Virtual shorts and opens were part of the jargon we used every day. No engineer at other RF facilities ever questioned the wordage, and in fact understood because the jargon was common.

Now, I explained the concept of total re-reflection in QST in the 1970s, nearly 30 years ago, again in Reflections in 1990, and still again in QEX Mar/Apr 1998. During the intervening years many RF engineers commended me on the lucidity of my explanation, telling me that they had previously had only a mathematical understanding of the matching process, but with my explanation the finally 'got it' from the viewpoint of reflection mechanics.

Let me state unequivocally that only two people have ever challenged my presentation during those nearly 30 years. And they are Steve Best and Gary Coffman. So even if you don't believe it's kosher to say it, I'm going to say it anyway. THEY DON'T UNDERSTAND WHAT'S OCCURING IN THE MECHANICS OF THE REFLECTIONS THAT PERFORM THE MATCHING!!!

Walt, W2DU

3381. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 18:18:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF989DF.54807328@IEEE.org>
Source record: 163527

Richard Clark wrote:
> How is it that opprobrium and cat-calls now replace logic?

Anyone trying to hoodwink the public deserves the opprobrium.
Please read, nay, try to *understand* my latest reply to Steve.

> And where is Walt?

I don't know - maybe unpacking? This particular argument is not Walt's
argument. It is Steve's and my argument.

> ... from my limited
> perspective, it appears Walt is hedging his usage of that resource and
> doing it selectively.

Why are you mentioning Walt? This argument is 100% between Steve and me.
Your repeated comments about Walt seem to me to be a diversionary action
to direct attention somewhere else besides the point of discussion. One
wonders why.

> Cecil, on the other hand, you appear to be stuck in a rut of your own
> interpretation. I have asked for a complete architecture in regard to
> your criticism and have had to draw those elements out one at a time -
> tedious to say the least.

Forgive the one-at-a-time packets but I cannot reproduce every past posting
within every present posting. Readers are therefore forced to keep up with
the context just like I am. And I have had to take time out to refresh my
memory concerning Maxwell's equations. I didn't use them very much at Intel.

> Your fanciful thread of "Kirchoff's laws"
> was a travesty designed to prove a point through manipulation, not
> through the evidence of poor application of math offered by either
> Steve or Walt. That single thread poisoned the well insofar as my
> having any interest in supporting what appears to be more
> manipulation.

It was a joke, Richard, and had a twist. It's like the question:
After a plane crash right on the border of two countries, where do
they bury the survivors? The entire point of the posting was that
Steve's voltage additions are the same kind of joke as that one.
I'm surprised you haven't seen that. Have you really looked?

> Frankly I would offer that these issues matter not one whit against
> the topic of "Virtual Shorts" that seems to have wasted away to a
> trivial and poorly offered student's aide. NO ONE is actively engaged
> in that discussion anymore, least of all the proponent.

This argument is not about "Virtual Shorts", Richard. This argument is about conservation of energy and the violation thereof in Steve's voltage additions which should be a combination involving the square root of the sum of the squares. One cannot just willy nilly ignore the associated magnetic fields.
--
http://www.mindspring.com/~w6rca

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3382. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 18:20:43 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF98A7B.5FC26B55@IEEE.org>
Source record: 163530

Roy Lewallen wrote:
> I'm not sure where the controversy is. Independent currents on the two
> surfaces of a conductor (which is at least several skin depths thick) is
> entirely consistent with all the several electromagnetics texts I have.

I think everyone would agree that independent RF currents can flow on
the inside and outside of a piece of copper tubing. The controversy, as
I see it, is what happens when one drills a hole through the tubing?
--
http://www.mindspring.com/~w6rca

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3383. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 18:21:05 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <IUfK6.12491$4f7.995619@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163528

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF9838F.3466C068@IEEE.org...
> VE9SRB wrote:
> > The total power in the 50 ohm resistor is equal to 75 W.
> > The total power in the 50 ohm resistor is equal to 8.33 W.
> > The total power in the 50 resistor is equal to 133.33 W. Yes Cecil, THE
END
> > RESULT IS GREATER THAN THE SUM OF THE INDIVIDUAL VALUES.
>
> This is unadulterated bullcrap, Steve, and clearly violates the
conservation
> of energy principle. Here is the mathematical proof based on *ALL* the
components
> we are dealing with, some of which you are choosing to ignore.
>
> 100 watts of generated power whose components are:
>
> A. 75 watts is the part of the generated power that makes it
> past the Z0-match point
>
> B. 25 watts is the part of the generated power that would be reflected
> if it were not subjected to destructive interference
>
> 33.33 watts of reflected power whose components are:
>
> C. 8.33 watts re-reflected back toward the load from the Z0-match point
>
> D. 25 watts not re-reflected and subjected to destructive interference
>
> 133.33 watts forward power is in a 150 ohm feedline and consists of
> the combination of A, B, C, D above. The powers add directly because
> they are scalars and energy cannot be destroyed, but the voltages DO
> NOT add directly. Here are the voltages associated with A, B, C, D above
> (normalized to the 150 ohm environment because that's where all four
> components end up).
>
> A. 106.1 volts, B. 61.24 volts, C. 35.355 volts, D. 61.24 volts
>
> These are the voltages whose electric fields combine to get the 141.4
> volts of forward voltage. The math behind the combination is the square
> root of the sum of the squares. It happens that way because we are not
> dealing just with electric fields - we are dealing with electromagnetic
> fields which have a corresponding magnetic component containing some
> of the energy. You simply cannot deal with voltage alone and completely

> ignore the corresponding current.
>
> This is the way the electric fields of the component voltages combine to
> cause the total voltage.
>
> V(A)^2 + V(B)^2 + V(C)^2 + V(D)^2 = V(tot)^2
>
> (106.1)^2 + (61.24)^2 + (35.355)^2 + (61.24)^2 = 20000
>
> The total voltage is the square root of 20000 which is 141.4 volts
>
> It is only a mathematical curiosity that 106.1 + 35.355 = 141.4
> and is meaningless in the analysis. You are engaging in Voodoo
> Mathematics. You know what the outcome has to be so you are bending
> and breaking the rules of physics. You simply cannot be allowed to
> get away with such nonsense, Steve.
>
> P(A) + P(B) + P(C) + P(D) = total forward power
>
> P(A) + P(B) = 75 + 25 = 100 watts of generated power
>
> P(C) + P(D) = 8.33 + 25 = 33.33 watts of reflected power
>
> 100 watts + 33.33 watts = 133.33 watts of total forward power
>
> For our example, given the existence of a Z0-match,
> GENERATED POWER PLUS REFLECTED POWER EQUALS FORWARD POWER!!!
> Physics wins out once again.
> --
> http://www.mindspring.com/~w6rca

Thanks for the comments Cecil.

Take care.

Steve

3384. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 18:23:47 UTC
From: w2du@iag.net
Message-ID: <3af98a8f.9370143@news.onemain.com>
Source record: 163532

On Wed, 09 May 2001 18:14:12 GMT, w2du@iag.net (Walter Maxwell, W2DU) wrote:

>So let me say this:
>
>The concept of virtual shorts and opens is not new, nor is it my idea. I learned
>this from several of the finest transmission-line authorities in the country
>while working with them at the RCA Laboratories in Princeton under the direction
>of the well-known Dr. George H. Brown. Virtual shorts and opens were part of the
>jargon we used every day. No engineer at other RF facilities ever questioned the
>wordage, and in fact understood because the jargon was common.
>
>Now, I explained the concept of total re-reflection in QST in the 1970s, nearly
>30 years ago, again in Reflections in 1990, and still again in QEX Mar/Apr 1998.
>During the intervening years many RF engineers commended me on the lucidity of
>my explanation, telling me that they had previously had only a mathematical
>understanding of the matching process, but with my explanation the finally 'got
>it' from the viewpoint of reflection mechanics.
>
>Let me state unequivocally that only two people have ever challenged my
>presentation during those nearly 30 years. And they are Steve Best and Gary
>Coffman. So even if you don't believe it's kosher to say it, I'm going to say it
>anyway. THEY DON'T UNDERSTAND WHAT'S OCCURING IN THE MECHANICS OF THE
>REFLECTIONS THAT PERFORM THE MATCHING!!!
>
>Walt, W2DU
>
Sorry about the long previous post. I intended to delete more than 100 lines,
but I musta goofed. They didn't get deleted as I thought. Sorry

Walt, W2DU

3385. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 18:33:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF98D78.9EB3E649@eznec.com>
Source record: 163531

The center conductor impedance is about the same as the impedance along the INSIDE of the coax shield. In your experiment, you increased the impedance of the path along the inside of the shield by putting ferrite cores on the outside. The reason that cores on the outside seem to increase the impedance on the inside is that when the shield isn't connected at the end, any current on the inside has to flow over the edge and along the outside. By looking at the path, you can see that the inside and outside impedances are in series. So by putting the ferrite cores on the outside, you've increased the total path impedance. This is reflected in the center conductor impedance. Another way of looking at it is by observing the current flow. The current on the inside of the shield is equal to and opposite the current on the center conductor. With the shield open, the only path for the shield inner current is over the edge and along the outside. So when you put ferrite cores on the outside, you decrease the current on both the inside and outside of the shield. This reduces the current on the center conductor by an equal amount, resulting in an increase in center conductor impedance.

If you'll take a look at the experimental results I recently published, you'll see that I put ferrite cores on the outside of the coax, dramatically increasing the impedance along the outside, without increasing the center conductor impedance. This is because there was another path for the shield inside current besides the path along the outside. Any blanket statement that adding cores to the outside of the cable will increase the impedance of the center conductor is shown to be false by this experiment.

The explanation of current flow I've presented here and in the earlier postings fully explains both the results of your experiment and of mine.

Roy Lewallen, W7EL

Reg Edwards wrote:
>
> Balun cores increase the impedance of the INNER coaxial conductor
> to precisely the same extent as the outer.
>
> To prove this just wind some coax around a ferrite core and measure
> the inductance between the ends of the inner conductor with the
> outer disconnected. It will have the same inductance as the outer
> all by itself. Connecting the inner and outer conductors in
> parallel will again have the same inductance.
> ---
> Reg

3386. Re: inverted L for 160 m.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 18:39:47 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AF98EF3.430@wt.net>
Source record: 163534

f4ckv wrote:
>
> 73 to all
>
> it's a big S.O.S. for me.
>
> If I construct an inverted L for 160 m. with this configuration is any
> body can tell me more about angle, gain,...
>
> verticaly 12 m.
> horizontaly 150 m.
> feed with possible self and CV.
>
> thanks for info in advance,please send me mail only.
>
> f4ckv@radioamateur.org

Probably the best way would be to download the eznec demo and model the antenna. It will give you a good idea what it will do, and you can vary the ground quality to match yours. That antenna is very long for a normal 160m inv L. Normally, one is a total length of 1/4 WL. Some versions are longer, IE: 3/8 WL etc. Current distribution can improve with a long one, but your high angle radiation goes up compared to a 1/4 wl. For some this is ok, for a DX'er, not so good in some cases. MK
--
http://web.wt.net/~nm5k

3387. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 18:39:49 UTC
From: Gene <webmaster@zylay.com>
Message-ID: <3AF98EF5.647902AE@zylay.com>
Source record: 163537
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

> > > You, sir, assume too much. And you know what happens when you assume. I,
> > > for one, do happen to obey speed limits as well as frequency ranges and
> > > power contstraints. But thanks for your concern.
> >
> > Don't take it too hard. Some folks simply can't comprehend what it must
> > be like to drive without constantly paying attention to potential hiding
> > places for cops rather than the road itself.
> >
>
> It works both ways. Some people can't comprehend the peace of mind
> that you have when you don't care where the cops are hiding.
>
> All you have to do is go a little slower then all those other
> drivers, that are looking over their sholders for cops, and the
> cops won't pay any attention to you. In the end, does it really
> matter whether you get there a minute or two before me? If you
> get there first, do you win? If so, what do you win?

I think we said the same thing in different words LOL

--
Ride to eat, eat to ride. __O
_-\<,_
Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
Please visit http://www.tfn.net/~gfloyd7/cmn/

3388. Re: In search of a quality 2m antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 18:48:08 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AF990E8.49F3@wt.net>
Source record: 163536

Dick Hughes wrote:
>
> I don't think any vertical is going to improve much on the AEA
> Isopole. That's a great antenna. You are going to have to get the
> vertical higher, or go to a yagi, quad, quagi, etc. or both. If I
> were in your situation, I would try a 13-element Cushcraft at about 50
> or 60 feet. You can always build a 2-meter yagi if money is a
> problem. There's a nice little 4-element quad in the ARRL Antenna
> Book made of pine and aluminum ground wire. That should do the job.
>
> Dick - W6CCD

I agree, the isopole is one of the best dual 5/8's 2m antennas out
there. It's better than the RR2. "Better decoupling". In fact, this may
be part of the problem. It may have too much radiation at low angles to
do much at the "top of the hill" angles. But you could test this by
tilting the antenna and seeing if any improvement.
I think you will probably need a small beam to do well. I use a small 3
el yagi here, and it smokes any vertical. Get one of those up, and you
will probably make it. You can point it, and also adjust the tilt if
needed. If all that fails you will need to get the antenna higher up. MK
--
http://web.wt.net/~nm5k

3389. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 18:49:47 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AF9914B.5CF1@wt.net>
Source record: 163535

W6RCecilA wrote:
>
> Dick Carroll wrote:
> > I don't
> > know if Dejanews archives, which were bought by Google, still contain
> > all the old archived files, but if so you'd do well to read a bit.
>
> Somebody reported that it is back on line and fully functional.
> --
> http://www.mindspring.com/~w6rca

You can search but not post. They plan to add posting again later. MK
--
http://web.wt.net/~nm5k

3390. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 19:03:01 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <FvgK6.13339$t12.1010943@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163538

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3af9828b.7318603@news.onemain.com...
> On Wed, 09 May 2001 16:52:02 GMT, kb7qhc@home.com (Richard Clark) wrote:
>
> >On Wed, 09 May 2001 10:38:12 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> >wrote:
> >
> >>VE9SRB wrote:
> >>> 2) The hang up here is that everyone seems to struggle with adding two
> >>> *forward* powers. The 100 W + 33.33 W must equal 133.33 W issue.
These are
> >>> two forward powers traveling in the same direction in a transmission
line.
> >>> It is the voltage components of these powers that add, not the powers.
100
> >>> W has an associated voltage of 70.71 V, 33.33 W has an associated
voltage of
> >>> 40.82 V. 133.33 W has an associated voltage of 81.65 V. Adding 70.71
V in
> >>> phase with 40.82 V just does not equal 81.65 V.
>
> Steve you admit that 100 w + 33.33 w = 133.33, proving that we add powers.
>

I did not admit that 100 W + 33.33 W = 133.33 W.

I was just demonstrating that the voltage associated with 100 W (70.71 V)
when added in-phase to the voltage associated with 33.33 W (40.82 V) does
not add to the required voltage of 81.65 V, necessary for 133.33 Watts of
power.

> You also show correctly that 70.71 v + 40.82v does not equal the correct
total
> forward voltage of 81.65 v. How can you then still say that adding the
voltages
> is correct when it is evident that that is not the case?
>

The correct voltage addition is 61.24 V (75 W) + 20.41 V (8.33 W) = 81.65 V
(133.33 W).

Vtotal = V1 + V2.

> >>You must add the square root of the sum of the squares of the voltages
> >>to get the resulting voltage and you must add the square root of the sum
> >>of the squares for current to get the resulting current.

>
> Steve, this is what I've been trying to persuade you for the last two
years!
>

Someone else made this comment to the newsgroup not me.

>
> The concept of virtual shorts and opens is not new, nor is it my idea. I
learned
> this from several of the finest transmission-line authorities in the
country
> while working with them at the RCA Laboratories in Princeton under the
direction
> of the well-known Dr. George H. Brown. Virtual shorts and opens were part
of the
> jargon we used every day. No engineer at other RF facilities ever
questioned the
> wordage, and in fact understood because the jargon was common.
>
> Now, I explained the concept of total re-reflection in QST in the 1970s,
nearly
> 30 years ago, again in Reflections in 1990, and still again in QEX Mar/Apr
1998.
> During the intervening years many RF engineers commended me on the
lucidity of
> my explanation, telling me that they had previously had only a
mathematical
> understanding of the matching process, but with my explanation the finally
'got
> it' from the viewpoint of reflection mechanics.
>
> Let me state unequivocally that only two people have ever challenged my
> presentation during those nearly 30 years. And they are Steve Best and
Gary
> Coffman. So even if you don't believe it's kosher to say it, I'm going to
say it
> anyway. THEY DON'T UNDERSTAND WHAT'S OCCURING IN THE MECHANICS OF THE
> REFLECTIONS THAT PERFORM THE MATCHING!!!
>
> Walt, W2DU
>

The only technical discussion that you engage in is "I'm right, Steve's
wrong". You are very good at bragging on and on about your papers but you
avoid virtually every direct discussion on this subject and you avoid
answering direct questions. When the discussion gets uncomfortable you
claim "Steve doesn't agree with me so he doesn't understand the basics".
You just can't face the possibility that you made a big mistake.

You have claimed several times on this newsgroup that I don't understand basic reflection mechanics. Let's talk about your understanding of wave mechanics demonstrated on the newsgroup during the past week or so:

1) You said that the reflected voltage at an impedance termination is not equal to the incident voltage times the reflection coefficient.

2) You continue to claim that two forward traveling voltages do not add, yet Johnson, the author you quote most, clearly says that they do add.

3) You said that it is not possible to have the total voltage on a transmission line go to 0, while at the same time have the total current be non-zero. This is incorrect. When the line impedance on a transmission is a short circuit, the total voltage is zero, yet the current is at its maximum value.

4) You disagree that 61.24 V added in-phase with 20.41 V is equal to 81.65 V. Simple complex vector math.

5) You disagree that Pdelivered equals Pforward - Preflected when a Zo match does not exist in the transmission line.

6) You do not understand the derivation of the relationship Pforward = Pdelivered /(1 - |rhoA|^2)

7) You do not understand the difference between the forward source power after the Zo match and the delivered power after the Zo match.

Would you care to go through each of these point in detail?

Steve VE9SRB

3391. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 19:08:26 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AF995AA.2415@wt.net>
Source record: 163540

Ryan KC8PMX wrote:
>
> One question, what would happen if a ham operator used his/her callsign as
> an identifier on the LEGAL cb frequencies. (assume all other operation is
> completely legal). Is it legal to identify with your callsign there?
> (sorry, not up to much on my 11meter knowledge here)
>
> I have one in my truck that I use about 2 times per year mainly to find out
> road conditions etc, because it seems NO ONE uses 146.520 anymore......
> --
>
> Ryan, KC8PMX

It's legal to ID with anything on the CB band, because you don't have to ID at all. Sure, you could use your ham call, but it would be a waste of time. It has no authority there at all. Would be like showing a traffic cop your ham license instead of a driver license if you got pulled over in a car. Normally, if you started using a ham call on the CB bands, the CBer's would think you are trying to be uppity. Likely would tell you to get where you belong. But in comparing 10m to the CB band, I don't see why any ham would want to hang out on CB. The cber's all want to talk at the same time on the same frequencies. No bueno. If you started problems on the CB band, while using your call, it's quite possible the fcc could start problems for you stating out of band ham operation. And if the radio is non type accepted, you are illegal no matter how you ID. Yep, you are right about the uselessness of 2m on the road. Thats why I run HF mobile. MK
--
http://web.wt.net/~nm5k

3392. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 19:10:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF99627.A6867C85@eznec.com>
Source record: 163539

I apparently misinterpreted what you said. I thought that you meant that a piece of coax would act as a conventional transformer, with one "winding" being the center conductor and the other the shield. I guess I was mislead by the figures in your QEX article showing such a connection. The concept of a piece of coax cable acting as a conventional transformer seems to me to run into trouble when confronted with a situation like I described with the "shorted" outer shield.

What does happen is that the *inside* of the coax acts like a conventional transformer, in that all the flux (both electric and magnetic) from the inner conductor is coupled to the inside of the shield and vice-versa. However, the inside of the shield is always conductively connected to the outside of the shield. I subscribe to the principle that no field, electric or magnetic, can exist inside a perfect conductor (and no significant amount in a good conductor at least several skin depths thick). This predicts that anything done to the outside of the shield, such as threading ferrite cores, will have no effect on the inside -- except, of course, to modify the impedance of the path along the outside of the coax, to which the inside is unavoidbly connected at the shield ends. Using this model, I can explain Reg's results, your results, and my results. But using your premise that the voltage drop along the inside of the shield has to equal the voltage drop along the outside, the currents I measured in my test couldn't exist. Have you resolved that? Can you propose an experiment that would show my analysis to be incorrect?

Roy Lewallen, W7EL

"William E. Sabin" wrote:
>
> Roy Lewallen wrote:
>
> > If a piece of coax acts as a transformer from the center conductor to
> > the braid, consider the following:
> >
> > Take a quarter electrical wavelength of 50 ohm semi-rigid coax (the kind
> > with a solid shield). Wind the coax into a coil and dunk the whole thing
> > into a solder pot. (Or cast the whole thing into a block of metal.) I
> > hope you'll agree that there's no drop from one end of the shield to the
> > other, or from any point along the shield to any other.
> >
> > Excite one end with a one volt generator and terminate the other end
> > with a 500 ohm resistor. The voltage across the resistor (assuming
> > negligible cable loss) will be 10 volts, lagging the source by 90
> > degrees. The voltage from one end of the center conductor to the other

> > (Vout - Vin) = -1 - j10 which is a magnitude of 10.5 volts. So it seems
> > that we've created a transformer with 10.5 volts across one "winding"
> > and zero across the other. How do you explain this?
>
> It's like any other impedance transformer. If you ground one end of the input side and one end of the output side
> you still have an impedance transformer. And you still have a common mode voltage increase, but it is all along
> the center wire. To prove it, just add up the rms voltages around the four terminals.
>
> If the braid output is floating, this common mode voltage is shared between center wire and braid, according ot
> their respective common mode impedances.
>
> Keep in mind that the actual impedance transformation is occurring in the differential mode.
>
> I am sure you know all of this as well as I do, and you don't need my help.
>
> Bill W0IYH

3393. Re: In search of a quality 2m antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 19:16:29 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <hIgK6.52616$Ce4.4413368@news1.rdc1.ct.home.com>
Source record: 163542

Where do you live? I used an Isopole at 80 feet for
years, and few antennas could touch it. You will have
to go to a fairly large beam and rotor to see much
improvement. If you live in southern New England,
I can't imagine why you aren't hitting any machines..
If you are in northern Maine, that could be part of
the answer...

Pete

"Ryan Morse (N1QZF)" <ryanbeck@loa.com> wrote in message
news:9daag1rii1@nntpsp2-ld.pvd.loa.net...
> Hi Guys and Gals,
> I'm just starting out with my Technician licence, and I'm looking
> forward to working the local 2m repeaters, but I'm finding I have trouble
> tripping them. I live in a valley, and am currently using a Kenwood
> TM-2550A with a AEA Isopole 2m vertical antenna. I also own a Ringo
Ranger,
> but I'm having problems with that, (I think there's a short, and need to
> track it down.) My question is, does anyone have a good antenna design or
> suggestions to help me get my signal out of this hole? Also, I have no
> manuals with any of my above equipment, (I inherited them from the
> Grandfather, who became a silent key several years ago,) can anyone give
> me pointers?
> Thanks ahead of time for any help you can offer,
>
> N1QZF
>
> Ryan Morse
>
>

3394. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 19:17:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF997DD.6A6BD4DC@eznec.com>
Source record: 163541

Bill Sabin has made an argument that, as I understand it, goes something like this:

The voltage at any point along a shield between the inside and outside has to be zero. Therefore, you can't have a current flowing one direction along the inside and in the opposite direction on the outside, becuase this would cause voltage drops in opposite directions on the inside and outside. This in turn would result in unequal voltages on the inside and outside of the shield.

Please, Bill or someone else, correct me if I'm mistaken. I don't intend to misrepresent what you've said.

If this premise were true, the currents I measured in my recently posted experiments couldn't exist. But they do. Tom's measurements of the current along a plane shield also contradict this theory.

Roy Lewallen, W7EL

W6RCecilA wrote:
>
> Roy Lewallen wrote:
> > I'm not sure where the controversy is. Independent currents on the two
> > surfaces of a conductor (which is at least several skin depths thick) is
> > entirely consistent with all the several electromagnetics texts I have.
>
> I think everyone would agree that independent RF currents can flow on
> the inside and outside of a piece of copper tubing. The controversy, as
> I see it, is what happens when one drills a hole through the tubing?
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3395. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 19:35:13 UTC
From: kb7qhc@home.com
Message-ID: <3afb75d4.153962706@news.seanet.com>
Source record: 163543

On Tue, 8 May 2001 21:25:23 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

> but what the heck does that have to do with
>what a ham VSWR meter indicates?

Hi Peter,

You could have pointed that out long ago if that was the bone of
contention - but it wasn't.

Are we to understand NOW that you accept there is power in the
reflected wave? If not, what is the point of discussing VSWR meter
indications? Shouldn't you target the discussion of Power?

If I recall, both Wes and I responded to the "fiction" of reflected
power. Wes even described how it was exhibited in a system free of
VSWR meter implications. Now you have chosen to respond with the
introduction of this complexity - to what end?

You've spoken of a DC correlative of reflection that held with
conventional math. Both Wes and I have used that math, and have shown
an example of real power in a reflection that cannot possibly be
demonstrated at DC.

The long and short of it is that for two of your recent speculations,
you have not demonstrated sufficient proof, much less coverage to make
a compelling case.

73's
Richard Clark, KB7QHC

3396. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 19:44:41 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <J6hK6.12633$4f7.1003909@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163544

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3af98a8f.9370143@news.onemain.com...
> On Wed, 09 May 2001 18:14:12 GMT, w2du@iag.net (Walter Maxwell, W2DU)
wrote:
>
>
> >So let me say this:
> >
> >The concept of virtual shorts and opens is not new, nor is it my idea. I
learned
> >this from several of the finest transmission-line authorities in the
country
> >while working with them at the RCA Laboratories in Princeton under the
direction
> >of the well-known Dr. George H. Brown. Virtual shorts and opens were part
of the
> >jargon we used every day. No engineer at other RF facilities ever
questioned the
> >wordage, and in fact understood because the jargon was common.
> >
> >Now, I explained the concept of total re-reflection in QST in the 1970s,
nearly
> >30 years ago, again in Reflections in 1990, and still again in QEX
Mar/Apr 1998.
> >During the intervening years many RF engineers commended me on the
lucidity of
> >my explanation, telling me that they had previously had only a
mathematical
> >understanding of the matching process, but with my explanation the
finally 'got
> >it' from the viewpoint of reflection mechanics.
> >
> >Let me state unequivocally that only two people have ever challenged my
> >presentation during those nearly 30 years. And they are Steve Best and
Gary
> >Coffman. So even if you don't believe it's kosher to say it, I'm going to
say it
> >anyway. THEY DON'T UNDERSTAND WHAT'S OCCURING IN THE MECHANICS OF THE
> >REFLECTIONS THAT PERFORM THE MATCHING!!!
> >
> >Walt, W2DU
> >

I fully understand that the impedance match occurs as the result of two rearward traveling waves canceling one another at the match point. When the two rearward waves cancel, the total rearward voltage, current and power go to zero. At this point, there is no need to introduce the concept of total power re-reflection. You introduced this concept because you were unable to establish the correct relationships between the forward source voltage and the re-reflected voltage and then arrive at the correct total forward power. If you are uncertain of my lack of understanding, let's go through the discussion in detail, from the beginning, without the chest pounding.

Steve VE9SRB

3397. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 19:49:08 UTC
From: atkes@imap1.asu.edu
Message-ID: <9dc6vkect1@news.asu.edu>
Source record: 163545

W6RCecilA (Cecil.A.Moore@IEEE.org) wrote:
: Roy Lewallen wrote:
: > I'm not sure where the controversy is. Independent currents on the two
: > surfaces of a conductor (which is at least several skin depths thick) is
: > entirely consistent with all the several electromagnetics texts I have.

: I think everyone would agree that independent RF currents can flow on
: the inside and outside of a piece of copper tubing. The controversy, as
: I see it, is what happens when one drills a hole through the tubing?

Cecil,

Actually if you read the quoted part of Roy's post you would see
that Roger does not agree.

However, Roger apparently thinks that a difference in current requires
a large voltage difference supported by the conductor. This is not
correct, as Roy notes the electric field in the bulk of the conductor
and certainly the component from the inner surface to the outer is tiny.
You can look in your IEEE dictionary and see that they define the voltage
as the line integral of the electric field along a path. Therefore there
is essentially no voltage difference along that path.

Alternatively you can realize that with essentially no electric field
in the bulk of the conductor, there is no force on the electrons there,
and therefore no induced current.

I think the braid question is a red herring. Most texts on
electromagnetism explain in detail how to calculate the effect of
small holes in rf conductors. However, I believe that anyone who does
not understand the mathematics and physics of the skin effect for solid
conductors will find this problem too difficult. Personally I have always
found it easier to understand simple systems first before trying to
think about or to calculate harder systems.

For anyone interested, I recommend J.D. Jackson, Classical Electrodynamics
(Wiley, New York, 1998). You can order a copy at your local bookstore or
amazon.com. He covers apertures in waveguides in section 9.5. He also
gives references to the original work of Rayleigh in 1897 and Bethe
in 1944.

73 Kevin w9cf@ptolemy.la.asu.edu

3398. Re: FYI Antenna Engineer Position

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 20:03:06 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AF9A27A.7B33@wt.net>
Source record: 163547

Fractenna wrote:
>
> Hi All--
>
> Since many firms are now helping people get job info by posting on this
> newzgroup, I thought I'd pass along the URL of a new listing. Hope this is
> useful to some here. Looks like quite a few guys and gals are out of jobs
> recently with CA, CO, and Wash/VA especially hard hit.
>
> http://www.fractenna.com/jobs.html
>
> 73,
> Phil
> de N1ZKT
Well, if you are only hiring in Q4 2001, and Q1 2002, I guess these out
of work people will starve to death before they start work. But I guess
dead people will fit right in to your program, except they may feel
somewhat self conscious due to their lack of roundness in comparison to
others there.....:/ MK
--
http://web.wt.net/~nm5k

3399. Re: AM/FM reception in Midtown NYC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 20:03:23 UTC
From: Pat Santucci <psantucc@dnaco.net>
Message-ID: <3af9a28b$1@127.0.0.1>
Source record: 163546

harvey <harvey@lawrence.csnet.net> wrote:
>You've got to play around. No radio shack off the shelf unit will work.
I've
>set up dipoles in windows and ran coax back to my fm radio inside a steel
>building in midtown and get about 90% of all the local FM's. Never tried
WX
>reception in NYC but I think it can be done. I've also heard of some people
>attaching wire to the metal window frames which also act as an antenna.
Lots
>of multipath and high RF levels will cause front end overloading but all
you
>can do is experiment. Good Luck!
>
I was afraid you'ld say that.

I'll have only two days to work the problem, and part of that has to be occupied with my real job (programming the control system). Further, we know that visible solutions are unacceptable to the customer - If I make it work by attaching to the window frame, it does no good unless I can also hide it completely.

I'm working the yellow pages on Friday trying to find a contractor willing to install a rooftop mast and antenna so I can tell the customer what it will cost to make this dream come true.

Thanks for your reply- it would have worked if it was _my _ apartment.

Pat Santucci

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3400. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 20:03:23 UTC
From: w2du@iag.net
Message-ID: <3af99d92.14237722@news.onemain.com>
Source record: 163549

On Wed, 09 May 2001 19:03:01 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>The only technical discussion that you engage in is "I'm right, Steve's
>wrong". You are very good at bragging on and on about your papers but you
>avoid virtually every direct discussion on this subject and you avoid
>answering direct questions. When the discussion gets uncomfortable you
>claim "Steve doesn't agree with me so he doesn't understand the basics".
>You just can't face the possibility that you made a big mistake.
>
>You have claimed several times on this newsgroup that I don't understand
>basic reflection mechanics. Let's talk about your understanding of wave
>mechanics demonstrated on the newsgroup during the past week or so:
>
>1) You said that the reflected voltage at an impedance termination is not
>equal to the incident voltage times the reflection coefficient.

Steve, as you have done consistently with me, you have again twisted my words
exactly 180 degrees. I have never said what you said I said in 1) above.
>
>2) You continue to claim that two forward traveling voltages do not add,
>yet Johnson, the author you quote most, clearly says that they do add.

The forward traveling voltages do not add to form the total forward power. You
have misinterpreted Johnson, because the expression of Johnson you use gives the
line voltage at any point on the line. It does not give the forward power.

>3) You said that it is not possible to have the total voltage on a
>transmission line go to 0, while at the same time have the total current be
>non-zero.

Again, this is not what I said. I said that at the match point voltage and
current cannot go to zero simultaneously, because energy cannot be destroyed.
Energy would be destroyed if both voltage and current were zero simultaneously
at the same point.

> This is incorrect. When the line impedance on a transmission is
>a short circuit, the total voltage is zero, yet the current is at its
>maximum value.

This is exactly what I've been saying all along, but now you've twisted my words
again.
>
>4) You disagree that 61.24 V added in-phase with 20.41 V is equal to 81.65
>V. Simple complex vector math.
>

>5) You disagree that Pdelivered equals Pforward - Preflected when a Zo
>match does not exist in the transmission line.
>
>6) You do not understand the derivation of the relationship Pforward =
>Pdelivered /(1 - |rhoA|^2)

Sorry Steve, I spent hours emailing you this concept 6), which you refuted endlessly until recently. You kept insisting that it was Vdelivered/(1 - rho). You finally discovered the relationship in 6) to be true, because you used it as your Eq 36 in your QEX article.
>
>7) You do not understand the difference between the forward source power
>after the Zo match and the delivered power after the Zo match.
>
>Would you care to go through each of these point in detail?

No Steve, I would not, because your mind is made up. I'm dismayed because you're continually giving bad information to people who are trying to learn, and sadly, they believe you..

Walt, W2DU

3401. Re: Tower/mast question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 20:09:35 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AF9A3FF.20B5@wt.net>
Source record: 163548

Dick Hughes wrote:
>
> Sorry, but that ain't going to happen. The current pre-geezers will
> become geezers, the pre-pre geezers will become geezers, and even you,
> my friend, will become a geezer faster than you could ever imagine.
>
> 73, Dick - W6CCD

That ain't no bull. Once you reach the point of semi old fartism, full blown old fartism and geezerness is soon to follow. And fast too. It's fairly depressing. Many complain of "antenna" problems in these advancing years. Thats the worst part. MK

--
http://web.wt.net/~nm5k

3402. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 20:17:43 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <HBhK6.135979$xN4.8661463@news1.sttls1.wa.home.com>
Source record: 163550

>
Does any current looping around the end of a solid coax shield have to obey
the following rules?

> The voltage at any point along a shield between the inside and outside
> has to be zero. Therefore, you can't have a current flowing one
> direction along the inside and in the opposite direction on the outside,
> becuase this would cause voltage drops in opposite directions on the
> inside and outside. This in turn would result in unequal voltages on the
> inside and outside of the shield.

I would add the following example. When current loops around the end of a
coax shield, the highest current point must occur at the point of loop
reversal (the open end of the cylindrical tube). When we cut a section
through the wall on one side of the tube, we see three layers, inner
conductive layer, skin effect shield layer, outer conductive layer. A
quarter wavelength long length of this section would act like a 1/4
wavelength shorted line, and would have a very high impedance between open
ends of the section. In addition, at the end points, current would not be
flowing at the time of maximum current flow at the shorting point, so skin
effect would not be opperative at the time of highest voltage.

Can skin effect really act to create a situation allowing two seperate
currents in this situation?

73, Roger, W7WKB

3403. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 20:17:43 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <HBhK6.135980$xN4.8661463@news1.sttls1.wa.home.com>
Source record: 163551

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:3AF997DD.6A6BD4DC@eznec.com...
> If this premise were true, the currents I measured in my recently posted
> experiments couldn't exist. But they do. Tom's measurements of the
> current along a plane shield also contradict this theory.
>
> Roy Lewallen, W7EL

Hi Roy,

I would like to see the description of your circuit. I think I have the results of the test but they were meaningless without the circuit.

It is making it tough to follow the conversation when parts are dropped by the server.

I recall Tom's experiment. It would help if he could give a careful description of the apparatus, including loop orientation, size, freq, ect.

As you may recall, I reported on an experiment that I called a double shielded coax experiment. It did not show a change in capacitance that might be related to skin effect. I can post it again if someone would like me too.

73, Roger, W7WKB

3404. Re: FA - Hustler Mobile Setup

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 20:32:25 UTC
From: kk4tl@aol.com
Message-ID: <20010509163225.25150.00005262@ng-mq1.aol.com>
Source record: 163552

Sold.

3405. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 20:37:01 UTC
From: w2du@iag.net
Message-ID: <3af9a5eb.18825239@news.journey.com>
Source record: 163553

On Wed, 09 May 2001 19:44:41 GMT, "VE9SRB" <srbest@att.net> wrote:

>I fully understand that the impedance match occurs as the result of two
>rearward traveling waves canceling one another at the match point. When the
>two rearward waves cancel, the total rearward voltage, current and power go
>to zero.

Your last sentences totally contradicts your statement in the previous post. You can't really believe the voltage, current and power go to zero simultaneously. Or have you found a way to destroy energy? Steve, you're so confused you can't seem to avoid contradictions from one post to the other.

Walt, W2DU

3406. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 20:53:33 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AF9AE4D.950@wt.net>
Source record: 163554

Harold wrote:
>
> I am having a very anoying RFI problem and request any comments from Hams
> that may have experienced and resolved a similar problem.
>
> My station is set up like this..
>
> Rig IC-718---1 Ft. RG-58 coax--low pass filter--1 Ft. RG-58 coax---AL-80A
> amplifier-----1 Ft. RG-58 coax---low pass filter---1 Ft. RG-58 coax---MFJ
> Versatuner V--40 Ft. RG-8 coax--dipole antenna in attic. The antenna is an
> Alpha Delta DX EE with the 40 meter section removed to fit my space.

You have a lot of harmonic suppression so thats not the problem. Most
newer rigs are fairly clean anyway to pass fcc certification. I don't
even bother with pass filters here. And if you are using the tuner, it
also acts as a filter.
>
> As installed, the SWR within the General Class band on 20 and 15 Meters is
> less than 2:1 and the antenna has reasonable SWR for a segment of the 10
> meter band.
>
SWR has absolutely nothing to do with RFI/TVI problems. Or common mode
currents for that matter.

> I live in a restricted area, so getting the antenna outside and in the clear
> is not a vialble option.

Thats too bad. That would help alot.
>
> The station grounding goes like this...each piece of equipment mentioned
> above are grounded to a half inch copper pipe. The copper pipe is routed to
> ground straight out the wall and down with 8 gauge wire about 15 ft. to the
> main house ground rod. The total length of the ground wire is about 20
> feet.

Grounding also usually has no effect on your problem, as you've probably
noticed.
>
> As installed, I can operate on 20 meters and 10 meters without a peep of
> RFI. It doesn't matter, with or without the amplifier, my signals on 20 and
> 10 meters cause no RFI at all.
>
> On 15 meters I interfere seriously with the TV in the house. It is on a
> coax connection with a Direct TV dish up on the roof. I also have an
> interference problem with the home burglar alarm.

You have fundimental overload. From too much power/antennas too close to your other gear. Also it could be possible you have a lot of common mode current on the feedline. This in effect makes your feedline act as part of the antenna, and you are radiating right into the house/shack from both the antenna and feedline. Also you could be coupling to other house wiring in the attic. Again the only real cure is to move the antenna in that case. Being you can work ok even with power on 20/10, that leads me to believe you have an antenna/feedline or coupling problem. And sometimes things can just be more sensistive to certain freq's. MK

--

http://web.wt.net/~nm5k

3407. Re: Looking for VHF & UHF Eggbeater

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 20:59:08 UTC
From: kg4fet@aol.combadspam
Message-ID: <20010509165908.11254.00002535@ng-cc1.aol.com>
Source record: 163555

> I am looking for a VHF & UHF Eggbeater
>
>Tnx
>
>N6CO
>Dave
>

Dave,
In the spirit of ham radio try your own. Here is a web sit that gives you a completerun doun on how to build both UHF and VHF egg beaters.
www.members.aol.com/k5oe
Great site and lots of loe info ther as well.
73 de KG4FET Sandor

3408. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 21:06:18 UTC
From: kb7qhc@home.com
Message-ID: <3afcad3d.168147303@news.seanet.com>
Source record: 163557

On Wed, 09 May 2001 13:18:07 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> How is it that opprobrium and cat-calls now replace logic?
>
>Anyone trying to hoodwink the public deserves the opprobrium.
>Please read, nay, try to *understand* my latest reply to Steve.
>
>> And where is Walt?
>
>I don't know - maybe unpacking? This particular argument is not Walt's
>argument. It is Steve's and my argument.
>
>> ... from my limited
>> perspective, it appears Walt is hedging his usage of that resource and
>> doing it selectively.
>
>Why are you mentioning Walt? This argument is 100% between Steve and me.
>Your repeated comments about Walt seem to me to be a diversionary action
>to direct attention somewhere else besides the point of discussion. One
>wonders why.
>
>> Cecil, on the other hand, you appear to be stuck in a rut of your own
>> interpretation. I have asked for a complete architecture in regard to
>> your criticism and have had to draw those elements out one at a time -
>> tedious to say the least.
>
>Forgive the one-at-a-time packets but I cannot reproduce every past posting
>within every present posting. Readers are therefore forced to keep up with
>the context just like I am. And I have had to take time out to refresh my
>memory concerning Maxwell's equations. I didn't use them very much at Intel.
>
>> Your fanciful thread of "Kirchoff's laws"
>> was a travesty designed to prove a point through manipulation, not
>> through the evidence of poor application of math offered by either
>> Steve or Walt. That single thread poisoned the well insofar as my
>> having any interest in supporting what appears to be more
>> manipulation.
>
>It was a joke, Richard, and had a twist. It's like the question:
>After a plane crash right on the border of two countries, where do
>they bury the survivors? The entire point of the posting was that
>Steve's voltage additions are the same kind of joke as that one.

>I'm surprised you haven't seen that. Have you really looked?
>
>> Frankly I would offer that these issues matter not one whit against
>> the topic of "Virtual Shorts" that seems to have wasted away to a
>> trivial and poorly offered student's aide. NO ONE is actively engaged
>> in that discussion anymore, least of all the proponent.
>
>This argument is not about "Virtual Shorts", Richard. This argument is
>about conservation of energy and the violation thereof in Steve's voltage
>additions which should be a combination involving the square root of the
>sum of the squares. One cannot just willy nilly ignore the associated
>magnetic fields.

Hi Cecil,

Your response to my posting is the only one I will offer. This is because those other responses to my posting clearly negate most of what you pose above about what this thread is all about. (Imagine how this seems so natural thus far.)

As I said, you are in an orbit of your own invention, and it seems all three of you are busy "quoting" each other with the "other" being infuriated that they never said anything in that quote! (What a surprise!) This responds to why I am not interested in derivative side-bars.

I already expressed that I thought nothing would come of the admonition to not restate or revise another's model and portray it as theirs. You three have conformed to my expectations fully within the space of an hour. This basic consideration of not reshuffling the hand at every bid seems to be consigned to the ash heap of 600 postings.

So the end result is now all three are talking past me. Are you guys really interested in a response (that you would attend), or merely here for the gratification?

73's
Richard Clark, KB7QHC

3409. Does anyone have experience with the Magnetic loop antenna's from MFJ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 21:07:17 UTC
From: Adam <digipoint@hotmail.com>
Message-ID: <9dcblfaqm1@news.kabelfoon.nl>
Source record: 163556

Hi there,

Is there anyone who has experience with the Magnetic loop antenna's from MFJ? There is the MFJ 1786 and MFJ 1788. I don't know if results are good with this type of antenna. Please post your comments.

'73,
Adam

3410. Re: HF DF capability

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 21:38:42 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3af9b97e_1@news3.prserv.net>
Source record: 163475

FCC now operates a large network of fully automated CDAAs. The monitor stations aren't closed, just unmanned and remote controlled. One of their engineers made a presentation on the system at the 1997 HFDF conference.

--
Crazy George

MailfrmPA <mailfrmpa@aol.com> wrote in message news:20010508230251.01134.00000765@ng-fp1.aol.com...
> do your search on the Adcock antenna, I believe its called.
>
> Makes you wonder about the FCC's claimed DF capability now that the monitoring
> stations have been closed.
>
> K0MB

3411. Re: AM/FM reception in Midtown NYC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 21:40:06 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3af9b980_1@news3.prserv.net>
Source record: 163558

Pat:
Here is a possibility:
Many of these buildings had their own rooftop TV antennas before Cable TV was installed. Try to determine if any of the old coax and antennas are still in place, even broken pieces of an antenna. Running new plenum rated coax is expensive, so if there happens to be some already there, it might be usable for FM and Wx channels (162 MHz) with a new simple FM antenna on an existing mount. AM radio is another matter entirely. The building is a good shield at those frequencies, and an amplified antenna on the roof, separately fed to an appropriate tuner (with external AM antenna connections) will be necessary, and even then the noise from the various digital equipment nearby (computers, adjustable speed motor drives, etc.) may still drown out the wanted signals.

--
Crazy George
Pat Santucci <psantucc@dnaco.net> wrote in message news:3af9a28b$1@127.0.0.1...
>
> harvey <harvey@lawrence.csnet.net> wrote:
> >You've got to play around. No radio shack off the shelf unit will work.
> I've
> >set up dipoles in windows and ran coax back to my fm radio inside a steel
> >building in midtown and get about 90% of all the local FM's. Never tried
> WX
> >reception in NYC but I think it can be done. I've also heard of some
people
> >attaching wire to the metal window frames which also act as an antenna.
> Lots
> >of multipath and high RF levels will cause front end overloading but all
> you
> >can do is experiment. Good Luck!
> >
> I was afraid you'ld say that.
>
> I'll have only two days to work the problem, and part of that has to be
occupied
> with my real job (programming the control system). Further, we know that
> visible solutions are unacceptable to the customer - If I make it work by
> attaching to the window frame, it does no good unless I can also hide it
> completely.
>
> I'm working the yellow pages on Friday trying to find a contractor willing

> to install a rooftop mast and antenna so I can tell the customer what it
> will cost to make this dream come true.
>
> Thanks for your reply- it would have worked if it was _my _ apartment.
>
> Pat Santucci
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3412. Re: In search of a quality 2m antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 22:11:26 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <i3gjftok1te3661am45f1tc6to0vadmg5a@4ax.com>
Source record: 163559

He's in South Portland Maine.

On Wed, 09 May 2001 19:16:29 GMT, "Peter J. Bertini"
<commquart@home.com> wrote:

>Where do you live? I used an Isopole at 80 feet for
>years, and few antennas could touch it. You will have
>to go to a fairly large beam and rotor to see much
>improvement. If you live in southern New England,
>I can't imagine why you aren't hitting any machines..
>If you are in northern Maine, that could be part of
>the answer...
>
>Pete
>
>
>"Ryan Morse (N1QZF)" <ryanbeck@loa.com> wrote in message
>news:9daag1rii1@nntpsp2-ld.pvd.loa.net...
>> Hi Guys and Gals,
>> I'm just starting out with my Technician licence, and I'm looking
>> forward to working the local 2m repeaters, but I'm finding I have trouble
>> tripping them. I live in a valley, and am currently using a Kenwood
>> TM-2550A with a AEA Isopole 2m vertical antenna. I also own a Ringo
>Ranger,
>> but I'm having problems with that, (I think there's a short, and need to
>> track it down.) My question is, does anyone have a good antenna design or
>> suggestions to help me get my signal out of this hole? Also, I have no
>> manuals with any of my above equipment, (I inherited them from the
>> Grandfather, who became a silent key several years ago,) can anyone give
>> me pointers?
>> Thanks ahead of time for any help you can offer,
>>
>> N1QZF
>>
>> Ryan Morse
>>
>>
>

3413. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 22:19:42 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dcfkl$57j$1@uranium.btinternet.com>
Source record: 163560

> Most controversial is the idea that coax braid could support two
separated
> currents. Take a careful look at how braid is actually woven and
see for
> your self if two currents could actually exist. I think the idea
is a
> little ridiculous for braid.
==========
Not if the braid is thick enough. And it usually is.

3414. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 22:27:28 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <kvjK6.53382$2_.18867936@news3.rdc1.on.home.com>
Source record: 163562
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> The problem is that the safety nazis want everyone to abide by
> their version of what is or should be safe. None of that
> crowd trusts anyone as an individual.

That is because the rules are made for the masses not the individual. I doubtr any law says Mike Smith of Nowheresville can drive this speed And Betty Sue Timmins of Godknowswhere can drive this speed.

3415. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 22:29:52 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <AxjK6.53387$2_.18872602@news3.rdc1.on.home.com>
Source record: 163563
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> That statement alone tells me you are very pro-government and
> have little or no respect for individual responsibility unless it is
> "enforced" by government. Pretty sad.

First thing ... we elect the gov't so why not trust them to some extent?

Next, when you consider people still do stupid things regardless of there being laws there, what do you think would happen if they are not?

3416. Re: Directional Discontinuity Ring Radiator (DDRR)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 22:32:36 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF9C584.75E23F76@eznec.com>
Source record: 163561

On April 28, I posted some information about patents. (The text is at the end of this posting.) In it I asked for corrections of any incorrect information from a knowledgeable person. So I was delighted to hear from "Mac" McLaughlin, N8TT, which pointed out a couple of errors in my posting. Mac is both a patent attorney and Professional Engineer, and kindly gave permission to post what he wrote.

I really appreciate his contacting me and taking the time to write up this informative tutorial. I hope we can look forward to more of his input in this field, and from experts in other fields as well.

Roy Lewallen, W7EL

Dear Mr Lewallen: 4/30/2001

We have had some correspondence about patents and some of the more arcane aspects of
the patenting process. At your request, I offer some observations that may be of some assistance
in understanding a few aspects of US patents. I promise to stay away from religious statements
about the existence of reflected power.
A process does exist for modifying, or even terminating, an issued patent. The process is
called "reexamination," which I will call "reex." Anyone may request the reex of an issued
patent by providing a patent, or other printed document, that predates the issued patent's filing
date, that was not used in the original patent prosecution, and that raises significant issues of the
patentability of the issued patent. A fee is also required. A patent that has been modified after
reex, is reissued with a new number preceded by "RE." (Reex is not the only process whereby a
patent might be reissued.)
Where the validity of a patent is in question based on prior art (printed relevant art
existing prior to application) it is usually much less expensive to let the PTO sort things out than
to have the Federal courts do so. A Federal judge who knows that a reex proceeding is on going
is most unlikely to allow a patent validity suit to go forward 'till after the PTO makes a
determination. Thus, sometimes, the person requesting reex is the patentee.

A common practice in patent applications is to disclose as much about the subject matter as possible beyond what is in the claims. (The claims constitute the description of what is protected, for a limited time, by a patent.) Such disclosures make it more difficult for persons in the future to be granted "close" patents. Discussions of alternate materials, processes, uses, properties, etc. are often made. It is this sort of disclosure, which was for material not claimed, that becomes a reference against a future patent application or is not found by a patent examiner and becomes a reference used by a person requesting reex.

Another issue that you asked me to comment on is the possible breadth of a patent. As a general rule, claims are limited to what is disclosed in the patent application. A few pioneering patents have been broad in their coverage, but how often does the transistor come around. The classic case illustrating this, is a 19th century case brought to the US Supreme Court by one S. Morse. Sam wanted coverage of all communication uses of electricity. It did not fly. Sam did not show how to effect what he was asking for. Indeed, we are still adding to the list. Thus, a patent with a description of a working antenna of a certain structure should be limited to claims of that structure. Occasionally, the PTO issues a patent with much too broad a set of claims, but their enforceability is questionable. Indeed, as Mr. Lewallen, has said: "There is no such thing as a single "fractal patent.""

My background: I have been a radio amateur for about 47 years and continually fascinated with antennas. I received a BS in mathematics from the University of Michigan where I also took the senior year EE courses. After graduate work in radio astronomy under W8JK, I began a career of teaching electrical engineering at a private engineering college (where I have now taught for some 37 years). In order to afford to teach, I went to law school and became a patent attorney with a small private practice. I am also a registered professional engineer in Michigan.

My hat is off to the numerous on the antenna newsgroup who do a first class job of illuminating antennas. I am amazed at the few who use the group as if it were a urinal.

73 Mac, N8TT

Roy Lewallen wrote:
>
> This is a repeat of information I've posted several times here before,
> but it seems to need repeating from time to time.
>
> There's no such thing as a single "fractal patent". There could be
> hundreds of patents involving fractal antennas -- different and specific
> ways of folding them, testing them, constructing them, fixtures to bend
> them, ways to feed or match them, and so forth. Each patent contains
> claims which describe specifically and exactly just what combination of
> items is patented. A patent applies only to the specific combinations
> stated in the claims. Simply building, using, or selling a fractal
> antenna doesn't in itself violate any patents, unless it contains all
> the elements in a patent's claims (or variations "obvious to one skilled
> in the art"). I suggest spending a little time at http://uspto.gov.
> You'll find good, accurate information there, and can read the claims of
> some real patents to see what I mean.
>
> I don't believe that the USPTO can or will overturn patents once they're
> issued. The common process is for someone to make, use, or sell a
> patented device, get sued by the patent holder, then countersue to
> declare the patent void. Often, if the party using the device has a
> credible case, the patentee will issue a low cost or no cost license to
> use the device, ending both suits. That way, it saves a bundle of money
> and leaves the patent intact so that other competitors will have to go
> through the same process if they want to try and use the device. This is
> beneficial to both parties, since both save a lot of money and both have
> some level of protection from potential competitors. It's a particularly
> effective technique when the parties are large corporations, because it
> effectively locks out small competitors who can't afford the protracted
> litigation of a suit and countersuit.
>
> DISCLAIMER: I'm not a lawyer, and the above might not be entirely
> correct. In any case it's not intended as legal advice; if you need
> legal advice you should see a qualified attorney. But I'd appreciate
> corrections from any knowledgeable person, if anything I posted is in
> error.
>
> Roy Lewallen, W7EL

3417. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 22:34:07 UTC
From: GG <nbc_red@mailcity.com>
Message-ID: <3AF9B764.5AEEBD5A@mailcity.com>
Source record: 163564
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Suggest you check with a lawyer, it isn't that simple. Homesteading and
imminent domain have nothing to do with it.

JWheeler wrote:
>
> That's not completely correct. I believe that the time limit is about 4
> years. If I went and 'established' myself on that land for long enough and
> no one said anything about it, then while I may have been there illegally in
> the beginning, I do have a legal right to be there, and the courts in Texas
> will back me up on it. I'm not sure if it falls under homestead or imminent
> domain, but it is the law, at least here in Texas. I know of people who
> have lost several feet off of their property line in this very same manner.
>
> JWheeler
> kd5bcu
> GG <nbc_red@mailcity.com> wrote in message n
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3418. Re: Hygain HYTOWER antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 22:50:09 UTC
From: Doug <doug@ycsi.net>
Message-ID: <9dchj1$pa4$0@63.90.193.171>
Source record: 163565

Well.....we learn somthing every day. I'll look at MFJ's catalog. I do
enjoy the antenna. Maybe I'll have another. Thanks....

73

Doug

Dick Hughes wrote:

> Are you aware that they are being manufactured again?
>
> 73, Dick - W6CCD
>
> On 9 May 2001 16:36:41 GMT, Doug <doug@ycsi.net> wrote:
>
> >Looking for one of these, in decent shape with most of the pieces. I've got
> >one, but it's an older model with some but not all of the parts. Would like
> >to find another.
> >
> >Thanks and 73
> >
> >Doug, K7YD
> >Livingston, MT
> >

3419. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:02:56 UTC
From: W4NTI <w4nti@nospammindspring.com>
Message-ID: <9dci9s$ri2$1@slb4.atl.mindspring.net>
Source record: 163567
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Well....there is one thing about it.....Ya just cain't fisk stupid.

Dan/W4NTI
"Rob St.Denis" <tstdenis3160@home.com> wrote in message
news:AxjK6.53387$2_.18872602@news3.rdc1.on.home.com...
> > That statement alone tells me you are very pro-government and
> > have little or no respect for individual responsibility unless it is
> > "enforced" by government. Pretty sad.
>
> First thing ... we elect the gov't so why not trust them to some extent?
>
> Next, when you consider people still do stupid things regardless of there
> being laws there, what do you think would happen if they are not?
>
>

3420. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:04:26 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF9CCFA.AC916CB8@IEEE.org>
Source record: 163568

VE9SRB wrote:
> When the
> two rearward waves cancel, the total rearward voltage, current and power go
> to zero.

The energy in those canceled waves CANNOT disappear from the universe.
Those joules do not "go to zero" and instead of disappearing, they add
to the electromagnetic field to assist in the creation of the forward
wave. Those energy values are hidden in your voltage values and that's
why your energy equation doesn't balance. 50v at one amp added to 50v
at one amp does not equal 100v at two amps.

I am in the position of disagreeing with everyone, including you, Walt
and some others with whom I've been in contact by email. However, I
think I can prove my case, point by point.

What appears to have happened is that both you and Walt have adopted
math models that have taken some long-forgotten shortcuts. Shortcuts
are OK but it is not OK to incorporate those shortcuts into reality
as if they are reality itself. When the (flawed) math model becomes
someone's reality, it is time to take a long hard look at it.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3421. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:05:53 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dcifpkji1@slb2.atl.mindspring.net>
Source record: 163566

Roy:

Heh, heh... the rub is in the degree of "perfection" pf that perfect conductor.

To achieve "perfection" would require an infinite number of dB of separation of common modes and differential modes...

Infinite dB's are hard to come by... the first 50-60 dB are easy, the remainder of the dB's as you well know, must be fought for with great difficulty, 1dB at at time all the way to infiinty.

And so... skin effect alone does not ensure de-coupling of common and differential modes. In the perfect conductor the "skin depth" is zero and all current travels on the surface, with any practical conductor there is still some tiny current detectable with some very expensive instruments on the other side of the shield. Cfr... NACSIM 5100!

-Peter K1PO

"Roy Lewallen" <w7el@eznec.com> wrote in message news:3AF976B3.3F844819@eznec.com...
> I'm not sure where the controversy is. Independent currents on the two
> surfaces of a conductor (which is at least several skin depths thick) is
> entirely consistent with all the several electromagnetics texts I have.
> As far as I can tell, only one person seems to believe otherwise. Tom,
> W8JI, measured different currents on the two sides of a plane conductor,
> and I recently posted measurements showing different currents on the
> inside and outside of a coaxial cable. No contradictory evidence has
> been offered. To have a link between currents on the two sides of a
> conductor (other than the conductive path at the edge) requires a field
> within the conductor. But as Holt says(*),
>
> "The electric field inside a perfect conductor is zero, for otherwise
> there would be the absurdity of an infinite drift current. We know from
> Maxwell's equations that time-varying electric and magnetic fields
> always accompany one another and, consequently, a time-varying magnetic
> field cannot exist in a perfect conductor."
>
> Roy Lewallen, W7EL
>
> (*) Charles A. Holt, Introduction to Electromagnetic Fields and Waves,
> Wiley, 1963, p. 187.
>
> Roger Sparks wrote:
> >

> > "Serafini" <nerva4@mywebpages.com> wrote in message
> > news:3AF93689.868D1066@mywebpages.com...
> > > It exists an experimental proof that the skin effect is NOT a form of
> > > shielding?
> > > I seem to me that the way of skin effect is to expell current and
> > > magnetic field from the inner part of a conductor, might be a form of
> > > shieldind from external EM
> > > fields too.
> > > Antonio
> > >
> > >
> > >
> > Hi Serafini,
> >
> > You seem to have a grasp of the theory of skin effect and how it holds
the
> > current to the surface of a conductor.
> >
> > More controversial is the idea that skin effect is so effective at
> > separating the two surfaces of a flat or cylindrical conductor that two
> > separate currents can flow, one on each surface. Keep in mind that
separate
> > currents would require a potentially very large voltage difference
between
> > the surfaces such as appears across a capacitor.
> >
> > Most controversial is the idea that coax braid could support two
separated
> > currents. Take a careful look at how braid is actually woven and see for
> > your self if two currents could actually exist. I think the idea is a
> > little ridiculous for braid.
> >
> > 73, Roger, W7WKB

3422. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:11:37 UTC
From: richardharrison@webtv.net
Message-ID: <10473-3AF9CEA9-63@storefull-111.iap.bryant.webtv.net>
Source record: 163478

Dick Carroll wrote:
"You guys make me nervous using energy and power interchangeably."

Most readers know that power is measured in watts and that energy is measured in watts times hours or in watthours. Maybe that is why they are not nervous.

Best regards, Richard Harrison, KB5WZI

3423. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:12:04 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dcirc$ff4$1@slb1.atl.mindspring.net>
Source record: 163469

Steve and Cecil:

Ya'll realize of course that the "reflected power" you are adding into that sum is completely fictional!

And so... all ya'll's could be right.

I think Humpty Dumpty said it best:

.....

"When I use a word", Humpty Dumpty said, in a rather scornful tone, "it means just what I choose it to mean, neither more nor less."

"The question is", said Alice, "whether you can make words mean so many different things."

"The question is", said Humpty Dumpty, "Who is to be master: - that's all."

Lewis Carol, "Alice in Wonderland - The Turtle soup"
.....

-Peter K1PO

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message news:lUfK6.12491$4f7.995619@bgtnsc06-news.ops.worldnet.att.net...
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3AF9838F.3466C068@IEEE.org...
> > VE9SRB wrote:
> > > The total power in the 50 ohm resistor is equal to 75 W.
> > > The total power in the 50 ohm resistor is equal to 8.33 W.
> > > The total power in the 50 resistor is equal to 133.33 W. Yes Cecil, THE
> END
> > > RESULT IS GREATER THAN THE SUM OF THE INDIVIDUAL VALUES.
> >
> > This is unadulterated bullcrap, Steve, and clearly violates the
> conservation
> > of energy principle. Here is the mathematical proof based on *ALL* the
> components
> > we are dealing with, some of which you are choosing to ignore.
> >
> > 100 watts of generated power whose components are:
> >
> > A. 75 watts is the part of the generated power that makes it
> > past the Z0-match point

> >
> > B. 25 watts is the part of the generated power that would be reflected
> > if it were not subjected to destructive interference
> >
> > 33.33 watts of reflected power whose components are:
> >
> > C. 8.33 watts re-reflected back toward the load from the Z0-match
point
> >
> > D. 25 watts not re-reflected and subjected to destructive interference
> >
> > 133.33 watts forward power is in a 150 ohm feedline and consists of
> > the combination of A, B, C, D above. The powers add directly because
> > they are scalars and energy cannot be destroyed, but the voltages DO
> > NOT add directly. Here are the voltages associated with A, B, C, D above
> > (normalized to the 150 ohm environment because that's where all four
> > components end up).
> >
> > A. 106.1 volts, B. 61.24 volts, C. 35.355 volts, D. 61.24 volts
> >
> > These are the voltages whose electric fields combine to get the 141.4
> > volts of forward voltage. The math behind the combination is the square
> > root of the sum of the squares. It happens that way because we are not
> > dealing just with electric fields - we are dealing with electromagnetic
> > fields which have a corresponding magnetic component containing some
> > of the energy. You simply cannot deal with voltage alone and completely
> > ignore the corresponding current.
> >
> > This is the way the electric fields of the component voltages combine to
> > cause the total voltage.
> >
> > V(A)^2 + V(B)^2 + V(C)^2 + V(D)^2 = V(tot)^2
> >
> > (106.1)^2 + (61.24)^2 + (35.355)^2 + (61.24)^2 = 20000
> >
> > The total voltage is the square root of 20000 which is 141.4 volts
> >
> > It is only a mathematical curiosity that 106.1 + 35.355 = 141.4
> > and is meaningless in the analysis. You are engaging in Voodoo
> > Mathematics. You know what the outcome has to be so you are bending
> > and breaking the rules of physics. You simply cannot be allowed to
> > get away with such nonsense, Steve.
> >
> > P(A) + P(B) + P(C) + P(D) = total forward power
> >
> > P(A) + P(B) = 75 + 25 = 100 watts of generated power
> >
> > P(C) + P(D) = 8.33 + 25 = 33.33 watts of reflected power
> >
> > 100 watts + 33.33 watts = 133.33 watts of total forward power

> >
> > For our example, given the existence of a Z0-match,
> > GENERATED POWER PLUS REFLECTED POWER EQUALS FORWARD POWER!!!
> > Physics wins out once again.
> > --
> > http://www.mindspring.com/~w6rca
>
> Thanks for the comments Cecil.
>
> Take care.
>
> Steve
>
>

3424. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:15:42 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dcj26$ij6$1@slb3.atl.mindspring.net>
Source record: 163470

Richard:

I would encourage you to have them all examine and critique my DC reflection example.

That's certainly simple enough! Anyone with a modicum of DC circuit analyis know how could follow and understand that...

I think they ignore the DC case because... well... because it hurts to admit to belief in a fiction.

Heh, heh.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:3afa695c.150770236@news.seanet.com...
> On Wed, 09 May 2001 10:38:12 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >VE9SRB wrote:
> >> 2) The hang up here is that everyone seems to struggle with adding two
> >> *forward* powers. The 100 W + 33.33 W must equal 133.33 W issue. These are
> >> two forward powers traveling in the same direction in a transmission line.
> >> It is the voltage components of these powers that add, not the powers. 100
> >> W has an associated voltage of 70.71 V, 33.33 W has an associated voltage of
> >> 40.82 V. 133.33 W has an associated voltage of 81.65 V. Adding 70.71 V in
> >> phase with 40.82 V just does not equal 81.65 V.
> >
> >That's because some of the power is in the magnetic field, Steve. Are you
> >saying that when you combine 50v at one amp (in phase) with 50v at one amp
> >(in phase), you get 100v at two amps (in phase)? It's not true, Steve.
> >
> >You must add the square root of the sum of the squares of the voltages
> >to get the resulting voltage and you must add the square root of the sum
> >of the squares for current to get the resulting current. In the
> >50v,1a + 50v,1a addition (inside a 50 ohm feedline) the sum of the voltages
> >will be 70.7v (not 100v) and the sum of the currents will be 1.414a (not 2a)

> >
> >You are taking the known steady-state measured values and performing
> >Voodoo Math on them while completely ignoring the source(s) of power
> >that would balance the energy equation. I certainly hope no newcomer
> >is trying to learn from you.
> >
> >Since all the following voltages/currents are in phase, assume a phase
> >angle of zero degrees for all. Z0 = 150 ohms.
> >
> > +------------+
> > 106.1v, 0.707a | | 141.4v, 0.943a
> >--------------------->| |---------------->
> >75w Generated power | Z0-match | 133.33w forward power
> > not reflected at | |
> > the Z0-match point | |<----------------
> > | | 35.355v, 0.236a
> > +------------+ 8.33w Re-reflected power
> >
> >You are saying that 75w + 8.33w = 133.33w and that is still nonsense.
> >WITHOUT ANY ADDITIONAL POWER IN THE SYSTEM, 75w + 8.33w adds up to
> >a total of 83.33w. That would mean a forward voltage of 111.8v and
> >a forward current of 0.745a in the 150 ohm line. These are the values
> >that are required, by the conservation of energy principle, to exist
> >IF THERE IS NO OTHER POWER IN THE SYSTEM. We know that those values
> >of forward voltage and current do not agree with the measured values
> >so we know that THERE IS OTHER POWER IN THE SYSTEM, power that you
> >have ignored.
> >
> >Therefore, only one rational conclusion is possible. YOU HAVE NOT
> >ACCOUNTED FOR ALL THE POWER. In order to balance the energy equation
> >you must include the other 25w of generated power and the other 25w
> >of reflected power. These are the two powers involved in the
> >destructive interference pattern at the Z0-match. So the diagram
> >needs to be changed. (Note that the added voltages and currents
> >exist in the 50 ohm environment but since they completely cancel,
> >there is no 50/150 normalization problem.)
> >
> > +------------+
> > 106.1v, 0.707a | | 141.4v, 0.943a
> >--------------------->| |---------------->
> >75w Generated power | Z0-match | 133.33w forward power
> > not reflected at | |
> > the Z0-match point | |<----------------
> > | | 35.355v, 0.236a
> > | | 8.33w Re-reflected power
> > | |
> > 35.355v at 0 deg | | 35.355v at 180 deg
> > 0.707a at 180 deg | | 0.707a at 0 deg
> >--------------------->| |<-----------------
> >25w that tries to be | | 25w reflected power used

> >reflected but instead | | in the process of
> >suffers destructive | | destructive interference
> >interference +------------+
> >
> >The additional terms include two voltage phasors, equal in magnitude and
> >opposite in phase so they are canceled. Also included are two current
> >phasors, equal in magnitude and opposite in phase so they are canceled.
> >BUT THE POWERS ASSOCIATED WITH THESE CANCELED TERMS DO NOT CANCEL.
> >
> >THAT ADDITIONAL 25W+25W=50W IS ABSOLUTELY NECESSARY TO GET 133.33 WATTS
> >OF FORWARD POWER. Your assertion that 75w + 8.33w = 133.33w is absolute
> >nonsense.
> >
> >The correct energy equation is 75w + 25w + 8.33w + 25w = 133.33w
> >
> >Grouping the terms: (75w + 25w) + (8.33w + 25w) = 133.33w
> >
> >75 watts plus 25 watts equals the generated power.
> >
> >8.33 watts plus 25 watts equals the reflected power.
> >
> >THEREFORE, in this example, THE FORWARD POWER EQUALS THE GENERATED POWER
> >PLUS THE REFLECTED POWER!!!
> >
> >> The power addition formula that I describe, Ptotal = P1 + P2 + 2
Sqrt(P1)
> >> Sqrt (P2) Cos(theta), is valid for determining the total power
resulting
> >> from the vector addition of two forward or rearward traveling voltages,
E1
> >> and E2. Theta is the phase angle between the voltages. Terman uses a
> >> similar formula for determining the total voltage magnitude associated
with
> >> adding the voltage vectors E1 and E2. Terman's formula for determining
the
> >> magnitude of the total voltage sum is Etotal = Sqrt[E1^2 + E2^2 + 2
E1 E2
> >> Cos(theta)].
> >
> >You cannot willy nilly apply a voltage equation involving phasors to a
power
> >equation involving scalars, Steve. Your power equation, above, obviously
> >violates the conservation of energy principle. To the best of my
knowledge,
> >no other author has been ignorant enough to publish your power equation
above.
> >If you know of such an author, besides yourself, who has published that
power
> >equation above, please produce the reference.
> >

> >What you are implying is that TWO SCALAR VALUES CAN MAGICALLY BLEND
TOGETHER
> >SO THAT THE END RESULT IS GREATER THAN THE SUM OF THE INDIVIDUAL VALUES.
> >I contend that is a blatantly false concept but if you are convinced that
> >you are right, please perform your Voodoo Math on my bank account.
>
> Hi Cecil,
>
> How is it that opprobrium and cat-calls now replace logic? There are
> no more than maybe four sentences above that deserve airing. Given
> the rest presumes "ignorance" there is no point in lengthy treatments
> if in your opinion Steve is incapable of understanding it.
>
> And where is Walt?
>
> Where are HIS references?
>
> I would dearly love to see them both offered, but as you three
> continue to talk past each other, I hold no hope of that. I do see
> discussion of Johnson from both Walt and Steve, but from my limited
> perspective, it appears Walt is hedging his usage of that resource and
> doing it selectively. I can neither confirm nor deny their correct
> application, being without that tome - so I would offer that they both
> recite a more accessible author.
>
> Cecil, on the other hand, you appear to be stuck in a rut of your own
> interpretation. I have asked for a complete architecture in regard to
> your criticism and have had to draw those elements out one at a time -
> tedious to say the least. Your fanciful thread of "Kirchoff's laws"
> was a travesty designed to prove a point through manipulation, not
> through the evidence of poor application of math offered by either
> Steve or Walt. That single thread poisoned the well insofar as my
> having any interest in supporting what appears to be more
> manipulation.
>
> Steve, I can understand your application of the contentious formula,
> I can even see how it works. This is not to say I understand WHY it
> works (or if it is even correctly applied) and I would offer that you
> too have a less than complete treatment. The one obvious point that
> Cecil's myopic treatment seems to neglect is that his insistence of
> 8.3 odd Watts adding to the forward power is insufficient to generate
> that same 8.3 odd Watts in the first place. In this I maybe wrong,
> but it requires your response to either his specific challenge (and go
> no further) or my observation (and go no further).
>
> Frankly I would offer that these issues matter not one whit against
> the topic of "Virtual Shorts" that seems to have wasted away to a
> trivial and poorly offered student's aide. NO ONE is actively engaged
> in that discussion anymore, least of all the proponent.
>

> And as a last comment: the models provided by ALL are too busy with
> extraneous or hidden detail. I am not enamored with Walt's in that it
> appears to be a one-trick pony that can't perform to the generality
> that Walt insists is behind its singular success.
>
> 73's
> Richard Clark, KB7QHC

3425. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:16:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF9CFBB.83724793@IEEE.org>
Source record: 163471

VE9SRB wrote:
> I was just demonstrating that the voltage associated with 100 W (70.71 V)
> when added in-phase to the voltage associated with 33.33 W (40.82 V) does
> not add to the required voltage of 81.65 V, necessary for 133.33 Watts of
> power.

Of course it does, Steve. sqrt(70.71^2 + 40.82^2) = 81.65v

This is exactly like adding 50v at one amp to 50v at one amp and getting
70.7v at 1.414 amp. It is the square root of the sum of the squares, not
simple addition. The "addition" is done in the electromagnetic fields.

> The correct voltage addition is 61.24 V (75 W) + 20.41 V (8.33 W) = 81.65 V
> (133.33 W).

But then your powers don't add up. Seems you have a choice with your method.
Either the voltages are wrong or the powers are wrong. With my above
equation BOTH voltage and power add up to known correct values.

> 3) You said that it is not possible to have the total voltage on a
> transmission line go to 0, while at the same time have the total current be
> non-zero. This is incorrect.

That's one point of disagreement between Walt and me. However, I also
disagree with you that energy goes to zero when voltages and currents
undergo destructive interference.
--
http://www.mindspring.com/~w6rca

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3426. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:24:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF9D197.A16D1F9A@IEEE.org>
Source record: 163472

Richard Clark wrote:
> So the end result is now all three are talking past me. Are you guys
> really interested in a response (that you would attend), or merely
> here for the gratification?

It is a three-sided argument. I disagree with Walt and I disagree with
Steve. I am going to start another thread and do as you suggest. It
will be titled "Back to Basics".
--
http://www.mindspring.com/~w6rca

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3427. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:28:05 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dcjpd$n32$1@nntp9.atl.mindspring.net>
Source record: 163474

Walt:

[snip]
> Let me state unequivocally that only two people have ever challenged my
> presentation during those nearly 30 years. And they are Steve Best and
Gary
> Coffman. So even if you don't believe it's kosher to say it, I'm going to
say it
> anyway. THEY DON'T UNDERSTAND WHAT'S OCCURING IN THE MECHANICS OF THE
> REFLECTIONS THAT PERFORM THE MATCHING!!!
>
> Walt, W2DU
>
[snip]

For centuries before Christopher Columbus entered the scene, everyone believed the earth to be flat...

...time and a history of believers does nothing to strengthen your arguments...

Your arguments either stand alone or not...

a history of acquiesence by a group of individuals within an organization headed by a person who believes the "principle" does not make fact! Did they ever try to serve Koolaide at that laboratory?

Enough of punishing you for "calling in" those long suffering supporters of 30 years...

Walt, what can you do to convince us now?

I assert that reflected power, as espoused in the formalism of reflection mechanics, is in fact a "fiction". In fact the reflected voltage b = V - IR presented by so-called reflected power meters exists only in the meter itself, not in the circuits being measured!

In another couple of threads, I gave extremely simple examples of DC circuits containing no more than a voltage source and two resistors, with a mismatch, a reflection coefficient, a reflected voltage, and a VSWR, and a generated power and a delivered power, and no "home" can be found for the associated "reflected power"...

Y'all have "chosen" to ignore that simple example.

Why?

Is it because y'all know that "the jig is up", there is no way out,
reflected power is a fiction.

Or is it that you can't be bothered with "simple" circuits?

What?

Thoughts, comments,

-Peter K1PO

3428. FS: HyGAIN Quad Tri BAND Tennessee $300

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:41:25 UTC
From: ham_guy@webtv.net
Message-ID: <12886-3AF9D5A5-20@storefull-138.iap.bryant.webtv.net>
Source record: 163483

The antenna is down and ready for pickup. I would be willing to deliver within 50 miles of Crossville, TN for $50 on my trailer. Has original manual and new insulators. Johnny KF4WWF

3429. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:41:44 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dckj0$4og$1@nntp9.atl.mindspring.net>
Source record: 163476

Richard:

DC or AC it's all the same.

Same equations, same physics, same mathematics, same arithmetic, same measurements.

Maxwell's Equations and the principle of conservation of energy are the same at all frequencies...

As I asked before...

At which "magical frequency" "f" does your laboratory measurement stop working?

And why?

Why not answer those two questions?

If you can make those measurements that you and Wes describe at 10Ghz, and at 1GHz, and at 100MHz, and at 10MHz, and at 1MHz, and at 100kHz, and at 10kHz, and at 1kHz, and at 100Hz, and at 10Hz and at 1Hz, and at 0.1Hz and at 0.001Hz... and at 0.0000000000000001Hz, then at which particular frequency on the way down to zero does it stop working!

Come on, ya'll are just blowing smoke here, you can't even give the cutoff frequency for your "pseudo effect"!

You measure some effect that is descirbed by so-called immutable mathematical relationships extracted from some "mathematical formalism, in one frequency range and then turn around and tell me that they don't hold in another range!!!!

What?

What is the magical roll off effect, where is the magical 3dB frequency at which your measurements are only half as accurate as they are at microwaves, what???

I don't believe you can even begin to have me consider your' arguments seriously until you can tell me the cutoff frequency and the cutoff function.

Thoughts, comments,

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:3afb75d4.153962706@news.seanet.com...

> On Tue, 8 May 2001 21:25:23 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> > but what the heck does that have to do with
> >what a ham VSWR meter indicates?
>
>
> Hi Peter,
>
> You could have pointed that out long ago if that was the bone of
> contention - but it wasn't.
>
> Are we to understand NOW that you accept there is power in the
> reflected wave? If not, what is the point of discussing VSWR meter
> indications? Shouldn't you target the discussion of Power?
>
> If I recall, both Wes and I responded to the "fiction" of reflected
> power. Wes even described how it was exhibited in a system free of
> VSWR meter implications. Now you have chosen to respond with the
> introduction of this complexity - to what end?
>
> You've spoken of a DC correlative of reflection that held with
> conventional math. Both Wes and I have used that math, and have shown
> an example of real power in a reflection that cannot possibly be
> demonstrated at DC.
>
> The long and short of it is that for two of your recent speculations,
> you have not demonstrated sufficient proof, much less coverage to make
> a compelling case.
>
> 73's
> Richard Clark, KB7QHC

3430. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:43:35 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dckn7$u6n$1@slb4.atl.mindspring.net>
Source record: 163477

Cecil:

While you were at it with voltages, you should also have tried to prove that
you cannot just willy nilly add powers.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF8E2D5.FF2B807D@IEEE.org...
> Richard Clark wrote:
> > Weren't you the author of the thread "Kirchhoff's Laws?" I'm looking
> > for the sucker punch in your post.
>
> It was to prove that we cannot just willy nilly add voltages.
> --
> http://www.mindspring.com/~w6rca
>
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3431. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:51:03 UTC
From: w2du@iag.net
Message-ID: <3af9d703.1990582@news.onemain.com>
Source record: 163480

On Wed, 9 May 2001 19:28:05 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
wrote:

>
>Thoughts, comments,
>
>-Peter K1PO
>
>
Peter, with all the other valuable info you have in your brain you certainly
can't be eligible for the loony bin, but with your continuing insistence that
reflected power is fictitous I believe that's where you're headed.

On the other hand, it could be that you've been pulling our leg all along. I'm
going for the latter.

Walt,W2DU

3432. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-09 23:56:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AF9D91A.82251B43@eznec.com>
Source record: 163479

At HF and above, the difference between a braided shield and solid one
is usually of consequence only to people making precise measurements
with very well shielded and low noise equipment. The difference between
a solid copper or aluminum shield and one made from a perfect conductor
is of interest more to philosophers and academics than to engineers. In
other words, it's a perfect discussion for some of the folks on this
newsgroup. Have fun with it!

Roy Lewallen, W7EL

"Peter O. Brackett" wrote:
>
> Roy:
>
> Heh, heh... the rub is in the degree of "perfection" pf that perfect
> conductor.
>
> To achieve "perfection" would require an infinite number of dB of separation
> of common modes and differential modes...
>
> Infinite dB's are hard to come by... the first 50-60 dB are easy, the
> remainder of the dB's as you well know, must be fought for with great
> difficulty, 1dB at at time all the way to infiinty.
>
> And so... skin effect alone does not ensure de-coupling of common and
> differential modes. In the perfect conductor the "skin depth" is zero and
> all current travels on the surface, with any practical conductor there is
> still some tiny current detectable with some very expensive instruments on
> the other side of the shield. Cfr... NACSIM 5100!
>
> -Peter K1PO

3433. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 00:00:43 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF9DA2B.60A04B01@spam.me.not>
Source record: 163481

Ever stop to think that maybe they all talk on the same frequencies
because there's too few frequencies for them to talk on?

Just my two cents.

-SSB

Mark Keith wrote:
>
> Ryan KC8PMX wrote:
> >
> > One question, what would happen if a ham operator used his/her callsign as
> > an identifier on the LEGAL cb frequencies. (assume all other operation is
> > completely legal). Is it legal to identify with your callsign there?
> > (sorry, not up to much on my 11meter knowledge here)
> >
> > I have one in my truck that I use about 2 times per year mainly to find out
> > road conditions etc, because it seems NO ONE uses 146.520 anymore......
> > --
> >
> > Ryan, KC8PMX
>
> It's legal to ID with anything on the CB band, because you don't have to
> ID at all. Sure, you could use your ham call, but it would be a waste of
> time. It has no authority there at all. Would be like showing a traffic
> cop your ham license instead of a driver license if you got pulled over
> in a car. Normally, if you started using a ham call on the CB bands, the
> CBer's would think you are trying to be uppity. Likely would tell you to
> get where you belong. But in comparing 10m to the CB band, I don't see
> why any ham would want to hang out on CB. The cber's all want to talk at
> the same time on the same frequencies. No bueno. If you started problems
> on the CB band, while using your call, it's quite possible the fcc could
> start problems for you stating out of band ham operation. And if the
> radio is non type accepted, you are illegal no matter how you ID. Yep,
> you are right about the uselessness of 2m on the road. Thats why I run
> HF mobile. MK
> --
> http://web.wt.net/~nm5k

3434. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 00:02:59 UTC
From: richardharrison@webtv.net
Message-ID: <10473-3AF9DAB3-70@storefull-111.iap.bryant.webtv.net>
Source record: 163484

Cecil, W6RCA wrote:
"Generated power plus reflected power equals forward power."

Your Bird wattmeter tells you that and you don`t even need a Zo match.

Reference to Terman might simplify a solution to many of these arguments. Terman says: "In the case of radio-frequency lines, Zo can nearly always be assumed to be a pure resistance." (Terman is speaking of practicality concerning the lines actually used.)

Voltage and current on a line are the sum of two waves. One travels toward the load and is called the incident wave. The second travels back from the load and toward the generator and is called the reflected wave. These waves are identical in nature.

Everywhere on the line each of these waves has a value: E/I = Zo. In the case of the reflected wave we say the wave has a value of: E/I = -Zo, because its direction is reversed.

Actual voltage and current at any point on a transmission line are the sums of the incident and reflected values. The seeming complication from combination of the incident and reflected waves, Terman says, is made simple by reference to his section 4-4 of the 1955 edition of "Electronic and Radio Engineering". It seems reasonable to me, but contains various diagrams which I can`t reproduce here.

The Bird wattmeter is enslaved to Terman`s principles and it works. That fact should bring sense to all these arguments. Almost the same wording is found in part in Bird`s literature as you find in Terman.

Best regards, Richard Harrison, KB5WZI

3435. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 00:09:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF9DC22.CF9B3D89@IEEE.org>
Source record: 163482

"Peter O. Brackett" wrote:
> I assert that reflected power, as espoused in the formalism of reflection
> mechanics, is in fact a "fiction".

Consider the following experiment:

75 ohm TV source signal--------N*1/2WL 300 ohm line------75ohm TV

Why does ghosting appear where the reflection theory predicts
and at the strength that the reflection theory predicts? Are you
going to deny ghosting, Peter?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3436. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 00:16:20 UTC
From: richardharrison@webtv.net
Message-ID: <10473-3AF9DDD4-73@storefull-111.iap.bryant.webtv.net>
Source record: 163490

Peter, K1PO wrote:
"While you were at it with voltages, you should also have tried to prove
that you cannot just willy nilly add powers."

No, you add r-f powers with a Bird wattmeter for quantification.

Best regards, Richard Harrison, KB5WZI

3437. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 00:19:43 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF9DE9F.808F46D7@IEEE.org>
Source record: 163485

"Peter O. Brackett" wrote:
> While you were at it with voltages, you should also have tried to prove that
> you cannot just willy nilly add powers.

Ahhhh that's the beauty, Peter. Scalar power is like buckets of water.
You *can* add them willy nilly because there is no phase. 75 joules plus
8.33 joules always equals 83.33 joules, now and forever until those
joules are changed into something besides energy which, to the best of
my knowledge, cannot happen in a transmission line. I am appalled at
the number of people on the newsgroup who see nothing wrong with
violation of the conservation of energy principle. Does Mother Nature
grant special dispensation to RF engineers that she doesn't grant to
physicists?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3438. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 00:24:31 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF9DFBE.E63078FC@IEEE.org>
Source record: 163486

"Walter Maxwell, W2DU" wrote:
> On the other hand, it could be that you've been pulling our leg all along. I'm
> going for the latter.

Peter doesn't use the same dictionary as I do so real communications
between us is impossible. :-) We do, however, seem to share a weird
sense of humor.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3439. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 00:26:56 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AF9E050.9FFBE225@IEEE.org>
Source record: 163487

Sideband wrote:
> Ever stop to think that maybe they all talk on the same frequencies
> because there's too few frequencies for them to talk on?

More likely, the frequency of their talking is just too high.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3440. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 00:30:06 UTC
From: Bob McConnell <rmcconne.NOSPAM@lightlink.com>
Message-ID: <lvnjft4dggtgc2q6clhqvijpor7a673cfc@4ax.com>
Source record: 163488

On Tue, 08 May 2001 21:49:58 GMT, "Ryan KC8PMX" <kc8pmx@tm.net> wrote:

>One question, what would happen if a ham operator used his/her callsign as
>an identifier on the LEGAL cb frequencies. (assume all other operation is
>completely legal). Is it legal to identify with your callsign there?
>(sorry, not up to much on my 11meter knowledge here)
>
>I have one in my truck that I use about 2 times per year mainly to find out
>road conditions etc, because it seems NO ONE uses 146.520 anymore......

You could be cited for operating outside of the bands assigned to the
amateur radio service, not that anyone is likely to hear you and
report you. But it would be the same as using your ham call sign on,
say, a police band. Unless it is an emergency (Mayday), you aren't
supposed to do it.

Bob McConnell
N2SPP

3441. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 00:34:21 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AF9E20D.52583CF8@spam.me.not>
Source record: 163489

Heh. I'm not going to argue that one...

-SSB (who still doesn't have his callsign... Maybe it'll show up tomorrow...)

W6RCecilA wrote:
>
> Sideband wrote:
> > Ever stop to think that maybe they all talk on the same frequencies
> > because there's too few frequencies for them to talk on?
>
> More likely, the frequency of their talking is just too high.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3442. Re: AM/FM reception in Midtown NYC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 01:02:50 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <nuf5OvdwGI0QYGhY1pMp73ai4rCZ@4ax.com>
Source record: 163491

psantucc@dnaco.net (Pat Santucci) wrote:

>Greetings.
>
>Through an embarassing sequence of contract arrangements, I find myself in
>an awkward spot. I apologise for how far off-topic my question may be, but
>I don't know where else to ask. I hope one or more of you can help - this
>is potentially financially rewarding. Let me explain:
>
>I am a control sytems programmer. Normally, I integrate the media rooms of
>large corporations under one control system, and I work in the OH-IN-KY
>tristate.
>
>Now I am obligated to to a home theatre installation in New York City. One
>of the many things for which I was unprepared was poor radio reception. We
>can recieve clearly maybe 5 FM, no AM, and no WX stations, on two different
>tuners, even after a panic trip to the Wiz for some little Jensen amped
>antennae. Here's what I'm looking for:
>
>1. Information - is this kind of reception just normal? The site is right
>on the east river in midtown.
>
>2. Information - if you live in a similar area, how do you deal with it? Is
>there a 'sure thing' product for NYC radio reception?
>
>3. Service - if any of you know of, or work for, a company which offeres
>antenna installation for AM/FM/WX with guaranteed results, I'm sure my
>company can make a deal.
>
>I'm coming back to town on 5/23/2001. Good tips are worth a drink of your
>choice, and of course, a job may be in the offing. Go easy on me - I'm
>pretty damn ignorant of radio.
>
>Thanks in advance-
>Pat Santucci

If I were you, I would contact some of the stereo dealers in NYC that deal in ultra high-end equipment, the really good stuff, speakers that cost $80,000, etcetera.

They can probably refer you to good people who can put up an antenna appropos to central-city NYC that will work.

Bob
k5qwg

>
>
>-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
>http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
>------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3443. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 01:11:52 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3af9da6e.87269878@news.aepnet.org>
Source record: 163492

On Wed, 9 May 2001 19:28:05 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

{SNIP}

>
>In another couple of threads, I gave extremely simple examples of DC
>circuits containing no more than a voltage source and two resistors, with a
>mismatch, a reflection coefficient, a reflected voltage, and a VSWR, and a
>generated power and a delivered power, and no "home" can be found for the
>associated "reflected power"...
>
>Y'all have "chosen" to ignore that simple example.
>
>Why?
>
>Is it because y'all know that "the jig is up", there is no way out,
>reflected power is a fiction.
>
>Or is it that you can't be bothered with "simple" circuits?
>
>What?
>
>Thoughts, comments,

I have a thought. My thought is this: here we have a case of the pot
calling the kettle black. (Is that politically incorrect?)

I posed a simple waveguide reflectometer setup, one that I
demonstrated to dozens of fourth year and graduate students when I
TAed for a former boss who was an adjunct prof at the U of AZ.

You have repeatedly ignored responding to my previous posts some of
which I repeat below: (Note: I use two different computers to access
this group so I don't always have continuity in retrieving history.
If you want the exact messages, use Deja)

Quote #1.

Picture this. I have an x-band source that uses a high quality
isolator (terminated circulator) on its output. Any power returned to
this source is dissipated in the isolator. In addition, there is a
sampling loop that measures output level and via feedback stabilizes
the output power (ALC, if you will) This loop has the effect of
further improving the source match.

I connect this generator to a waveguide high-directivity dual directional coupler. We will use waveguide so you can throw away your volt and ammeters.

I place two waveguide thermistor power sensors to the two coupled ports on the directional coupler. I place a shorting plate on the output of the coupler. If the coupler is a good one, I will measure the same power on each of the sensors.

The forward power (your Pi) is sampled by the forward-reading coupler at a level equal to the coupling factor, e.g. -30 dB. The output short circuit totally reflects the incident power and returns it to the source. The reverse-reading sensor samples this, also at -30 dB and displays the same value as the forward sensor. Any differences between the two can be normalized out.

Because of the 'perfect' source match, there is no re-reflection of the reflected power; it is totally dissipated by the generator. This system will now reliably measure the return loss (within the directivity uncertainty limits discussed earlier) of a load placed on the output. For most purposes, we can ignore the forward sensor reading because it remains constant regardless of load impedance.

A few words about the power sensors. Contrary to what you claim above, the resistance of the thermistors doesn't have to be anywhere near the system impedance. The thermistors (today thermocouples are also used) simply measures temperature rise in a termination. The thermistor is not necessarily the termination. It is usual to have matched thermistors in a self-nulling bridge circuit. The second thermistor is heated by applying an easily measured DC or low frequency AC signal to it. This applied signal power is adjusted to null the bridge at which time the applied power equals the r-f power. This is a substitution method where a difficult to measure quantity (microwave power) is determined by measuring the low frequency or DC power. End #1

Quote #2:

Let's take two of my waveguide dual-directional couplers (reflectometers) and connect them thus:

The input port of coupler #1 attaches directly to the output of a well-matched source, as before. On the output port of coupler #1 we attach a waveguide E- H tuner (the waveguide equivalent of your antenna tuner). On the output of the tuner we attach the input port of coupler #2.

On the output of coupler #2 we attach a 3 dB attenuator followed by a short circuit.

So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho = 0.5

If I temporarily remove the tuner, as expected, both reflectometers measure a 6 dB power ratio between the forward and reflected coupled

ports.

We assume that maximum available power out of the source is 1.0 W. Because we have a non-reflective source, there is a mismatch loss given as:

-10 * log(1 - rho^2) = 1.25 dB

or leaving off the -10 log, a power ratio of 0.75.

So of the available power, 0.75 W makes it into the input port of coupler #1.

If our couplers are 30 dB, as in my previous example, then we read the following: (give or take coupling loss)

1. Coupler #1 forward port = 0.75 mW.
2. Coupler #1 reflected port = 0.1875 mW.
3. Coupler #2 forward port = 0.75 mW.
4. Coupler #2 reflected port = 0.1875 mW.

Okay, now we put the tuner back in between the two couplers. If we fiddle fart around with the tuner, the power reading at the reflected port of coupler #1 can be reduced to zero, or nearly so. We have "re-reflected" the nasty reflected (dare I say) power back toward the load.

The mismatch loss now goes away and the forward port of coupler #1 reads 1.0 mW.

Let's examine the readings on the thermistor power sensors on the coupled ports of coupler #2. Since we tweaked the tuner, we now have 1.0 W migrating around in the second coupler so the forward coupler reads 1.0 mW. (1.25 dB higher than before and no surprise)

With 1.0 W incident on a 6 dB return loss load, the reflected power is 0.25 W. The coupling factor is 30 dB so the power appearing at the reflected port of coupler #2 is 0.25 mW. The ratio of the reflected power to the forward power readings is .25 / 1.0 = - 6dB, just as before and (to me anyway) again no surprise.

But wait! We just tuned (conjugately matched) this system to "remove the termination" and that pesky reflected power still showing up on the coupled port!!!

No voltmeter, no ammeter, no hanky panky, just real reflected power heating up the thermistor. Funny how this works. End #2

So....now what?

By the way it broke 100 F in Tucson yesterday. Too bad, I predicted it would be today.

A local TV station runs a contest each year called the "Ice Break Contest" where the winner is the person that most accurately predicts

the day, hour and minute when the official temperature first hits 100 F for the year. The prize this year was a $10K trip for two to FO0.

The "Ice Break" comes from the idea that it takes 100 degrees to break the ice on the Santa Cruz River, which is normally dry and hasn't seen any ice for at least the last 10,000 years.

Wes Stewart N7WS

>
>-Peter K1PO
>
>

3444. Baby Boomer Quad WAS: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 01:47:56 UTC
From: G&R <"stop the spam"@limbo.hell>
Message-ID: <jpmK6.4010$h%.1482689@news20.bellglobal.com>
Source record: 163419

Roy,

Of course you are correct, the numbers were used as calculated by the program. This practice has been used by other suppliers as well, but we can and will correct this in the near future to make this clear, as we do not want to deceive with unrealistic claims.

The NEC4WIN program does have an automatic loop correction feature which yields fairly good results. Actual SWR and Z measurements (Autek Research RF-1) shows the modeling about 0.1 to 0.2 Mhz off which was correct for by trimming the capacity hats. For your interest Cebik's (W4RNL) article inspired us for this design. He modeled the diamond formation but only as a single bander. We found the square more advantageous for various reason, but mostly because it lent itself to a "nesting design" for multi-band use.

Should you wish more information, please contact VE3 CVS at erwins@degendesigns.com

73

Guenther
info@degendesigns.com

"Roy Lewallen" <w7el@eznec.com> wrote in message news:3AF5E814.B1B27D6A@eznec.com...
> The gain of a dipole at 50 feet on 20 meters is 7.64 dBi, or about 5.5
> "dBd". The plots on the Baby Boomer web site are for gain over ground at
> 50 foot height. This means that the gain of the Baby Boomer quad is
> about 3.5 dB relative to a dipole at the boom height. I'd expect NEC4WIN
> or any other modeling program to show a similar gain for a dipole at the
> boom height. I hope the manufacturers will change their plots to show
> 3.5 dB gain relative to a dipole at the same boom height, rather than
> the very misleading "9 dBd" (and similarly for the other bands).
>
> MININEC-based programs like NEC4WIN have to be used very carefully for
> quads because of MININEC's well known "corner cutting" error. It is
> possible to get good results by using a very large number of segments or
> segment length tapering, but if this isn't done, results won't be
> accurate. The forward gain won't usually be affected much, but the
> indicated F/B ratio can be badly off. See "MININEC: The Other Edge of
> the Sword", in QST, Feb. 1991. Because you don't have to worry about the
> "corner cutting problem", quad modeling is simpler with NEC-2 based
> programs. But results will be nearly identical when using NEC-2 or
> MININEC for quad modeling, as long as segment length tapering is used
> with MININEC.
>

> Roy Lewallen, W7EL
>
> Tom W8JI wrote:
> >
> > On Sun, 06 May 2001 19:40:17 GMT, "G&R" <stop the spam@limbo.hell>
> > wrote:
> >
> > >I wish you would also consider our Baby Boomer Quad (at
> > >www.degendesigns.com). We have used modeling software based on average
> > >ground conditions and based on our actual mounting conditions. To the
best
> > >of our experience our antenna does perform as indicated by our models.
> > >
> > >For your reference our software is NEC4WIN95VM as we feel it's the only
> > >software that can accurately model our antenna. There may be others,
> > >however based our field testing and modeling results it currently
performs
> > >the function the best.
> >
> > A two-element shortened quad with 9 to 10 dBd gain?
> >
> > I'd find out where the modeling error is, or are you twisting the
> > specs and comparing an antenna over ground to a dipole in freespace?!
> >
> > 73 Tom

3445. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 02:00:07 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <r7tjft8g368vbhvnog9c3j4vf6h3jhpfsr@4ax.com>
Source record: 163493

On Wed, 09 May 2001 18:24:07 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> So the end result is now all three are talking past me. Are you guys
>> really interested in a response (that you would attend), or merely
>> here for the gratification?
>
>It is a three-sided argument. I disagree with Walt and I disagree with
>Steve. I am going to start another thread and do as you suggest. It
>will be titled "Back to Basics".

Hi Cecil,

Good luck. I hope the others follow and restrain their comments to
specific issues rather than drawing out the entire argument again.

My preference would be for your model with two transmission lines of
differing Z and a mismatch at the load (if I recall those details
correctly).

73's
Richard Clark, KB7QHC

3446. Baby Boomer Quad WAS: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 02:00:18 UTC
From: G&R <"stop the spam"@limbo.hell>
Message-ID: <TAmK6.4037$h%.1488327@news20.bellglobal.com>
Source record: 163420

Interestingly enough "gain" is not affected to a great degree at peak vs a full size quad. This said, a full size quad has a broader peak for gain and F/B ratio that the BBQ. However, because of the total wire employed and the capacity hat design reasonable bandwidth is achieved.

As to SWR, you are correct, Z0 assumes 100 ohm ladder line. Ladder line and a tuner are always a good feed since losses are negligible even with high SWR..

With about 50ft of RG58 and a choke balum the transceiver (a KACHINA 505) sees the SWR different (loss factors) than the SWR appears on the antenna. For actual performance it means that the finals are not overloaded and the automatic tuner can match the apparent SWR.

By the way, the antenna was optimized for F/B ratios rather than gain and results on receive yield about 2 to 3 S units over an R5 vertical on 15m (1 S unit = 5db on the Kachina), approximately 2s units on 10m and 1 to 1.5 on 20m.

Should you have further questions, please contact VE3 CVS at erwins@degendesigns.com

73

Guenther
info@degendesigns.com

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message news:3af5eebc.91031776@news.aepnet.com...
> On Sun, 06 May 2001 23:12:40 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:
>
> >On Sun, 06 May 2001 19:40:17 GMT, "G&R" <stop the spam@limbo.hell>
> >wrote:
> >
> >>I wish you would also consider our Baby Boomer Quad (at
> >>www.degendesigns.com). We have used modeling software based on average
> >>ground conditions and based on our actual mounting conditions. To the best
> >>of our experience our antenna does perform as indicated by our models.
> >>
> >>For your reference our software is NEC4WIN95VM as we feel it's the only
> >>software that can accurately model our antenna. There may be others,
> >>however based our field testing and modeling results it currently performs
> >>the function the best.
> >

> >A two-element shortened quad with 9 to 10 dBd gain?
> >
> >I'd find out where the modeling error is, or are you twisting the
> >specs and comparing an antenna over ground to a dipole in freespace?!
>
>
> I took the file 15mquad (packaged with EZNEC) and scaled it to 14.1 MHz at
a
> height above ground of 50 feet. I set the gnd constants the same as used
on the
> web site above. Plotting the az pattern at an elevation angle of 19 deg.
I get
> 12.26 dBi or 10.1 dBd.
>
> Since this is a "full-size" quad, the "baby" version should be
considerably
> lower. Only 1 dB lower sounds too good to be true.
>
> A dipole at the same height gives 5.3 "dBd" at the same elevation angle.
>
> Oh, and another thing. The 14 MHz feedpoint Z is given as 66.25 - j67.92
and
> yet the SWR (I assume that's the number in brackets) is given as 2.47.
That
> means that the reference Zo is 100 ohm. The claim is that the antenna can
be
> fed with either coax or ladder line. I guess that's true but the 50 ohm
SWR
> will be over 3:1 and the 400 ohm SWR would be over 6:1.
>
> Sumthin' fishy here.
>
> Wes Stewart N7WS
> >
> >73 Tom
>
>

3447. Re: Does anyone have experience with the Magnetic loop antenna's from MFJ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 02:05:00 UTC
From: "VE3TMT (Max Donoghue)" <mdonoghue1@sympatico.ca>
Message-ID: <gHmK6.7932$yw.350050@news20.bellglobal.com>
Source record: 163494

"Adam" <digipoint@hotmail.com> wrote in message
news:9dcblfaqm1@news.kabelfoon.nl...
> Hi there,
>
> Is there anyone who has experience with the Magnetic loop antenna's from
> MFJ? There is the MFJ 1786 and MFJ 1788. I don't know if results are good
> with this type of antenna. Please post your comments.
>
> '73,
> Adam

Get your hands on a vacuum variable cap and build one yourself, and save a couple hundred $$ along the way. My 3' loop tunes 40-10m continous using 1/2" copper tube. Small 120VAC stepper motor tunes the cap. Very slow but very precise.

Good luck,

Max

3448. Re: What's the difference.....

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 02:13:44 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dctbagpa1@uranium.btinternet.com>
Source record: 163495

> The explanation of current flow I've presented here and in the
earlier
> postings fully explains both the results of your experiment and
of mine.
==========
Roy, excellent. No disagreement.

Reg.

3449. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 02:17:36 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <djtjftkvv4ov6rq79fq16mo4t3ikk5j974@4ax.com>
Source record: 163496

On Wed, 9 May 2001 19:15:42 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>I would encourage you to have them all examine and critique my DC reflection
>example.
>
>That's certainly simple enough! Anyone with a modicum of DC circuit analyis
>know how could follow and understand that...
>
>I think they ignore the DC case because... well... because it hurts to admit
>to belief in a fiction.
>
>Heh, heh.
>
>-Peter K1PO

Hi Peter,

I'm sorry, but I find your work just as dense beyond necessity and you
have been no more compelling in your logic than these fellows. I
have little patience with your reflected power fictions when I have
had to solve their reality far too often. Basically your arguments
devolve to the logic of denial with a smattering of math that is
circumspect in that it reveals facts, but correlation is not
causation.

I preserve my "willing suspension of disbelief" for good examples of
art. Spruce up your style, or show more causality.

73's
Richard Clark, KB7QHC

3450. Re: AM/FM reception in Midtown NYC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 02:22:52 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <0YmK6.137254$xN4.8739649@news1.sttls1.wa.home.com>
Source record: 163497

Hi Bob,

Is your radio receiver located in a building with a lot of metal walls, metal supports, and surrounding metal. If it is, then the surrounding metal can absorb and reradiate the radio waves which results in no signal for your radio. A site in the basement with metal floors or ceilings overhead can have the same problem.

The solution in this case is to take the radio to the street, or to bring the street to the radio by using an outside antenna and wires to bring the signal indoors. If you know any local hams, I'll bet they can help you fix the problem.

Good luck,

Roger, W7WKB
"Bob Miller" <bamiller@texas.net> wrote in message
news:nuf5OvdwGI0QYGhY1pMp73ai4rCZ@4ax.com...
> psantucc@dnaco.net (Pat Santucci) wrote:
>
> >Greetings.
> >
> >Through an embarassing sequence of contract arrangements, I find myself
in
> >an awkward spot. I apologise for how far off-topic my question may be,
but
> >I don't know where else to ask. I hope one or more of you can help - this
> >is potentially financially rewarding. Let me explain:
> >
> >I am a control sytems programmer. Normally, I integrate the media rooms
of
> >large corporations under one control system, and I work in the OH-IN-KY
> >tristate.
> >
> >Now I am obligated to to a home theatre installation in New York City.
One
> >of the many things for which I was unprepared was poor radio reception.
We
> >can recieve clearly maybe 5 FM, no AM, and no WX stations, on two
different
> >tuners, even after a panic trip to the Wiz for some little Jensen amped
> >antennae. Here's what I'm looking for:
> >
> >1. Information - is this kind of reception just normal? The site is right
> >on the east river in midtown.

> >
> >2. Information - if you live in a similar area, how do you deal with it?
Is
> >there a 'sure thing' product for NYC radio reception?
> >
> >3. Service - if any of you know of, or work for, a company which offeres
> >antenna installation for AM/FM/WX with guaranteed results, I'm sure my
> >company can make a deal.
> >
> >I'm coming back to town on 5/23/2001. Good tips are worth a drink of your
> >choice, and of course, a job may be in the offing. Go easy on me - I'm
> >pretty damn ignorant of radio.
> >
> >Thanks in advance-
> >Pat Santucci
>
> If I were you, I would contact some of the stereo dealers in NYC that deal
in
> ultra high-end equipment, the really good stuff, speakers that cost
$80,000,
> etcetera.
>
> They can probably refer you to good people who can put up an antenna
appropos to
> central-city NYC that will work.
>
> Bob
> k5qwg
> >
> >
> >-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> >http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> >-----== Over 80,000 Newsgroups - 16 Different Servers! =-----
>

3451. Re: New Key

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 02:28:34 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <k6vjft0f837m209ti568bacgnd8b958aqg@4ax.com>
Source record: 163498

On Tue, 08 May 2001 20:29:13 -0400, Sideband <sideband@spam.me.not>
wrote:

>Gents and Ladies:
>
>I'm proud to announce, (and yes, I'm tooting my own horn here) that I've
>just passed both the Technician and General Written Elements. I'll have
>my callsign by Thursday or Friday, but it's probably going to be a
>KC8R?? or an early KC8S?? according to AA5GO, W8DYH and WB8HRO, the
>three fine VE's who oversaw my testing and gave me the good news.
>
>Now I just gotta get the code requirement licked. But KC8HEZ said he'd
>help me out with that over the air, once I get a radio.
>
>Anyone got an inexpensive 2M set they're not using that they'd be
>willing to part with?
>
>-SSB

Congrats OM.

73's
Richard Clark, KB7QHC

3452. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 02:35:28 UTC
From: w2du@iag.net
Message-ID: <3af9fc6a.11565940@news.onemain.com>
Source record: 163500

On Thu, 10 May 2001 01:11:52 GMT, nospam_n7ws@arrl.net (Wes Stewart) wrote:

>Quote #1.
>
>Picture this. I have an x-band source that uses a high quality
>isolator (terminated circulator) on its output. Any power returned to
>this source is dissipated in the isolator. In addition, there is a
>sampling loop that measures output level and via feedback stabilizes
>the output power (ALC, if you will) This loop has the effect of
>further improving the source match.
>
>I connect this generator to a waveguide high-directivity dual
>directional coupler. We will use waveguide so you can throw away your
>volt and ammeters.
>
>I place two waveguide thermistor power sensors to the two coupled
>ports on the directional coupler. I place a shorting plate on the
>output of the coupler. If the coupler is a good one, I will measure
>the same power on each of the sensors.
>
>The forward power (your Pi) is sampled by the forward-reading coupler
>at a level equal to the coupling factor, e.g. -30 dB. The output
>short circuit totally reflects the incident power and returns it to
>the source. The reverse-reading sensor samples this, also at -30 dB
>and displays the same value as the forward sensor. Any differences
>between the two can be normalized out.
>
>Because of the 'perfect' source match, there is no re-reflection of
>the reflected power; it is totally dissipated by the generator. This
>system will now reliably measure the return loss (within the
>directivity uncertainty limits discussed earlier) of a load placed on
>the output. For most purposes, we can ignore the forward sensor
>reading because it remains constant regardless of load impedance.
>
>A few words about the power sensors. Contrary to what you claim
>above, the resistance of the thermistors doesn't have to be anywhere
>near the system impedance. The thermistors (today thermocouples are
>also used) simply measures temperature rise in a termination. The
>thermistor is not necessarily the termination. It is usual to have
>matched thermistors in a self-nulling bridge circuit. The second
>thermistor is heated by applying an easily measured DC or low
>frequency AC signal to it. This applied signal power is adjusted to
>null the bridge at which time the applied power equals the r-f power.
>This is a substitution method where a difficult to measure quantity

>(microwave power) is determined by measuring the low frequency or DC
>power. End #1

Irrefutable proof the reflected power exists!

>Quote #2:
>
>Let's take two of my waveguide dual-directional couplers
>(reflectometers) and connect them thus:
>
>The input port of coupler #1 attaches directly to the output of a
>well-matched source, as before. On the output port of coupler #1 we
>attach a waveguide E- H tuner (the waveguide equivalent of your
>antenna tuner). On the output of the tuner we attach the input port
>of coupler #2.
>
>On the output of coupler #2 we attach a 3 dB attenuator followed by a
>short circuit.
>
>So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho = 0.5
>
>If I temporarily remove the tuner, as expected, both reflectometers
>measure a 6 dB power ratio between the forward and reflected coupled
>ports.
>
>We assume that maximum available power out of the source is 1.0 W.
>Because we have a non-reflective source, there is a mismatch loss
>given as:
>
>-10 * log(1 - rho^2) = 1.25 dB
>
>or leaving off the -10 log, a power ratio of 0.75.
>
>So of the available power, 0.75 W makes it into the input port of
>coupler #1.
>
>If our couplers are 30 dB, as in my previous example, then we read the
>following: (give or take coupling loss)
>
>1. Coupler #1 forward port = 0.75 mW.
>2. Coupler #1 reflected port = 0.1875 mW.
>3. Coupler #2 forward port = 0.75 mW.
>4. Coupler #2 reflected port = 0.1875 mW.
>
>Okay, now we put the tuner back in between the two couplers. If we
>fiddle fart around with the tuner, the power reading at the reflected
>port of coupler #1 can be reduced to zero, or nearly so. We have
>"re-reflected" the nasty reflected (dare I say) power back toward the
>load.
>
>The mismatch loss now goes away and the forward port of coupler #1

>reads 1.0 mW.
>
>Let's examine the readings on the thermistor power sensors on the
>coupled ports of coupler #2. Since we tweaked the tuner, we now have
>1.0 W migrating around in the second coupler so the forward coupler
>reads 1.0 mW. (1.25 dB higher than before and no surprise)
>
>With 1.0 W incident on a 6 dB return loss load, the reflected power is
>0.25 W. The coupling factor is 30 dB so the power appearing at the
>reflected port of coupler #2 is 0.25 mW. The ratio of the reflected
>power to the forward power readings is .25 / 1.0 = - 6dB, just as
>before and (to me anyway) again no surprise.
>
>But wait! We just tuned (conjugately matched) this system to "remove
>the termination" and that pesky reflected power still showing up on
>the coupled port!!!
>
>No voltmeter, no ammeter, no hanky panky, just real reflected power
>heating up the thermistor. Funny how this works. End #2
>
>So....now what?

Accurate experimental data proves that a concept or theorem is either true or false. Wes' experiments have proved Peter's concept that reflected power is fictitous false, which we've known all along.

And Wes, I've performed similar experiments in my own lab, but with coax, using an HP-8405A Vector Voltmeter and an HP-778D Dual Directional Coupler, with similar results. Bravo!

>Wes Stewart N7WS

3453. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 02:42:18 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <eenK6.14199$t12.1076657@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163499

"Walter Maxwell" <w2du@iag.net> wrote in message
news:3af9a5eb.18825239@news.journey.com...
> On Wed, 09 May 2001 19:44:41 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>
> >I fully understand that the impedance match occurs as the result of two
> >rearward traveling waves canceling one another at the match point. When
the
> >two rearward waves cancel, the total rearward voltage, current and power
go
> >to zero.
>
> Your last sentences totally contradicts your statement in the previous
post.

What statement do I contradict?

>You can't
> really believe the voltage, current and power go to zero simultaneously.
Or have you found
> a way to destroy energy? Steve, you're so confused you can't seem to avoid
contradictions
> from one post to the other.
>

Why do you insist that energy is destroyed? The net rearward energy flow
goes to zero. Its no different than a multipath fade or a radiation pattern
null in an antenna.

Steve

3454. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 02:47:24 UTC
From: w2du@iag.net
Message-ID: <3af9ff4e.12305173@news.onemain.com>
Source record: 163501

On Thu, 10 May 2001 02:42:18 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"Walter Maxwell" <w2du@iag.net> wrote in message
>news:3af9a5eb.18825239@news.journey.com...
>> On Wed, 09 May 2001 19:44:41 GMT, "VE9SRB" <srbest@att.net> wrote:
>>

>Why do you insist that energy is destroyed? The net rearward energy flow
>goes to zero. Its no different than a multipath fade or a radiation pattern
>null in an antenna.

Steve, are you unaware that a null in an antenna radiation patttern means that the destructive interference that causes the null in a particular direction is followed instantly by a maximum in another direction greater than the original, which is reason we achieve gain? The gain is the result of the constructive interference immediately following the destructive interference. If the voltage and current in the original wave both go to zero simultaneously the energy would be destroyed, not conserved to form the gain resulting from the null in the opposite direction.
>
>Steve
>
>

3455. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 02:51:19 UTC
From: "David G. Nagel" <nagel@core.com>
Message-ID: <3afa0252$0$42883$1dc6e903@news.corecomm.net>
Source record: 163502
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

"John Goller, K9UWA" wrote:
>
> In article <9daf1iojs0@208.207.71.137>, dixie@townsqr.com says...
> >but I live in a state
> >where the Democratic machine routinely steals elections in metropolitian
> >areas, and gets away with it.
>
> Direct Quote from "Mayor Daley" ...Vote Early and Vote Often!
> John k9uwa
And stop by the cemetery on your way to the poles...

Dave WD9BDZ

3456. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 03:15:40 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <wJnK6.13865$4f7.1076330@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163503

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3af99d92.14237722@news.onemain.com...
> On Wed, 09 May 2001 19:03:01 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>
> > >The only technical discussion that you engage in is "I'm right, Steve's
> > >wrong". You are very good at bragging on and on about your papers but
you
> > >avoid virtually every direct discussion on this subject and you avoid
> > >answering direct questions. When the discussion gets uncomfortable you
> > >claim "Steve doesn't agree with me so he doesn't understand the basics".
> > >You just can't face the possibility that you made a big mistake.
> > >
> > >You have claimed several times on this newsgroup that I don't understand
> > >basic reflection mechanics. Let's talk about your understanding of wave
> > >mechanics demonstrated on the newsgroup during the past week or so:
> > >
> > >1) You said that the reflected voltage at an impedance termination is
not
> > >equal to the incident voltage times the reflection coefficient.
>
> Steve, as you have done consistently with me, you have again twisted my
words
> exactly 180 degrees. I have never said what you said I said in 1) above.
> > >

You really need to read what I write and then consider your own response:

My statements:

"If a forward voltage of 70.71 V arrives at a termination with a 3:1 SWR
(|rho| = 0.5) the reflected voltage is equal to 35.355 V and the total
voltage is equal to 106.065 V. This is very fundamental transmission line
theory. That was the point of my discussion. Do you now disagree with
these statements?"

Your response:

"Yes, I certainly do disagree with these statements. Apparently you and I
went to two
separate schools of engineering that could not have taught the same
concepts, because what
you are saying is not what I learned."

My statements above are based on the reflected voltage being equal to the incident voltage times the reflection coefficient. You said you disagree with these statements. Perhaps I should have been specific and said that the terminating impedance was 150 + j0 ohms.

> >2) You continue to claim that two forward traveling voltages do not add,
> >yet Johnson, the author you quote most, clearly says that they do add.
>
> The forward traveling voltages do not add to form the total forward power. You
> have misinterpreted Johnson, because the expression of Johnson you use gives the
> line voltage at any point on the line. It does not give the forward power.
>

Johnson's formula for total voltage at any point on the line is comprised of two components, the total forward traveling voltage and the total rearward traveling voltage. Etotal = E+ + E-. Johnson later states that the total forward traveling power is equal to |E+|^2 / Zo and the total rearward traveling power is equal to |E-|^2 / Zo.

Its quite obvious that the total forward power is derived from the total forward voltage.

>
> >3) You said that it is not possible to have the total voltage on a
> >transmission line go to 0, while at the same time have the total current be
> >non-zero.
>
> Again, this is not what I said. I said that at the match point voltage and
> current cannot go to zero simultaneously, because energy cannot be destroyed.
> Energy would be destroyed if both voltage and current were zero simultaneously
> at the same point.
>

Walter, you need to understand the difference between total voltage and current and traveling voltage and current. At the match point, the total voltage does not go to zero and the total current does not go to zero.

However, the rearward traveling voltage and current must both go to zero. The classic text book relationship for Vrearward and Irearward is Irearward = -Vrearward/Zo. You cannot have a rearward current without a rearward voltage. This is no different than voltage and current in a resistor. If the voltage across a resistor goes to zero, the current and power must go to zero as well.

Vtotal = Vforward + Vrearward

Vforward / Iforward = Zo

Vrearward / -Irearward = Zo

> > This is incorrect. When the line impedance on a transmission is
> >a short circuit, the total voltage is zero, yet the current is at its
> >maximum value.
>
> This is exactly what I've been saying all along, but now you've twisted my
words
> again.
> >

I did not twist your words:

My statements:

"Walter, it is physically impossible in any transmission line system to have the rearward voltage go to zero and yet still have a rearward current. If the rearward traveling voltage goes to zero, the rearward traveling current goes to zero as well. This is not the same as the total voltage and current. It is possible to have the total voltage go to 0 while the total current does not."

Your response:

"Steve, your last statement is clear evidence that your understanding of
reflection
mechanics is flawed, because your statement is not true."

I said it was possible to have the total voltage go to 0 while the total current does not. You said that this statement is not true.

> >4) You disagree that 61.24 V added in-phase with 20.41 V is equal to
81.65
> >V. Simple complex vector math.
> >
> >5) You disagree that Pdelivered equals Pforward - Preflected when a Zo
> >match does not exist in the transmission line.
> >
> >6) You do not understand the derivation of the relationship Pforward =
> >Pdelivered /(1 - |rhoA|^2)
>
> Sorry Steve, I spent hours emailing you this concept 6), which you refuted
> endlessly until recently. You kept insisting that it was Vdelivered/(1 -
rho).

When did I ever insist this? The concept that I disagree with is that this relationship translates into a total re-reflection of power. Sent me a private copy of the e-mail where I said that Pforward = Pdelivered / (1 - rho).

> You finally discovered the relationship in 6) to be true, because you used
it as
> your Eq 36 in your QEX article.
> >
> >7) You do not understand the difference between the forward source power
> >after the Zo match and the delivered power after the Zo match.

> >
> >Would you care to go through each of these point in detail?
>
> No Steve, I would not, because your mind is made up. I'm dismayed because
you're
> continually giving bad information to people who are trying to learn, and
sadly,
> they believe you..
>

If you do not want to go through any of this in detail then stop making statements that I don't understand basic concepts. If you don't want to defend your position with a technical discussion rather than the "I can't possibly be wrong" discussion then stop claiming that my technical position is wrong. I have absolutly no issue with the fact that we disagree. But please don't avoid a serious technical discussion and then simply claim that I am wrong and you are right.

If you ever want to face this issue as a professional engineer and discuss concepts through a working example let me know. Otherwise, I will end this discussion here if you do so as well.

Steve VE9SRB

3457. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 03:29:22 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <mWnK6.13940$4f7.1079325@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163504

Thanks for a technical response.

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3af9ff4e.12305173@news.onemain.com...
> On Thu, 10 May 2001 02:42:18 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >"Walter Maxwell" <w2du@iag.net> wrote in message
> >news:3af9a5eb.18825239@news.journey.com...
> >> On Wed, 09 May 2001 19:44:41 GMT, "VE9SRB" <srbest@att.net> wrote:
> >>
>
> >Why do you insist that energy is destroyed? The net rearward energy flow
> >goes to zero. Its no different than a multipath fade or a radiation
pattern
> >null in an antenna.
>
> Steve, are you unaware that a null in an antenna radiation patttern means
that
> the destructive interference that causes the null in a particular
direction is
> followed instantly by a maximum in another direction greater than the
original,
> which is reason we achieve gain? The gain is the result of the
constructive
> interference immediately following the destructive interference.

I am fully aware of this. I am also aware of what this implies and how it
directly relates to the transmission line problem.

>If the voltage
> and current in the original wave both go to zero simultaneously the energy
would
> be destroyed, not conserved to form the gain resulting from the null in
the
> opposite direction.
> >

The point that I was trying to make is that in the specific direction of the
null, the destructive interference casuses the net energy flow in that
direction to go to zero. *Both* the E and H fields must go to zero for this
to happen. This is similar to both rearward V and I going to zero at the
match point in the transmission line. With the antenna null, the traveling
E field can't go to zero and the traveling H field remain. With the
impedance match in the transmission line, the rearward V can't go to zero

and the rearward I remain.

As for the constructive interference, the power gain is determined through the vector addition of the E and H fields. E and H add directly and then power is the derived quanity. That's why the power gain of a dipole spaced 1/4 WL over a perfect conductor is approx 6 dB, not 3 dB. When E1 + E1 = 2E1, the total power is 4 P1, not 2 P1.

Steve VE9SRB

3458. Re: DC Power supply question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 03:30:03 UTC
From: Keith McQueen <kb7m@arrl.net>
Message-ID: <%WnK6.2803$VX.391393@news.uswest.net>
Source record: 163505
Cross-posted to: alt.radio.scanner,rec.radio.amateur.antenna,rec.radio.scanner,rec.radio.shortwave

The easy answer is to look in the manuals (or on the backplate) for each device, total up the amps, and then get a supply that has 50 to 100% higher amp rating.

I have used small supplies floating gelled electrolyte batteries for years instead of
big supplies. Using this technique, you use a supply that is no bigger than 1/10 of
the AmpHour rating of the batteries. This allows for a C10 charging rate if you run
the batteries completely flat. At this rate you will not damage the batteries. Set the
power supply to regulate at the float voltage of the batteries used (usually around
13.6-13.8 volts).

With a 5 amp supply, and a 50 AmpHour Gell cell, I can easily run my HF rig at 100 watts, drawing about 20 amps. Obviously, you can't do this for very long
because you eventually draw out all of the reserve of the batteries. With the above
setup, and with a duty cycle of 50% I can easily operate for several hours. Then,
the 5 amp supply can still put 4 amps into the batteries while running the radio on
receive.

The above is just one example. I also run a repeater/remote base system that can draw
over 50 amps when all transmitters are up using only a 10 amp supply. You just have
to make a power budget, (so many amps draw over so much time), and then size the
batteries and the power supply/charger to your needs. You can use many of the same
techniques that the solar power guys use to plan and run their systems.

"Sycho_Graphics" <Sycho_Graphics@msn.com> wrote in message
news:O6erGbC1AHA.302@cpmsnbbsa07...
> I am tired of all the wall warts and want to power my radios with a DC power
> supply my question is how many amps is enough? What I want to power is the
> following (AOR 8000, BC 780xlt, RadioShack DX-398, two Cobra CB radio's

{one
> base, one portable}), but I want some room for future expansion.
>
> Sorry for the newbie question, but I am a newbie :)
>
>
>
>

3459. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 03:57:27 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dd3ie$8fd$1@slb3.atl.mindspring.net>
Source record: 163506

Cecil:

We are repeating ourselves. We've been over this before.

I do not deny "reflections"!

I do not deny TV "ghosts!"

They are real and they exist and one can perform quantitative analysis of them and also measure the "power" contained in them, etc..., etc...

You miss my whole point, which is again...

That particular thing that is labeled on VSWR meters as "reflected power" is a "fiction", it does not measure the power in a reflected signal at all.

The reflected voltmeters of the Breune class, actually measure and indicated the quantity "b":

Where b = V - IR, where V is V = IZ the voltage drop across a load Z, caused by the actual current flowing through it, and IR is an "artificial" voltage developed inside the meter itself and represents the actual current I flowing through a different impedance, the reference impedance R. Thus b = V - IR = IZ - IR = I (Z - R).

b = I(Z - R) is the "artificial" or "ficticious" voltage developed by the actual current flowing through a ficticious impedance (Z - R) equal to the difference between the actual load Z and the reference impedance R.

There is no such impedance as (Z - R) anywhere in the circuit under test! It simply doesn't exist! (Z - R) is a mathematical "formalism", not an actual impedance... and so is b = I(Z - R) as well. Look at the schematic diagrams of VSWR bridges and see... what I am telling you is true!

Now using this fiction "b" to calculate a Power, which in the "mathematical formalism" is called the "reflected power", merely continues the fiction of "b".

Just using the formula for power, i.e. voltage squared divided by resistance, with a ficticious voltage b = I(Z - R) and a ficticious R across which b does not even appear, does not make a "real" power! Pr = b*b/R is ficticious... it cannot be interperted as the "power" in the reflected wave, and should not be interperted that way, because it is not! The power in a reflected wave is a different quantity from that so-called "ficticious" power.

Look very very very carefully at the definition and method of measuring those ficticious quantities by studying the schematic diagrams and operation

of reflected power meters with a critical and open mind and you will understand that it is so. The simplest circuit to examine for these operations is a simple DC circuit like the examples I have given. The DC circuits MUST give the same answers as the AC, HF, RF circuits, for Maxwell's equations, the Physics,and the equations of the "reflection formalism" are all the same no matter what the frequency range! Doing the analysis for DC eliminates those extraneous factors like phasors, etc that complicate things and make the calculations more tedious and error prone. Once you have analyzed a DC circuit this way, go ahead and do an AC version, and follow all the same steps, just with complex numbers instead of reals, but the results are the same...

Within the "Scattering Formalism" the reflected power is a "dummy" quantity, and should not be treated as if it were a "real" power.

Now if you really wanted to measure the power in a reflected wave there are correct ways of doing it, but the conventional reflectometer which is set up to "emulate" the mathematical "Scattering Formalism", does not do it.

The quicker you realize the fictional nature of that "reflected power" the sooner you will stop trying to make "things" come out right in your "visualizations" and the sooner you can get down to calculating or measuring some real powers. Ones that do obey the law of conservation of energy.

Cecil, the reflected voltage "b" is good for one thing and one thing only, and that is indicating by it's null, when you have adjusted Z to equal R! Nothing more, nothing less... stop ascribing "magical powers" to it.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AF9DC22.CF9B3D89@IEEE.org...
> "Peter O. Brackett" wrote:
> > I assert that reflected power, as espoused in the formalism of
reflection
> > mechanics, is in fact a "fiction".
>
> Consider the following experiment:
>
> 75 ohm TV source signal--------N*1/2WL 300 ohm line------75ohm TV
>
> Why does ghosting appear where the reflection theory predicts
> and at the strength that the reflection theory predicts? Are you
> going to deny ghosting, Peter?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3460. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 04:04:43 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9dd40r$6nr$0@208.206.142.102>
Source record: 163507

Richard Harrison wrote:
>
> Dick Carroll wrote:
> "You guys make me nervous using energy and power interchangeably."
>
> Most readers know that power is measured in watts and that energy is
> measured in watts times hours or in watthours. Maybe that is why they
> are not nervous.
>

And maybe that's a part of the source of so much expert confusion.

3461. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 04:20:21 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dd4tfmkd1@slb1.atl.mindspring.net>
Source record: 163508

Wes:

Thanks, I'll draw out your rather complicated and elaborate measurement setup and comment on it step by step.

But you'd better be ready to "think deeply", and not in a black box sense, about circulators and directional couplers, since a lot of stuff goes on inside circulators and directional couplers that is "called" something else on the outside. Labels on ports, just as labels on meter faces, are not necessarily meant to be taken literally.

It happens that I am deeply familiar with the internal operations and "guts" of both circulators and directional couplers, having designed several versions of both, and put them into large scale production. From what I can tell from your remarks, our look at your setup will entail a careful review of the insides of circulators. Just as an understanding of "reflected power" as indicated on ham VSWR meters requires a careful analysis of the circuitry inside the "meter" that generates the readings.

On your side, I insist that you critique my analysis of the very simple three element, one source, two resistors, DC circuit source missmatch example.

This will take you no more than a few minutes. All it requires is a little exercise in DC circuit analysis using Ohms law and the reflected voltage equation, to check the accuracy of my calculations.

Tell me if I have erred in my simple calculations, and where.

Show me where the reflected voltage, the reflection coefficient, and the VSWR that I calculated for that simple three element DC circuit are wrong!

Then... since I went to the trouble of calculating the so-called "reflected power" that y'all admire so greatly in that circuit, I feel that it is incumbent upon you to find for me where the "reflected power" comes from and where it is dissipated.

Words are "cheap"... mathematics according to the imutable laws of Physics are not.

Understanding demands only one price, the effort to analyze and make quantitative calculations.

If you are not prepared to analyze circuits and make quantitative calculations, then understanding will elude you.

I have done it... have you?

More later...

Best,

-Peter K1PO

"Wes Stewart " <nospam_n7ws@arrl.net> wrote in message
news:3af9da6e.87269878@news.aepnet.org...
> On Wed, 9 May 2001 19:28:05 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> {SNIP}
>
> >
> >In another couple of threads, I gave extremely simple examples of DC
> >circuits containing no more than a voltage source and two resistors, with
a
> >mismatch, a reflection coefficient, a reflected voltage, and a VSWR, and
a
> >generated power and a delivered power, and no "home" can be found for the
> >associated "reflected power"...
> >
> >Y'all have "chosen" to ignore that simple example.
> >
> >Why?
> >
> >Is it because y'all know that "the jig is up", there is no way out,
> >reflected power is a fiction.
> >
> >Or is it that you can't be bothered with "simple" circuits?
> >
> >What?
> >
> >Thoughts, comments,
>
> I have a thought. My thought is this: here we have a case of the pot
> calling the kettle black. (Is that politically incorrect?)
>
> I posed a simple waveguide reflectometer setup, one that I
> demonstrated to dozens of fourth year and graduate students when I
> TAed for a former boss who was an adjunct prof at the U of AZ.
>
> You have repeatedly ignored responding to my previous posts some of
> which I repeat below: (Note: I use two different computers to access
> this group so I don't always have continuity in retrieving history.
> If you want the exact messages, use Deja)
>
> Quote #1.
>
> Picture this. I have an x-band source that uses a high quality
> isolator (terminated circulator) on its output. Any power returned to
> this source is dissipated in the isolator. In addition, there is a

> sampling loop that measures output level and via feedback stabilizes
> the output power (ALC, if you will) This loop has the effect of
> further improving the source match.
>
> I connect this generator to a waveguide high-directivity dual
> directional coupler. We will use waveguide so you can throw away your
> volt and ammeters.
>
> I place two waveguide thermistor power sensors to the two coupled
> ports on the directional coupler. I place a shorting plate on the
> output of the coupler. If the coupler is a good one, I will measure
> the same power on each of the sensors.
>
> The forward power (your Pi) is sampled by the forward-reading coupler
> at a level equal to the coupling factor, e.g. -30 dB. The output
> short circuit totally reflects the incident power and returns it to
> the source. The reverse-reading sensor samples this, also at -30 dB
> and displays the same value as the forward sensor. Any differences
> between the two can be normalized out.
>
> Because of the 'perfect' source match, there is no re-reflection of
> the reflected power; it is totally dissipated by the generator. This
> system will now reliably measure the return loss (within the
> directivity uncertainty limits discussed earlier) of a load placed on
> the output. For most purposes, we can ignore the forward sensor
> reading because it remains constant regardless of load impedance.
>
> A few words about the power sensors. Contrary to what you claim
> above, the resistance of the thermistors doesn't have to be anywhere
> near the system impedance. The thermistors (today thermocouples are
> also used) simply measures temperature rise in a termination. The
> thermistor is not necessarily the termination. It is usual to have
> matched thermistors in a self-nulling bridge circuit. The second
> thermistor is heated by applying an easily measured DC or low
> frequency AC signal to it. This applied signal power is adjusted to
> null the bridge at which time the applied power equals the r-f power.
> This is a substitution method where a difficult to measure quantity
> (microwave power) is determined by measuring the low frequency or DC
> power. End #1
>
> Quote #2:
>
> Let's take two of my waveguide dual-directional couplers
> (reflectometers) and connect them thus:
>
> The input port of coupler #1 attaches directly to the output of a
> well-matched source, as before. On the output port of coupler #1 we
> attach a waveguide E- H tuner (the waveguide equivalent of your
> antenna tuner). On the output of the tuner we attach the input port
> of coupler #2.

>
> On the output of coupler #2 we attach a 3 dB attenuator followed by a
> short circuit.
>
> So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho = 0.5
>
> If I temporarily remove the tuner, as expected, both reflectometers
> measure a 6 dB power ratio between the forward and reflected coupled
> ports.
>
> We assume that maximum available power out of the source is 1.0 W.
> Because we have a non-reflective source, there is a mismatch loss
> given as:
>
> -10 * log(1 - rho^2) = 1.25 dB
>
> or leaving off the -10 log, a power ratio of 0.75.
>
> So of the available power, 0.75 W makes it into the input port of
> coupler #1.
>
> If our couplers are 30 dB, as in my previous example, then we read the
> following: (give or take coupling loss)
>
> 1. Coupler #1 forward port = 0.75 mW.
> 2. Coupler #1 reflected port = 0.1875 mW.
> 3. Coupler #2 forward port = 0.75 mW.
> 4. Coupler #2 reflected port = 0.1875 mW.
>
> Okay, now we put the tuner back in between the two couplers. If we
> fiddle fart around with the tuner, the power reading at the reflected
> port of coupler #1 can be reduced to zero, or nearly so. We have
> "re-reflected" the nasty reflected (dare I say) power back toward the
> load.
>
> The mismatch loss now goes away and the forward port of coupler #1
> reads 1.0 mW.
>
> Let's examine the readings on the thermistor power sensors on the
> coupled ports of coupler #2. Since we tweaked the tuner, we now have
> 1.0 W migrating around in the second coupler so the forward coupler
> reads 1.0 mW. (1.25 dB higher than before and no surprise)
>
> With 1.0 W incident on a 6 dB return loss load, the reflected power is
> 0.25 W. The coupling factor is 30 dB so the power appearing at the
> reflected port of coupler #2 is 0.25 mW. The ratio of the reflected
> power to the forward power readings is .25 / 1.0 = - 6dB, just as
> before and (to me anyway) again no surprise.
>
> But wait! We just tuned (conjugately matched) this system to "remove

> the termination" and that pesky reflected power still showing up on
> the coupled port!!!
>
> No voltmeter, no ammeter, no hanky panky, just real reflected power
> heating up the thermistor. Funny how this works. End #2
>
> So....now what?
>
> By the way it broke 100 F in Tucson yesterday. Too bad, I predicted
> it would be today.
>
> A local TV station runs a contest each year called the "Ice Break
> Contest" where the winner is the person that most accurately predicts
> the day, hour and minute when the official temperature first hits 100
> F for the year. The prize this year was a $10K trip for two to FO0.
>
> The "Ice Break" comes from the idea that it takes 100 degrees to break
> the ice on the Santa Cruz River, which is normally dry and hasn't seen
> any ice for at least the last 10,000 years.
>
> Wes Stewart N7WS
>
>
>
> >
> >-Peter K1PO
> >
> >
>
>

3462. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 04:52:28 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dd6pplbo1@slb0.atl.mindspring.net>
Source record: 163509

Walt:

Your measurement setups use instruments that measure that "ficticious" reflected power and the "formalism" has been set up to make that an easy thing to do... it does not prove that the "reflected power" exists or not, it's just part of the measurement "formalism".

Measuring one thing, and calling it another, is just playing with words. You must know quantitatively exactly what you are discussing. Unless you understand the "Internal Operation" of the measuring instruments, you have but a faint understanding of what is happening. When a meter face displays, Watts, you must be sure that the meter is measuring watts, for it may be measuring volts or amps or something else and just "calling" them watts.

Unfortunately the fictional mathematical "formalism" of the the "Scattering Formalism" is built into the "labels" on most if not all of the instruments that you use in your lab setups.

Walt, don't depend upon others and the makers of instruments to guide you. Understand the instruments themselves, try to design instruments to make those measurements yourself, if only in sketch form. It will help you immeasureably with understanding.

Walt, I recommed that you either set up a simple DC circuit, or use the one that I set up, of a voltage source with an internal resistance and a mismatched load resistance, and do the calculations yourself.

It only takes a few minutes... and it will be illuminating, you will then understand more about reflections than you ever thought possible.

And you don't have to depend upon what HP or Daiwa or Tektronix, or PRD, or whomever puts on the labels of their instruments, or what people call things, you will know in a very simple quantitative way, just what mismatch, reflection coefficient, VSWR, reflected voltage, and reflected power are!

And you will have done it all yourself.

Walt, just do it!

It only takes a few moments, probably less time than it takes to type a reply to this posting. Stop, analyze, calculate and think at the volts and amps level. Leave the power till later, once you have established the volts and amps.

Why is it that you seem to refuse to do this simple task? I have done it here on the NG and you refuse to comment or elaborate.

Could it be perhaps that you are incapbable of analyzing a simple DC circuit with only two resistors in series?

Could it be perhaps that you don't really know the equations and formulas of reflection mechanics.

Could it be that you don't know the formula for reflected voltage?

Could it be that.....???? I wonder????

Prove to me that it is not so!

Here's my extremely simple challenge.

Draw a schematic diagram containing only three elements, a 10 volt battery with an internal resistance of 10 Ohms, connected to a 5 Ohm resistor load and then do the following very simple quantitative DC analysis.

1. Compute the current I through the load and write it down. I = ?
2. Compute the voltage across the load and write it down V = ?
3. Compte the reflection coefficient at the battery terminals and write it down, rho = ?
4. Compute the VSWR at the load and write it down, VSWR = ?
5. Compute the reflected voltage at the load and write it down, b = ?
6. Compute the power dissipated in the load and write it down, Pload = ?
7. Compute the power dissipated in the internal resistance and write it down , Pint = ?
8. Compute the incident or forward power, and write it down, Pf = ?
9. Compute the reflected power and write it down, Pr = ?

10. Now ask yourself where that Pr is generated and where it is dissipated.

A power that has no source and no sink, no generator and no load, is a pale imitation of a real power!

Walt, until you thoroughly analyze a simple DC mismatched circuit setup as above, using all the equations of reflections mechanics, which are just as valid at DC as at AC, and then stare at the results and ask why?...

YOU SIMPLY DO NOT YET UNDERSTAND REFLECTIONS.

Once you understand deeply the DC analysis, then and only then are you qualified to go on to understand reflections in AC, HF, RF and microwaves and to discuss the operation of circulators and directional couplers.

Walt, just do it!

10 simple answers, 10 simple questions. Anyone who calls himself an engineer can do it. Can you do it?

Best,

-Peter K1PO

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message news:3af9fc6a.11565940@news.onemain.com...
> On Thu, 10 May 2001 01:11:52 GMT, nospam_n7ws@arrl.net (Wes Stewart)

wrote:
>
>
> >Quote #1.
> >
> >Picture this. I have an x-band source that uses a high quality
> >isolator (terminated circulator) on its output. Any power returned to
> >this source is dissipated in the isolator. In addition, there is a
> >sampling loop that measures output level and via feedback stabilizes
> >the output power (ALC, if you will) This loop has the effect of
> >further improving the source match.
> >
> >I connect this generator to a waveguide high-directivity dual
> >directional coupler. We will use waveguide so you can throw away your
> >volt and ammeters.
> >
> >I place two waveguide thermistor power sensors to the two coupled
> >ports on the directional coupler. I place a shorting plate on the
> >output of the coupler. If the coupler is a good one, I will measure
> >the same power on each of the sensors.
> >
> >The forward power (your Pi) is sampled by the forward-reading coupler
> >at a level equal to the coupling factor, e.g. -30 dB. The output
> >short circuit totally reflects the incident power and returns it to
> >the source. The reverse-reading sensor samples this, also at -30 dB
> >and displays the same value as the forward sensor. Any differences
> >between the two can be normalized out.
> >
> >Because of the 'perfect' source match, there is no re-reflection of
> >the reflected power; it is totally dissipated by the generator. This
> >system will now reliably measure the return loss (within the
> >directivity uncertainty limits discussed earlier) of a load placed on
> >the output. For most purposes, we can ignore the forward sensor
> >reading because it remains constant regardless of load impedance.
> >
> >A few words about the power sensors. Contrary to what you claim
> >above, the resistance of the thermistors doesn't have to be anywhere
> >near the system impedance. The thermistors (today thermocouples are
> >also used) simply measures temperature rise in a termination. The
> >thermistor is not necessarily the termination. It is usual to have
> >matched thermistors in a self-nulling bridge circuit. The second
> >thermistor is heated by applying an easily measured DC or low
> >frequency AC signal to it. This applied signal power is adjusted to
> >null the bridge at which time the applied power equals the r-f power.
> >This is a substitution method where a difficult to measure quantity
> >(microwave power) is determined by measuring the low frequency or DC
> >power. End #1
>
> Irrefutable proof the reflected power exists!
>

> >Quote #2:
> >
> >Let's take two of my waveguide dual-directional couplers
> >(reflectometers) and connect them thus:
> >
> >The input port of coupler #1 attaches directly to the output of a
> >well-matched source, as before. On the output port of coupler #1 we
> >attach a waveguide E- H tuner (the waveguide equivalent of your
> >antenna tuner). On the output of the tuner we attach the input port
> >of coupler #2.
> >
> >On the output of coupler #2 we attach a 3 dB attenuator followed by a
> >short circuit.
> >
> >So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho = 0.5
> >
> >If I temporarily remove the tuner, as expected, both reflectometers
> >measure a 6 dB power ratio between the forward and reflected coupled
> >ports.
> >
> >We assume that maximum available power out of the source is 1.0 W.
> >Because we have a non-reflective source, there is a mismatch loss
> >given as:
> >
> >-10 * log(1 - rho^2) = 1.25 dB
> >
> >or leaving off the -10 log, a power ratio of 0.75.
> >
> >So of the available power, 0.75 W makes it into the input port of
> >coupler #1.
> >
> >If our couplers are 30 dB, as in my previous example, then we read the
> >following: (give or take coupling loss)
> >
> >1. Coupler #1 forward port = 0.75 mW.
> >2. Coupler #1 reflected port = 0.1875 mW.
> >3. Coupler #2 forward port = 0.75 mW.
> >4. Coupler #2 reflected port = 0.1875 mW.
> >
> >Okay, now we put the tuner back in between the two couplers. If we
> >fiddle fart around with the tuner, the power reading at the reflected
> >port of coupler #1 can be reduced to zero, or nearly so. We have
> >"re-reflected" the nasty reflected (dare I say) power back toward the
> >load.
> >
> >The mismatch loss now goes away and the forward port of coupler #1
> >reads 1.0 mW.
> >
> >Let's examine the readings on the thermistor power sensors on the
> >coupled ports of coupler #2. Since we tweaked the tuner, we now have

> >1.0 W migrating around in the second coupler so the forward coupler
> >reads 1.0 mW. (1.25 dB higher than before and no surprise)
> >
> >With 1.0 W incident on a 6 dB return loss load, the reflected power is
> >0.25 W. The coupling factor is 30 dB so the power appearing at the
> >reflected port of coupler #2 is 0.25 mW. The ratio of the reflected
> >power to the forward power readings is .25 / 1.0 = - 6dB, just as
> >before and (to me anyway) again no surprise.
> >
> >But wait! We just tuned (conjugately matched) this system to "remove
> >the termination" and that pesky reflected power still showing up on
> >the coupled port!!!
> >
> >No voltmeter, no ammeter, no hanky panky, just real reflected power
> >heating up the thermistor. Funny how this works. End #2
> >
> >So....now what?
>
> Accurate experimental data proves that a concept or theorem is either true
or
> false. Wes' experiments have proved Peter's concept that reflected power
is
> fictitous false, which we've known all along.
>
> And Wes, I've performed similar experiments in my own lab, but with coax,
using
> an HP-8405A Vector Voltmeter and an HP-778D Dual Directional Coupler, with
> similar results. Bravo!
>
> >Wes Stewart N7WS
>

3463. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 05:14:42 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dd83a$rj3$1@slb7.atl.mindspring.net>
Source record: 163510

Cecil:

Be careful and tread lightly.

You cannot always add powers meaningfully, even if they are scalers.

Consider, the "power" that I calculate by multiplying the current flowing out of my car battery by the voltage across my motorcycle battery.

P1 = Vcar*Imoto

Now consider the "powerf" that I calculate by multiplying the current flowing out of your car battery by the voltage across my motorcycle battery

P2 = Vmoto*Icecil's car

Now I compute the total power Ptotal = P1 + P2.

Sound right? Should energy be conserved with these ficticious powers?

No... kinda silly isn't it.

Yet that's exactly the sort of thing that ya'll are doing with reflected power as indicated on most instruments and as set up in the "reflection formalism".

Be careful and make sure that what you are adding are really powers before you invoke conservation of energy.

I am not being facitious or playing with words, here... you just gotta look at the circuits of reflected power meters and understand that what they are indicating is a fiction. Just as my P1 and P2 above are "fictions".

I am truly sorry that many eruidite technical folks, professors and all have led you so far astray with their complicated formalisms, but that's what you've got.

Deal with it!

Understand the simple DC circuit mismatch first and all will become clear!

-Peter K1PO

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AF9DE9F.808F46D7@IEEE.org...
> "Peter O. Brackett" wrote:
> > While you were at it with voltages, you should also have tried to prove that

> > you cannot just willy nilly add powers.
>
> Ahhhh that's the beauty, Peter. Scalar power is like buckets of water.
> You *can* add them willy nilly because there is no phase. 75 joules plus
> 8.33 joules always equals 83.33 joules, now and forever until those
> joules are changed into something besides energy which, to the best of
> my knowledge, cannot happen in a transmission line. I am appalled at
> the number of people on the newsgroup who see nothing wrong with
> violation of the conservation of energy principle. Does Mother Nature
> grant special dispensation to RF engineers that she doesn't grant to
> physicists?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3464. Re: DC Power supply question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 05:17:07 UTC
From: Dev <.>
Message-ID: <9dd87501gvc@enews3.newsguy.com>
Source record: 163515
Cross-posted to: alt.radio.scanner,rec.radio.amateur.antenna,rec.radio.scanner,rec.radio.shortwave

actually if you have a old computer power supply laying around. it give you pure DC. of 5 volts and 12 volts. Some say it sucks cause it is switching. but. I have tried it with a few transeivers that pulled over 15 amps. It worked nice. no voltage drops and I never had no AC humm transmitting or RX ing.

Dev

"Sycho_Graphics" <Sycho_Graphics@msn.com> wrote in message news:O6erGbC1AHA.302@cpmsnbbsa07...
> I am tired of all the wall warts and want to power my radios with a DC power
> supply my question is how many amps is enough? What I want to power is the
> following (AOR 8000, BC 780xlt, RadioShack DX-398, two Cobra CB radio's {one
> base, one portable}), but I want some room for future expansion.
>
> Sorry for the newbie question, but I am a newbie :)
>
>
>
>

3465. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 05:20:24 UTC
From: dennis@wawa.juniper.net
Message-ID: <9dd8eo$up0$1@heap.juniper.net>
Source record: 163513

Roy Lewallen <w7el@eznec.com> wrote:
>The voltage at any point along a shield between the inside and outside
>has to be zero. Therefore, you can't have a current flowing one
>direction along the inside and in the opposite direction on the outside,
>becuase this would cause voltage drops in opposite directions on the
>inside and outside. This in turn would result in unequal voltages on the
>inside and outside of the shield.

I don't think the first sentence necessarily implies the second, since
it seems to me that current doesn't necessarily flow in the direction that
the net voltage is dropping. For example, the current induced in a
conductor by an EM field flows in the direction that the induced voltage
rises (i.e. the induced voltage resists the induced current), so the
net voltage may drop or rise in the direction of current flow depending
on whether the I*R (R resistive or radiative) drop is greater or less
than the induced voltage. So even if the voltage between the inside
and outside of the shield is always zero, the currents can be different
if the EM fields adjacent to the conductor inside and outside of the shield
are different.

>If this premise were true, the currents I measured in my recently posted
>experiments couldn't exist. But they do. Tom's measurements of the
>current along a plane shield also contradict this theory.

I didn't see the post about the experiments, but I don't think you
can conclude that the voltages are different just because the currents
are different. Did you also measure a voltage difference between
the two sides of the conductor? I suspect not because I think Bill
Sabin was right about this part.

Dennis Ferguson

3466. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 05:21:26 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AFA2556.37E76E69@eznec.com>
Source record: 163511

The circuit description was posted on May 1. On May 2 I posted additional information about the directions of current flow. On May 3 I posted data from an experiment where I had added ferrite beads to the outside of the coax. All postings were made on the thread "What's the difference......." If they're no longer on your news server, you can get them from deja (http://www.deja.com).

Roy Lewallen, W7EL

Roger Sparks wrote:
>
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:3AF997DD.6A6BD4DC@eznec.com...
> > If this premise were true, the currents I measured in my recently posted
> > experiments couldn't exist. But they do. Tom's measurements of the
> > current along a plane shield also contradict this theory.
> >
> > Roy Lewallen, W7EL
>
> Hi Roy,
>
> I would like to see the description of your circuit. I think I have the
> results of the test but they were meaningless without the circuit.
>
> It is making it tough to follow the conversation when parts are dropped by
> the server.
>
> I recall Tom's experiment. It would help if he could give a careful
> description of the apparatus, including loop orientation, size, freq, ect.
>
> As you may recall, I reported on an experiment that I called a double
> shielded coax experiment. It did not show a change in capacitance that
> might be related to skin effect. I can post it again if someone would like
> me too.
>
> 73, Roger, W7WKB

3467. Tower Recommendations

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 05:23:11 UTC
From: Tony Hackenberg <awhmeh@core.com>
Message-ID: <3afa25c9$0$18900$272ea4a1@news.execpc.com>
Source record: 163512

Any recommendations on towers? I need one about 40 feet high and capable of support wind loads of about 11-14 square feet. It must be capable of being easily lowered (hinged at base or crank down).

My 40' aluminum tower that's over 26 years old bit the dust recently. Two large cracks developed in 2 of the 3 legs about 25' up the tower. I've dismantled it. Thus, I'm looking to replace it with a new tower. The old tower was a Universal aluminium tower from Universal Manufacturing Corporation. It was their model# 11-40 (11 square feet of wind load; 40' tall). I'm leaning toward getting their model# 12-40 (or 7-40) as a replacement.

3468. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 05:53:59 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AFA2CF7.73822B7B@eznec.com>
Source record: 163514

Roger Sparks wrote:
>
> >
> Does any current looping around the end of a solid coax shield have to obey
> the following rules?
>
> > The voltage at any point along a shield between the inside and outside
> > has to be zero. Therefore, you can't have a current flowing one
> > direction along the inside and in the opposite direction on the outside,
> > becuase this would cause voltage drops in opposite directions on the
> > inside and outside. This in turn would result in unequal voltages on the
> > inside and outside of the shield.

I assume that this is directed to Bill Sabin. Although I wrote the
words, they're what I believe to be Bill's premise. I don't agree with
it, and have produced experimental evidence that seemingly shows it to
be false.

> I would add the following example. When current loops around the end of a
> coax shield, the highest current point must occur at the point of loop
> reversal (the open end of the cylindrical tube).

Why is this?

When we cut a section
> through the wall on one side of the tube, we see three layers, inner
> conductive layer, skin effect shield layer, outer conductive layer.

There's only one layer, but it has the following characteristics: On the
inside of the shield there's a current which is equal in magnitude and
opposite in direction from the current on the center conductor. The
current density is greatest at the surface, and falls off exponentially
within the conductor. Five skin depths below the surface, the current
density is 1% of the density at the surface. Ten skin depths below the
surface it's 0.000045 the surface density, and so forth. At some depth
within this range, it can be considered zero for any practical purpose.
Then on the outside of the shield there can be another current. Its
density also decays as it penetrates into the conductor, by the same
proportion as the inner current. Peter noted that some fraction of the
current on the inside makes it to the outside and vice-versa. Let's see
how much. If the shield thickness is 0.010 inches and it's made from
copper, at 10 MHz the fraction of one current making it to the other
side is 0.000006. This is a reduction of 104 dB. A particularly
interesting thickness is 38.8 mils (.0388 inches). The reduction of
current density through this thickness of copper at 10 MHz is 280 dB.
And 280 dB is the ratio of the light output from an ordinary two cell

flashlight to the total light output of the Sun. (Not the light striking the Earth, but its total output.) I'll leave it to the Group Philosophers to discuss the importance of the fact that this current making it through isn't theoretically exactly zero. I just say that the currents are independent, and consider that close enough.

> A
> quarter wavelength long length of this section would act like a 1/4
> wavelength shorted line, and would have a very high impedance between open
> ends of the section. In addition, at the end points, current would not be
> flowing at the time of maximum current flow at the shorting point, so skin
> effect would not be opperative at the time of highest voltage.

I've gotten lost here. Skin effect is always present.

> Can skin effect really act to create a situation allowing two seperate
> currents in this situation?
>
> 73, Roger, W7WKB

As long as the conductor is at least several skin depths thick, no significant fraction of the current on one side will appear on the other, so two independent (for practical purposes) currents can exist on the two sides of the conductor. This is for *any* situation, with *any* length line terminated in *any* way. I'll be glad to point you to some texts for further reading if you'd like.

Roy Lewallen, W7EL

3469. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 06:50:34 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AFA3A3A.6108@wt.net>
Source record: 163516

Sideband wrote:
>
> Ever stop to think that maybe they all talk on the same frequencies
> because there's too few frequencies for them to talk on?
>
> Just my two cents.

But all the activity is the skip shooters these days. The local stuff is dead. I'm tuned to the CB freq's right now as a test, and all channels are dead. Even 19. "1:30 am". Used to, ch 19 never went dead, even at night. But soon as the sun comes up, and the skip's a rolling ,they come out of the woodwork. The inherent problem in this is that it defeats totally what CB was intended to be. Which was local communications up to 150 miles. Business included. No one uses it for that anymore. It's now mostly long distance stuff done by people that want to "shoot skip" but don't want to take a ham test. The fcc threw up their hands about that, but they are still going after freebanders. So anyway, the point is, if the CB band was used as it was intended to be, there would probably be room. But being as the band is wide open right now, that may be hard even if they wanted to. The CB band was really fairly poorly conceived to do what it was intended to back in 1958. They should have put them on 46 mhz or higher where there is a less likely chance of long haul stuff to gum up the works. The best solution today is to get a ham ticket if you really want to take advantage of some spectrum. With the different types propagation on each band, it helps add variety. I couldn't live being stuck on 10/11 m all day. Would get old quick. Congrats on the ticket. Keep up with the code, like it or not, it buys you a whole lot more privileges once you pass it. Once you get general, you pretty much have it made. You can do a bit of everything. MK
--
http://web.wt.net/~nm5k

3470. Leaky Feeder

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 07:10:45 UTC
From: Paul Huish <Paul.Huish@Interhouse.Redbus.com>
Message-ID: <tfkfnoo83bcoc4@xo.supernews.co.uk>
Source record: 163517

We have some DECT phones in our building but there are areas they do not cover.
Would it be possible to run 'leaky feeder' coax round the building and connect that in some way to (or instead of) the DECT base station antenna?
Any suggestions?

Thanks

Paul

--

Paul.Huish@Interhouse.Redbus.com
Facilities Manager, Redbus Interhouse
6&7 Harbour Exchange Square, London, E14 9GE
Tel: 020 7531 8744, Mob: 00 33 672 21 68 17
Fax: 020 7531 8701

3471. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 07:39:37 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3afa45b8.108407328@news.aepnet.com>
Source record: 163518

On Thu, 10 May 2001 00:20:21 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
wrote:

>Wes:
>
>Thanks, I'll draw out your rather complicated and elaborate measurement
>setup and comment on it step by step.
>
>But you'd better be ready to "think deeply", and not in a black box sense,
>about circulators and directional couplers, since a lot of stuff goes on
>inside circulators and directional couplers that is "called" something else
>on the outside. Labels on ports, just as labels on meter faces, are not
>necessarily meant to be taken literally.
>
>It happens that I am deeply familiar with the internal operations and "guts"
>of both circulators and directional couplers, having designed several
>versions of both, and put them into large scale production. From what I can
>tell from your remarks, our look at your setup will entail a careful review
>of the insides of circulators. Just as an understanding of "reflected
>power" as indicated on ham VSWR meters requires a careful analysis of the
>circuitry inside the "meter" that generates the readings.

I'll make it easier on you. Remove the circulator and replace it with a 30 dB
attenuator and up the source power to 1 KW.
>
>On your side, I insist that you critique my analysis of the very simple
>three element, one source, two resistors, DC circuit source missmatch
>example.

You can "insist" all you want. I want to talk about the weather for a month or
so. Another 100+ day today.

Wes Stewart N7WS

3472. Re: HF DF capability

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 09:13:15 UTC
From: 2w8ji@contesting.com
Message-ID: <3afa5b18.573881715@news.accessunited.com>
Source record: 163421

On 09 May 2001 03:02:51 GMT, mailfrmpa@aol.com (MailfrmPA) wrote:

>do your search on the Adcock anteena, I believe its called.
>
>Makes you wonder about the FCC's claimed DF capability now that the monitoring
>stations have been closed.
>
>K0MB

It's now called "I net", and the systems are all linked from one
central location instead of having ops at each location. It is more
effective than ever.

73 Tom

3473. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 09:18:59 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AFA5D03.FEBBE31C@mwci.net>
Source record: 163422

Dennis Ferguson wrote:

> I didn't see the post about the experiments, but I don't think you
> can conclude that the voltages are different just because the currents
> are different. Did you also measure a voltage difference between
> the two sides of the conductor? I suspect not because I think Bill
> Sabin was right about this part.

This is correct. There can be two different currents, but the voltage difference across the braid must be zero at every location. That is the boundary condition, as I have said before, and it is eminently sensible. The longitudinal voltage distribution is determined by the composite effect of the two currents and the *reactance* of the braid and by the distribution of electronic charges. The longitudinal voltage *must* be the same on both surfaces. No amount of creative speculation about skin effect changes that conclusion.

It is precisely for this reason that, if we think carefully, the "loop-current-over-the-edge-and-down-the-other-side" concept is nothing but hogwash that for some reason has become part of the ham radio culture. I have never seen this concept in any valid engineering publication. It defies Ohm's law, and it defies common sense. What is amazing is the amount of rhetoric and emotions that are exerted to defend this bit of nonsense.

A length of coax braid is not a valid path for a self-completing common mode loop, any more than a simple piece of wire is.

In normal usage of a coax that is properly terminated the differential mode produces no longitudinal voltages because of mag field cancellations along the inner surface, and the common mode current on the outer surface alone produces common mode voltages.

A common mode current along the outer surface, therefore its common mode voltage due to its common mode reactance, produces an E field along the center wire, despite the physical separation. Therefore it induces a common mode voltage in the center wire. This electromagnetic transfer is in perfect agreement with Maxwell's equations. In other words, the common mode voltage distribution along the outer surface is very nearly identical to the common mode voltage distribution along the center wire. Also, the common mode impedance on the outer surface is alo transferred, in exact agreement with any other conventional transformer.

(By the way, do you really think that a current balun is not also a conventional transformer for the common mode? All you have to do is *look* at it!)

This transfer effect is enhanced by the current balun, and is one major reason for its usage. Without this transfer, common mode signals would be converted to differential mode signals, which we definitely do not want. The fact that this conversion is greatly attenuated verifies the concept.

Despite all of this, some say over and over that the coax balun affects only the impedance on the outer surface. Baloney!

Bill W0IYH

3474. Re: Does anyone have experience with the Magnetic loop antenna's from MFJ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 09:30:48 UTC
From: 2w8ji@contesting.com
Message-ID: <3afa5f22.574916149@news.accessunited.com>
Source record: 163423

On Thu, 10 May 2001 02:05:00 GMT, "VE3TMT \(Max Donoghue\)"
<mdonoghue1@sympatico.ca> wrote:

>
>Get your hands on a vacuum variable cap and build one yourself, and save a
>couple hundred $$ along the way. My 3' loop tunes 40-10m continous using
>1/2" copper tube. Small 120VAC stepper motor tunes the cap. Very slow but
>very precise.

Hi Max,

Most vacuum caps are now around $100 US or so for useful voltages and
capacitance.

Do you know of a less expensive source? What voltage and capacitance
do you use?

73 Tom

3475. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 09:47:22 UTC
From: 2w8ji@contesting.com
Message-ID: <3afa5fc6.575079702@news.accessunited.com>
Source record: 163424

On Wed, 09 May 2001 20:17:43 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:

>I would add the following example. When current loops around the end of a
>coax shield, the highest current point must occur at the point of loop
>reversal (the open end of the cylindrical tube). When we cut a section
>through the wall on one side of the tube, we see three layers, inner
>conductive layer, skin effect shield layer, outer conductive layer. A
>quarter wavelength long length of this section would act like a 1/4
>wavelength shorted line, and would have a very high impedance between open
>ends of the section. In addition, at the end points, current would not be
>flowing at the time of maximum current flow at the shorting point, so skin
>effect would not be opperative at the time of highest voltage.
>
>Can skin effect really act to create a situation allowing two seperate
>currents in this situation?
>
>73, Roger, W7WKB

The edge is a surface Roger. At that point skin depth is inward from
the surface of the edge, just like along the walls of the conductor.

There is no resonant length inside the conductor becuase there are no
fields inside the conductor.

My experiment was a thin solid copper wall. One side excited with a
short conductor spaced a small fraction of an inch above the wall, the
other side "sniffed" with a small loop and actual connections to the
wall.

Voltage and current was lowest on the wall side directly opposite the
exciting conductor, and maximum at that conductor and parallel to that
exciting conductor on the side of the wall being excited.

Current was maximum (concentrated) near edges.

Here's something else to think about. I'm in the process of measuring
coaxial traps. Why, if the inside of the shield is not isolated from
the outside, does the coaxial trap have the same "capacitance"
appearing across the trap when the outside of the shield is used as
the inductor as if a separate inductor is used?

Look at a coaxial trap, and tell me how it works if the shield inside
and outside? Why does it appear as a lumped capacitor across an
inductor, rather than distributed inductance? Why isn't part or most
of the center-to-shield capacitance lost as distributed capacitance
along the "inductor"?

3476. Re: Does anyone have experience with the Magnetic loop antenna's from MFJ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 10:39:52 UTC
From: "VE3TMT (Max Donoghue)" <mdonoghue1@sympatico.ca>
Message-ID: <YduK6.9778$yw.401987@news20.bellglobal.com>
Source record: 163425

> Hi Max,
>
> Most vacuum caps are now around $100 US or so for useful voltages and
> capacitance.
>
> Do you know of a less expensive source? What voltage and capacitance
> do you use?
>
> 73 Tom

Hi Tom,

I know they are expensive, I managed to buy my Jennings 475 pf @ 4.5kv for $35 US from a ham on the east coast! I know I got a great deal. Here in Canada those MFJ loops are in the neighbourhood of $675.

73,

Max

3477. QRP enthusiasts out there ???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 11:03:56 UTC
From: News <giggle@mjvn.co.za>
Message-ID: <3afa764e$0$225@hades.is.co.za>
Source record: 163427

Hi
I'm interested in QRP.... are you or do you know of a site I could visit ?

73's
Eldred
ZS1DJ

3478. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 11:05:33 UTC
From: Michael Tope <W4EF@earthlink.net>
Message-ID: <1CuK6.3224$8x4.306007@newsread2.prod.itd.earthlink.net>
Source record: 163426

Hi Gents,

Here is an interesting thought experiment for you guys to ponder.
Say I have an omni antenna radiating 1 watt. One mile from the
antenna, I have a receiver which is picking some of the energy
radiated by the omni source. Some distance from the omni antenna
in the other direction away from my receiver, I have another
identical antenna with an identical transmitter (lets assume the
antennas are electrically short, so mutual coupling is minimal).
At some time, t=to, I turn on the second transmitter, whose antenna
as a matter of fact, is some odd multiple of a half wavelength from
the first antenna. What happens to the power flow towards my
receiver as the wave from the 2nd transmitter first reaches the
first antenna? Does it go to zero at the instant the second wave
reaches the first antenna, or does it go to zero when the two
waves reach my receive antenna? Also, in this case (again assuming
minimal mutual coupling), when does the power density at right
angles to the line of the array jump by 6dB? When the two incident
waves reach a distant receiver (at a right angle to the array), or
at the instant the second transmitter is switched on?

This stuff is never as simple as it first looks. Thanks for getting
me thinking.

73 de Mike, W4EF.....................................

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3af99d92.14237722@news.onemain.com...
> On Wed, 09 May 2001 19:03:01 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>
> > >
> > >The only technical discussion that you engage in is "I'm right, Steve's
> > >wrong". You are very good at bragging on and on about your papers but
you
> > >avoid virtually every direct discussion on this subject and you avoid
> > >answering direct questions. When the discussion gets uncomfortable you
> > >claim "Steve doesn't agree with me so he doesn't understand the basics".
> > >You just can't face the possibility that you made a big mistake.
> > >
> > >You have claimed several times on this newsgroup that I don't understand
> > >basic reflection mechanics. Let's talk about your understanding of wave
> > >mechanics demonstrated on the newsgroup during the past week or so:
> > >
> > >1) You said that the reflected voltage at an impedance termination is

not
> >equal to the incident voltage times the reflection coefficient.
>
> Steve, as you have done consistently with me, you have again twisted my
words
> exactly 180 degrees. I have never said what you said I said in 1) above.
> >
> >2) You continue to claim that two forward traveling voltages do not add,
> >yet Johnson, the author you quote most, clearly says that they do add.
>
> The forward traveling voltages do not add to form the total forward power.
You
> have misinterpreted Johnson, because the expression of Johnson you use
gives the
> line voltage at any point on the line. It does not give the forward power.
>
>
> >3) You said that it is not possible to have the total voltage on a
> >transmission line go to 0, while at the same time have the total current
be
> >non-zero.
>
> Again, this is not what I said. I said that at the match point voltage and
> current cannot go to zero simultaneously, because energy cannot be
destroyed.
> Energy would be destroyed if both voltage and current were zero
simultaneously
> at the same point.
>
> > This is incorrect. When the line impedance on a transmission is
> >a short circuit, the total voltage is zero, yet the current is at its
> >maximum value.
>
> This is exactly what I've been saying all along, but now you've twisted my
words
> again.
> >
> >4) You disagree that 61.24 V added in-phase with 20.41 V is equal to
81.65
> >V. Simple complex vector math.
> >
> >5) You disagree that Pdelivered equals Pforward - Preflected when a Zo
> >match does not exist in the transmission line.
> >
> >6) You do not understand the derivation of the relationship Pforward =
> >Pdelivered /(1 - |rhoA|^2)
>
> Sorry Steve, I spent hours emailing you this concept 6), which you refuted
> endlessly until recently. You kept insisting that it was Vdelivered/(1 -
rho).

> You finally discovered the relationship in 6) to be true, because you used
it as
> your Eq 36 in your QEX article.
> >
> >7) You do not understand the difference between the forward source power
> >after the Zo match and the delivered power after the Zo match.
> >
> >Would you care to go through each of these point in detail?
>
> No Steve, I would not, because your mind is made up. I'm dismayed because
you're
> continually giving bad information to people who are trying to learn, and
sadly,
> they believe you..
>
> Walt, W2DU
>

3479. Old radio valve wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 11:19:25 UTC
From: News <giggle@mjvn.co.za>
Message-ID: <3afa79a9$0$224@hades.is.co.za>
Source record: 163428

Hi

Please could you guide me to a place (or site), where I can purchase a valve for an old radio which I would like to restore ?

Thanks in advance

E de Vos
Cape Town
South Africa

3480. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 11:21:21 UTC
From: Dave Hall <nojunkmail_n3cvj@worldlynx.net>
Message-ID: <3AFA79B1.5D5C@worldlynx.net>
Source record: 163430
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Bill Sohl wrote:
>
> On Tue, 08 May 2001 10:07:28 GMT, "Rob St.Denis"
> <tstdenis3160@home.com> wrote:
>
> >> It is bad law because people do not want the government
> >> telling them how to live their lives and to what degree of
> >> risk they can/should afford themselves. No one is mandated
> >> to drive 70 MPH. If you don't want to drive a that speed,
> >> then don't.
> > >
> > >Still doesn't stop that idiot who is going to end up losing control of his
> > >car because he feels he should drive whatever speed he wants (since there
> > >wouldn't be any limit for him to abide by) and then crashing into my car.
> > >See believe it or not, MOST laws are there for the protection of OTHER
> > >people, not the offender.
> > >
> > >Ya can't drive drunk under law because you are a danger to others, not
> > >yourself.
>
> I have no problem with DWI laws. I do have problems where
> speed limits are set lower than anyone rationally drives. I have
> never suggested allowing unlimited speeds...although there
> are certainly highways in the west that can and have had
> only "reasonable and proper" as the limit.
>
> The problem is that the safety nazis want everyone to abide by
> their version of what is or should be safe. None of that
> crowd trusts anyone as an individual.

You have to remember that most "safety" related laws and rules are written for the lowest common denominator in society. Just because YOU can safely drive a car on a particular road at 70 MPH, does not mean that everyone else can. And since personal responsibility and prudent judgement seems to be at an all time low in this country, we have been more or less forced to have the rules dictated to us. It's a shame for those of us that feel that we're "better" than that, but the law is the law, and you do not have the right to arbitrarily disregard them. Organize a lobby, study and document your evidence as to why a particular law should be changed, and present it to the proper governing body, and let the process do its thing.

Dave
"Sandbagger"

3481. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 11:26:37 UTC
From: Dave Hall <nojunkmail_n3cvj@worldlynx.net>
Message-ID: <3AFA7AED.1ABB@worldlynx.net>
Source record: 163431
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Bill Sohl wrote:
>
> On Tue, 08 May 2001 10:09:43 GMT, "Rob St.Denis"
> <tstdenis3160@home.com> wrote:
>
> >> If you mean Clinton, you sure have that wrong. The safety nazis
> >> love Cintonites because they all want to tell you and me how
> >> we should live our lives.
> > >
> > >The amusing thing is ... the laws you do enjoy are exactly that. You know
> > >like: murder, rape, robbery, assault, stalking, etc etc etc ....
> > >
> > >The laws are there because the average person is too stupid to realise just
> > >what is good and what isnt
> >
> > That statement alone tells me you are very pro-government and
> > have little or no respect for individual responsibility unless it is
> > "enforced" by government. Pretty sad.

I am very much in favor of personal responsibility, and despise the government meddling in my life. But you have to realize that there are a great many peope in this country that are NOT responsible, and do NOT exercise good judgement. It is THESE people that the laws were written for. As long as people demonstrate that they could not behave themselves if left to their own desires, then the government will have to regulate them. This news group is a perfect example of why we need rules and regs. Too many people operate potentially dangerous equipment with little or no regard for other people's rights, yet they are the first to piss and moan when the law bites them. It's hard to make a case in favor of that type of mentality.

Dave
"Sandbagger"

3482. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 11:37:14 UTC
From: Michael Tope <W4EF@earthlink.net>
Message-ID: <K3vK6.3270$8x4.301682@newsread2.prod.itd.earthlink.net>
Source record: 163429

Hi Peter,

You might try the following experiment. Get yourself
a gated RF source, a fast RF switch and a long 50 ohm
transmission line. Place a 25 ohm resistive termination
at the end of the transmission line and connect an
oscilloscope across the resistor. Connect the other
channel of the O-scope across the input of the
transmission line. Now setup the gated source so
that is generates a burst of RF which is shorter
than the round trip delay time of the cable. Also setup
the switch so that the generator is removed from
the circuit and replaced with a 50 ohm termination
at the end of the RF burst. Note the amplitude of the
incident RF burst from the oscilloscope, and the
amplitude of the burst when it reaches the termination
at the far end of the transmission line. Then observe
the amplitude of RF burst envelope when it returns to
the 50 ohm source termination. Do this experiment and
then come back and tell us whether or not you still
consider refleted power to be some kind of fictious
mathematical formalism.

73 de Mike, W4EF.....................................
"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9dd6pplbo1@slb0.atl.mindspring.net...
> Walt:
>
> Your measurement setups use instruments that measure that "ficticious"
> reflected power and the "formalism" has been set up to make that an easy
> thing to do... it does not prove that the "reflected power" exists or not,
> it's just part of the measurement "formalism".
>
> Measuring one thing, and calling it another, is just playing with words.
> You must know quantitatively exactly what you are discussing. Unless you
> understand the "Internal Operation" of the measuring instruments, you have
> but a faint understanding of what is happening. When a meter face
displays,
> Watts, you must be sure that the meter is measuring watts, for it may be
> measuring volts or amps or something else and just "calling" them watts.
>
> Unfortunately the fictional mathematical "formalism" of the the
"Scattering
> Formalism" is built into the "labels" on most if not all of the
instruments

> that you use in your lab setups.
>
> Walt, don't depend upon others and the makers of instruments to guide you.
> Understand the instruments themselves, try to design instruments to make
> those measurements yourself, if only in sketch form. It will help you
> immeasureably with understanding.
>
> Walt, I recommed that you either set up a simple DC circuit, or use the
one
> that I set up, of a voltage source with an internal resistance and a
> mismatched load resistance, and do the calculations yourself.
>
> It only takes a few minutes... and it will be illuminating, you will then
> understand more about reflections than you ever thought possible.
>
> And you don't have to depend upon what HP or Daiwa or Tektronix, or PRD,
or
> whomever puts on the labels of their instruments, or what people call
> things, you will know in a very simple quantitative way, just what
mismatch,
> reflection coefficient, VSWR, reflected voltage, and reflected power are!
>
> And you will have done it all yourself.
>
> Walt, just do it!
>
> It only takes a few moments, probably less time than it takes to type a
> reply to this posting. Stop, analyze, calculate and think at the volts
and
> amps level. Leave the power till later, once you have established the
volts
> and amps.
>
> Why is it that you seem to refuse to do this simple task? I have done it
> here on the NG and you refuse to comment or elaborate.
>
> Could it be perhaps that you are incapbable of analyzing a simple DC
circuit
> with only two resistors in series?
>
> Could it be perhaps that you don't really know the equations and formulas
of
> reflection mechanics.
>
> Could it be that you don't know the formula for reflected voltage?
>
> Could it be that.....???? I wonder????
>
> Prove to me that it is not so!
>

> Here's my extremely simple challenge.
>
> Draw a schematic diagram containing only three elements, a 10 volt
battery
> with an internal resistance of 10 Ohms, connected to a 5 Ohm resistor load
> and then do the following very simple quantitative DC analysis.
>
> 1. Compute the current I through the load and write it down. I = ?
> 2. Compute the voltage across the load and write it down V = ?
> 3. Compte the reflection coefficient at the battery terminals and write it
> down, rho = ?
> 4. Compute the VSWR at the load and write it down, VSWR = ?
> 5. Compute the reflected voltage at the load and write it down, b = ?
> 6. Compute the power dissipated in the load and write it down, Pload = ?
> 7. Compute the power dissipated in the internal resistance and write it
down
> , Pint = ?
> 8. Compute the incident or forward power, and write it down, Pf = ?
> 9. Compute the reflected power and write it down, Pr = ?
>
> 10. Now ask yourself where that Pr is generated and where it is
dissipated.
>
> A power that has no source and no sink, no generator and no load, is a
pale
> imitation of a real power!
>
> Walt, until you thoroughly analyze a simple DC mismatched circuit setup as
> above, using all the equations of reflections mechanics, which are just as
> valid at DC as at AC, and then stare at the results and ask why?...
>
> YOU SIMPLY DO NOT YET UNDERSTAND REFLECTIONS.
>
> Once you understand deeply the DC analysis, then and only then are you
> qualified to go on to understand reflections in AC, HF, RF and microwaves
> and to discuss the operation of circulators and directional couplers.
>
> Walt, just do it!
>
> 10 simple answers, 10 simple questions. Anyone who calls himself an
> engineer can do it. Can you do it?
>
> Best,
>
> -Peter K1PO
>
>
>
>
>

> "Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
> news:3af9fc6a.11565940@news.onemain.com...
> > On Thu, 10 May 2001 01:11:52 GMT, nospam_n7ws@arrl.net (Wes Stewart)
> wrote:
> >
> >
> > >Quote #1.
> > >
> > >Picture this. I have an x-band source that uses a high quality
> > >isolator (terminated circulator) on its output. Any power returned to
> > >this source is dissipated in the isolator. In addition, there is a
> > >sampling loop that measures output level and via feedback stabilizes
> > >the output power (ALC, if you will) This loop has the effect of
> > >further improving the source match.
> > >
> > >I connect this generator to a waveguide high-directivity dual
> > >directional coupler. We will use waveguide so you can throw away your
> > >volt and ammeters.
> > >
> > >I place two waveguide thermistor power sensors to the two coupled
> > >ports on the directional coupler. I place a shorting plate on the
> > >output of the coupler. If the coupler is a good one, I will measure
> > >the same power on each of the sensors.
> > >
> > >The forward power (your Pi) is sampled by the forward-reading coupler
> > >at a level equal to the coupling factor, e.g. -30 dB. The output
> > >short circuit totally reflects the incident power and returns it to
> > >the source. The reverse-reading sensor samples this, also at -30 dB
> > >and displays the same value as the forward sensor. Any differences
> > >between the two can be normalized out.
> > >
> > >Because of the 'perfect' source match, there is no re-reflection of
> > >the reflected power; it is totally dissipated by the generator. This
> > >system will now reliably measure the return loss (within the
> > >directivity uncertainty limits discussed earlier) of a load placed on
> > >the output. For most purposes, we can ignore the forward sensor
> > >reading because it remains constant regardless of load impedance.
> > >
> > >A few words about the power sensors. Contrary to what you claim
> > >above, the resistance of the thermistors doesn't have to be anywhere
> > >near the system impedance. The thermistors (today thermocouples are
> > >also used) simply measures temperature rise in a termination. The
> > >thermistor is not necessarily the termination. It is usual to have
> > >matched thermistors in a self-nulling bridge circuit. The second
> > >thermistor is heated by applying an easily measured DC or low
> > >frequency AC signal to it. This applied signal power is adjusted to
> > >null the bridge at which time the applied power equals the r-f power.
> > >This is a substitution method where a difficult to measure quantity
> > >(microwave power) is determined by measuring the low frequency or DC
> > >power. End #1

> >
> > Irrefutable proof the reflected power exists!
> >
> > >Quote #2:
> > >
> > >Let's take two of my waveguide dual-directional couplers
> > >(reflectometers) and connect them thus:
> > >
> > >The input port of coupler #1 attaches directly to the output of a
> > >well-matched source, as before. On the output port of coupler #1 we
> > >attach a waveguide E- H tuner (the waveguide equivalent of your
> > >antenna tuner). On the output of the tuner we attach the input port
> > >of coupler #2.
> > >
> > >On the output of coupler #2 we attach a 3 dB attenuator followed by a
> > >short circuit.
> > >
> > >So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho = 0.5
> > >
> > >If I temporarily remove the tuner, as expected, both reflectometers
> > >measure a 6 dB power ratio between the forward and reflected coupled
> > >ports.
> > >
> > >We assume that maximum available power out of the source is 1.0 W.
> > >Because we have a non-reflective source, there is a mismatch loss
> > >given as:
> > >
> > >-10 * log(1 - rho^2) = 1.25 dB
> > >
> > >or leaving off the -10 log, a power ratio of 0.75.
> > >
> > >So of the available power, 0.75 W makes it into the input port of
> > >coupler #1.
> > >
> > >If our couplers are 30 dB, as in my previous example, then we read the
> > >following: (give or take coupling loss)
> > >
> > >1. Coupler #1 forward port = 0.75 mW.
> > >2. Coupler #1 reflected port = 0.1875 mW.
> > >3. Coupler #2 forward port = 0.75 mW.
> > >4. Coupler #2 reflected port = 0.1875 mW.
> > >
> > >Okay, now we put the tuner back in between the two couplers. If we
> > >fiddle fart around with the tuner, the power reading at the reflected
> > >port of coupler #1 can be reduced to zero, or nearly so. We have
> > >"re-reflected" the nasty reflected (dare I say) power back toward the
> > >load.
> > >
> > >The mismatch loss now goes away and the forward port of coupler #1
> > >reads 1.0 mW.

> > >
> > >Let's examine the readings on the thermistor power sensors on the
> > >coupled ports of coupler #2. Since we tweaked the tuner, we now have
> > >1.0 W migrating around in the second coupler so the forward coupler
> > >reads 1.0 mW. (1.25 dB higher than before and no surprise)
> > >
> > >With 1.0 W incident on a 6 dB return loss load, the reflected power is
> > >0.25 W. The coupling factor is 30 dB so the power appearing at the
> > >reflected port of coupler #2 is 0.25 mW. The ratio of the reflected
> > >power to the forward power readings is .25 / 1.0 = - 6dB, just as
> > >before and (to me anyway) again no surprise.
> > >
> > >But wait! We just tuned (conjugately matched) this system to "remove
> > >the termination" and that pesky reflected power still showing up on
> > >the coupled port!!!
> > >
> > >No voltmeter, no ammeter, no hanky panky, just real reflected power
> > >heating up the thermistor. Funny how this works. End #2
> > >
> > >So....now what?
> >
> > Accurate experimental data proves that a concept or theorem is either
true
> or
> > false. Wes' experiments have proved Peter's concept that reflected power
> is
> > fictitous false, which we've known all along.
> >
> > And Wes, I've performed similar experiments in my own lab, but with
coax,
> using
> > an HP-8405A Vector Voltmeter and an HP-778D Dual Directional Coupler,
with
> > similar results. Bravo!
> >
> > >Wes Stewart N7WS
> >
>
>

3483. Re: QRP enthusiasts out there ???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 11:53:27 UTC
From: k4ia@aol.com
Message-ID: <20010510075327.26230.00003288@ng-fq1.aol.com>
Source record: 163432

The big one is http://www.qrparci.org/
Radio K4IA
Buck
Fredericksburg, Virginia USA

REAL CHEAP Long Distance 4.9 cents/min Interstate and REAL CHEAP Intrastate, International, Toll Free, Callback, Calling Cards, Pagers and more Tune to http://www.ld.net/?bucksavers

3484. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 11:59:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFA82A9.F60E0A9B@IEEE.org>
Source record: 163433

VE9SRB wrote:
> As for the constructive interference, the power gain is determined through
> the vector addition of the E and H fields. E and H add directly and then
> power is the derived quanity.

Aha, so the 50 joules/sec involved in the destructive interference is preserved by constructive interference and 75 joules/sec plus 8.33 joules/sec does not equal 133.33 joules/sec. 75 joules/sec plus 8.33 joules/sec plus that 50 joules/sec equals 133.33 joules/sec.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3485. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 12:02:21 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFA834D.2AB8236F@IEEE.org>
Source record: 163434

VE9SRB wrote:
> Why do you insist that energy is destroyed? The net rearward energy flow
> goes to zero. Its no different than a multipath fade or a radiation pattern
> null in an antenna.

Aha, so the 50 joules/sec involved in the destructive interference is preserved by constructive interference and 75 joules/sec plus 8.33 joules/sec does NOT equal 133.33 joules/sec. 75 joules/sec plus 8.33 joules/sec plus that net rearward energy flow of 50 joules/sec equals 133.33 joules/sec.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3486. Re: K5K, D68C QSLs

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 12:20:24 UTC
From: Adam Adkins <km5nNoSpam@earthlink.net>
Message-ID: <MPG.156443972ca9dd34989690@news.earthlink.net>
Source record: 163435

[This followup was posted to rec.radio.amateur.antenna and a copy was
sent to the cited author.]

In article <l0XJ6.44968$2U.19405947@news2.rdc2.tx.home.com>,
dave.routzon@mindspring.com says...
> Does anyone know when the QSLs will be forthcoming from these DXprditions?
> Mine were sent with $ and sase's right away, but nothing back yet!
>

You might want to check the web site, http://www.qsl.net/krpdxg.
Here is what it has to say:

QSL CARDS ARE CURRENTLY BEING MAILED (MARCH 1, 2001). ALL QSLS RECEIVED
VIA MAIL WILL BE ANSWERED FIRST. WE WILL LET YOU KNOW WHEN WE ARE CAUGHT
UP, IF THEN, AFTER SEVERAL MONTHS YOUR DIRECT SASE HAS NOT ARRIVED FEEL
FREE TO INQUIRE TO THE MANAGER AND HE'LL CHECK HIS LOGS FOR STATUS.
PLEASE ALLOW 1 YEAR FOR A BUREAU RESPONSE.

73,

Adam, KM5N

3487. FS: Ham IV Rotator and Controller

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 12:21:27 UTC
From: K6CVC <K6CVC@home.com>
Message-ID: <eScYSVW2AHA.292@cpmsnbbsa09>
Source record: 162814
Cross-posted to: rec.radio.amateur.antenna,rec.radio.swap

Excellent condition very little use. Mast bracket and all hardware included.

$275 plus shipping

Chuck
K6CVC@home.com

3488. Re: QRP enthusiasts out there ???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 13:10:37 UTC
From: AC6V <ac6v@ix.netcom.com>
Message-ID: <3AFA934C.C8955051@ix.netcom.com>
Source record: 163436

Eldred -- try the 30 QRP Links at URL:
http://ac6v.com/qrp.htm
Includes QRP calling frequencies
--
73 From Rod AC6V In San Diego
700 Ham Topics & 6,000 Links
http://ac6v.com/
I Doubt, Therefore I Might Be!!!
==========

News wrote:

> Hi
> I'm interested in QRP.... are you or do you know of a site I could visit ?
>
> 73's
> Eldred
> ZS1DJ

3489. Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 13:18:09 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <lywK6.14533$4f7.1147556@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163437

Cecil:

Consider this quiz:

Known Information:

The transmitter is adjusted so that it will deliver 100 W of power to a Zo matched load.

XMTR---50 ohm coax---X---150 ohm twinlead---Antenna

There is not a Zo match at X.

The 50 ohm coax is 1 WL long. Both lines are lossless.

The measured forward power at X in the 50 ohm coax is 100 W.

The measured reflected power at X in the 150 ohm line is 18.864 W

The reflected voltage at X in the 150 ohm line has a phase angle of -94.203 degrees

The antenna impedance is a pure resistance.

Quiz:

What is the steady state forward power in the 150 ohm line?

What is the steady state reflected power in the 50 ohm line?

What is the antenna impedance?

The solution to this simple Quiz illustrates all of the correct aspects of wave reflection mechanics and should take less than 5 minutes.

Steve VE9SRB

3490. Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 13:26:47 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <rGwK6.14542$4f7.1149002@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163438

Walter:

Consider this quiz:

Known Information:

The transmitter is adjusted so that it will deliver 100 W of power to a Zo matched load.

XMTR---50 ohm coax---X---150 ohm twinlead---Antenna

There is not a Zo match at X.

The 50 ohm coax is 1 WL long. Both lines are lossless.

The measured forward power at X in the 50 ohm coax is 100 W.

The measured reflected power at X in the 150 ohm line is 18.864 W

The reflected voltage at X in the 150 ohm line has a phase angle of -94.203 degrees

The antenna impedance is a pure resistance.

Quiz:

What is the steady state forward power in the 150 ohm line?

What is the steady state reflected power in the 50 ohm line?

What is the antenna impedance?

The solution to this simple Quiz illustrates all of the correct aspects of wave reflection mechanics and should take less than 5 minutes.

Steve VE9SRB

3491. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 14:10:26 UTC
From: richardharrison@webtv.net
Message-ID: <15898-3AFAA152-3@storefull-116.iap.bryant.webtv.net>
Source record: 163441

Peter, K1PO wrote:
"Measuring one thing and calling it another is just playing with words."

We have many useful plays on words. Your analog multimeter is deflected by current while it is scaled for volts or ohms. No problem.

Proportionality is not fiction. Display is in the scaling and calibration.

Peter`s voltage source with its internal resistance and external load lacks one essential ingredient for a distinct reflection to be sensed. It needs a transmission line. You need a delay or a directional coupler to distinguish the initial signal from the reflection.

If you want a reflection sensed without those misleading instruments, you can use your ears to hear an echo. But, you must have enough round-trip travel time to sort out the echo from the initial signal. Else, you need highly directional transducers, a directional coupler, or other tricks to distinguish the sound from the echo.

Where is the delay in Peter`s battery and load resistor? A transmission line has energy storage in its inductance and capacitance. More importantly, a transmission line has significant length so that whatever the vave velocity there is phase rotation along its length.

The formula for the magnitude of the reflected voltage at any point along a transmission line is: the magnitude of the vector value of the reflected voltage at the load times e (the base of the logarithm) to the minus alpha times (l) power. (l) is the distance back from the load.

The phase drops back beta radians for each unit of distance that the wave travels toward the generator.

The magnitude of the reflected voltage at the load depends on the reflection coefficient which has phase and magnitude.

This is getting tedious to type for a non-typist. If you want the whole story, just consult Terman.

Best regards, Richard Harrison, KB5WZI

3492. Re: Old radio valve wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 14:47:19 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <vdalftc59gufcr0deh7pf68ofme13m1rfe@4ax.com>
Source record: 163440

On Thu, 10 May 2001 13:19:25 +0200, "News" <giggle@mjvn.co.za> wrote:

>Please could you guide me to a place (or site), where I can purchase a valve for an old radio which I would like to restore ?

Try:

http://www.tubesandmore.com/

73, Bill W7TI

3493. Dipole antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 14:49:21 UTC
From: Boyd Durdle <bdurdle@roadrunner.nf.net>
Message-ID: <1103_989506161@b>
Source record: 163439

If two dipoles are connected to the same coax transmission line what problems would result if both (a 20m and a 40m dipole) are running in different
directions. One runs north-south, the other east-west. I think I may have read somewhere that both should be parallel. Anyone have any suggestions?

3494. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 15:18:05 UTC
From: w2du@iag.net
Message-ID: <3afaaf74.3876744@news.onemain.com>
Source record: 163442

On Thu, 10 May 2001 00:52:28 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
wrote:

>Once you understand deeply the DC analysis, then and only then are you
>qualified to go on to understand reflections in AC, HF, RF and microwaves
>and to discuss the operation of circulators and directional couplers.
>
>Walt, just do it!
>
>10 simple answers, 10 simple questions. Anyone who calls himself an
>engineer can do it. Can you do it?
>
>Best,
>
>-Peter K1PO
>
OK Peter, you're on. I can do the paper work, but my RF lab is in Florida. We
just arrived in Michigan last week for our 6mo summer stay, so I won't have any
lab equipment until Nov.--any measurements must wait.

I've got some other chores at the moment, but I'll get back with you.

OTH, how can you dispel Wes' data?

Walt

3495. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 15:40:14 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <yDyK6.14684$4f7.1162781@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163443

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3afaaf74.3876744@news.onemain.com...
> On Thu, 10 May 2001 00:52:28 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com>
> wrote:
>
>

Walter:

Take a look at this Quiz as well:

Known Information:

The transmitter is adjusted so that it will deliver 100 W of power to a Zo
matched load.

XMTR---50 ohm coax---X---150 ohm twinlead---Antenna

There is not a Zo match at X.

The 50 ohm coax is 1 WL long. Both lines are lossless.

The measured forward power at X in the 50 ohm coax is 100 W.

The measured reflected power at X in the 150 ohm line is 18.864 W

The reflected voltage at X in the 150 ohm line has a phase angle of -94.203
degrees

The antenna impedance is a pure resistance.

Quiz:

What is the steady state forward power in the 150 ohm line?

What is the steady state reflected power in the 50 ohm line?

What is the antenna impedance?

The solution to this simple Quiz illustrates all of the correct aspects of
wave reflection mechanics and should take less than 5 minutes.

Steve VE9SRB

3496. Re: Dipole antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 15:43:00 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <7kdlftodbmq88995g9hjj6v4l6bv8ihgvc@4ax.com>
Source record: 163444

On Thu, 10 May 2001 14:49:21 GMT, Boyd Durdle <bdurdle@roadrunner.nf.net> wrote:

>If two dipoles are connected to the same coax transmission line what problems would result if both (a 20m and a 40m dipole) are running in different
>directions. One runs north-south, the other east-west. I think I may have read somewhere that both should be parallel. Anyone have any suggestions?

I did this some years ago and found the lower frequency dipole was little affected, but the higher frequency one was way off tune. I believe it's better to use traps to achieve multi-band capability, but with lots of cut-and-try, you can probably get some measure of success. Good luck.

73, Bill W7TI

3497. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 15:53:37 UTC
From: richardharrison@webtv.net
Message-ID: <25251-3AFAB981-5@storefull-116.iap.bryant.webtv.net>
Source record: 163445

Peter, K1PO wrote:
"Kinda silly isn`t it."
"Yet that is exactly the sort of thing ya`ll are doing with reflected power as indicated on most instruments and as set up in the "reflection formalism".

Peter seems to have shifted from "reflected power is a hoax" to "instruments which measure reflected power are a hoax".

Maybe the examples of time domain reflectometery and TV ghosts proved compelling.

Directional couplers exist and work well to measure reflected power while ignoring incident power, or vice versa.

Peter also wrote:
"You cannot always add powers meaningfully, even if they are scalars."

Of course the relationship between the powers to be added or subtracted must be correct. A sane person would take that into account.

Bird says that the power accepted from a transmitter and delivered to a load via a 50-ohm transmission line coupling one transmitter to one load is simply the incident (forward) power minus the reflected (reverse) power. It works, in reasonably low loss lines. Otherwise, the power delivered by the transmitter is greater than the power the load accepts, by the amount of the line loss.

Best regards, Richard Harrison, KB5WZI

3498. Big Mac

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 16:09:38 UTC
From: jknope@webtv.net
Message-ID: <28363-3AFABD42-14@storefull-153.iap.bryant.webtv.net>
Source record: 163446

Whatever happened to Big Mac's CB Webpage???

3499. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 16:12:46 UTC
From: kb7qhc@home.com
Message-ID: <3afabdd0.237926179@news.seanet.com>
Source record: 163447

On Wed, 9 May 2001 19:41:44 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>DC or AC it's all the same.
>
>Same equations, same physics, same mathematics, same arithmetic, same
>measurements.
>

Hi Peter,

Yes, I am sure, your proposal fails for both.

73's
Richard Clark, KB7QHC

3500. Help please! How do I power a RCA 10W505 (3 Wire) Rotor - What was in the controler?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 16:43:03 UTC
From: beeHIND <to@rear.com>
Message-ID: <cmglfto34s7v6ip1gf04oq8pn23c4v322f@4ax.com>
Source record: 163448

[No readable article body recovered]

3501. Helix ant help needed

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 16:56:55 UTC
From: "Peter D. Richeson" <peter.d.richeson_@boeing.com>
Message-ID: <GD4pr1.n0z@news.boeing.com>
Source record: 163451

Trying to design a helix ant for 432 MHz using NEC. It takes forever to adjust out the reactive part of the input Z. Any advice on what parameter effects this the most.

Thanks.

3502. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 16:59:09 UTC
From: kb7qhc@home.com
Message-ID: <3afcc8ce.240740877@news.seanet.com>
Source record: 163449

On Thu, 10 May 2001 13:18:09 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>Cecil:
>
>Consider this quiz:
>
>Known Information:
>
>The transmitter is adjusted so that it will deliver 100 W of power to a Zo
>matched load.
>
>XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
>
>There is not a Zo match at X.
>
>The 50 ohm coax is 1 WL long. Both lines are lossless.
>
>The measured forward power at X in the 50 ohm coax is 100 W.
>
>The measured reflected power at X in the 150 ohm line is 18.864 W
>
>The reflected voltage at X in the 150 ohm line has a phase angle of -94.203
>degrees
>
>The antenna impedance is a pure resistance.
>
>Quiz:
>
>What is the steady state forward power in the 150 ohm line?
>
>What is the steady state reflected power in the 50 ohm line?
>
>What is the antenna impedance?
>
>The solution to this simple Quiz illustrates all of the correct aspects of
>wave reflection mechanics and should take less than 5 minutes.
>
>Steve VE9SRB
>

Hi Steve,

So, as I understand this, you measure 100W at both the load and as
forward power in the 50 Ohm line? What about source Z? 50 Ohms?

73's
Richard Clark, KB7QHC

3503. Re: QRP enthusiasts out there ???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 17:22:48 UTC
From: nielsen@remove_this.oz.net
Message-ID: <9deip8bgo0@216.39.171.5>
Source record: 163450

Here's a few:

http://www.fix.net/norcal.html
http://www.njqrp.org/
http://www.extremezone.com/~nk7m/

On Thu, 10 May 2001 13:03:56 +0200, News wrote:
> Hi
> I'm interested in QRP.... are you or do you know of a site I could visit ?
>
> 73's
> Eldred
> ZS1DJ
>
>

--
Bob Nielsen, N7XY nielsen@oz.net
Bainbridge Island, WA http://www.oz.net/~nielsen
IOTA NA-065, USI WA-028S

3504. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 17:38:51 UTC
From: N3VST <not@chance.com>
Message-ID: <YIAK6.12663$R2.13206082@newsrump.sjc.telocity.net>
Source record: 163452

yes it is legal, after all 11 meters is public use band, why not use your
fcc assigned callsign
"Ryan KC8PMX" <kc8pmx@tm.net> wrote in message
news:aSZJ6.97$gA.27440@monger.newsread.com...
> One question, what would happen if a ham operator used his/her callsign as
> an identifier on the LEGAL cb frequencies. (assume all other operation is
> completely legal). Is it legal to identify with your callsign there?
> (sorry, not up to much on my 11meter knowledge here)
>
> I have one in my truck that I use about 2 times per year mainly to find
out
> road conditions etc, because it seems NO ONE uses 146.520 anymore......
> --
>
>
> Ryan, KC8PMX
>
> Check out www.qsl.net/w8kea
>
> Amateur Radio Is Fun!!! Ask me!
>
>
>
>
>
> > >Hams can still go there, use your callsign
> > >and follow all the rules.
> >
> > *ANYBODY can go there. And you don't need to use your ham call sign. You
> don't
> > need ANY call sign. Furthermore, when a ham goes to 11 meters, he
"checks
> his
> > license at the door". He/she has no more "authority" or rights than
anyone
> else
> > on 11 meters.
> >
> > > If we hams again populate this band maybe we can win it back, for
> > >sole amateur use.
> >
> > CB is a designated set of frequencies and those operating in the United
> States
> > and many other places are doing so with the permission and blessing of

> their
> > government. How would you like it if roles were reversed? Try this:
> Okay,
> > all CBers report to ten meters and begin operating. CBers might win the
> band
> > for themselves. Don't like it? Tough. CBers operate on 11 meters with
> > exactly the same authority as YOU operate on 10 meters!
>
>
>

3505. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 17:42:22 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <2qAK6.14923$4f7.1174064@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163453

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3afcc8ce.240740877@news.seanet.com...
> On Thu, 10 May 2001 13:18:09 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >Cecil:
> >
> >Consider this quiz:
> >
> >Known Information:
> >
> >The transmitter is adjusted so that it will deliver 100 W of power to a
Zo
> >matched load.
> >
> >XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
> >
> >There is not a Zo match at X.
> >
> >The 50 ohm coax is 1 WL long. Both lines are lossless.
> >
> >The measured forward power at X in the 50 ohm coax is 100 W.
> >
> >The measured reflected power at X in the 150 ohm line is 18.864 W
> >
> >The reflected voltage at X in the 150 ohm line has a phase angle
of -94.203
> >degrees
> >
> >The antenna impedance is a pure resistance.
> >
> >Quiz:
> >
> >What is the steady state forward power in the 150 ohm line?
> >
> >What is the steady state reflected power in the 50 ohm line?
> >
> >What is the antenna impedance?
> >
> >The solution to this simple Quiz illustrates all of the correct aspects
of
> >wave reflection mechanics and should take less than 5 minutes.
> >
> >Steve VE9SRB

> >
>
> Hi Steve,
>
> So, as I understand this, you measure 100W at both the load and as
> forward power in the 50 Ohm line? What about source Z? 50 Ohms?
>
> 73's
> Richard Clark, KB7QHC

Hi Richard:

The source Z is assumed to be 50 ohms so that no re-reflections occur at the source. Regardless of this fact, the forward power in the 50 ohm line is adjusted such that the steady state forward power arriving at point X is 100 W. There is not an impedance match at point X.

I will not tell the group (yet) as to what forward power is measured at the antenna load or what the rearward (reflected) power is in the 50 ohm line. This is the exercise in understanding wave mechanics. More than enough information is provided to correctly determine the total forward power in the 150 ohm line, the reflected power in the 50 ohm line and the antenna impedance.

With more than the allotted 5 minutes, there is also enough information to determine the steady state impedance at X, and the length of the 150 Ohm line.

For those who do not add voltages as vectors and assume to add forward power as Pforward = Psource forward + Pre-reflected, the exercise should be enlightening. The issue here is that the problem is not worked backwards from the steady state power values so you can't use incorrect concepts. Note: there are many incorrect answers.

Steve VE9SRB

3506. Re: Circuits for 2m S.W.R and Watt Meters.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 17:46:06 UTC
From: Skipp <skipp@pilot.ucdavis.edu>
Message-ID: <9dek4uprr2@woodrow.ucdavis.edu>
Source record: 163454
Cross-posted to: rec.ham-radio,rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,relcom.radio.diagrams,sci.electronics.design,sci.electronics.equipmenttw.bbs.rec.radio.amateur

Your best bet is to pick up an ARRL Handbook and have a look at the
projects inside. If you want a cheaper prebuilt unit, consider buying a
used Heathkit VHF watt meter off Ebay.

cheers
skipp
http://sonic.ucdavis.edu

: In sci.electronics.design Tienie.Venter@eskom.co.za wrote:
: Hi,
: I am looking for circuits to build a S.W.R and Watt meters for 2m. (144 -
: 146MHz) If anyone can help, please e-mail direct to:-
: Tienie.Venter@Eskom.Co.ZA
: Thanks,
: Tienie ZR6JMV.

3507. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 17:49:57 UTC
From: N3VST <not@chance.com>
Message-ID: <qwAK6.12666$R2.13213791@newsrump.sjc.telocity.net>
Source record: 163455

no its not, this is the most misleading thing I have heard yet. There is no requirement for ID'ing on 11 meters. This is a band that is open to anyone that can fork out $20 for a cheap set. There is absolutely rule against using an FCC assigned callsign there.

If you were to use a public service band "stupid idea" and use your callsign, one your an idiot and two you do not have a license to transmit there, nor the permission of the license trustee, this would be illegal. Also, under no circumstances are you transmit on the police bands without approval from the licensee,(mayday or not) and your not supposed to have equipment that transmits in the Public service bands.

Find me the paragraph in any FCC rules (current) that prohibit using an amateur radio callsign on the CB band, you won't, it does not exist.

"Bob McConnell" <rmcconne.NOSPAM@lightlink.com> wrote in message news:lvnjft4dggtgc2q6clhqvijpor7a673cfc@4ax.com...
> On Tue, 08 May 2001 21:49:58 GMT, "Ryan KC8PMX" <kc8pmx@tm.net> wrote:
>
> >One question, what would happen if a ham operator used his/her callsign as
> >an identifier on the LEGAL cb frequencies. (assume all other operation is
> >completely legal). Is it legal to identify with your callsign there?
> >(sorry, not up to much on my 11meter knowledge here)
> >
> >I have one in my truck that I use about 2 times per year mainly to find out
> >road conditions etc, because it seems NO ONE uses 146.520 anymore......
>
> You could be cited for operating outside of the bands assigned to the
> amateur radio service, not that anyone is likely to hear you and
> report you. But it would be the same as using your ham call sign on,
> say, a police band. Unless it is an emergency (Mayday), you aren't
> supposed to do it.
>
> Bob McConnell
> N2SPP
>

3508. Re: Eleven Mtrs/Freebanders/Feds

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 17:54:49 UTC
From: N3VST <not@chance.com>
Message-ID: <XAAK6.12668$R2.13216399@newsrump.sjc.telocity.net>
Source record: 163456

The guy sending code should have waited for a few more minutes, an email address is somewhat easy to track. My guess was that ham was to acient to understand email and how it works, so he started send fast code to drive them away. I would hve loved to nail these two foul mouthed truckers.

Maybe next time, before someone starts sending code.

"Leland C. Scott" <no-spam@junk-mail.net> wrote in message
news:tfg3i4np6llf4a@corp.supernews.com...
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF7A966.9F4A4A31@spam.me.not...
> > Hrm. To my recollection it doesn't specify... but then again, I could be
> > wrong.
>
> By the rules you can't be interfering with an illegal transmission. The
Ham
> sending CW the other post mentions should have ID'ed to be legal too.
> Sending CW over the top of the 10m interlopers was not illegal in of it
> self.
>
>
> --
> Leland C. Scott
> KC8LDO
>
> Saw this on a Tee-shirt:
>
> "I am a bomb technician. If you see
> me running, try to keep up. "
>
>

3509. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 18:24:21 UTC
From: kb7qhc@home.com
Message-ID: <3afddc7f.245781585@news.seanet.com>
Source record: 163457

On Thu, 10 May 2001 17:42:22 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"Richard Clark" <kb7qhc@home.com> wrote in message
>news:3afcc8ce.240740877@news.seanet.com...
>> On Thu, 10 May 2001 13:18:09 GMT, "VE9SRB" <srbest@att.net> wrote:
>>
>> >
>> >Cecil:
>> >
>> >Consider this quiz:
>> >
>> >Known Information:
>> >
>> >The transmitter is adjusted so that it will deliver 100 W of power to a
>Zo
>> >matched load.
>> >
>> >XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
>> >
>> >There is not a Zo match at X.
>> >
>> >The 50 ohm coax is 1 WL long. Both lines are lossless.
>> >
>> >The measured forward power at X in the 50 ohm coax is 100 W.
>> >
>> >The measured reflected power at X in the 150 ohm line is 18.864 W
>> >
>> >The reflected voltage at X in the 150 ohm line has a phase angle
>of -94.203
>> >degrees
>> >
>> >The antenna impedance is a pure resistance.
>> >
>> >Quiz:
>> >
>> >What is the steady state forward power in the 150 ohm line?
>> >
>> >What is the steady state reflected power in the 50 ohm line?
>> >
>> >What is the antenna impedance?
>> >
>> >The solution to this simple Quiz illustrates all of the correct aspects
>of

>> >wave reflection mechanics and should take less than 5 minutes.
>> >
>> >Steve VE9SRB
>> >
>>
>> Hi Steve,
>>
>> So, as I understand this, you measure 100W at both the load and as
>> forward power in the 50 Ohm line? What about source Z? 50 Ohms?
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Hi Richard:
>
>The source Z is assumed to be 50 ohms so that no re-reflections occur at the
>source. Regardless of this fact, the forward power in the 50 ohm line is
>adjusted such that the steady state forward power arriving at point X is 100
>W. There is not an impedance match at point X.
>
>I will not tell the group (yet) as to what forward power is measured at the
>antenna load or what the rearward (reflected) power is in the 50 ohm line.
>This is the exercise in understanding wave mechanics. More than enough
>information is provided to correctly determine the total forward power in
>the 150 ohm line, the reflected power in the 50 ohm line and the antenna
>impedance.
>
>With more than the allotted 5 minutes, there is also enough information to
>determine the steady state impedance at X, and the length of the 150 Ohm
>line.
>
>For those who do not add voltages as vectors and assume to add forward power
>as Pforward = Psource forward + Pre-reflected, the exercise should be
>enlightening. The issue here is that the problem is not worked backwards
>from the steady state power values so you can't use incorrect concepts.
>Note: there are many incorrect answers.
>
>Steve VE9SRB
>
Hi Steve,

So, as I understand this, you measure 100W at both the load and as
forward power in the 50 Ohm line?

73's
Richard Clark, KB7QHC

3510. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 18:45:46 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3AFAE1DA.8C75CA80@berkshire.net>
Source record: 163462

in all these discussions about z0 match, swr, reflections, conjugate matches, kirchoff's laws, voltage vs current vs power addition, etc that you guys have had has anyone disproved the basic transmission line formulas and network analysis taught in undergraduate level ee classes? has anyone proved that current amplifier matching networks don't work? or that common power meters don't let us operate legally within the fcc's rules? have the transmission line analysis done by jackson or circuit analysis by desoer&kuh been thrown out? or are you just arguing about which direction to look down the wire and how to properly add voltages, currents, and powers? is there anything of practical value here or should i just ignore these recurring themes and stick with what i learned in college and apply every day?

VE9SRB wrote:
>
> At this point, I think that my participation in discussing this serves no
> further purpose. Sorry to drag this out so long by repeating myself.
>
> Steve VE9SRB

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

3511. Re: Eleven Mtrs/Freebanders/Feds

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 19:04:02 UTC
From: "Leland C. Scott" <no-spam@junk-mail.net>
Message-ID: <tflph4e9kel0e2@corp.supernews.com>
Source record: 163458

"N3VST" <not@chance.com> wrote in message
news:XAAK6.12668$R2.13216399@newsrump.sjc.telocity.net...
> The guy sending code should have waited for a few more minutes, an email
> address is somewhat easy to track. My guess was that ham was to acient to
> understand email and how it works, so he started send fast code to drive
> them away. I would hve loved to nail these two foul mouthed truckers.
>
> Maybe next time, before someone starts sending code.

No kidding! I hope you get their E-mail Address next time, and good luck.

--
Leland C. Scott
KC8LDO

Saw this on a Tee-shirt:

"I am a bomb technician. If you see
me running, try to keep up. "

3512. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 19:07:24 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <MFBK6.15231$t12.1184259@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163459

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3afddc7f.245781585@news.seanet.com...
> On Thu, 10 May 2001 17:42:22 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >"Richard Clark" <kb7qhc@home.com> wrote in message
> >news:3afcc8ce.240740877@news.seanet.com...
> >> On Thu, 10 May 2001 13:18:09 GMT, "VE9SRB" <srbest@att.net> wrote:
> >>
> >> >
> >> >Cecil:
> >> >
> >> >Consider this quiz:
> >> >
> >> >Known Information:
> >> >
> >> >The transmitter is adjusted so that it will deliver 100 W of power to
a
> >Zo
> >> >matched load.
> >> >
> >> >XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
> >> >
> >> >There is not a Zo match at X.
> >> >
> >> >The 50 ohm coax is 1 WL long. Both lines are lossless.
> >> >
> >> >The measured forward power at X in the 50 ohm coax is 100 W.
> >> >
> >> >The measured reflected power at X in the 150 ohm line is 18.864 W
> >> >
> >> >The reflected voltage at X in the 150 ohm line has a phase angle
> >of -94.203
> >> >degrees
> >> >
> >> >The antenna impedance is a pure resistance.
> >> >
> >> >Quiz:
> >> >
> >> >What is the steady state forward power in the 150 ohm line?
> >> >
> >> >What is the steady state reflected power in the 50 ohm line?
> >> >
> >> >What is the antenna impedance?

> >> >
> >> >The solution to this simple Quiz illustrates all of the correct
aspects
> >of
> >> >wave reflection mechanics and should take less than 5 minutes.
> >> >
> >> >Steve VE9SRB
> >> >
> >>
> >> Hi Steve,
> >>
> >> So, as I understand this, you measure 100W at both the load and as
> >> forward power in the 50 Ohm line? What about source Z? 50 Ohms?
> >>
> >> 73's
> >> Richard Clark, KB7QHC
> >
> >Hi Richard:
> >
> >The source Z is assumed to be 50 ohms so that no re-reflections occur at
the
> >source. Regardless of this fact, the forward power in the 50 ohm line is
> >adjusted such that the steady state forward power arriving at point X is
100
> >W. There is not an impedance match at point X.
> >
> >I will not tell the group (yet) as to what forward power is measured at
the
> >antenna load or what the rearward (reflected) power is in the 50 ohm
line.
> >This is the exercise in understanding wave mechanics. More than enough
> >information is provided to correctly determine the total forward power in
> >the 150 ohm line, the reflected power in the 50 ohm line and the antenna
> >impedance.
> >
> >With more than the allotted 5 minutes, there is also enough information
to
> >determine the steady state impedance at X, and the length of the 150 Ohm
> >line.
> >
> >For those who do not add voltages as vectors and assume to add forward
power
> >as Pforward = Psource forward + Pre-reflected, the exercise should be
> >enlightening. The issue here is that the problem is not worked backwards
> >from the steady state power values so you can't use incorrect concepts.
> >Note: there are many incorrect answers.
> >
> >Steve VE9SRB
> >
> Hi Steve,

>
> So, as I understand this, you measure 100W at both the load and as
> forward power in the 50 Ohm line?
>
> 73's
> Richard Clark, KB7QHC
>

No. The forward power measured in the 50 ohm line is 100 W. The forward power arriving at the antenna load is not 100 W.

Steve

3513. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 19:20:46 UTC
From: kb7qhc@home.com
Message-ID: <3afae761.248567240@news.seanet.com>
Source record: 163460

```
On Thu, 10 May 2001 19:07:24 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"Richard Clark" <kb7qhc@home.com> wrote in message
>news:3afddc7f.245781585@news.seanet.com...
>> On Thu, 10 May 2001 17:42:22 GMT, "VE9SRB" <srbest@att.net> wrote:
>>
>> >
>> >"Richard Clark" <kb7qhc@home.com> wrote in message
>> >news:3afcc8ce.240740877@news.seanet.com...
>> >> On Thu, 10 May 2001 13:18:09 GMT, "VE9SRB" <srbest@att.net> wrote:
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>> >> >
>> >> >Cecil:
>> >> >
>> >> >Consider this quiz:
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>> >> >Known Information:
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>> >> >matched load.
>> >> >
>> >> >XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
>> >> >
>> >> >There is not a Zo match at X.
>> >> >
>> >> >The 50 ohm coax is 1 WL long. Both lines are lossless.
>> >> >
>> >> >The measured forward power at X in the 50 ohm coax is 100 W.
>> >> >
>> >> >The measured reflected power at X in the 150 ohm line is 18.864 W
>> >> >
>> >> >The reflected voltage at X in the 150 ohm line has a phase angle
>> >of -94.203
>> >> >degrees
>> >> >
>> >> >The antenna impedance is a pure resistance.
>> >> >
>> >> >Quiz:
>> >> >
>> >> >What is the steady state forward power in the 150 ohm line?
>> >> >
```

>> >> >What is the steady state reflected power in the 50 ohm line?
>> >> >
>> >> >What is the antenna impedance?
>> >> >
>> >> >The solution to this simple Quiz illustrates all of the correct
>aspects
>> >of
>> >> >wave reflection mechanics and should take less than 5 minutes.
>> >> >
>> >> >Steve VE9SRB
>> >> >
>> >>
>> >> Hi Steve,
>> >>
>> >> So, as I understand this, you measure 100W at both the load and as
>> >> forward power in the 50 Ohm line? What about source Z? 50 Ohms?
>> >>
>> >> 73's
>> >> Richard Clark, KB7QHC
>> >
>> >Hi Richard:
>> >
>> >The source Z is assumed to be 50 ohms so that no re-reflections occur at
>the
>> >source. Regardless of this fact, the forward power in the 50 ohm line is
>> >adjusted such that the steady state forward power arriving at point X is
>100
>> >W. There is not an impedance match at point X.
>> >
>> >I will not tell the group (yet) as to what forward power is measured at
>the
>> >antenna load or what the rearward (reflected) power is in the 50 ohm
>line.
>> >This is the exercise in understanding wave mechanics. More than enough
>> >information is provided to correctly determine the total forward power in
>> >the 150 ohm line, the reflected power in the 50 ohm line and the antenna
>> >impedance.
>> >
>> >With more than the allotted 5 minutes, there is also enough information
>to
>> >determine the steady state impedance at X, and the length of the 150 Ohm
>> >line.
>> >
>> >For those who do not add voltages as vectors and assume to add forward
>power
>> >as Pforward = Psource forward + Pre-reflected, the exercise should be
>> >enlightening. The issue here is that the problem is not worked backwards
>> >from the steady state power values so you can't use incorrect concepts.
>> >Note: there are many incorrect answers.
>> >

>> >Steve VE9SRB
>> >
>> Hi Steve,
>>
>> So, as I understand this, you measure 100W at both the load and as
>> forward power in the 50 Ohm line?
>>
>> 73's
>> Richard Clark, KB7QHC
>>
>
>No. The forward power measured in the 50 ohm line is 100 W. The forward
>power arriving at the antenna load is not 100 W.
>
>Steve
>

Hi Steve,

Then what does this mean?
>>>>The transmitter is adjusted so that it will deliver 100 W of power to a
>>>>Zo matched load.

I see a discrepancy in what you say you deliver to the load and what
you say you measure at the load. There is an ambiguity presented by
the offhand comment:
>>>>There is not a Zo match at X.
which suggests that there are two conditions and your model either
anticipates the match and presents the pre-match condition, or is in
the match and presents the post-match condition.

73's
Richard Clark, KB7QHC

3514. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 19:42:05 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <haCK6.15105$4f7.1185067@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163461

```
"Richard Clark" <kb7qhc@home.com> wrote in message
news:3afae761.248567240@news.seanet.com...
> On Thu, 10 May 2001 19:07:24 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >"Richard Clark" <kb7qhc@home.com> wrote in message
> >news:3afddc7f.245781585@news.seanet.com...
> >> On Thu, 10 May 2001 17:42:22 GMT, "VE9SRB" <srbest@att.net> wrote:
> >>
> >> >
> >> >"Richard Clark" <kb7qhc@home.com> wrote in message
> >> >news:3afcc8ce.240740877@news.seanet.com...
> >> >> On Thu, 10 May 2001 13:18:09 GMT, "VE9SRB" <srbest@att.net> wrote:
> >> >>
> >> >> >
> >> >> >Cecil:
> >> >> >
> >> >> >Consider this quiz:
> >> >> >
> >> >> >Known Information:
> >> >> >
> >> >> >The transmitter is adjusted so that it will deliver 100 W of power
to
> >a
> >> >Zo
> >> >> >matched load.
> >> >> >
> >> >> >XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
> >> >> >
> >> >> >There is not a Zo match at X.
> >> >> >
> >> >> >The 50 ohm coax is 1 WL long. Both lines are lossless.
> >> >> >
> >> >> >The measured forward power at X in the 50 ohm coax is 100 W.
> >> >> >
> >> >> >The measured reflected power at X in the 150 ohm line is 18.864 W
> >> >> >
> >> >> >The reflected voltage at X in the 150 ohm line has a phase angle
> >> >of -94.203
> >> >> >degrees
> >> >> >
> >> >> >The antenna impedance is a pure resistance.
> >> >> >
> >> >> >Quiz:
```

> >> >> >
> >> >> >What is the steady state forward power in the 150 ohm line?
> >> >> >
> >> >> >What is the steady state reflected power in the 50 ohm line?
> >> >> >
> >> >> >What is the antenna impedance?
> >> >> >
> >> >> >The solution to this simple Quiz illustrates all of the correct
> >aspects
> >> >of
> >> >> >wave reflection mechanics and should take less than 5 minutes.
> >> >> >
> >> >> >Steve VE9SRB
> >> >> >
> >> >>
> >> >> Hi Steve,
> >> >>
> >> >> So, as I understand this, you measure 100W at both the load and as
> >> >> forward power in the 50 Ohm line? What about source Z? 50 Ohms?
> >> >>
> >> >> 73's
> >> >> Richard Clark, KB7QHC
> >> >
> >> >Hi Richard:
> >> >
> >> >The source Z is assumed to be 50 ohms so that no re-reflections occur
at
> >the
> >> >source. Regardless of this fact, the forward power in the 50 ohm line
is
> >> >adjusted such that the steady state forward power arriving at point X
is
> >100
> >> >W. There is not an impedance match at point X.
> >> >
> >> >I will not tell the group (yet) as to what forward power is measured
at
> >the
> >> >antenna load or what the rearward (reflected) power is in the 50 ohm
> >line.
> >> >This is the exercise in understanding wave mechanics. More than
enough
> >> >information is provided to correctly determine the total forward power
in
> >> >the 150 ohm line, the reflected power in the 50 ohm line and the
antenna
> >> >impedance.
> >> >
> >> >With more than the allotted 5 minutes, there is also enough
information

> >to
> >> >determine the steady state impedance at X, and the length of the 150
Ohm
> >> >line.
> >> >
> >> >For those who do not add voltages as vectors and assume to add forward
> >power
> >> >as Pforward = Psource forward + Pre-reflected, the exercise should be
> >> >enlightening. The issue here is that the problem is not worked
backwards
> >> >from the steady state power values so you can't use incorrect
concepts.
> >> >Note: there are many incorrect answers.
> >> >
> >> >Steve VE9SRB
> >> >
> >> Hi Steve,
> >>
> >> So, as I understand this, you measure 100W at both the load and as
> >> forward power in the 50 Ohm line?
> >>
> >> 73's
> >> Richard Clark, KB7QHC
> >>
> >
> >No. The forward power measured in the 50 ohm line is 100 W. The forward
> >power arriving at the antenna load is not 100 W.
> >
> >Steve
> >
>
> Hi Steve,
>
> Then what does this mean?
> >>>>The transmitter is adjusted so that it will deliver 100 W of power to
a
> >>>>Zo matched load.
>
> I see a discrepancy in what you say you deliver to the load and what
> you say you measure at the load. There is an ambiguity presented by
> the offhand comment:
> >>>>There is not a Zo match at X.
> which suggests that there are two conditions and your model either
> anticipates the match and presents the pre-match condition, or is in
> the match and presents the post-match condition.
>
> 73's
> Richard Clark, KB7QHC

I assumed that the source impedance was 50 ohms so that there would be no re-reflections at the source. When the source is adjusted to deliver 100 W to a Zo matched load, the *forward* power in the transmission line will be 100 W as well. If there are no re-reflections at the source, the *forward* power will remain at 100 W regardless of the mismatch. The delivered power (Pforward - Preflected) would decrease appropriately. The only factor that will cause a change in *forward* power from the matched to the mismatched condition are re-reflections at the source.

Ignore the statement "The transmitter is adjusted so that it will deliver 100 W of power to a Zo matched load." It is an irrelevant statement to the quiz. Go with the statement: the steady state forward power in the 50 ohm line is adjusted to 100 W, you should be all set. There are no re-reflections at the source. Since a Zo match does not exist at X, the delivered power will not be the full 100 W.

Everything as stated in the example is sufficient to determine all of the system's steady state conditions.

Steve, VE9SRB

3515. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 19:47:27 UTC
From: Henry County American Red Cross <arcweb@bnnorth.net>
Message-ID: <0jCK6.9390$Os.1295162@cletus.bright.net>
Source record: 163463
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

JR <jr@some.net> wrote in message news:3AF94EB6.1573B77B@some.net...
> I would suggest you forget the echo completely when getting on the ham
> bands. It may please all the 12 year olds and those who think like 12
> year olds on cb, but it doesn't fly on ham radio.
>
echo definately sucks on 11m sideband as well, especially thse jokers who
get their kicks by echoing their roger beeps. I never saw the need for the
modulation toys, I have only ever seen two good reasons for a power mic, one
was a friend of mine who had a really soft voice due to his suffering throat
cancer, and he had his setup on a O-scope and had it set at 100% (or as
close to it as possible) by a local radio sho that is owned by a local HAM,
the other was a friend who had a radio with weak modulation, he had it in
every shop in the tri state area and nobody could trace the problem, so he
had a power mic that he barely cracked open. Other than this, power mics and
modulation kits (connex boards) are a waste and useless for good sounding
radio.

WebDoc

3516. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 20:01:00 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9des2ecgc1@neptunium.btinternet.com>
Source record: 163464

The scope measures or indicates volts - not power.

Reg, G4FGQ

3517. Re: Big Mac

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 20:17:34 UTC
From: Ken Bessler <kg0wx@yahoo.com>
Message-ID: <3AFAF75E.56F8@yahoo.com>
Source record: 163465

JCK wrote:
>
> Whatever happened to Big Mac's CB Webpage???
>

Maybe rec.radio.cb would be a better place to ask?

Sheesh.

3518. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 20:27:43 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <3RCK6.15220$4f7.1189128@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163466

"David Robbins" <k1ttt@berkshire.net> wrote in message
news:3AFAE1DA.8C75CA80@berkshire.net...
> in all these discussions about z0 match, swr, reflections, conjugate
matches,
> kirchoff's laws, voltage vs current vs power addition, etc that you guys
have
> had has anyone disproved the basic transmission line formulas and network
> analysis taught in undergraduate level ee classes? has anyone proved that
> current amplifier matching networks don't work? or that common power
meters
> don't let us operate legally within the fcc's rules? have the
transmission line
> analysis done by jackson or circuit analysis by desoer&kuh been thrown
out? or
> are you just arguing about which direction to look down the wire and how
to
> properly add voltages, currents, and powers? is there anything of
practical
> value here or should i just ignore these recurring themes and stick with
what i
> learned in college and apply every day?
>

David:

I am certain that what you learned in college is correct. Stick with it.

Steve

3519. Re: Dipole antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 20:31:42 UTC
From: John Passaneau <jxp16@psu.edu>
Message-ID: <9detrf$r4q@r02n01.cac.psu.edu>
Source record: 163467

Hi Boyd:

Lengths of the dipoles will be different than what they would be if they
were separate dipoles.
The amount of change will be more if the dipoles are parallel that if they
are at right angles.
This is a good way to get a multi-band antenna with out the losses of traps.
A trapped antenna can be a very good antenna also, if the traps are designed
to have a high Q and low loss.
It does have the advantage of only have one wire to support unlike the fan
dipole which has two.

--
John Passaneau
Penn State University, State College Pa.
W3JXP
w3jxp@arrl.net

"Boyd Durdle" <bdurdle@roadrunner.nf.net> wrote in message
news:1103_989506161@b...
> If two dipoles are connected to the same coax transmission line what
problems would result if both (a 20m and a 40m dipole) are running in
different
> directions. One runs north-south, the other east-west. I think I may have
read somewhere that both should be parallel. Anyone have any suggestions?
>

3520. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:10:20 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB03BC.2E213194@IEEE.org>
Source record: 163468

VE9SRB wrote:
> XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
> There is not a Zo match at X.

Here we go again. Just as we are zeroing in on the problem, you start diverting the issue by changing the boundary conditions to avoid the consequences of a Z0-match. What I said was: IN A SYSTEM WITH A Z0-MATCH, forward power equals generated power plus reflected power.

Allowing reflections to enter the transmitter complicates things beyond belief. Is complicating things beyond belief the only way you can win the argument? Please, Steve, let's make the boundary conditions as simple as possible and avoid the smoke and mirrors of a mismatch. I am simply not going to debate generator impedances with you.

I will be starting over from scratch with some simple examples in a thread entitled, "Back to Basics". It will apply Ockham's razor to your smokescreens.
--
http://www.mindspring.com/~w6rca

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3521. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:12:27 UTC
From: richardharrison@webtv.net
Message-ID: <10459-3AFB043B-26@storefull-117.iap.bryant.webtv.net>
Source record: 163380

Bill Sabin wrote:
"I have never seen this concept (current over the edge and around, instead of directly through a conductor) in any valid engineering publication."

Bill should immediately search for a copy of "Radio-Electronic Transmission Fundamentals" by B. Whitfield Griffith, Jr., Director of Advanced Development, General Electrodynamics Corporation. It was published by McGraw-Hill in 1962. The Library of Congress Catalog Card Number is: 61-13756.

Regarding skin-effect, Bill should read "Current Paths", starting on page 231. I won`t reproduce the whole because there are diagrams and I`m no typist, but it starts thusly:

"Flexible conductors are often made of large numbers of bare wires of small size, cabled or braided together to form one conductor. It must be remembered that the skin effect acts upon a conductor of this sort as though it were a solid conductor, forcing the current to follow the outermost surface at high frequencies, regardless of where individual wires go." Griffith goes into great detail and seems absolutely correct to me. He agrees with Terman.

Best regards, Richard Harrison, KB5WZI

3522. Re: Dipole antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:18:19 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AFB059B.2CDC@wt.net>
Source record: 163369

Boyd Durdle wrote:
>
> If two dipoles are connected to the same coax transmission line what problems would result if both (a 20m and a 40m dipole) are running in different
> directions. One runs north-south, the other east-west. I think I may have read somewhere that both should be parallel. Anyone have any suggestions?

If you have them at right angles "90" degrees", there is almost no interaction at all. I've used multi-dipoles fed with coax for years. If the elements are not exactly 90 degrees apart , you start to see a bit of coupling, but usually not bad enough to be a problem in tuning. Only if they lie in pretty much the same direction will the coupling start to cause tuning problems. And even this can be dealt with with pruning. I've had 80/40 at right angles, and had a leg fall down and have no effect at all on the other band. I'm using a 160-80-40 set right now which have been up a few years. About 440 ft of wire in the air. If you do have coupling problems with close elements, it will be the higher band that is effected. Very rarely will the lower band have a problem. If this happens, you can get a good match for the higher band by shifting the centerpoint of the antenna a tad, and also trimming for best match. You will see some strange things happen. Many times on such an antenna, I've had to add wire to the 40 legs to go UP the band. Weird huh...The higher band antenna starts to act like an array of sorts. But if you keep the legs fairly far apart , you will have no trouble. My 160-80-40 setup looks like a big insect from overhead. I like this type setup because no tuner is needed, and no tuner losses. No wx problems, etc, And some bands will still do ok when the tuner is used as long as the impedance isn't too high. 30m works like a hose, but 20 fairly lame due to the high impedance on that band. The SWR on 30m only about a 5 to 1. With the 213 I use the loss at 10 mc is still pretty low. So anyway, the best is perpendicular, not parallel. At right angles they will almost totally ignore each other. MK
--
http://web.wt.net/~nm5k

3523. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:20:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB0627.4BBAEE4@IEEE.org>
Source record: 163370

VE9SRB wrote:
> Everything as stated in the example is sufficient to determine all of the
> system's steady state conditions.

And much more complicated than the previous example where all voltages and currents were either in phase or 180 degrees out of phase. What is your motive in making the discussion even more complicated than it already was?
--
http://www.mindspring.com/~w6rca

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3524. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:22:01 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB0679.EB0B9B23@IEEE.org>
Source record: 163371

VE9SRB wrote:
> The reflected voltage at X in the 150 ohm line has a phase angle of -94.203
> degrees

There is absolutely no reason to complicate the discussion even more. Let's
simplify the discussion rather than complicating it.
--
http://www.mindspring.com/~w6rca

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3525. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:23:35 UTC
From: kb7qhc@home.com
Message-ID: <3afb0555.256235116@news.seanet.com>
Source record: 163373

On Thu, 10 May 2001 21:01:00 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>The scope measures or indicates volts - not power.
>---
>Reg, G4FGQ
>
>

ah Punchinello,

Yet another old wive's tale. Is it such a mysterious process to comprehend the intention of "indicates?" I cannot believe that such a term is so abstract as to profoundly stupefy any but the most learned engineer. Take a step down from your ivory tower and observe how simple these expedients successfully allow people to go about their usual occupation without becoming brain-locked over trivial distinctions. ;-)

73's
Richard Clark, KB7QHC

3526. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:24:08 UTC
From: Michael & Jayne Goad <ka4ezy@bellsouth.net>
Message-ID: <3AFB06F8.F9B44DE9@bellsouth.net>
Source record: 163372

Since there are no licences issued for the 11 meter CB band, it probably would be legal to use your ham call as your "handle". I don't know how warm a reception you will get, though. Also, remember, while there are no licenses, the Part 95 (not 97) rules still apply. I, too, use a CB on occasional road trips but I find I don't need to talk on it, just listen and get all the info I need.

73,
Mike
KA4EZY

N3VST wrote:

> yes it is legal, after all 11 meters is public use band, why not use your
> fcc assigned callsign
> "Ryan KC8PMX" <kc8pmx@tm.net> wrote in message
> news:aSZJ6.97$gA.27440@monger.newsread.com...
> > One question, what would happen if a ham operator used his/her callsign as
> > an identifier on the LEGAL cb frequencies. (assume all other operation is
> > completely legal). Is it legal to identify with your callsign there?
> > (sorry, not up to much on my 11meter knowledge here)
> >
> > I have one in my truck that I use about 2 times per year mainly to find
> out
> > road conditions etc, because it seems NO ONE uses 146.520 anymore......
> > --
> >
> >
> > Ryan, KC8PMX
> >
> > Check out www.qsl.net/w8kea
> >
> > Amateur Radio Is Fun!!! Ask me!
> >
> >
> >
> >
> >
> > > >Hams can still go there, use your callsign
> > > >and follow all the rules.
> > >
> > > *ANYBODY can go there. And you don't need to use your ham call sign. You
> > don't
> > > need ANY call sign. Furthermore, when a ham goes to 11 meters, he
> "checks
> > his

> > > license at the door". He/she has no more "authority" or rights than
> anyone
> > else
> > > on 11 meters.
> > >
> > > > If we hams again populate this band maybe we can win it back, for
> > > >sole amateur use.
> > >
> > > CB is a designated set of frequencies and those operating in the United
> > States
> > > and many other places are doing so with the permission and blessing of
> > their
> > > government. How would you like it if roles were reversed? Try this:
> > Okay,
> > > all CBers report to ten meters and begin operating. CBers might win the
> > band
> > > for themselves. Don't like it? Tough. CBers operate on 11 meters with
> > > exactly the same authority as YOU operate on 10 meters!
> >
> >
> >

3527. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:27:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB07B1.88DD65FB@IEEE.org>
Source record: 163374

"Peter O. Brackett" wrote:
> That particular thing that is labeled on VSWR meters as "reflected power" is
> a "fiction", it does not measure the power in a reflected signal at all.

You are technically correct but your statement is irrelevant. Please
give us a straight answer to the following question.

> > Why does ghosting appear where the reflection theory predicts
> > and at the strength that the reflection theory predicts?

If the reflected waves are, as you say, not moving up and down the feedline,
why are the ghosts exactly where wave reflection theory predicts? Why is
the delay between ghosts equal to twice the delay in the feedline? Could
it be that each ghost makes a round trip?
--
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3528. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:29:58 UTC
From: kb7qhc@home.com
Message-ID: <3afc06f7.256653588@news.seanet.com>
Source record: 163376

On Thu, 10 May 2001 19:45:46 +0100, David Robbins
<k1ttt@berkshire.net> wrote:

>in all these discussions about z0 match, swr, reflections, conjugate matches,
>kirchoff's laws, voltage vs current vs power addition, etc that you guys have
>had has anyone disproved the basic transmission line formulas and network
>analysis taught in undergraduate level ee classes? has anyone proved that
>current amplifier matching networks don't work? or that common power meters
>don't let us operate legally within the fcc's rules? have the transmission line
>analysis done by jackson or circuit analysis by desoer&kuh been thrown out? or
>are you just arguing about which direction to look down the wire and how to
>properly add voltages, currents, and powers? is there anything of practical
>value here or should i just ignore these recurring themes and stick with what i
>learned in college and apply every day?
>
>
>VE9SRB wrote:
>>
>> At this point, I think that my participation in discussing this serves no
>> further purpose. Sorry to drag this out so long by repeating myself.
>>
>> Steve VE9SRB

Hi David,

In the course of events, all things have been proven - to the arguer's
satisfaction (if not infuriation for the lack of support).

I'm sure if you search the archives, you will find proven:
E = M * C^2 +/- 3 dB

What is more amusing is the number of "inventors" that drop in with
their patent hot off the press begging us to explain how it works.

73's
Richard Clark, KB7QHC

3529. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:30:36 UTC
From: Michael Tope <W4EF@earthlink.net>
Message-ID: <0MDK6.10963$Ak7.607395@newsread1.prod.itd.earthlink.net>
Source record: 163375

Hello Reg,

Yes, of course, but last time I checked P = V^2/R. At the 50 ohm input
termination, all of the relected pulse would be absorbed, thus Pr = V^2/50.
At the 25 ohm output termination, the power absorbed or transmitted
to the load would be Pt = V^/25.

73 de Mike, W4EF...

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9des2ecgc1@neptunium.btinternet.com...
> The scope measures or indicates volts - not power.
> ---
> Reg, G4FGQ
>
>
>
>

3530. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:34:15 UTC
From: w2du@iag.net
Message-ID: <3afb07aa.26458865@news.onemain.com>
Source record: 163377

On Thu, 10 May 2001 13:26:47 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>Walter:
>
>Consider this quiz:
>
>Known Information:
>
>The transmitter is adjusted so that it will deliver 100 W of power to a Zo
>matched load.
>
>XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
>
>There is not a Zo match at X.
>
>The 50 ohm coax is 1 WL long. Both lines are lossless.
>
>The measured forward power at X in the 50 ohm coax is 100 W.
>
>The measured reflected power at X in the 150 ohm line is 18.864 W
>
>The reflected voltage at X in the 150 ohm line has a phase angle of -94.203
>degrees
>
>The antenna impedance is a pure resistance.
>
>Quiz:
>
>What is the steady state forward power in the 150 ohm line? 93.864 w
>
>What is the steady state reflected power in the 50 ohm line? 14.148 w
>
>What is the antenna impedance? 388.7 ohms

The 150-ohm line is 47.1 degrees long, or 0.131 wl

Reflection coefficient rho at antenna 0.4431, and SWR = 2.59
>
>The solution to this simple Quiz illustrates all of the correct aspects of
>wave reflection mechanics and should take less than 5 minutes.
>
>Steve VE9SRB

This is my final answer.

Walt, W2DU
>
>
>
>

3531. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:39:45 UTC
From: kb7qhc@home.com
Message-ID: <3afe08d5.257131565@news.seanet.com>
Source record: 163379

So, if I understand recent modifications suggested in another
side-thread, the following edition is the correct Quiz:

On Thu, 10 May 2001 13:18:09 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>Cecil:
>
>Consider this quiz:
>
>Known Information:
>
snip
>
change content:
>50 Ohm source XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
>
snip
>
>The 50 ohm coax is 1 WL long. Both lines are lossless.
>
>The measured forward power at X in the 50 ohm coax is 100 W.
>
change content and order:
>Since a Zo match does not exist at X, the
>delivered power will not be the full 100 W.
>
>The measured reflected power at X in the 150 ohm line is 18.864 W
>
>The reflected voltage at X in the 150 ohm line has a phase angle of -94.203
>degrees
>
>The antenna impedance is a pure resistance.
>
>Quiz:
>
>What is the steady state forward power in the 150 ohm line?
>
>What is the steady state reflected power in the 50 ohm line?
>
>What is the antenna impedance?
>
>The solution to this simple Quiz illustrates all of the correct aspects of
>wave reflection mechanics and should take less than 5 minutes.
>

>Steve VE9SRB
>

3532. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:40:54 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB0AE6.F728F4EC@IEEE.org>
Source record: 163378

Michael Tope wrote:
> Do this experiment and
> then come back and tell us whether or not you still
> consider refleted power to be some kind of fictious
> mathematical formalism.

Mike, I already gave Peter a thought experiment. He agreed with everything I said and then said I was wrong and the IEEE Dictionary was wrong. He doesn't speak the same language as I so he has rendered communications impossible.

Here was my thought experiment: Everything in the system is lossless except the load.

100w XMTR---51.5 ohm coax---X---one second long 300 ohm feedline---51.5 ohm load

Peter agreed that, after steady-state conditions are reached, the 300 ohm feedline contains 300 joules of energy, that the XMTR had generated 300 more joules than the load had accepted, and that those 300 joules could not stand still. He recently agreed that TV ghosting would occur exactly where wave reflection theory predicts. He doesn't realize that same-cycle reflections are akin to division by zero in that they are a case too mathematically trivial to prove much of anything.
--
http://www.mindspring.com/~w6rca

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------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3533. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:42:27 UTC
From: kb7qhc@home.com
Message-ID: <3aff0b11.257703668@news.seanet.com>
Source record: 163381

On Thu, 10 May 2001 21:34:15 GMT, w2du@iag.net (Walter Maxwell, W2DU)
wrote:

>On Thu, 10 May 2001 13:26:47 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>>
>>Walter:
>>
>>Consider this quiz:
>>
>>Known Information:
>>
>>The transmitter is adjusted so that it will deliver 100 W of power to a Zo
>>matched load.
>>
>>XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
>>
>>There is not a Zo match at X.
>>
>>The 50 ohm coax is 1 WL long. Both lines are lossless.
>>
>>The measured forward power at X in the 50 ohm coax is 100 W.
>>
>>The measured reflected power at X in the 150 ohm line is 18.864 W
>>
>>The reflected voltage at X in the 150 ohm line has a phase angle of -94.203
>>degrees
>>
>>The antenna impedance is a pure resistance.
>>
>>Quiz:
>>
>>What is the steady state forward power in the 150 ohm line? 93.864 w
>>
>>What is the steady state reflected power in the 50 ohm line? 14.148 w
>>
>>What is the antenna impedance? 388.7 ohms
>
>The 150-ohm line is 47.1 degrees long, or 0.131 wl
>
>Reflection coefficient rho at antenna 0.4431, and SWR = 2.59
>>
>>The solution to this simple Quiz illustrates all of the correct aspects of
>>wave reflection mechanics and should take less than 5 minutes.

>>
>>Steve VE9SRB
>
>This is my final answer.
>
>Walt, W2DU
>>
>>
>>
>>

Hi Walt,

Sure you don't want to CQ a lifeline? ;-)

73's
Richard Clark, KB7QHC

3534. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:45:45 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB0C09.69BFF2D0@IEEE.org>
Source record: 163382

"Peter O. Brackett" wrote:
> Thanks, I'll draw out your rather complicated and elaborate measurement
> setup and comment on it step by step.

Great, Peter, there's no meeting of the minds on the simple stuff and you want to make it more complicated. Good thing you're not a teacher. "Students, you didn't understand yesterday's lesson so today we will improve it by making it more complicated." Peter, how about some simple examples that are not impossible to follow? After everyone understands, add one item of complication and iterate.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3535. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:46:33 UTC
From: kb7qhc@home.com
Message-ID: <3b000b74.257802680@news.seanet.com>
Source record: 163383

On Thu, 10 May 2001 16:10:20 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>VE9SRB wrote:
>> XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
>> There is not a Zo match at X.
>
>Here we go again. Just as we are zeroing in on the problem, you start
>diverting the issue by changing the boundary conditions to avoid
>the consequences of a Z0-match. What I said was: IN A SYSTEM WITH A Z0-
>MATCH, forward power equals generated power plus reflected power.
>
>Allowing reflections to enter the transmitter complicates things beyond
>belief. Is complicating things beyond belief the only way you can win
>the argument? Please, Steve, let's make the boundary conditions as
>simple as possible and avoid the smoke and mirrors of a mismatch. I
>am simply not going to debate generator impedances with you.
>
>I will be starting over from scratch with some simple examples in a
>thread entitled, "Back to Basics". It will apply Ockham's razor to
>your smokescreens.

Hi Cecil,

"zeroing in on the problem?" you are dreaming in technicolor and
surround sound. Where is your thread?

73's
Richard Clark, KB7QHC

3536. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 21:57:49 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB0EDD.75F005C7@IEEE.org>
Source record: 163384

"Peter O. Brackett" wrote:
> Sound right? Should energy be conserved with these ficticious powers?
> No... kinda silly isn't it.

Of course, the powers that are added have to be separate energy, Peter.
Please stop being ridiculous. If there are two sources of power from
50 ohm coax, each delivering 50v at one amp, and you combine them in a
lossless matching network and output them into another 50 ohm coax, will
the voltage be 100v and the current be two amps. Of course not. You cannot
get 200 watts out of two 50 watt signals. You guys are the ones who are
trying to circumnavigate the conservation of energy principle.

> Yet that's exactly the sort of thing that ya'll are doing with reflected
> power as indicated on most instruments and as set up in the "reflection
> formalism".

We know you don't accept dictionary definitions, Steve. That makes
your attempt at communications impossible. I am resigned to that fact.
I do, however, appreciate your humor.

> Be careful and make sure that what you are adding are really powers before
> you invoke conservation of energy.

Of course, I would never do otherwise. Inventing energy by adding voltages
is just as bad.

> I am not being facitious or playing with words, here...

Nope, just inventing concepts for which no words exist.

> Deal with it!

Uhhhhhh Peter, I accept dictionary definitions. Maybe it's you who must
deal with it.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3537. Re: Does anyone have experience with the Magnetic loop antenna's from MFJ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 22:01:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB0F9E.742D80E3@IEEE.org>
Source record: 163385

Tom W8JI wrote:
> Do you know of a less expensive source? What voltage and capacitance
> do you use?

Can't you just put a normal cap in a bottle and suck the air out with
a vacuum pump?
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3538. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 22:22:02 UTC
From: w2du@iag.net
Message-ID: <3afb1330.29408877@news.onemain.com>
Source record: 163386

On Thu, 10 May 2001 21:34:15 GMT, w2du@iag.net (Walter Maxwell, W2DU) wrote:

>On Thu, 10 May 2001 13:26:47 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>>
>>Walter:
>>
>>Consider this quiz:
>>
>>Known Information:
>>
>>The transmitter is adjusted so that it will deliver 100 W of power to a Zo
>>matched load.
>>
>>XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
>>
>>There is not a Zo match at X.
>>
>>The 50 ohm coax is 1 WL long. Both lines are lossless.
>>
>>The measured forward power at X in the 50 ohm coax is 100 W.
>>
>>The measured reflected power at X in the 150 ohm line is 18.864 W
>>
>>The reflected voltage at X in the 150 ohm line has a phase angle of -94.203
>>degrees
>>
>>The antenna impedance is a pure resistance.
>>
>>Quiz:
>>
>>What is the steady state forward power in the 150 ohm line? 93.864 w
>>
>>What is the steady state reflected power in the 50 ohm line? 14.148 w
>>
>>What is the antenna impedance? 388.7 ohms
>
>The 150-ohm line is 47.1 degrees long, or 0.131 wl
>
>Reflection coefficient rho at antenna 0.4431, and SWR = 2.59
>>
>>The solution to this simple Quiz illustrates all of the correct aspects of
>>wave reflection mechanics and should take less than 5 minutes.
>>

>>Steve VE9SRB
>
>This is my final answer.
>
>Walt, W2DU

PS--I forgot to say that the power absorbed in the 388.7+ j 0 ohm resistive load is 75 watts.

3539. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 22:28:51 UTC
From: w2du@iag.net
Message-ID: <3afb15cd.30077659@news.onemain.com>
Source record: 163387

On Thu, 10 May 2001 21:42:27 GMT, kb7qhc@home.com (Richard Clark) wrote:

>Hi Walt,
>
>Sure you don't want to CQ a lifeline? ;-)
>
>73's
>Richard Clark, KB7QHC

Hi Richard, I didn't think I needed a lifeline. Are my answers that far off?

Walt

3540. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 22:30:19 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <%DEK6.15564$4f7.1200187@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163388

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFB0627.4BBAEE4@IEEE.org...
> VE9SRB wrote:
> > Everything as stated in the example is sufficient to determine all of
the
> > system's steady state conditions.
>
> And much more complicated than the previous example where all voltages and
> currents were either in phase or 180 degrees out of phase. What is your
> motive in making the discussion even more complicated than it already was?
> --

Working a transmission line problem from the beginning to arrive at the correct steady state conditions correctly illustrates the behavior of waves in the lines and the correct relationship between voltage and power. All of the examples we discuss start with the steady state which leaves too much room for interpretation and confusion. Starting with the steady state we all know the answer and we just argue about how to get there. Let's see if we can get there without knowing the answer.

As I said in the post, the answer to this quiz takes less than 5 minutes.

Steve

3541. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 22:35:06 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <uIEK6.15571$4f7.1202501@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163389

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFB03BC.2E213194@IEEE.org...
> VE9SRB wrote:
> > XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
> > There is not a Zo match at X.
>
> Here we go again. Just as we are zeroing in on the problem, you start
> diverting the issue by changing the boundary conditions to avoid
> the consequences of a Z0-match. What I said was: IN A SYSTEM WITH A Z0-
> MATCH, forward power equals generated power plus reflected power.
>
> Allowing reflections to enter the transmitter complicates things beyond
> belief. Is complicating things beyond belief the only way you can win
> the argument? Please, Steve, let's make the boundary conditions as
> simple as possible and avoid the smoke and mirrors of a mismatch. I
> am simply not going to debate generator impedances with you.
>
> I will be starting over from scratch with some simple examples in a
> thread entitled, "Back to Basics". It will apply Ockham's razor to
> your smokescreens.
> --

No smoke screens.

If you understand the basic concepts you can answer the quiz in less than 5 minutes. If you avoid this quiz and discussion, then your technical position on power addition and wave mechanics has no basis other than opinion.

The answer to the quiz is resolved in exactly the same manner as would be done if a Zo match existed. The only difference is that with the Zo match you know the steady state answer. Knowing the answer all we can do is argue about how to get there. That avenue has failed too many times. Let's try a new approach.

Steve

3542. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 22:57:22 UTC
From: w2du@iag.net
Message-ID: <3afb1c59.31754130@news.onemain.com>
Source record: 163390

On Thu, 10 May 2001 21:34:15 GMT, w2du@iag.net (Walter Maxwell, W2DU) wrote:

>On Thu, 10 May 2001 13:26:47 GMT, "VE9SRB" <srbest@att.net> wrote:

>>Quiz:
>>
>>What is the steady state forward power in the 150 ohm line? 93.864 w
>>
>>What is the steady state reflected power in the 50 ohm line? 14.148 w
>>
>>What is the antenna impedance? 388.7 ohms
>
>The 150-ohm line is 47.1 degrees long, or 0.131 wl
>
>Reflection coefficient rho at antenna 0.4431, and SWR = 2.59
>>
>>The solution to this simple Quiz illustrates all of the correct aspects of
>>wave reflection mechanics and should take less than 5 minutes.
>>
>>Steve VE9SRB
>
>This is my final answer.
>
>Walt, W2DU

Having second thoughts about the forward power in the 150-ohm line. Give me a
few minutes to reconsider.

Walt, W2DU

3543. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:11:40 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <MeFK6.15621$4f7.1208220@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163391

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3afb07aa.26458865@news.onemain.com...
> On Thu, 10 May 2001 13:26:47 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >Walter:
> >
> >Consider this quiz:
> >
> >Known Information:
> >
> >The transmitter is adjusted so that it will deliver 100 W of power to a
Zo
> >matched load.
> >
> >XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
> >
> >There is not a Zo match at X.
> >
> >The 50 ohm coax is 1 WL long. Both lines are lossless.
> >
> >The measured forward power at X in the 50 ohm coax is 100 W.
> >
> >The measured reflected power at X in the 150 ohm line is 18.864 W
> >
> >The reflected voltage at X in the 150 ohm line has a phase angle
of -94.203
> >degrees
> >
> >The antenna impedance is a pure resistance.
> >
> >Quiz:
> >
> >What is the steady state forward power in the 150 ohm line? 93.864 w
> >
> >What is the steady state reflected power in the 50 ohm line? 14.148 w
> >
> >What is the antenna impedance? 388.7 ohms
>
> The 150-ohm line is 47.1 degrees long, or 0.131 wl
>
> Reflection coefficient rho at antenna 0.4431, and SWR = 2.59
> >
> >The solution to this simple Quiz illustrates all of the correct aspects

of
> >wave reflection mechanics and should take less than 5 minutes.
> >
> >Steve VE9SRB
>
> This is my final answer.
>
> Walt, W2DU

Too bad its totally the wrong answer.

With an impedance of 388.7 ohms terminating a 150 ohm line, rhoA is equal to 0.443 (as you correctly start). If the line is 0.131 WL long (which is not the correct quiz answer), the input impedance to the line would have to be 95.44 - j104.94 ohms (which is not the correct quiz answer). This impedance would have a |rho| = 0.638. With 100 W forward power at X, the reflected power at X would have to be 40.70 Watts, not the 14.148 Watts you state. Both of these answers are incorrect.

With the power levels at X being 100 W forward and 14.148 Watts reflected (as you incorrectly state), the power delivered to the 150 ohm line is equal to 85.852 W (100 - 14.148). With the relationship Pfwd = Pdel / (1 - |rhoA|^2), which is always correct, the forward power in the 150 ohm line would have to be 106.8 W not 93.864 W. Both of these answers are incorrect.

With 85.852 W of power delivered to the 150 ohm line (your 100W - 14.148 W) and 93.864 W of forward power in the 150 ohm line(your answer), the reflected power in the 150 ohm line would be have to be 8.01 W. Pdelivered = Pforward - Preflected. Far from the quiz reflected power of 18.864 W.

As I said to Cecil, its little more involved when you don't know the final answer before hand.

Try again.

Steve, VE9SRB

3544. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:15:45 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <BiFK6.15623$4f7.1208987@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163392

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3afb1330.29408877@news.onemain.com...
> On Thu, 10 May 2001 21:34:15 GMT, w2du@iag.net (Walter Maxwell, W2DU)
wrote:
>
> >On Thu, 10 May 2001 13:26:47 GMT, "VE9SRB" <srbest@att.net> wrote:
> >
> >>
> >>Walter:
> >>
> >>Consider this quiz:
> >>
> >>Known Information:
> >>
> >>The transmitter is adjusted so that it will deliver 100 W of power to a
Zo
> >>matched load.
> >>
> >>XMTR---50 ohm coax---X---150 ohm twinlead---Antenna
> >>
> >>There is not a Zo match at X.
> >>
> >>The 50 ohm coax is 1 WL long. Both lines are lossless.
> >>
> >>The measured forward power at X in the 50 ohm coax is 100 W.
> >>
> >>The measured reflected power at X in the 150 ohm line is 18.864 W
> >>
> >>The reflected voltage at X in the 150 ohm line has a phase angle
of -94.203
> >>degrees
> >>
> >>The antenna impedance is a pure resistance.
> >>
> >>Quiz:
> >>
> >>What is the steady state forward power in the 150 ohm line? 93.864 w
> >>
> >>What is the steady state reflected power in the 50 ohm line? 14.148 w
> >>
> >>What is the antenna impedance? 388.7 ohms
> >
> >The 150-ohm line is 47.1 degrees long, or 0.131 wl
> >

> >Reflection coefficient rho at antenna 0.4431, and SWR = 2.59
> >>
> >>The solution to this simple Quiz illustrates all of the correct aspects
of
> >>wave reflection mechanics and should take less than 5 minutes.
> >>
> >>Steve VE9SRB
> >
> >This is my final answer.
> >
> >Walt, W2DU
>
> PS--I forgot to say that the power absorbed in the 388.7+ j 0 ohm
resistive load
> is 75 watts.
>

Still the wrong answer.

From your answer, 100 W forward at the 150 ohm line and 14.148 W reflected, the delivered power to the 150 ohm line would be 85.85 W. Your don't even agree with yourself.

Steve

3545. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:17:08 UTC
From: kb7qhc@home.com
Message-ID: <3afb20f9.263311942@news.seanet.com>
Source record: 163393

On Thu, 10 May 2001 22:28:51 GMT, w2du@iag.net (Walter Maxwell, W2DU)
wrote:

>On Thu, 10 May 2001 21:42:27 GMT, kb7qhc@home.com (Richard Clark) wrote:
>
>
>>Hi Walt,
>>
>>Sure you don't want to CQ a lifeline? ;-)
>>
>>73's
>>Richard Clark, KB7QHC
>
>Hi Richard, I didn't think I needed a lifeline. Are my answers that far off?
>
>Walt

Hi Walt,

Just a joke alluding to "Who wants to be a millionaire" where you
employed the common term "that's my final answer" to which I provided
the appropriate, canned response to you with tongue planted firmly in
cheek. ;-)

73's
Richard Clark, KB7QHC

3546. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:21:44 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <coFK6.59496$2_.21446736@news3.rdc1.on.home.com>
Source record: 163395
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> Well....there is one thing about it.....Ya just cain't fisk stupid.

No but we can certainly have guidelines to punish the stupid by

3547. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:21:45 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <doFK6.59497$2_.21445966@news3.rdc1.on.home.com>
Source record: 163394
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> You have to remember that most "safety" related laws and rules are
> written for the lowest common denominator in society. Just because YOU
> can safely drive a car on a particular road at 70 MPH, does not mean
> that everyone else can. And since personal responsibility and prudent
> judgement seems to be at an all time low in this country, we have been
> more or less forced to have the rules dictated to us. It's a shame for
> those of us that feel that we're "better" than that, but the law is the
> law, and you do not have the right to arbitrarily disregard them.
> Organize a lobby, study and document your evidence as to why a
> particular law should be changed, and present it to the proper governing
> body, and let the process do its thing.

Not to mention not inconvenient either

3548. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:21:46 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <eoFK6.59498$2_.21446119@news3.rdc1.on.home.com>
Source record: 163396
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

> Really??
>
> It didn't look that way from where I'm sitting!

I remember the floridians complaining about a ballot for quite a long time there ...

3549. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:30:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB24A1.C2C1DCD9@IEEE.org>
Source record: 163397

VE9SRB wrote:
> Working a transmission line problem from the beginning to arrive at the
> correct steady state conditions correctly illustrates the behavior of waves
> in the lines and the correct relationship between voltage and power. All of
> the examples we discuss start with the steady state which leaves too much
> room for interpretation and confusion. Starting with the steady state we
> all know the answer and we just argue about how to get there. Let's see if
> we can get there without knowing the answer.
>
> As I said in the post, the answer to this quiz takes less than 5 minutes.

How can it possibly take 5 minutes when you define one quantity as having a
phase angle of -94.203 degrees and neglected to specify the phase angles of
any other quantity? -94.203 degrees compared to what?
--
http://www.mindspring.com/~w6rca

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3550. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:35:16 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <UAFK6.15737$t12.1218984@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163398

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFB24A1.C2C1DCD9@IEEE.org...
> VE9SRB wrote:
> > Working a transmission line problem from the beginning to arrive at the
> > correct steady state conditions correctly illustrates the behavior of
waves
> > in the lines and the correct relationship between voltage and power.
All of
> > the examples we discuss start with the steady state which leaves too
much
> > room for interpretation and confusion. Starting with the steady state
we
> > all know the answer and we just argue about how to get there. Let's see
if
> > we can get there without knowing the answer.
> >
> > As I said in the post, the answer to this quiz takes less than 5
minutes.
>
> How can it possibly take 5 minutes when you define one quantity as having
a
> phase angle of -94.203 degrees and neglected to specify the phase angles
of
> any other quantity? -94.203 degrees compared to what?
> --

Since the source impedance is 50 ohms, Zo before X is 50 ohms and the 50 ohm
line is 1 WL long, the forward source voltage at X will have a relative zero
degrees phase. Sorry if that was not obvious.

Steve

3551. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:37:36 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB2640.C583B58B@IEEE.org>
Source record: 163400

VE9SRB wrote:
> No smoke screens.

I posted that before you supplied the generator impedance, Steve. I could just see you saying the generator impedance is complex and not conjugately matched thus collapsing the discussion into the black hole of whether a non-dissipative resistance exists. Are we assuming that the generator impedance is 50 ohms resistive and dissipative?

> If you understand the basic concepts you can answer the quiz in less than 5
> minutes.

Doubt it, Steve. The answer is different depending on whether the generator voltage is at ten degrees or twenty degrees. You neglected to specify any phase angle except one - one phase angle is as useless as tits on a boar hog.
--
http://www.mindspring.com/~w6rca

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3552. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:37:41 UTC
From: w2du@iag.net
Message-ID: <3afb25f1.34209821@news.onemain.com>
Source record: 163399

On Thu, 10 May 2001 23:11:40 GMT, "VE9SRB" <srbest@att.net> wrote:

>> This is my final answer.
>>
>> Walt, W2DU
>
>Too bad its totally the wrong answer.
>
>With an impedance of 388.7 ohms terminating a 150 ohm line, rhoA is equal to
>0.443 (as you correctly start). If the line is 0.131 WL long (which is not
>the correct quiz answer), the input impedance to the line would have to be
>95.44 - j104.94 ohms (which is not the correct quiz answer). This impedance
>would have a |rho| = 0.638. With 100 W forward power at X, the reflected
>power at X would have to be 40.70 Watts, not the 14.148 Watts you state.
>Both of these answers are incorrect.
>
>With the power levels at X being 100 W forward and 14.148 Watts reflected
>(as you incorrectly state), the power delivered to the 150 ohm line is equal
>to 85.852 W (100 - 14.148). With the relationship Pfwd = Pdel / (1 -
>|rhoA|^2), which is always correct, the forward power in the 150 ohm line
>would have to be 106.8 W not 93.864 W. Both of these answers are incorrect.
>
>With 85.852 W of power delivered to the 150 ohm line (your 100W - 14.148 W)
>and 93.864 W of forward power in the 150 ohm line(your answer), the
>reflected power in the 150 ohm line would be have to be 8.01 W. Pdelivered
>= Pforward - Preflected. Far from the quiz reflected power of 18.864 W.
>
>As I said to Cecil, its little more involved when you don't know the final
>answer before hand.
>
>Try again.

Yeah Steve, I was a little too hasty and overlooked a couple of important items.

Walt
>
>Steve, VE9SRB
>
>
>

3553. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:45:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB2803.8C1CB9EB@IEEE.org>
Source record: 163402

"Walter Maxwell, W2DU" wrote:
> This is my final answer.

Walt, how can you possibly know that when the phase angle of the
generated voltage has not been specified? :-)
--
http://www.mindspring.com/~w6rca

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3554. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:45:28 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <sKFK6.15649$4f7.1212728@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163401

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3afb25f1.34209821@news.onemain.com...
> On Thu, 10 May 2001 23:11:40 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>
> >> This is my final answer.
> >>
> >> Walt, W2DU
> >
> >Too bad its totally the wrong answer.
> >
> >With an impedance of 388.7 ohms terminating a 150 ohm line, rhoA is equal
to
> >0.443 (as you correctly start). If the line is 0.131 WL long (which is
not
> >the correct quiz answer), the input impedance to the line would have to
be
> >95.44 - j104.94 ohms (which is not the correct quiz answer). This
impedance
> >would have a |rho| = 0.638. With 100 W forward power at X, the reflected
> >power at X would have to be 40.70 Watts, not the 14.148 Watts you state.
> >Both of these answers are incorrect.
> >
> >With the power levels at X being 100 W forward and 14.148 Watts reflected
> >(as you incorrectly state), the power delivered to the 150 ohm line is
equal
> >to 85.852 W (100 - 14.148). With the relationship Pfwd = Pdel / (1 -
> >|rhoA|^2), which is always correct, the forward power in the 150 ohm line
> >would have to be 106.8 W not 93.864 W. Both of these answers are
incorrect.
> >
> >With 85.852 W of power delivered to the 150 ohm line (your 100W - 14.148
W)
> >and 93.864 W of forward power in the 150 ohm line(your answer), the
> >reflected power in the 150 ohm line would be have to be 8.01 W.
Pdelivered
> >= Pforward - Preflected. Far from the quiz reflected power of 18.864 W.
> >
> >As I said to Cecil, its little more involved when you don't know the
final
> >answer before hand.
> >
> >Try again.
>

> Yeah Steve, I was a little too hasty and overlooked a couple of important items.
>
> Walt
> >
> >Steve, VE9SRB
> >

Not a problem. I enjoy the opportunity to have a friendly technical discussion with you.

Steve

3555. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-10 23:47:50 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <GMFK6.15650$4f7.1213232@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163403

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFB2640.C583B58B@IEEE.org...
> VE9SRB wrote:
> > No smoke screens.
>
> I posted that before you supplied the generator impedance, Steve. I could
> just see you saying the generator impedance is complex and not conjugately
> matched thus collapsing the discussion into the black hole of whether a
non-
> dissipative resistance exists. Are we assuming that the generator
impedance
> is 50 ohms resistive and dissipative?
>
> > If you understand the basic concepts you can answer the quiz in less
than 5
> > minutes.
>
> Doubt it, Steve. The answer is different depending on whether the
generator
> voltage is at ten degrees or twenty degrees. You neglected to specify any
> phase angle except one - one phase angle is as useless as tits on a boar
> hog.

The generator impedance is irrelevant. I said that there were no
re-reflections at the generator and that the forward power in the 50 ohm
line is 100 W. That's all you need. The answer actually does take less
than 5 minutes. I know Walt will zero in on the answer at some point soon.
After he does, I will post the 5 minute solution.

Steve

3556. Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:01:28 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB2BD8.7B4A65F7@IEEE.org>
Source record: 163404

All signals handled by 50 ohm lossless coax with no reflections
on any coax.

Assume two phase-locked transmitters which must be connected to a
single antenna. XMTR1 puts out 50v at zero degrees and one amp at
zero degrees. XMTR2 puts out 50v at zero degrees and one amp at zero
degrees. A lossless matching network is designed such that the two
transmitter signals are combined in phase to achieve maximum possible
output power (100% efficiency) into 50 ohm coax to a 50 ohm antenna.

What is the output voltage? What is the output current? What is the
output power?
--
http://www.mindspring.com/~w6rca

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3557. Portable Antenna Ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:08:09 UTC
From: Richard <2e0avf@talk21.com>
Message-ID: <9dfagsakg1@plutonium.btinternet.com>
Source record: 163405

Hi

I am looking for portable antenna ideas, I will be travelling around in the summer and will want to take my HF radio with me. I will be looking to use 10 - 20 meters and 100 Watts or less. It will be from a house and not a car so I will need an antenna that can be put up without having to climb trees or anything like that, just to be able to mount it some way and then tune it up and use it.

I have thought about using some form a base and then just use mobile whips but I would prefer to just take one antenna. I will be looking to make something more than buy it but if there is any portable antennas out there that are a reasonable price let me know. Something that can be made up on the spot so that it is small to carry but then extends when in use might be an idea because I don't want to carry some huge long antenna somewhere so perhaps something that is telescopic might be good to use.

If you need any more details let me know

Richard

3558. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:12:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB2E70.32591ADD@IEEE.org>
Source record: 163406

VE9SRB wrote:
> As I said to Cecil, its little more involved when you don't know the final
> answer before hand.

I'm sure no one has noticed that you knew the final answer beforehand.
Why make up an example where someone is likely to make a mathematical
error. Why not keep it simple? What is the motive for not keeping it
simple?
--
http://www.mindspring.com/~w6rca

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3559. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:14:38 UTC
From: "Peter J. Bertini" <radioconnection@home.com>
Message-ID: <O9GK6.54528$Ce4.4665346@news1.rdc1.ct.home.com>
Source record: 163407

70.71V, 1.414A, 100W

What did I win?

"

3560. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:18:05 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <1dGK6.4371$f61.82883@news1.sttls1.wa.home.com>
Source record: 163408

"Tom W8JI" <2w8ji@contesting.com> wrote in message
news:3afa5fc6.575079702@news.accessunited.com...
(Snip some)
>
> My experiment was a thin solid copper wall. One side excited with a
> short conductor spaced a small fraction of an inch above the wall, the
> other side "sniffed" with a small loop and actual connections to the
> wall.
>
> Voltage and current was lowest on the wall side directly opposite the
> exciting conductor, and maximum at that conductor and parallel to that
> exciting conductor on the side of the wall being excited.
>
> Current was maximum (concentrated) near edges.
>

I think by this experiment you concluded that skin effect shields one surface from the other. Why do you feel that skin effect is more important than the canceling effects of opposite flowing currents which act to oppose the driving voltage? Is this experiment a test for the loop around, independent current which can be expected to flow on the outside surface of a coaxial line due to skin effect?
What was the pattern of the current on the wall plate? What was the frequency and plate size?

> Here's something else to think about. I'm in the process of measuring
> coaxial traps. Why, if the inside of the shield is not isolated from
> the outside, does the coaxial trap have the same "capacitance"
> appearing across the trap when the outside of the shield is used as
> the inductor as if a separate inductor is used?
>
> Look at a coaxial trap, and tell me how it works if the shield inside
> and outside? Why does it appear as a lumped capacitor across an
> inductor, rather than distributed inductance? Why isn't part or most
> of the center-to-shield capacitance lost as distributed capacitance
> along the "inductor"?
>
>
Maybe you could clarify this question? Short lengths of coax (relative to the frequency) act as capacitors, longer lengths show a cancelation of the capacitance by the inductive reactance.

73, Roger, W7WKB

3561. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:18:05 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <1dGK6.4372$f61.82883@news1.sttls1.wa.home.com>
Source record: 163409

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:3AFA2CF7.73822B7B@eznec.com...

(Snip some)

> There's only one layer, but it has the following characteristics: On the
> inside of the shield there's a current which is equal in magnitude and
> opposite in direction from the current on the center conductor. The
> current density is greatest at the surface, and falls off exponentially
> within the conductor. Five skin depths below the surface, the current
> density is 1% of the density at the surface. Ten skin depths below the
> surface it's 0.000045 the surface density, and so forth. At some depth
> within this range, it can be considered zero for any practical purpose.
> Then on the outside of the shield there can be another current. Its
> density also decays as it penetrates into the conductor, by the same
> proportion as the inner current. Peter noted that some fraction of the
> current on the inside makes it to the outside and vice-versa. Let's see
> how much. If the shield thickness is 0.010 inches and it's made from
> copper, at 10 MHz the fraction of one current making it to the other
> side is 0.000006. This is a reduction of 104 dB. A particularly
> interesting thickness is 38.8 mils (.0388 inches). The reduction of
> current density through this thickness of copper at 10 MHz is 280 dB.
> And 280 dB is the ratio of the light output from an ordinary two cell
> flashlight to the total light output of the Sun. (Not the light striking
> the Earth, but its total output.) I'll leave it to the Group
> Philosophers to discuss the importance of the fact that this current
> making it through isn't theoretically exactly zero. I just say that the
> currents are independent, and consider that close enough.
>

(snip some more)
> Roy Lewallen, W7EL

You make a very good case that energy contained in the current component of the wave flows near the surface of the conductor. I think you are also making the case that a plate of metal is actually an super insulator which will not allow even capacitive coupling between the sides at high frequencies. For example, if a plate of metal were placed in series with one side of a dipole, with the connections for each side of the plate at the very center of the plate, then the only current path between the centers on each side of the plate would be around the edges of the plate. No current could pass through the metal at the points of connection, all current would have to flow around the plate edges, held to the metal surface by skin effect.

Is this an accurate extension of the theory of skin effect?

73, Roger,W7WKB

3562. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:26:51 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <flGK6.15827$t12.1228225@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163410

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFB2E70.32591ADD@IEEE.org...
> VE9SRB wrote:
> > As I said to Cecil, its little more involved when you don't know the
final
> > answer before hand.
>
> I'm sure no one has noticed that you knew the final answer beforehand.
> Why make up an example where someone is likely to make a mathematical
> error. Why not keep it simple? What is the motive for not keeping it
> simple?

If you understand wave mechanics as I have them described to you, it is very simple. The process is exactly the same for a non-Zo match and a Zo match. The Zo match only makes it easier because you know that the delivered power and the forward power are the same at the Zo match point.

As I said, the answer takes less than 5 minutes.

Steve

3563. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:29:38 UTC
From: w2du@iag.net
Message-ID: <3afb30eb.37019491@news.onemain.com>
Source record: 163411

On Thu, 10 May 2001 23:17:08 GMT, kb7qhc@home.com (Richard Clark) wrote:

>On Thu, 10 May 2001 22:28:51 GMT, w2du@iag.net (Walter Maxwell, W2DU)
>wrote:

>Hi Walt,
>
>Just a joke alluding to "Who wants to be a millionaire" where you
>employed the common term "that's my final answer" to which I provided
>the appropriate, canned response to you with tongue planted firmly in
>cheek. ;-)
>
>73's
>Richard Clark, KB7QHC

Yeah, Richard, I thought I had it, and didn't need a life line. I knew you mean't it as a joke, I then realized for one thing, I forgot to inlcude the 25 watts reflected at X in total reflected power in the 50-ohm line. I'm sticking by my line length of 0.131 wl for the 150-ohm line for now. But with a 50-ohm source absorbing the reflected power in the 50-ohm line the power entering the 150-ohm line must be 75 watts. The total forward power in the 150-ohm line is requiring a little more thought.

Walt

3564. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:35:40 UTC
From: n2ey@aol.com
Message-ID: <20010510203540.06351.00000968@nso-bk.aol.com>
Source record: 163412

In article <3af5f99d.286739123@news.accessunited.com>, 2w8ji@akorn.net (Tom W8JI) writes:

>On 07 May 2001 00:34:23 GMT, n2ey@aol.com (N2EY) wrote:
>
>>>Coaxial traps are physically large. They can dissipate consderable
>>>power without failing because of the exposed surface area.
>>
>>True - but they are made of plastics with low melting points. A coax trap
>made
>>with black coax gets pretty warm in the sun on a 95 degree August day. RF
>>losses would simply add to the trap temperature.
>
>RF losses are mostly distributed in the vinal jacket. The losses are
>pretty high in practical applications, compared to conventional L/C
>traps with off-the-shelf components..like #14 airdux and 100 pF
>doorknobs.

Makes sense - the vinyl jacket in coax isn't usually chosen for its low loss properties. In addition, there may be large variations in loss between different jacket types, so that the amount of loss may be much less in some cases. If so, that variability is another reason to prefer lumped-component traps.

I gotta get some big airdux and 850-type doorknobs on my shelves....

>>But Q is useful in comparing similar traps used for the same job. For
>example,
>>in my 80/40 inverted V example, the coax traps were treated as inductors and
>>measured on the 80 meter resonance frequency. Comparing them to typical LC
>>circuits of the same equivalent inductance and capacitance showed that the Q
>of
>>the coax traps was about half that obtainable from similar LC traps.
>
>I don't know how you measured that.

Made up a coax trap for 7050 and measured its Q at 3550 on the Q meter. Then made up a lumped-component trap using #14 wire on same size PVC pipe and a dipped mica cap of the same computed value. Of course that method does not tell the loss on 40 meters.

> I measured more like a ten times
>difference.

WOW!!

>One of the major problems with a coaxial trap is the very
>low amount of reactance in the trap. While 75 ohm cable is a step in
>the right direction, it isn't enough.

W8NX published some designs with two pieces of coax wound side-by-side and
connected in parallel. Claimed big jumps in Q. Building them is a real
challenge, though, to the extent that the simplicity and ease of construction
virtues of coax traps are lost.
>
>>I agree 100%. But that's not how we did the comparisons.
>>
>>In the FD setups I mentioned, we had two stations that were near-identical.
>>Same 100 w middle-line transceivers, antennas at same height, same feed line
>>lengths, etc. One station had a homebrew coax-trap 80/40 dipole and the
>other a
>>commercially made G5RV. Contact rates at the coax-trap station consistently
>>surpassed those of the G5RV station.
>
>That is the worse possible test we could ever do. Everything is
>different, not just the antenna!

How is everything different? The antennas were at the same heights, the rigs
were comparable, even the feedlines were the same length.
>
>How did the G5RV compare to a dipole at the same height at the same
>location with both antennas in the clear? Without knowing that, we
>don't know how the G5RV works. How does the trap dipole compare to a
>conventional dipole at the same height when both antennas are in the
>clear at the same site? Without that, we don't know what the trap loss
>is.

True - no reference standard antenna, like a plain fullsize dipole, was used.
>
>I'll certainly post the measurements after Dayton.
>
Can't ask for more than that!
Here's one more thought:

There are several different designs for "coaxial traps". The one I use is from
QST for December, 1984. In that design, the coax is connected "in series with
itself" - that is, the braid at one end of the winding is connected to the
center conductor of the other end, and the remaining free ends are used for the
trap connections. There are other designs that connect the trap quite
differently. Perhaps the trap design is a factor.

Thanks for the info, Tom. Enjoy the hamfest - sure wish I was going.

73 de Jim, N2EY

3565. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:36:28 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB340C.82B06CF5@IEEE.org>
Source record: 163413

VE9SRB wrote:
> If you understand wave mechanics as I have them described to you, it is very
> simple. The process is exactly the same for a non-Zo match and a Zo match.
> The Zo match only makes it easier because you know that the delivered power
> and the forward power are the same at the Zo match point.

The main thing the Z0-match does for us is allow us to state:
Forward power equals generated power plus reflected power.

In your non-Z0-matched example, is the generated power equal to 100 watts
or is the generated power equal to 100w minus the reflected power?
--
http://www.mindspring.com/~w6rca

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3566. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:37:10 UTC
From: billsohl@mindspring.com
Message-ID: <3afb33b5.1274108@news.mindspring.com>
Source record: 163272
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

FYI on lower speed limits...

The NMA recently received a special report from the Montana Department of Transportation on highway accidents and fatalities. Chad Dornsife, NMA
Nevada Activist, has created a web page that compares Montana's last 12 months WITHOUT a speed limit to their first full year of experience WITH a speed limit.

The new information shows that fatalities have more than doubled on rural
interstates and has also increased on rural primary highways. This information contradicts the state officials who claimed speed limits, higher fines, and more enforcement would lower traffic deaths.

You can find the full story at
http://www.hwysafety.com/hwy_montana_2001.htm
If you have any
questions, you can contact:

Chad Dornsife
NMA Nevada Activist
chad@hwysafety.com
775.721.2423 cell
800.708.5723 voice mail/fax

National Motorists Association 608/849-6000
nma@motorists.org www.motorists.org
Advocating, Protecting, and Representing the Rights of North American Motorists

3567. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:40:58 UTC
From: w2du@iag.net
Message-ID: <3afb338e.37695022@news.onemain.com>
Source record: 163414

On Thu, 10 May 2001 18:45:07 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>"Walter Maxwell, W2DU" wrote:
>> This is my final answer.
>
>Walt, how can you possibly know that when the phase angle of the
>generated voltage has not been specified? :-)
>--
>http://www.mindspring.com/~w6rca
>
Cecil, on the possibly wrong assumption that the load resistance is greater than 150 ohms the phase angle of the voltage reflection coefficient is inherently zero when the load is purely resistive. Then, if the phase angle of the reflection coefficient at X is given, the line length is one half of the angle of the reflection coefficient measured from the load.

Walt

3568. FREE classifieds with photos

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:43:26 UTC
From: Jack <poster@gate.net>
Message-ID: <3AFB35AE.6A95CBF2@gate.net>
Source record: 163415

http://www.graphicstouch.com

3569. Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 00:58:28 UTC
From: noname@aol.com
Message-ID: <3afb38ec.34743138@news.compuserve.com>
Source record: 163416

Hi,

Does anyone know where I can find information on the impedance transformation that occurs when a balun is operated in the presence of high SWR? I note that the ARRL Handbook is silent on this point, simply stating that "loads with reactive components should use appropriate networks to cancel the reactance." So I take it that a 4:1 balun does not just divide the twin lead impedances by 4.

I am specifically interested in feeding a non-resonant doublet with twin lead, at QRP power, and want to get as much as possible out the antenna and not burned up in the feedline or balun.

EZNEC gives a good idea of what the antenna impedance will be, and TLW takes that to the output of the transmatch, but I can't find any info on transforming that impedance through the balun to the actual matching network.

Thanks,

Dave
AB9CA

3570. Articles on coax/connector termination ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 01:25:38 UTC
From: coast station <nospam@newsranger.com>
Message-ID: <mcHK6.554$j65.48003@www.newsranger.com>
Source record: 163418

Are there any articles on the web about how to make good termination between connector N Male/Female and coax LMR-400. The articles should contain clear photos/illustrations with easy to understand explanations.

Thank You.

Coast Station.

3571. Re: Portable Antenna Ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 01:25:39 UTC
From: Ken Anderson <longrange2@home.com>
Message-ID: <3AFB3EDB.34F7531C@home.com>
Source record: 163417

Go to QRZ.com and do a search on the call W3FF. Then follow the link to his web page for instructions on building a light weight, tunable, portable dipole that will cover 2M to 40M. I built one for about $30, use it pedestrian mobile with an SG2020 at 20 watts out and have worked alot of great DX. Its a great antenna for the size, and really portable. KC0INZ, Ken

Richard wrote:

> Hi
>
> I am looking for portable antenna ideas, I will be travelling around in the
> summer and will want to take my HF radio with me. I will be looking to use
> 10 - 20 meters and 100 Watts or less. It will be from a house and not a car
> so I will need an antenna that can be put up without having to climb trees
> or anything like that, just to be able to mount it some way and then tune it
> up and use it.
>
> I have thought about using some form a base and then just use mobile whips
> but I would prefer to just take one antenna. I will be looking to make
> something more than buy it but if there is any portable antennas out there
> that are a reasonable price let me know. Something that can be made up on
> the spot so that it is small to carry but then extends when in use might be
> an idea because I don't want to carry some huge long antenna somewhere so
> perhaps something that is telescopic might be good to use.
>
> If you need any more details let me know
>
> Richard

3572. Re: Baby Boomer Quad WAS: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 01:29:15 UTC
From: Bill <billNOSPAM@hovac.com>
Message-ID: <9dff92$12c6$1@box9.cho.cstone.net>
Source record: 163319

BBQ seems like a nice antenna, but isn't it kind of pricey at $698.00?

Cubex Quad (http://www.cubex.com/mark.htm) is only $449.95 and Lightning Bolt Antennas(http://www.lightningboltantennas.com/hfquad.html) is only $265.00 .

I realize the BBQ is "mini" but it seems to be carrying a "maxi" price.

Somebody clue me into why it's so expensive.

Bill

"G&R" <stop the spam@limbo.hell> wrote in message news:TAmK6.4037$h%.1488327@news20.bellglobal.com...
> Interestingly enough "gain" is not affected to a great degree at peak vs a
> full size quad. This said, a full size quad has a broader peak for gain and
> F/B ratio that the BBQ. However, because of the total wire employed and the
> capacity hat design reasonable bandwidth is achieved.
>
> As to SWR, you are correct, Z0 assumes 100 ohm ladder line. Ladder line and
> a tuner are always a good feed since losses are negligible even with high
> SWR..
>
> With about 50ft of RG58 and a choke balum the transceiver (a KACHINA 505)
> sees the SWR different (loss factors) than the SWR appears on the antenna.
> For actual performance it means that the finals are not overloaded and the
> automatic tuner can match the apparent SWR.
>
> By the way, the antenna was optimized for F/B ratios rather than gain and
> results on receive yield about 2 to 3 S units over an R5 vertical on 15m (1
> S unit = 5db on the Kachina), approximately 2s units on 10m and 1 to 1.5 on
> 20m.
>
> Should you have further questions, please contact VE3 CVS at
> erwins@degendesigns.com
>
> 73
>
> Guenther
> info@degendesigns.com
>

> "Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
> news:3af5eebc.91031776@news.aepnet.com...
> > On Sun, 06 May 2001 23:12:40 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:
> >
> > >On Sun, 06 May 2001 19:40:17 GMT, "G&R" <stop the spam@limbo.hell>
> > >wrote:
> > >
> > >>I wish you would also consider our Baby Boomer Quad (at
> > >>www.degendesigns.com). We have used modeling software based on average
> > >>ground conditions and based on our actual mounting conditions. To
the
> best
> > >>of our experience our antenna does perform as indicated by our models.
> > >>
> > >>For your reference our software is NEC4WIN95VM as we feel it's the
only
> > >>software that can accurately model our antenna. There may be others,
> > >>however based our field testing and modeling results it currently
> performs
> > >>the function the best.
> > >
> > >A two-element shortened quad with 9 to 10 dBd gain?
> > >
> > >I'd find out where the modeling error is, or are you twisting the
> > >specs and comparing an antenna over ground to a dipole in freespace?!
> >
> >
> > I took the file 15mquad (packaged with EZNEC) and scaled it to 14.1 MHz
at
> a
> > height above ground of 50 feet. I set the gnd constants the same as
used
> on the
> > web site above. Plotting the az pattern at an elevation angle of 19
deg.
> I get
> > 12.26 dBi or 10.1 dBd.
> >
> > Since this is a "full-size" quad, the "baby" version should be
> considerably
> > lower. Only 1 dB lower sounds too good to be true.
> >
> > A dipole at the same height gives 5.3 "dBd" at the same elevation
angle.
> >
> > Oh, and another thing. The 14 MHz feedpoint Z is given as 66.25 -
j67.92
> and
> > yet the SWR (I assume that's the number in brackets) is given as 2.47.
> That

> > means that the reference Zo is 100 ohm. The claim is that the antenna
can
> be
> > fed with either coax or ladder line. I guess that's true but the 50 ohm
> SWR
> > will be over 3:1 and the 400 ohm SWR would be over 6:1.
> >
> > Sumthin' fishy here.
> >
> > Wes Stewart N7WS
> > >
> > >73 Tom
> >
> >
>
>

3573. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 01:49:33 UTC
From: Harold <hsnyder@houston.flightlessbird.com>
Message-ID: <NyHK6.40337$hu.7570970@typhoon.austin.rr.com>
Source record: 163322

Bill,
Thanks for your comment. I will give it a try this weekend.

Harold
wd5kca

"W4WNT" <w4wnt@carolina.rr.com> wrote in message
news:PC2K6.33047$Gx4.6178092@typhoon.southeast.rr.com...
> Sorry I don't know the configuration of your antenna, but you say you
> removed the 40m section. It may be causing a problem on 15m (3rd
harmonic,
> all that stuff). Try replacing the 40m section and bending (I'm hoping
it's
> a wire antenna here!) it around the space available.
>
> The other fact is that in-house antennas are known to cause rfi problems
on
> their own.
>
> Good luck,
>
> Bill, W4WNT
>

3574. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 01:49:35 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AFB452F.EC845113@eznec.com>
Source record: 163320

Roger Sparks wrote:
>
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:3AFA2CF7.73822B7B@eznec.com...
>
> (Snip some)
>
> > There's only one layer, but it has the following characteristics: On the
> > inside of the shield there's a current which is equal in magnitude and
> > opposite in direction from the current on the center conductor. The
> > current density is greatest at the surface, and falls off exponentially
> > within the conductor. Five skin depths below the surface, the current
> > density is 1% of the density at the surface. Ten skin depths below the
> > surface it's 0.000045 the surface density, and so forth. At some depth
> > within this range, it can be considered zero for any practical purpose.
> > Then on the outside of the shield there can be another current. Its
> > density also decays as it penetrates into the conductor, by the same
> > proportion as the inner current. Peter noted that some fraction of the
> > current on the inside makes it to the outside and vice-versa. Let's see
> > how much. If the shield thickness is 0.010 inches and it's made from
> > copper, at 10 MHz the fraction of one current making it to the other
> > side is 0.000006. This is a reduction of 104 dB. A particularly
> > interesting thickness is 38.8 mils (.0388 inches). The reduction of
> > current density through this thickness of copper at 10 MHz is 280 dB.
> > And 280 dB is the ratio of the light output from an ordinary two cell
> > flashlight to the total light output of the Sun. (Not the light striking
> > the Earth, but its total output.) I'll leave it to the Group
> > Philosophers to discuss the importance of the fact that this current
> > making it through isn't theoretically exactly zero. I just say that the
> > currents are independent, and consider that close enough.
> >
>
> (snip some more)
> > Roy Lewallen, W7EL
>
> You make a very good case that energy contained in the current component of
> the wave flows near the surface of the conductor. I think you are also
> making the case that a plate of metal is actually an super insulator which
> will not allow even capacitive coupling between the sides at high
> frequencies. For example, if a plate of metal were placed in series with
> one side of a dipole, with the connections for each side of the plate at the
> very center of the plate, then the only current path between the centers on
> each side of the plate would be around the edges of the plate. No current
> could pass through the metal at the points of connection, all current would

> have to flow around the plate edges, held to the metal surface by skin
> effect.
>
> Is this an accurate extension of the theory of skin effect?
>
> 73, Roger,W7WKB

Yes. Providing, of course, that the plate is at least several skin depths thick. If not for this, you wouldn't be able to shield a circuit by putting it into a metal box.

Roy Lewallen, W7EL

3575. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 01:51:59 UTC
From: thompson@mindspring.com
Message-ID: <9dfgkreh1@slb2.atl.mindspring.net>
Source record: 163275

The satellite input is probably on channel 3 and your are causing
fundamental overload. Try a high pass on the TV.
Surprised no telephone RFI. I try to convince the neighborhood committees
that having an antenna inside causes more problems
that one outside in the clear. Too bad you can put the wire antenna
outside. The restrictions or the committee must be severe to not allow a
simple outside wire.

73 Dave K4JRB

3576. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 01:54:35 UTC
From: Harold <hsnyder@houston.flightlessbird.com>
Message-ID: <vDHK6.40338$hu.7576302@typhoon.austin.rr.com>
Source record: 163323

Doc,

Thanks for your comment. My first thoughts were receiver overload, but why
it is only on 15 meters while 10 and 20 meters are quiet puzzles me.

Harold
wd5kca

"'Doc" <w5lz@oio.net> wrote in message news:3AF90E13.2CE22EB5@oio.net...
>
>
> Harold,
> I think your problem is due to proximity, primarily. In
> your situation I know you can't, but if you could get the
> antenna further away fron your TV, dish, etc, I think you'd
> 'solve' a lot of your problems.
> Good luck...
> 'Doc

3577. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 01:58:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB472F.25D68911@IEEE.org>
Source record: 163321

Dave wrote:
> Does anyone know where I can find information on the impedance
> transformation that occurs when a balun is operated in the
> presence of high SWR?

Jerry Sevick has some information in his book, "Transmission Line
Transformers". The sad fact is that there is no balun that will
do the job you need done. Where are you going to get a balun
that will balance the currents when it is looking into a 3k+j3k ohm
load? My advice is not to allow the balun to see an impedance
far away from its design impedance. Baluns are not magic.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3578. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 01:59:40 UTC
From: Harold <hsnyder@houston.flightlessbird.com>
Message-ID: <gIHK6.40340$hu.7582640@typhoon.austin.rr.com>
Source record: 163325

Thanks for your comments.

This will help me out if I can't solve the problem at the source. If I can't do that your suggestions will help me quiet the televisions in the house and get the xyl off my back!

Harold

wd5kca

"kazering" <kazeringue@aol.com> wrote in message news:3AF93D73.1000307@aol.com...
>
> Try winding the TV coax into a choke balun, right behind the
> set. About 6 feet of slack in the coax would be needed, with
> 8 turns. Wind it like an inductor coil, tightly (taping each
> turn helps).
>
> This may not provide enough impedance to solve the problem,
> but if you see an improvement in the RFI, ferrite beads may
> solve the problem.
>
> If the choke doesn't have any effect, your dish may be
> picking it up, and a high pass filter may be needed. Try to
> borrow one from another ham first (hate to see you shuck out
> the bucks, and still have a problem).
>
> I have a neighbor who is a VHF'er. His six meter amp was
> getting into the cable TV pretty good. The common mode coil
> chokes were sufficient for that problem. Your set up will
> be harder to fix with everything so closely spaced.
>
> Question:
> With the antenna in the attic, and running the amp, do your
> light bulbs glow at night? :)
>
> good luck,
> W4KAZ
>

3579. Re: New Key

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 02:13:38 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AFB4AD2.459AAB97@spam.me.not>
Source record: 163324

For any who are interested... my callsign came in tonight...

Now I just gotta get this morse code thing licked. Thanks again for all
your help and support.

-SSB (KC8RKQ)

Sideband wrote:
>
> Gents and Ladies:
>
> I'm proud to announce, (and yes, I'm tooting my own horn here) that I've
> just passed both the Technician and General Written Elements. I'll have
> my callsign by Thursday or Friday, but it's probably going to be a
> KC8R?? or an early KC8S?? according to AA5GO, W8DYH and WB8HRO, the
> three fine VE's who oversaw my testing and gave me the good news.
>
> Now I just gotta get the code requirement licked. But KC8HEZ said he'd
> help me out with that over the air, once I get a radio.
>
> Anyone got an inexpensive 2M set they're not using that they'd be
> willing to part with?
>
> -SSB

3580. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 02:20:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AFB4C76.692E03C7@eznec.com>
Source record: 163326

In a previous life, I worked on heavy ground radar. The particular set I spent most of my time with put out about 4 MW peak, through a rectangular waveguide that was roughly 2 X 4 inches in cross section. This waveguide was operated in the TE(1,0) mode. In this mode, the E field extends from one of the long sides directly across to the other. (It's maximum at the center of the long sides and sinusoidally drops to zero at the short sides.) The waveguide was kept slightly pressurized with dried air. When the pressurizing system failed and humidity was high, the waveguide would arc internally. I assume this arc took place between about the centers of the long walls, where the E field is greatest. Inside the waveguide, between the center of one long wall and the other, there's a very high potential, tens of kV. Yet on the outside of the waveguide, I could put one finger on the center of one long side and another finger on the opposite side and feel nothing.

How can this be?

Roy Lewallen, W7EL

"William E. Sabin" wrote:
>
> Dennis Ferguson wrote:
>
> > I didn't see the post about the experiments, but I don't think you
> > can conclude that the voltages are different just because the currents
> > are different. Did you also measure a voltage difference between
> > the two sides of the conductor? I suspect not because I think Bill
> > Sabin was right about this part.
>
> This is correct. There can be two different currents, but the voltage
> difference across the braid must be zero at every location. That is the
> boundary condition, as I have said before, and it is eminently sensible. The
> longitudinal voltage distribution is determined by the composite effect of the
> two currents and the *reactance* of the braid and by the distribution of
> electronic charges. The longitudinal voltage *must* be the same on both
> surfaces. No amount of creative speculation about skin effect changes that
> conclusion.
>
> It is precisely for this reason that, if we think carefully, the
> "loop-current-over-the-edge-and-down-the-other-side" concept is nothing but
> hogwash that for some reason has become part of the ham radio culture. I have
> never seen this concept in any valid engineering publication. It defies Ohm's
> law, and it defies common sense. What is amazing is the amount of rhetoric and
> emotions that are exerted to defend this bit of nonsense.
>

> A length of coax braid is not a valid path for a self-completing common mode
> loop, any more than a simple piece of wire is.
>
> In normal usage of a coax that is properly terminated the differential mode
> produces no longitudinal voltages because of mag field cancellations along the
> inner surface, and the common mode current on the outer surface alone produces
> common mode voltages.
>
> A common mode current along the outer surface, therefore its common mode
> voltage due to its common mode reactance, produces an E field along the center
> wire, despite the physical separation. Therefore it induces a common mode
> voltage in the center wire. This electromagnetic transfer is in perfect
> agreement with Maxwell's equations. In other words, the common mode voltage
> distribution along the outer surface is very nearly identical to the common
> mode voltage distribution along the center wire. Also, the common mode
> impedance on the outer surface is alo transferred, in exact agreement with any
> other conventional transformer.
>
> (By the way, do you really think that a current balun is not also a
> conventional transformer for the common mode? All you have to do is *look* at
> it!)
>
> This transfer effect is enhanced by the current balun, and is one major reason
> for its usage. Without this transfer, common mode signals would be converted to
> differential mode signals, which we definitely do not want. The fact that this
> conversion is greatly attenuated verifies the concept.
>
> Despite all of this, some say over and over that the coax balun affects only
> the impedance on the outer surface. Baloney!
>
> Bill W0IYH

3581. Re: License??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 02:22:06 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3AFB4CCE.EFFC33CF@dialpoint.net>
Source record: 163334

You can go to arrl.org and look. It is a national ham radio
headquarters.

You will have to take a very easy written test. Well, I say very easy
because you can get a book that has the exect questions and answers that
will be on the test. Don't recall execally how many, but maybe 300 to
500 questions in a pool and you will have to answer about 70 % of about
50 that will be on the test. I can't give you the exect frequencies for
the scanner, but they will be every 15 KC starting at 146.61 to about
147.5. There are also some more areas, but you should find several
repeaters in that area. The license taht you can get without the mores
code test will let you have full privileges above 50 mhz. The code test
for other classes will let you also operate below 50 mhz where you can
talk all over the world.

The benifits are whatever you want to make out of it. The stuff you
hear on the scanner will only be part of what you can do. You can also
get on 6 meters and from time to time work many places in the world.
There are several satalites you can talk through. Look at amsat.org to
find out about them. There may be some hams operating TV in your area.
YOu probably won't do it but there are stations bouncing signals off the
moon . Takes big antennas and high power to do it very well.

"Ron P." wrote:
>
> Hey everyone...just been kinda peeking around, and I was wondering...what is
> the easiest way to get talking on HAM, what is the most least expensive unit
> I could use, and what are the benefits of HAM? I am in Mansfield, OH and I
> would also like to know if anyone could give me the freqs so I can pop them
> into my scanner so I can get an idea what all is out there......that and I
> like to listen to my scanner so I can hear whats going on outside my little
> world LOL......ok thanks alot in advance, and feel free to drop me an
> email with the freqs.
>
> Ron

3582. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 02:27:47 UTC
From: Harold <hsnyder@houston.flightlessbird.com>
Message-ID: <D6IK6.40354$hu.7613361@typhoon.austin.rr.com>
Source record: 163328

Mark,

Thanks for your comments. Since the other bands don't cause a problem I wonder about fundimental overload being the real problem. Common Mode, might be. I am not familiar with that and will have to study that some.

My goal right now is to get a squeeky clean operation with the indoor antenna to demonstrate to the zoning folks that if they let me put the antenna outside, it can only get better.

-Harold
wd5kca

"Mark Keith" <nm5k@wt.net> wrote in message news:3AF9AE4D.950@wt.net...
> Harold wrote:
> >
> > I am having a very anoying RFI problem and request any comments from Hams
> > that may have experienced and resolved a similar problem.
> >
> > My station is set up like this..
> >
> > Rig IC-718---1 Ft. RG-58 coax--low pass filter--1 Ft. RG-58 coax---AL-80A
> > amplifier-----1 Ft. RG-58 coax---low pass filter---1 Ft. RG-58 coax---MFJ
> > Versatuner V--40 Ft. RG-8 coax--dipole antenna in attic. The antenna is an
> > Alpha Delta DX EE with the 40 meter section removed to fit my space.
>
> You have a lot of harmonic suppression so thats not the problem. Most
> newer rigs are fairly clean anyway to pass fcc certification. I don't
> even bother with pass filters here. And if you are using the tuner, it
> also acts as a filter.
> >
> > As installed, the SWR within the General Class band on 20 and 15 Meters is
> > less than 2:1 and the antenna has reasonable SWR for a segment of the 10
> > meter band.
> >
> SWR has absolutely nothing to do with RFI/TVI problems. Or common mode
> currents for that matter.
>
> > I live in a restricted area, so getting the antenna outside and in the clear

> > is not a vialble option.
>
> Thats too bad. That would help alot.
> >
> > The station grounding goes like this...each piece of equipment mentioned
> > above are grounded to a half inch copper pipe. The copper pipe is
routed to
> > ground straight out the wall and down with 8 gauge wire about 15 ft. to
the
> > main house ground rod. The total length of the ground wire is about 20
> > feet.
>
> Grounding also usually has no effect on your problem, as you've probably
> noticed.
> >
> > As installed, I can operate on 20 meters and 10 meters without a peep of
> > RFI. It doesn't matter, with or without the amplifier, my signals on 20
and
> > 10 meters cause no RFI at all.
> >
> > On 15 meters I interfere seriously with the TV in the house. It is on a
> > coax connection with a Direct TV dish up on the roof. I also have an
> > interference problem with the home burglar alarm.
>
> You have fundimental overload. From too much power/antennas too close to
> your other gear. Also it could be possible you have a lot of common mode
> current on the feedline. This in effect makes your feedline act as part
> of the antenna, and you are radiating right into the house/shack from
> both the antenna and feedline. Also you could be coupling to other house
> wiring in the attic. Again the only real cure is to move the antenna in
> that case. Being you can work ok even with power on 20/10, that leads me
> to believe you have an antenna/feedline or coupling problem. And
> sometimes things can just be more sensistive to certain freq's. MK
> --
> http://web.wt.net/~nm5k

3583. Re: Baby Boomer Quad WAS: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 02:41:53 UTC
From: G&R <"stop the spam"@limbo.hell>
Message-ID: <RjIK6.13880$yw.503385@news20.bellglobal.com>
Source record: 163327

Hi Bill,

Yes I'll be glad to answer your question.

1. Our BBQ is a portable quad. We sacrifice very little (in our opinion) in terms of performance for a portable antenna.
2. Built for heavy duty conditions. This means it can be used as a permanent installation without fear.
3. You can disassemble (1 hour) and assemble (1 hour) quickly.
4. It does not require any stringing of wires (we've already attached them).
5. You just tighten 8 bolts, 4 clamps, mount to the mast and attach the feed. Your up and running.
6. When folded it's 1' by 1' x 8' We supply the storage and shipping box.
7. We only use high strength electrical connectors. Our electrical fasteners are either tinned copper or St.St.
8. Our wiring is 14ga 168 strand FLEXWEAVE (reg TM).

Of course we could use cheaper components, let you do the assembly and than we could be lower in price. But then we would not be the Baby Boomer Quad.

In short, we use the best components, give you flexibility in use and pre-assemble the antenna. You just erect it.

Finally, our CDN$ price is cheap than our US$ price....Simple reason....This is cover the cost of credit cards acceptance and currency exchange. Credit Cards will only be accepted in US$. Otherwise, pay in CDN$ funds via money order or certified cheque and save a few bucks.

If you'd more information, please feel free to contact me directly.

73

Guenther
info@degendesigns.com

PS For those that do wish to contact me, please be assured we hate spam and therefore do not forward or share any address that you provide to us.

"Bill" <billNOSPAM@hovac.com> wrote in message
news:9dff92$12c6$1@box9.cho.cstone.net...
> BBQ seems like a nice antenna, but isn't it kind of pricey at $698.00?
>
> Cubex Quad (http://www.cubex.com/mark.htm) is only $449.95 and Lightning
> Bolt Antennas(http://www.lightningboltantennas.com/hfquad.html) is only
> $265.00 .
>
> I realize the BBQ is "mini" but it seems to be carrying a "maxi" price.

>
> Somebody clue me into why it's so expensive.
>
> Bill
>
>
> "G&R" <stop the spam@limbo.hell> wrote in message
> news:TAmK6.4037$h%.1488327@news20.bellglobal.com...
> > Interestingly enough "gain" is not affected to a great degree at peak vs
a
> > full size quad. This said, a full size quad has a broader peak for gain
> and
> > F/B ratio that the BBQ. However, because of the total wire employed and
> the
> > capacity hat design reasonable bandwidth is achieved.
> >
> > As to SWR, you are correct, Z0 assumes 100 ohm ladder line. Ladder line
> and
> > a tuner are always a good feed since losses are negligible even with
high
> > SWR..
> >
> > With about 50ft of RG58 and a choke balum the transceiver (a KACHINA
505)
> > sees the SWR different (loss factors) than the SWR appears on the
antenna.
> > For actual performance it means that the finals are not overloaded and
the
> > automatic tuner can match the apparent SWR.
> >
> > By the way, the antenna was optimized for F/B ratios rather than gain
and
> > results on receive yield about 2 to 3 S units over an R5 vertical on 15m
> (1
> > S unit = 5db on the Kachina), approximately 2s units on 10m and 1 to 1.5
> on
> > 20m.
> >
> > Should you have further questions, please contact VE3 CVS at
> > erwins@degendesigns.com
> >
> > 73
> >
> > Guenther
> > info@degendesigns.com
> >
> > "Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
> > news:3af5eebc.91031776@news.aepnet.com...
> > > On Sun, 06 May 2001 23:12:40 GMT, 2w8ji@akorn.net (Tom W8JI) wrote:
> > >

> > > >On Sun, 06 May 2001 19:40:17 GMT, "G&R" <stop the spam@limbo.hell>
> > > >wrote:
> > > >
> > > >>I wish you would also consider our Baby Boomer Quad (at
> > > >>www.degendesigns.com). We have used modeling software based on
average
> > > >>ground conditions and based on our actual mounting conditions. To
> the
> > best
> > > >>of our experience our antenna does perform as indicated by our
models.
> > > >>
> > > >>For your reference our software is NEC4WIN95VM as we feel it's the
> only
> > > >>software that can accurately model our antenna. There may be
others,
> > > >>however based our field testing and modeling results it currently
> > performs
> > > >>the function the best.
> > > >
> > > >A two-element shortened quad with 9 to 10 dBd gain?
> > > >
> > > >I'd find out where the modeling error is, or are you twisting the
> > > >specs and comparing an antenna over ground to a dipole in freespace?!
> > >
> > >
> > > I took the file 15mquad (packaged with EZNEC) and scaled it to 14.1
MHz
> at
> > a
> > > height above ground of 50 feet. I set the gnd constants the same as
> used
> > on the
> > > web site above. Plotting the az pattern at an elevation angle of 19
> deg.
> > I get
> > > 12.26 dBi or 10.1 dBd.
> > >
> > > Since this is a "full-size" quad, the "baby" version should be
> > considerably
> > > lower. Only 1 dB lower sounds too good to be true.
> > >
> > > A dipole at the same height gives 5.3 "dBd" at the same elevation
> angle.
> > >
> > > Oh, and another thing. The 14 MHz feedpoint Z is given as 66.25 -
> j67.92
> > and
> > > yet the SWR (I assume that's the number in brackets) is given as 2.47.
> > That

> > > means that the reference Zo is 100 ohm. The claim is that the antenna
> can
> > be
> > > fed with either coax or ladder line. I guess that's true but the 50
ohm
> > SWR
> > > will be over 3:1 and the 400 ohm SWR would be over 6:1.
> > >
> > > Sumthin' fishy here.
> > >
> > > Wes Stewart N7WS
> > > >
> > > >73 Tom
> > >
> > >
> >
> >
>
>

3584. License??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 02:46:41 UTC
From: "Ron P." <Simba88104@neo.rr.com>
Message-ID: <loIK6.1499$w72.29587@typhoon.neo.rr.com>
Source record: 163329

Hey everyone...just been kinda peeking around, and I was wondering...what is the easiest way to get talking on HAM, what is the most least expensive unit I could use, and what are the benefits of HAM? I am in Mansfield, OH and I would also like to know if anyone could give me the freqs so I can pop them into my scanner so I can get an idea what all is out there......that and I like to listen to my scanner so I can hear whats going on outside my little world LOL......ok thanks alot in advance, and feel free to drop me an email with the freqs.

Ron

3585. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 02:47:00 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB52A4.5FDAAB8@IEEE.org>
Source record: 163330

VE9SRB wrote:
> What is the steady state forward power in the 150 ohm line?

About 83 watts?

> What is the steady state reflected power in the 50 ohm line?

About 36 watts?

> What is the antenna impedance?

There seem to be two possible solutions depending on the length
of the twinlead.
--
http://www.mindspring.com/~w6rca

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3586. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 02:50:39 UTC
From: Jerry France <grf@ctaz.com>
Message-ID: <3AFB533E.A8EAE425@ctaz.com>
Source record: 163332
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Hey Rob...Why are you and your freeband idiots crossbanding your petty junk into an amateur antenna newsgroup? Can't you keep this crap in some "who cares" newsgroup?

"Rob St.Denis" wrote:
>
> > Well....there is one thing about it.....Ya just cain't fisk stupid.
>
> No but we can certainly have guidelines to punish the stupid by

3587. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 02:52:26 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <41kmft859lcntj51c8ogqsh93bqfs94osv@4ax.com>
Source record: 163331

On Thu, 10 May 2001 19:01:28 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>All signals handled by 50 ohm lossless coax with no reflections
>on any coax.
>
>Assume two phase-locked transmitters which must be connected to a
>single antenna. XMTR1 puts out 50v at zero degrees and one amp at
>zero degrees. XMTR2 puts out 50v at zero degrees and one amp at zero
>degrees. A lossless matching network is designed such that the two
>transmitter signals are combined in phase to achieve maximum possible
>output power (100% efficiency) into 50 ohm coax to a 50 ohm antenna.
>
>What is the output voltage? What is the output current? What is the
>output power?

Hi Cecil,

What about source Z? 50 Ohms?

73's
Richard Clark, KB7QHC

3588. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 02:55:54 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AFB54BA.4C9EEF52@bwcc.com>
Source record: 163333

Roy Lewallen wrote:
> Inside the waveguide, between the center of one long wall and
> the other, there's a very high potential, tens of kV.
> Yet on the outside of the waveguide, I could put one finger
> on the center of one long side and another finger on the
> opposite side and feel nothing.
>
> How can this be?
Obviously you didn't drill a hole in the middle of each side to stick your voltmeter probes in to measure the potential between the two sides on the inside.

Did you tell us what kept the current from spilling over the edges and running back down the outsides?

3589. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 03:20:38 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB5A86.B0577DC2@IEEE.org>
Source record: 163335

Richard Clark wrote:
>
> On Thu, 10 May 2001 19:01:28 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >All signals handled by 50 ohm lossless coax with no reflections
> >on any coax.
> >
> >Assume two phase-locked transmitters which must be connected to a
> >single antenna. XMTR1 puts out 50v at zero degrees and one amp at
> >zero degrees. XMTR2 puts out 50v at zero degrees and one amp at zero
> >degrees. A lossless matching network is designed such that the two
> >transmitter signals are combined in phase to achieve maximum possible
> >output power (100% efficiency) into 50 ohm coax to a 50 ohm antenna.
> >
> >What is the output voltage? What is the output current? What is the
> >output power?
>
> What about source Z? 50 Ohms?

Why would source Z matter if there are no reflections anywhere? If you
put 50 volts on a 50 ohm matched line, one amp will flow. All lines
are matched because there are no reflections anywhere. Seems to me,
source Z would only affect XMTR efficiency, not the value of voltage
and current at the outputs of the XMTRs.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3590. Spi-Ro Trap Verticals Slopers antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 03:30:33 UTC
From: Yong Cho <yongkch@msn.com>
Message-ID: <9dfmdj$hvh7k$1@ID-73101.news.dfncis.de>
Source record: 163337

Hi,
Does anyone have experience with Spi-Ro Trap Verticals Slopers antennas?
They advertised in QST like this ("can be used without radials", "Tuner
usually never required"). Does it works as well as practical dipols?

73 de n7zei,
Yong

3591. Re: Undertruck mount OK for an Icom AT-4 tuner?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 03:31:06 UTC
From: N3VST <not@chance.com>
Message-ID: <g1JK6.230$55.120439@newsrump.sjc.telocity.net>
Source record: 163336

I have this tuner, and it is rugged, a tuff ass unit. The main concern would be with ground clearence, and the amount of water, dirt and rocks that will hit the box that it is to be mounted in, as well as any road kills that might kick up. As for vibration and shock you should be alright, the unit would take the same as it would in the vehicle, since the whole thing rides on the suspention.

Have you though about mounting the tuner to the spare tire, either inside or outside of the truck. Good luck, there is a lot you can do with the tuner.
"Jeffrey Steinberg" <jeffreys@cyburban.com> wrote in message news:3af76cd6$0$41095$45beb828@newscene.com...
> Hello gang,
>
> Going HF mobile for the first time! Bought an Icom IC-706 MKIIG and an
> AT-4 (a weatherproof tuner for whips), a 8-foot CB whip and an Alpha Delta
> big-ass spring mount (my description).
>
> Believe it or not, my Suburban doesn't have a lot of space
> to cleanly install both boxes. So I was thinking I could fabricate
> a steel enclsoure for the AT-4 unit. The steel fabricated would also
provide
> the support for the 8-foot whip and it would be mounted to the frame).
>
> So my question is: Will the bumping around of the box outside of the car
(but
> firmly attached) be a problem? The AT-4 is weatherproof but is it very
> shockproof? The dealer indicated that he has many customers attaching
these
> things on trucks (18-wheelers) outside and inside. Even some RV's.
>
> Would you do this configuration?
>
> Thanks for your input.
>
> Jeffrey Steinberg, K2MIT
> Scarsdale, NY
>

3592. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 03:35:29 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <56JK6.16788$t12.1264645@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163339

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFB52A4.5FDAAB8@IEEE.org...
> VE9SRB wrote:
> > What is the steady state forward power in the 150 ohm line?
>
> About 83 watts?

82.47 Watts

>
> > What is the steady state reflected power in the 50 ohm line?
>
> About 36 watts?
>

36.39 Watts

> > What is the antenna impedance?
>
> There seem to be two possible solutions depending on the length
> of the twinlead.

Excellent!

I would like to know how you got the answer.

When I wrote the Quiz, I purposely selected a resistive impedance so that we would not have to deal with the +jX, -jX issue at the load. I forgot about the +jX, -jX issue at point X. The solution may still allow you to determine the magnitude and phase angle of the reflection coefficient leading to a single solution (I think).

Z = 425 ohms.

The 5 minute solution:

The forward source voltage at X is 70.71 V (100W). The impedance discontinuity is 150 ohms. rho = +0.5. The reflected source voltage is 35.36 V (25 W). The total source voltage developed at X is 106.07 V. This is transmitted as the forward source voltage into the 150 ohm line (75 W).

The reflected power in the 150 ohm line at X is 18.864 W. |Vref| is equal to 53.2 V. The phase angle of Vref was given as -94.202 deg. This reflected voltage in the 150 ohm line sees an impedance discontinuity of 50 ohms. rho = -0.5. The re-reflected voltage is Vref * rho = 26.6 V at 85.8 degrees. The re-reflected power is 4.72 W.

This re-reflected voltage adds to the forward source voltage of 106.07 V resulting in a total forward voltage of 111.23 V at 13.8 degrees.

The total steady state forward power in the 150 ohm line is 82.47 W (111.23^2 /150).

Note that the forward source power of 75 W and the re-reflected power 4.72 W do not "add" algebraically. Vector voltage additon is required to first determine the total forward voltage.

At the same time, the total voltage developed at X due to the arrival of the reflected voltage is equal to Vreflected + Vre-reflected. This total voltage is transmitted rearward into the 50 ohm line. This total rearward voltage is 26.6 V at -94.203 degrees. This rearward voltage adds to the source reflected voltage of 35.36 V resulting in a total rearward voltage in the 50 ohm line of 42.66 V at -38.45 deg. the total steady state rearward power in the 50 ohm line is 36.39 W.

The relationship Pfwd = Pdel / (1 - |rho|^2) can be used to determine the antenna reflection coefficient. In the 150 ohm line, Pfwd = 82.47 W. Pdel = 63.6 W. |rho| = 0.478. At this point the antenna impedance is 425 ohms or 52.95 ohms. With the phase angle specified I think that 425 ohms is a unique solution. I would have to verify further.

Steve VE9SRB

3593. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 03:35:30 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <66JK6.6106$f61.125916@news1.sttls1.wa.home.com>
Source record: 163338

```
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:3AFB452F.EC845113@eznec.com...
> Roger Sparks wrote:
> >
> > "Roy Lewallen" <w7el@eznec.com> wrote in message
> > news:3AFA2CF7.73822B7B@eznec.com...
> >
> > (Snip some)
> >
> > > There's only one layer, but it has the following characteristics: On
the
> > > inside of the shield there's a current which is equal in magnitude and
> > > opposite in direction from the current on the center conductor. The
> > > current density is greatest at the surface, and falls off
exponentially
> > > within the conductor. Five skin depths below the surface, the current
> > > density is 1% of the density at the surface. Ten skin depths below the
> > > surface it's 0.000045 the surface density, and so forth. At some depth
> > > within this range, it can be considered zero for any practical
purpose.
> > > Then on the outside of the shield there can be another current. Its
> > > density also decays as it penetrates into the conductor, by the same
> > > proportion as the inner current. Peter noted that some fraction of the
> > > current on the inside makes it to the outside and vice-versa. Let's
see
> > > how much. If the shield thickness is 0.010 inches and it's made from
> > > copper, at 10 MHz the fraction of one current making it to the other
> > > side is 0.000006. This is a reduction of 104 dB. A particularly
> > > interesting thickness is 38.8 mils (.0388 inches). The reduction of
> > > current density through this thickness of copper at 10 MHz is 280 dB.
> > > And 280 dB is the ratio of the light output from an ordinary two cell
> > > flashlight to the total light output of the Sun. (Not the light
striking
> > > the Earth, but its total output.) I'll leave it to the Group
> > > Philosophers to discuss the importance of the fact that this current
> > > making it through isn't theoretically exactly zero. I just say that
the
> > > currents are independent, and consider that close enough.
> > >
> >
> > (snip some more)
> > > Roy Lewallen, W7EL
> >
> > You make a very good case that energy contained in the current component
```

of
> > the wave flows near the surface of the conductor. I think you are also
> > making the case that a plate of metal is actually an super insulator
which
> > will not allow even capacitive coupling between the sides at high
> > frequencies. For example, if a plate of metal were placed in series
with
> > one side of a dipole, with the connections for each side of the plate at
the
> > very center of the plate, then the only current path between the centers
on
> > each side of the plate would be around the edges of the plate. No
current
> > could pass through the metal at the points of connection, all current
would
> > have to flow around the plate edges, held to the metal surface by skin
> > effect.
> >
> > Is this an accurate extension of the theory of skin effect?
> >
> > 73, Roger,W7WKB
>
> Yes. Providing, of course, that the plate is at least several skin
> depths thick. If not for this, you wouldn't be able to shield a circuit
> by putting it into a metal box.
>
> Roy Lewallen, W7EL

Hi Roy,

Ok, then, I am thinking of making a series of 4 dipoles and testing them on 10 Meters. The test would compare lengths required to find resonance under 4 conditions. Make each resonate at same freq.

The test configurations:

1) no plate loading. Record length.

2) loading with 2 12 inch diameter wire frames made as 4 spokes and round rim, #12 copper wire, 8 inch spacing. record resonant length

3) loading with 12 inch diameter copper mesh screen, tight weave, try to emulate coax braid.
record resonant length

4) loading with two 12 inch diameter copper plates, spaced 8 inches apart, solder connections at the center. Plate thickness #18 gage (.040) or greater. Record resonant length.

Expected results:

Case of skin effect not observable this situation: Each loading situation would be capacity loading only. Only a small reduction in length will occur

because the added capacity is very near the feed point. The capacity added by each method will be nearly equal, with the solid plate showing the most capacity.

Case skin effect is very noticable:
For the solid plate situation, skin effect will cause the current to flow over a path which is 12 inches longer compared to the case of no skin effect. Each series of test will require a shorter length of wire to restore resonance. There will be a large difference between the length for the open frame capacity and solid plate capacity.

Of course the devil is in the details. Care is required to find the center/resonant frequency. The antenna site would have to be equal for each antenna. Care would be needed to to prevent feed line intoduced errors.

Maybe this experiment has already been done and reported. I could perform this experiment, but don't know when because of other obligations. If two or three people performed it and got similar results, we would have a very good reference point.

Roy, I like to explore questions this way. I love theory, but only experiment will valid the theory.

73, Roger, W7WKB

3594. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 03:38:12 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <E8JK6.16801$t12.1264227@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163340

"VE9SRB" <srbest@att.net> wrote in message
news:56JK6.16788$t12.1264645@bgtnsc05-news.ops.worldnet.att.net...
>
> The relationship Pfwd = Pdel / (1 - |rho|^2) can be used to determine the
> antenna reflection coefficient. In the 150 ohm line, Pfwd = 82.47 W.
Pdel
> = 63.6 W. |rho| = 0.478. At this point the antenna impedance is 425 ohms
> or 52.95 ohms. With the phase angle specified I think that 425 ohms is a
> unique solution. I would have to verify further.
>
> Steve VE9SRB
>

The length of the 150 ohm line is 0.65 WL

Steve

3595. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 03:40:39 UTC
From: richardharrison@webtv.net
Message-ID: <10459-3AFB5F37-93@storefull-117.iap.bryant.webtv.net>
Source record: 163341

Roger, W7WKB wrote:
"No current could pass through the metal at the points of connection, all current would have to flow around the plate edges, held to the metal surface by skin effect."

Roger`s grasp of skin effect seems firm to me. This metal insulator effect produced by the dis-allowed penetration of current below a conducting surface at h-f to any significant extent is the famous "Skin Effect". It is real and it is operative.

Terman says that as the current tries to descend into the metal in its route, the deeper flowing current does bring a surrounding magnetic field right along with it into the metal. This close-in magnetic field does not substantially surround current flowing closer to the surface of the conductor. The magnetic field encircling the surface current does also enclose the deeper current. So, the deep current has a larger total magnetic field encircling it than does the shallower current. This provides the deeper conduction a higher inductive reaction which limits current at greater depths.

Progress of the current is slowed more and more, the deeper it sinks into the metal, so that before it sinks too deeply or progresses too far,
phase has been delayed 180 degrees and the direction of the current is reversed. By then it is so weak that it makes little difference.

This metal insulation produced by skin effect is well demonstrated by Fig 24 and the associated text on page 26-16 of the new edition no.19 of the ARRL Antenna Book. This is the Fig showing a coax feed of a dipole without a balun. Current from the inside of the shield is shown dividing between the outside of the shield and the attached dipole wire. I think this is exactly what can happen unless something is done which makes the outside of the shield an unattractractive path for the current (maybe a W2DU balun of iron cores surrounding the outer shield or something else to raise the impedance of the outer shield). Contrary to the stories of shield leakage defeating the isolation between the inside and outside of the shield, it just isn`t so. Any such coax would have been abandoned as useless. Actual leakage is trivial.

Best regards, Richard Harrison, KB5WZI

3596. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 04:53:05 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFB7031.FF5D42B1@IEEE.org>
Source record: 163342

VE9SRB wrote:
> I would like to know how you got the answer.

I used powers to determine the magnitudes of the voltages and currents
just like I did in the previous examples. The only non-standard phase
involved is your 94.2 degrees.

> Z = 425 ohms.

Why not ------1/4WL additional 150 ohm twinlead-----52.94 ohms ???

> Note that the forward source power of 75 W and the re-reflected power 4.72 W
> do not "add" algebraically.

Not so fast, Steve. There is some destructive interference going on.
It's not 100% like the other example, but exactly enough to balance
the energy equation.

25 watts of the forward power on the coax is reflected by the 50/150 ohm
impedance bump. 14.15 watts (3/4) of the 18.86 watts of reflected power
from the load makes it back across the 150/50 ohm impedance bump into
the coax. Adding those together yields 25 + 14.15 = 39.15 watts. However,
we know that the reflected power on the coax is 36.39 watts. The 2.76
watts difference was involved in the destructive interference and must be
added to the electromagnetic fields that create the forward power. Guess what?

75w + 4.72w + 2.76w = 82.48 watts which is exactly the value of the forward
power on the 150 ohm line. You just cannot fool Mother Nature, Steve. Once
again, you neglected a necessary component of the power. Also please notice
that forward power equals net generated power plus reflected power.

The net generated power is 100w - 36.39w = 63.6w
63.6w + 18.86w reflected = 82.46w of forward power

Whatta ya know? The conservation of energy equation is alive and well.
You apparently forgot about the 2.76 watts of destructive interference
that reverses its direction just like it did in the earlier example.

To summarize: 25w of the 100w forward on the coax is reflected.
14.15w of the power reflected from the load makes it across the 150/50
junction and into the coax. 25w+14.15w is 2.76w more than the reflected
power on the coax so it has to be destructive interference. It's pretty
obvious from looking at the phasor diagrams that there are out of phase
components contributing to the destructive interference. Nothing has
changed, Steve. In fact, your example supports my side of the argument.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3597. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 05:01:38 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AFB7232.1D3B@wt.net>
Source record: 163343

Harold wrote:
>
> Mark,
>
> Thanks for your comments. Since the other bands don't cause a problem I
> wonder about fundimental overload being the real problem. Common Mode,
> might be. I am not familiar with that and will have to study that some.
>

>
> -Harold
> wd5kca

I would think it is being as it effects more than one device in the house. That means the rf level is pretty strong. A field strength meter would come in handy here to gauge relative levels. I bet if you have a FS meter, you will find 15 meters to be much hotter in the shack than the other bands. I think this is probably due to using the multiband antenna, and for some reason the decoupling from the feedline must not be as good on that band. Maybe beads on the coax as a balun could help that.?? Or maybe winding an extra balun from a few turns of the coax, and taping it up near the feedpoint of the antenna. You never know without being there, but I kind of think the antenna feedline is radiating too much. Either that or you are coupling into wiring that just happens to be the right distance away. You might try a normal 15m dipole with a good balun as a test to see if any better. It should have fairly decent decoupling if you use a balun. If you still had the problem, it's probably coupling into wiring in the attic. If it goes away or vastly reduces, you know the feedline on the A-D was radiating too much on 15m. With a FS meter , you will always detect current, that is normal. What you want to look for is a great increase over the others. Sometimes other feedlines can pipe RF back into the shack. A FS meter will let you spot which one fast. Radio shack used to make cheap FS/SWR meters that were perfectly usable. They may still do. They let you stick a little antenna on the top of the meter. You can also build one pretty cheap. MK
--
http://web.wt.net/~nm5k

3598. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 05:28:56 UTC
From: richardharrison@webtv.net
Message-ID: <22773-3AFB7898-63@storefull-113.iap.bryant.webtv.net>
Source record: 163344

Cecil, W6RCA wrote:
"Why would source Z matter if there are no reflections anywhere?"

Well, in Cecil`s illustrious carrer, he has probably had the experience of paralleling an off-line alternator with an on-line machine.

There was no phase-lock in the old days. You set the on-coming speed a little high because it would drop as it accepted load. Not much faster, just a convenient wink rate for the phase lights. You also adjust the on-coming machine excitation high because the voltage output will drop a tad when it takes some load. Again, the voltage is not much higher than the existing line voltage. You just want the oncoming machine to behave as an alternator and not a motor trying to make the prime-mover go faster when the switch closes.

When everything is preset and the phase lamps are slowly winking in the right phase rotation, just a check, and the propitious moment arrives when the phase lamps are extinguished, you pull the big handle an both machines are purring and sharing the load. You can tweak the governor settings, check the frequency meter, the RPM meters are just as good, etc.

Point is the volts are the same as before, but you can adjust the machine loading balance with the excitation controls, then both machines equally share the power if that is your desire.

Why could you get twice the power out? Because twice the current is available with two machines on-line. Each has the same internal impedance (assuming similar machines) but with two machines in parallel, the total source impedance is halved.

I`ve done the same thing with two high-powered HF broadcast transmitters.. But like the power frequency alternators, we could adjust the excitation and loading so that each machine could deliver its full power output to a common load. We used a common exciter for phase-lock, and also a hybrid combiner to avoid interaction between the transmitters.

The impedance of the antenna the transmitters fed was unchanged. So, we had to provide 1.414 times the voltage to the antenna. The antenna then accepted 1.414 times the current so that 200,000 watts was radiated instead of the usual 100,000 watts. The impedance was 600 ohms if you would like to figure the volts and amps. It was a snap to load each transmitter for full output and nothing flashed over. That is a good comentary on the adequacy of the original antenna design.

Best regards, Richard Harrison, KB5WZI

3599. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 08:02:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AFB9CA2.1F6D4F46@eznec.com>
Source record: 163345

Denver Braughler wrote:
>
> Roy Lewallen wrote:
> > Inside the waveguide, between the center of one long wall and
> > the other, there's a very high potential, tens of kV.
> > Yet on the outside of the waveguide, I could put one finger
> > on the center of one long side and another finger on the
> > opposite side and feel nothing.
> >
> > How can this be?
> Obviously you didn't drill a hole in the middle of each side to stick your voltmeter probes in to measure the potential between the two sides on the inside.

Certainly not, but I've sure heard the arcs and seen their effects. And any fields text shows the E field distribution.

> Did you tell us what kept the current from spilling over the edges and running back down the outsides?

No, it wasn't relevant to the question. But the explanation lies with the direction currents flow inside the waveguide. In a coaxial cable (TEM mode), current flows only in the direction of wave propagation (i.e., along the cable). The center conductor current provides a field encouraging this flow to continue at and beyond the end of the cable. Current flows quite differently in a TE(1,0) waveguide. (In the following, consider the long sides of the rectangular waveguide to be horizontal.) In the top wall, current flows outward (that is, in the direction of propagation) for a half cycle, and inward for the other half. In the bottom wall, the same thing happens, but in the opposite direction. That is, when the current is flowing outward on the top wall, it's flowing inward on the bottom wall. On the side walls, the current flows upward for half the cycle and downward for the other half, with current again being opposite on opposite walls. So at the end of the waveguide, the most attractive path for the current flowing outward on the top wall is down the sides and inward on the bottom wall -- around the edge rather than over it. This circular flow doesn't occur in coax because there's no potential difference around the inside of the shield -- all points around the edge are at the same potential. But not so with TE(1,0) waveguide, where the maximum potential occurs between the center of the top wall and the center of the bottom wall.

There's a good picture of the current (as well as the fields) in TE(1,0) waveguide in Johnk, Carl T.A., Engineering Electromagnetic Fields and Waves, Wiley, 1975 (Fig. 8-13).

Roy Lewallen, W7EL

3600. Re: License??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 08:18:20 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AFBA04C.51A65C93@eznec.com>
Source record: 163346

This link will show you a lot of frequencies you can listen to:
http://www.artscipub.com/repeaters/states/Ohio.asp. Set your scanner to
the repeater output frequencies listed in the chart for your local area.
You'll probably find the most activity on ones in the 144 - 148 MHz
range. This is the amateur two meter band.

The biggest annual ham radio convention in the country is in Dayton, and
it begins next Friday (the 18th), with about 30,000 hams attending.
There'll be a lot of extra activity in Dayton and nearby areas all that
weekend.

Roy Lewallen, W7EL

"Ron P." wrote:
>
> Hey everyone...just been kinda peeking around, and I was wondering...what is
> the easiest way to get talking on HAM, what is the most least expensive unit
> I could use, and what are the benefits of HAM? I am in Mansfield, OH and I
> would also like to know if anyone could give me the freqs so I can pop them
> into my scanner so I can get an idea what all is out there......that and I
> like to listen to my scanner so I can hear whats going on outside my little
> world LOL......ok thanks alot in advance, and feel free to drop me an
> email with the freqs.
>
> Ron

3601. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 08:19:35 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <DAu6fwAXC6+6EAxE@ifwtech.com>
Source record: 163347

Denver Braughler wrote:
>Roy Lewallen wrote:
>> Inside the waveguide, between the center of one long wall and
>> the other, there's a very high potential, tens of kV.
>> Yet on the outside of the waveguide, I could put one finger
>> on the center of one long side and another finger on the
>> opposite side and feel nothing.
>>
>> How can this be?
>Obviously you didn't drill a hole in the middle of each side to stick your
>voltmeter probes in to measure the potential between the two sides on the
>inside.
>
Exactly - the skin effect keeps the inside and the outside surfaces
electrically apart (unless you deliberately connect them).

If someone has already accepted that:

a) the skin effect concentrates RF current on a surface; and

b) the RF electric field and RF current inside a good conductor both
decay to negligible levels below a few skin depths;

then it surprises me that they cannot also accept that:

c) no RF current flows through the thickness of the conductor.

In other words, the skin effect makes the inside of a conductor act
s like it's not there at RF (*not* like an insulator, but like it's not
there at all) and therefore there can be RF potential differences
between opposite surfaces.

(a) and (b) are both true only because it's happening at RF. Those who
reject (c) seem to have reverted to "DC thinking" at this one point.

>Did you tell us what kept the current from spilling over the edges and running
>back down the outsides?

Spillover of current from an open end of waveguide does indeed happen,
and yes, there will be spillover currents onto the outside surface.

However, waveguide is not the same as coax - it's much bigger in
relation to the wavelength. This means that an open-ended waveguide is
also behaving as a small horn antenna, and there is some reduction in
surface currents approaching the open end. Even so, Kirchhoff's law
applies right there at the open end itself: the surface current just
inside the end equals the surface current emerging onto the outside

surface.

It is notoriously difficult to get a symmetrical radiation pattern from an open-ended waveguide - precisely because of these spillover currents which make the outer surface radiate too. I's just like trying to get a symmetrical radiation pattern from a dipole without a balun.

A larger, longer horn antenna makes a much better transition into free space and the spillover currents at the open end are correspondingly much less.

A classic example of a small waveguide horn with control of spillover radiation is the Chaparral-type feedhorn, widely used for satellite dishes. Those fancy concentric rings on the outside are called "choke rings" because they are nothing less than a "choke balun" to reduce the spillover current. In addition they control the residual spillover current so that it makes a positive contribution to the radiation pattern.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

3602. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 09:29:58 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dgbdv$gc7$1@slb0.atl.mindspring.net>
Source record: 163296

Roy:

That can "be" because the "voltage" source on the outside is "behind" many many many MegOhms...

i.e. the voltage is still "visible" on the outside of the waveguide, but it is behind the extremely high impedance of the many many skin depths.

Think of a Thevinin voltage source with 10,000 Volts behind 100,000,000,000,000 Ohms.

As you point out that resistance expressed as a ratio to the resistance through your hand and body, and hence the voltage divider ratio for the voltage that you would "feel" may very well be in excess of say, "280dB", a very large ratio as you point out.

Would you "feel it"? NO!

Is it there? YES!

In fact there truly is a "very faint image" of the voltage inside the waveguide, or coax, actually present on the outside of the coax or waveguide, it's just that voltaage is almost unobservable due to the very very high impedance it must be "seen" through.

In practice you can "say" that the voltage is not present on the outside, but it is there nonetheless... it just can't deliver much current. And your hand can't feel an infinitesimal current.

But Maxwell demands that the voltage be there.

Nit picking? Sure. Do you have to worry about getting a shock? No. Is there a voltage there? Yes. Is there a significant current due to the voltage? No.

But you simply can't say that there is no "voltage" on the outside or the inside of a coaxial shield due to voltages on the opposite side, those voltages are always present, and the voltage is not attenuated, until an impedance is connected to it, say to try to measure it, then the "very" high impedance of the skin depth layers prevents much current from passing.

And so, for all practical purposes, the mettalic conductor in the several skin depth layers can be considered to be a very high impedance insulating layer...

What you call it, depends upon your view of "insulators". Do you view insulators as something that does not conduct electricity, or do you view insulators as conductors with a very high resistance.

The way you describe the situation in quantitative values using laws of Physics is the same. Conductor or Insulator, Resistor, or conductor? They are all the same, it's just so many Ohms.

But in "words", rather than numerical quantities, it's a kind of "glass half full or half empty" kind of thing.

So, in some sense, you are all correct.

But the voltage behind the Ohms just doesn't go away.

-Peter K1PO

"Roy Lewallen" <w7el@eznec.com> wrote in message news:3AFB4C76.692E03C7@eznec.com...
> In a previous life, I worked on heavy ground radar. The particular set I
> spent most of my time with put out about 4 MW peak, through a
> rectangular waveguide that was roughly 2 X 4 inches in cross section.
> This waveguide was operated in the TE(1,0) mode. In this mode, the E
> field extends from one of the long sides directly across to the other.
> (It's maximum at the center of the long sides and sinusoidally drops to
> zero at the short sides.) The waveguide was kept slightly pressurized
> with dried air. When the pressurizing system failed and humidity was
> high, the waveguide would arc internally. I assume this arc took place
> between about the centers of the long walls, where the E field is
> greatest. Inside the waveguide, between the center of one long wall and
> the other, there's a very high potential, tens of kV. Yet on the outside
> of the waveguide, I could put one finger on the center of one long side
> and another finger on the opposite side and feel nothing.
>
> How can this be?
>
> Roy Lewallen, W7EL
>
> "William E. Sabin" wrote:
> >
> > Dennis Ferguson wrote:
> >
> > > I didn't see the post about the experiments, but I don't think you
> > > can conclude that the voltages are different just because the currents
> > > are different. Did you also measure a voltage difference between
> > > the two sides of the conductor? I suspect not because I think Bill
> > > Sabin was right about this part.
> >
> > This is correct. There can be two different currents, but the voltage
> > difference across the braid must be zero at every location. That is the
> > boundary condition, as I have said before, and it is eminently sensible.
The
> > longitudinal voltage distribution is determined by the composite effect
of the
> > two currents and the *reactance* of the braid and by the distribution of
> > electronic charges. The longitudinal voltage *must* be the same on both
> > surfaces. No amount of creative speculation about skin effect changes

that
> > conclusion.
> >
> > It is precisely for this reason that, if we think carefully, the
> > "loop-current-over-the-edge-and-down-the-other-side" concept is nothing
but
> > hogwash that for some reason has become part of the ham radio culture.
I have
> > never seen this concept in any valid engineering publication. It defies
Ohm's
> > law, and it defies common sense. What is amazing is the amount of
rhetoric and
> > emotions that are exerted to defend this bit of nonsense.
> >
> > A length of coax braid is not a valid path for a self-completing common
mode
> > loop, any more than a simple piece of wire is.
> >
> > In normal usage of a coax that is properly terminated the differential
mode
> > produces no longitudinal voltages because of mag field cancellations
along the
> > inner surface, and the common mode current on the outer surface alone
produces
> > common mode voltages.
> >
> > A common mode current along the outer surface, therefore its common mode
> > voltage due to its common mode reactance, produces an E field along the
center
> > wire, despite the physical separation. Therefore it induces a common
mode
> > voltage in the center wire. This electromagnetic transfer is in perfect
> > agreement with Maxwell's equations. In other words, the common mode
voltage
> > distribution along the outer surface is very nearly identical to the
common
> > mode voltage distribution along the center wire. Also, the common mode
> > impedance on the outer surface is alo transferred, in exact agreement
with any
> > other conventional transformer.
> >
> > (By the way, do you really think that a current balun is not also a
> > conventional transformer for the common mode? All you have to do is
look at
> > it!)
> >
> > This transfer effect is enhanced by the current balun, and is one major
reason
> > for its usage. Without this transfer, common mode signals would be
converted to

> > differential mode signals, which we definitely do not want. The fact
that this
> > conversion is greatly attenuated verifies the concept.
> >
> > Despite all of this, some say over and over that the coax balun affects
only
> > the impedance on the outer surface. Baloney!
> >
> > Bill W0IYH

3603. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 09:37:11 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dgbs8bru1@plutonium.btinternet.com>
Source record: 163349

"Indicates" is a legitimate and apt description where a measuring instrument is involved. It allows a distinction to be be made between what the instrument responds to and what is indicated.

For example, an ordinary moving coil AC ammeter + bridge rectifier responds to the average value of an alternating current but but the pointer indicates the RMS value.

It is important for a user to be aware of this - the meter indicates correctly only when the alternating current has a sinewaveform. Other shapes of waveform results in errors.

Then there's the case of the meter which responds to both the current flowing through any value impedance and the voltage across it. But the meter indicates SWR when there may not be a transmission line around on which to develop any standing waves.

Reg, G4FGQ
==========

Richard Clark wrote
> "Reg Edwards"
>
> >The scope measures or indicates volts - not power.
> >---
> >Reg, G4FGQ
> >
> >
>
> ah Punchinello,
>
> Yet another old wive's tale. Is it such a mysterious process to
> comprehend the intention of "indicates?" I cannot believe that
such a
> term is so abstract as to profoundly stupefy any but the most
learned
> engineer. Take a step down from your ivory tower and observe how
> simple these expedients successfully allow people to go about
their
> usual occupation without becoming brain-locked over trivial
> distinctions. ;-)
>
> 73's
> Richard Clark, KB7QHC

3604. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 09:40:55 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AFBB3A7.359AA0EC@eznec.com>
Source record: 163348

"William E. Sabin" wrote:
>
> It is precisely for this reason that, if we think carefully, the
> "loop-current-over-the-edge-and-down-the-other-side" concept is nothing but
> hogwash that for some reason has become part of the ham radio culture. I have
> never seen this concept in any valid engineering publication. It defies Ohm's
> law, and it defies common sense. What is amazing is the amount of rhetoric and
> emotions that are exerted to defend this bit of nonsense.
> . . .

Rather than "defend this bit of nonsense" with "rhetoric and emotions",
I'll present a couple of valid engineering publications that support
this "hogwash":

Kraus, _Antennas_, Second Edition, p. 741:

"If a [lambda]/2 dipole antenna is fed by a single coaxial line as in
Fig 16-27a, current can flow back along the outside of the coaxial cable
making the current distribution on the dipole unbalanced, as suggested
in the figure. . . A wideband, more-compact arrangement is to wind the
coaxial cables around a ferrite core, as suggested in Fig. 16-28b, and
locate this balun at the center of the dipole, as indicated in Fig.
16-27b. The high decoupling impedance of the coils on the ferrite core
affects mainly the exterior fields of the coaxial cables rather than
their interior so that the coaxial line impedance (50 or 75 ohms) is
unchanged."

and Jordan and Balmain, _Electromagnetic Waves and Radiating Systems_,
p. 407:

"In Fig. 11-39(a) a balanced dipole antenna is shown connected directly
to the end of an unbalanced (coaxial) line. The currents I1 [on the
center conductor] and I2 [inner surface of the shield] must be equal and
opposite. At the junction A, current I2 divides into I3 [outside surface
of the shield], which flows down the outside of the outer conductor of
the line and K2 - I3 which flows on the second arm of the dipole."

Figure 11-39 is virtually identical to the illustration in Walt
Maxwell's QST article "Some Aspects of the Balun Problem" and in my
Compendium article "Baluns: What They Do and How They Do It". The
current flow described by Jordan and Balmain is the same as explained in
both those articles, and is in agreement with the measurements I posted
a few days ago.

Roy Lewallen, W7EL

3605. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 09:45:30 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dgcb2$7ql$1@slb2.atl.mindspring.net>
Source record: 163297

Cecil:

You keep putting words on my screen, or is that words in my mouth.

Heh, heh.

I never said, there are no reflections.

Here let me make it perfectly clear!!!!

Peter says, "reflections exist and reflections are real"!

Peter says, "reflections exist and reflections are real"!

Peter says, "reflections exist and reflections are real"!

I have never, nor do I now, deny the existence of reflections.

Satisfied?

Now with that out of the way...

I do assert that, the quantity defined by the equation Pr = b*b/R and indicated on the face of most VSWR "wattmeters" and called by most "The Reflected Power", is a complete fiction. Don't try to treat it as a "real" power for it is not! And don't expect it to obey fundamental "laws" like the conservation of energy principle because there is no reason that it should. It is a "made up" value, and not a real power.

Cecil, this is an important point! It is apparently more subtle than it's inventors meant it to be.

Understand that the definition of reflected power in wide use is merely a creation of a mathematical formalism, it does not yeild the actual energy in the reflected wave. You will see and know this if you will write down the definitions, follow the logic of the development of the equations of the "formalism" and then make some simple quantitative calculations.

And since in this "formalism" the "reflected power" values that you are using are just "made up" values, do not take them to be the "prime movers" that create reflected voltages and reflected currents! Nothing could be further from the truth. The "reflected power" does not generate the reflected voltages and currents, rather the reflected power is a made up value calculated from the reflected voltages and currents as defined in the formalism.

If you want to measure the actual power or energy contained in reflected waves, you will have to do that another way.

And to do that you will have to understand the difference between the
"scattering formalism" and "real" stuff.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFB07B1.88DD65FB@IEEE.org...
> "Peter O. Brackett" wrote:
> > That particular thing that is labeled on VSWR meters as "reflected
power" is
> > a "fiction", it does not measure the power in a reflected signal at all.
>
> You are technically correct but your statement is irrelevant. Please
> give us a straight answer to the following question.
>
> > > Why does ghosting appear where the reflection theory predicts
> > > and at the strength that the reflection theory predicts?
>
> If the reflected waves are, as you say, not moving up and down the
feedline,
> why are the ghosts exactly where wave reflection theory predicts? Why is
> the delay between ghosts equal to twice the delay in the feedline? Could
> it be that each ghost makes a round trip?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3606. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 09:50:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dgckn$26g$1@slb7.atl.mindspring.net>
Source record: 163299

Richard:

Talk, or rather should I say, typing on a keyboard is cheap!

Richard, you have been merely a spectator, and apparently still are.

Standing or sitting in the grandstands and yelling at the umpire just
doesn't cut it in this league.

If you are a player, then get in the game. Do the calculations and "prove"
it, man! Step up to the plate and take a swing.

Otherwise, enjoy your hot dogs and beer, and don't mess with the players
when they are too close to your for shouting.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3afabdd0.237926179@news.seanet.com...
> On Wed, 9 May 2001 19:41:44 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >DC or AC it's all the same.
> >
> >Same equations, same physics, same mathematics, same arithmetic, same
> >measurements.
> >
>
> Hi Peter,
>
> Yes, I am sure, your proposal fails for both.
>
> 73's
> Richard Clark, KB7QHC

3607. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 09:59:26 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dge7b$86b$1@uranium.btinternet.com>
Source record: 163350

Echos and reflections involve both location and time.

Should watts be summed only when they occur at the same place at
the same time ?

I think the problems would evaporate if watts were barred from the
discussion.

Reg

3608. Re: standing wave ratio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 10:04:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dgdfg$9n5$1@slb2.atl.mindspring.net>
Source record: 163298

Richard:

By golly I think you've got it!

Reflected Power, or since that lovely name has been perverted, lets call it the power in reflections, is real.

It's the meters with the labels "Reflected Power" that are a "hoax" as you put it.

The "thing" that all those meters are indicating, and calling "Reflected Power" is actually Pr = b*b/R, where b = V - IR This quantitiy is not the "power" in the reflection. It is a fiction.

Reflections actually do have power in them, but it is not

(V - IR)*(V - IR)/R

And if one comes to deep understanding of how a reflection bridge circuit works instead of just "using it" all will become clear!

Just as a special interest group in our society has changed the meaning of the word "gay" on us all, so to has a special interest group changed the meaning of the words "reflected power".

And this "change" of meaning has been so subtle that it co-opts many or most technicians and engineers who use modern reflections metrology.

And that's why these endless philosophical ramblings and misinterpertations erupt. No one seems to take the time to figure out just what quatities these instruments are actually indicating! Why? Because the modern generation has lost their analytical abilities, or have never studied error analysis for instrumentation, or learned error analysis, or whatever...

I say, wake up, be more discerning about the use of the term "reflected power". Don't be "sheep". Just because some long forgotten engineer/scientist cooked up a mathematical formalism with some "names" attached to derived quatities, and then created instruments to present those "made up" quatities as indications, does not make them "real".

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:25251-3AFAB981-5@storefull-116.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "Kinda silly isn`t it."
> "Yet that is exactly the sort of thing ya`ll are doing with reflected
> power as indicated on most instruments and as set up in the "reflection

> formalism".
>
> Peter seems to have shifted from "reflected power is a hoax" to
> "instruments which measure reflected power are a hoax".
>
> Maybe the examples of time domain reflectometery and TV ghosts proved
> compelling.
>
> Directional couplers exist and work well to measure reflected power
> while ignoring incident power, or vice versa.
>
> Peter also wrote:
> "You cannot always add powers meaningfully, even if they are scalars."
>
> Of course the relationship between the powers to be added or subtracted
> must be correct. A sane person would take that into account.
>
> Bird says that the power accepted from a transmitter and delivered to a
> load via a 50-ohm transmission line coupling one transmitter to one load
> is simply the incident (forward) power minus the reflected (reverse)
> power. It works, in reasonably low loss lines. Otherwise, the power
> delivered by the transmitter is greater than the power the load accepts,
> by the amount of the line loss.
>
> Best regards, Richard Harrison, KB5WZI
>

3609. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 10:27:04 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <Y7PK6.64086$2_.22804559@news3.rdc1.on.home.com>
Source record: 163351
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

Hey joe ... Why do you believe I give a damn about making sure the posts are in the correct forum? This is where it started and this is where it will end. And trust me I do not condone freebanding whatsoever.

--
Rob St.Denis

"Jerry France" <grf@ctaz.com> wrote in message news:3AFB533E.A8EAE425@ctaz.com...
> Hey Rob...Why are you and your freeband idiots crossbanding your petty
> junk into an amateur antenna newsgroup? Can't you keep this crap in
> some "who cares" newsgroup?
>
> "Rob St.Denis" wrote:
> >
> > > Well....there is one thing about it.....Ya just cain't fisk stupid.
> >
> > No but we can certainly have guidelines to punish the stupid by

3610. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 10:32:49 UTC
From: CW <cmagers@sprynet.com>
Message-ID: <9dgfic$j9u$1@slb2.atl.mindspring.net>
Source record: 163300

Are you waiting for this to come in the mail? Unfortunatly, I don't know the number but you can call the FCC and get your callsign within about two days after passing the test. You can go on the air as soon as they give it to you. You do not have to wait for the paper copy in the mail. They should have told you about this when you took the test.
--
CW
KC7NOD
"Sideband" <sideband@spam.me.not> wrote in message
news:3AF9E20D.52583CF8@spam.me.not...
> Heh. I'm not going to argue that one...
>
> -SSB (who still doesn't have his callsign... Maybe it'll show up
> tomorrow...)
>
> W6RCecilA wrote:
> >
> > Sideband wrote:
> > > Ever stop to think that maybe they all talk on the same frequencies
> > > because there's too few frequencies for them to talk on?
> >
> > More likely, the frequency of their talking is just too high.
> > --
> > http://www.mindspring.com/~w6rca
> >
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3611. First Pack of QSL Cards

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 11:20:12 UTC
From: Les Kramer <wa3sgz@mindspring.com>
Message-ID: <9dghnj$pt2$1@slb6.atl.mindspring.net>
Source record: 163303

Koos,

I received my first pack of QSL's from you a week or two ago. I just wanted to thank you for the great job that you are doing. The QSL bureau system works well because of dedicated volunteers like yourself. I really appreciate your help. Thanks.

Regards,

Les WA3SGZ

3612. Re: First Pack of QSL Cards

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 11:29:11 UTC
From: Les Kramer <wa3sgz@mindspring.com>
Message-ID: <9dgi8r$oh4$1@slb5.atl.mindspring.net>
Source record: 163304

Oops - I miss clicked on this message to my QSL Buro. Please ignore.

Les
"Les Kramer" <wa3sgz@mindspring.com> wrote in message
news:9dghnj$pt2$1@slb6.atl.mindspring.net...
> Koos,
>
> I received my first pack of QSL's from you a week or two ago. I just
wanted
> to thank you for the great job that you are doing. The QSL bureau system
> works well because of dedicated volunteers like yourself. I really
> appreciate your help. Thanks.
>
> Regards,
>
> Les WA3SGZ
>
>

3613. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 12:01:09 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AFBD485.3BE74473@mwci.net>
Source record: 163352

Roy Lewallen wrote:

> Kraus, _Antennas_, Second Edition, p. 741:
>
> "If a [lambda]/2 dipole antenna is fed by a single coaxial line as in
> Fig 16-27a, current can flow back along the outside of the coaxial cable
> making the current distribution on the dipole unbalanced, as suggested
> in the figure. . .

He does not say that this current is due to the "over-the-edge" effect. That is what I object to, as I have said very carefully.

> Jordan and Balmain, _Electromagnetic Waves and Radiating Systems_,
> p. 407:
>
> "In Fig. 11-39(a) a balanced dipole antenna is shown connected directly
> to the end of an unbalanced (coaxial) line. The currents I1 [on the
> center conductor] and I2 [inner surface of the shield] must be equal and
> opposite. At the junction A, current I2 divides into I3 [outside surface
> of the shield], which flows down the outside of the outer conductor of
> the line and K2 - I3 which flows on the second arm of the dipole."
>
> Figure 11-39 is virtually identical to the illustration in Walt
> Maxwell's QST article "Some Aspects of the Balun Problem" and in my
> Compendium article "Baluns: What They Do and How They Do It". The
> current flow described by Jordan and Balmain is the same as explained in
> both those articles, and is in agreement with the measurements I posted
> a few days ago.

If what J and B and W2DU and W7EL say is that the return current is due to the "over-the-edge" effect, then all of you are wrong, no matter how many places it is published. The current over-the-edge idea as you guys have described it *cannot* happen. All you have to do is use your own knowledge of Ohm's law. Specifically, a current cannot flow in a certain direction unless there is a voltage difference of the correct polarity. At the open end of the coax that condition does not and cannot exist simultaneously on both the inside and outside surfaces in *opposite* directions. And using skin effect to get around that dilemma is bull shit.

This is what I mean by "emotion". Instead of using your head, you are believing what you and your circle of friends *want* to believe and you invoke the "magical" properties of skin effect to try to justify what you cannot explain. And all of you completely ignore that the braid cannot have a transverse voltage between its surfaces. Somehow that just doesn't seem to matter.

The current over the edge folklore is just simply dead wrong. Instead of quoting this and that, explain to me how current can get over the edge and down the other

side, based on nothing but *valid* basic electrical principles.

Bill W0IYH

3614. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 12:02:09 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AFBD4C1.C95A611F@mwci.net>
Source record: 163353

Roy Lewallen wrote:

> In a previous life, I worked on heavy ground radar.

I worked on aircraft radar (S band).I am not competent to discuss waveguides, but I would guess that well above the cutoff frequency the situation is similar to a properly terminated coax in which the outside of the braid is "cold", the differential mode prevails inside and the common mode is zero. I recently reported a coax experiment that confirmed that.

> "William E. Sabin" wrote:

> > There can be two different currents, but the voltage
> > difference across the braid must be zero at every location. That is the
> > boundary condition, as I have said before, and it is eminently sensible. The
> > longitudinal voltage distribution is determined by the composite effect of the
> > two currents and the *reactance* of the braid and by the distribution of
> > electronic charges. The longitudinal voltage *must* be the same on both
> > surfaces. No amount of creative speculation about skin effect changes that
> > conclusion.

There can be two currents, but the second current (on the outside) cannot be merely a "continuation" of the first current (on the inside). A suitable current would be due to some valid common mode closed path.

The dipole path through air, to ground, to coax, back to antenna is a valid closed path that we are familiar with. We know also that the hypothetically ideal dipole has *no* common mode current.

Another possibility is due to unsymmetrical electromagnetic (near field) coupling between the dipole halves and the braid. In *addition* to the valid path described above, a secondary "local" circulating loop path can exist that involves *only* this coupling. The term "common mode" does not apply to this secondary local loop, in my opinion. And the current-over-the-edge idea is not involved here. The current balun helps with this problem also. A second balun farther down the coax might be a good idea.

Bill W0IYH

3615. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 12:21:06 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AFBD932.2C810FCD@mwci.net>
Source record: 163354

William E. Sabin wrote:

> The current over the edge folklore is just simply dead wrong. Instead of quoting
> this and that, explain to me how current can get over the edge and down the other
> side, based on nothing but *valid* basic electrical principles.

Instead of insisting that I prove that you're wrong, which is certainly a fun game for you, prove to me that you are right, which may not be quite as much fun.

Bill W0IYH

3616. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 12:24:01 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <BRQK6.17332$t12.1326531@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163355

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFB7031.FF5D42B1@IEEE.org...
> VE9SRB wrote:
> > I would like to know how you got the answer.
>
> I used powers to determine the magnitudes of the voltages and currents
> just like I did in the previous examples. The only non-standard phase
> involved is your 94.2 degrees.
>
> > Z = 425 ohms.
>
> Why not ------1/4WL additional 150 ohm twinlead-----52.94 ohms ???
>
> > Note that the forward source power of 75 W and the re-reflected power
4.72 W
> > do not "add" algebraically.
>
> Not so fast, Steve. There is some destructive interference going on.
> It's not 100% like the other example, but exactly enough to balance
> the energy equation.
>
> 25 watts of the forward power on the coax is reflected by the 50/150 ohm
> impedance bump. 14.15 watts (3/4) of the 18.86 watts of reflected power
> from the load makes it back across the 150/50 ohm impedance bump into
> the coax. Adding those together yields 25 + 14.15 = 39.15 watts. However,
> we know that the reflected power on the coax is 36.39 watts. The 2.76
> watts difference was involved in the destructive interference and must be
> added to the electromagnetic fields that create the forward power. Guess
what?
>
> 75w + 4.72w + 2.76w = 82.48 watts which is exactly the value of the
forward
> power on the 150 ohm line. You just cannot fool Mother Nature, Steve. Once
> again, you neglected a necessary component of the power. Also please
notice
> that forward power equals net generated power plus reflected power.
>
> The net generated power is 100w - 36.39w = 63.6w
> 63.6w + 18.86w reflected = 82.46w of forward power

> Whatta ya know? The conservation of energy equation is alive and well.
> You apparently forgot about the 2.76 watts of destructive interference
> that reverses its direction just like it did in the earlier example.
>

You just manipulated the steady state relationship of Pdelivered = Pforward - Preflected to get the answer you want. If you did not know the steady state answer, you would never have come up with this 2.76 W of destructive interference stuff. Knowing *only* the 25 W and 14.15 W of rearward power in the 50 ohm line and the phase relationship between the two voltages (and absolutely nothing else), I can determine the correct total rearward power in the 50 ohm line. You cannot.

> To summarize: 25w of the 100w forward on the coax is reflected.
> 14.15w of the power reflected from the load makes it across the 150/50
> junction and into the coax. 25w+14.15w is 2.76w more than the reflected
> power on the coax so it has to be destructive interference. It's pretty
> obvious from looking at the phasor diagrams that there are out of phase
> components contributing to the destructive interference. Nothing has
> changed, Steve. In fact, your example supports my side of the argument.
> --
> http://www.mindspring.com/~w6rca
>

You're funny.

Once you know the steady state solution, its always possible to work the numbers anyway you like. Without knowing the steady state solution, you cannot manipulate power the way you do to get the steady state answer.

Still think voltages don't add as vectors?

Have a good day Cecil. I really think my I'm going to call it quits on this topic. There is no sense in in us flogging each other over and over. I enjoyed the discussion.

73
Steve VE9SRB

3617. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 12:32:34 UTC
From: richardharrison@webtv.net
Message-ID: <322-3AFBDBE2-70@storefull-116.iap.bryant.webtv.net>
Source record: 163356

Ian, G3SEK wrote:
"Those fancy concentric rings on the outside are called "choke rings" because they are nothing less than a "choke balun" to reduce spillover current."

Exactly. Similarly, every flanged joint in waveguide has a moat machined into one of the circular flanges for the same purpose. It is not just for a neoprene "O"-ring to seal the joint. It is a necessary elaboration even when an "O"-ring is not used in the joint. This grooved flange is called a "choke flange" because its function is to reduce spillover current which might otherwise escape through the flanged joint were both flanges smooth.

Best regards, Richard Harrison, KB5WZI

3618. Re: New Key

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 12:55:01 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <X+D7Ooe+frsH2mx3BdQz1m62nLcM@4ax.com>
Source record: 163357

Sideband <sideband@spam.me.not> wrote:

>For any who are interested... my callsign came in tonight...
>
>Now I just gotta get this morse code thing licked. Thanks again for all
>your help and support.
>
>-SSB (KC8RKQ)

Contratulations! Now you need to think up a clever phrase for the acronym, rkq.

Bob
k5qwg (quick whisky gulper)

>
>Sideband wrote:
>>
>> Gents and Ladies:
>>
>> I'm proud to announce, (and yes, I'm tooting my own horn here) that I've
>> just passed both the Technician and General Written Elements. I'll have
>> my callsign by Thursday or Friday, but it's probably going to be a
>> KC8R?? or an early KC8S?? according to AA5GO, W8DYH and WB8HRO, the
>> three fine VE's who oversaw my testing and gave me the good news.
>>
>> Now I just gotta get the code requirement licked. But KC8HEZ said he'd
>> help me out with that over the air, once I get a radio.
>>
>> Anyone got an inexpensive 2M set they're not using that they'd be
>> willing to part with?
>>
>> -SSB

3619. 4 Sale Bensat atv Rec'er/Trade

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 12:59:51 UTC
From: Bill N0MNB <N0MNB@MINN.NET>
Message-ID: <AmRK6.79$SM.3281@news.corpcomm.net>
Source record: 163358
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment

I have a Bensat FM ATV rev'er for 900mhz and 1.2ghz. Less than a month old.
I just rec'ed
a wyman unit so I don't need it any more. this
cost brand new 150$ I will trade for a video ELK board or 220 mobile. or
125/bo$.you can see this sat rev'er on PC electronics web page.

n0mnb@sprintpcs.com

3620. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 13:11:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFBE512.B3A9F29A@IEEE.org>
Source record: 163359

VE9SRB wrote:
> You just manipulated the steady state relationship of Pdelivered =
> Pforward - Preflected to get the answer you want.

I'm not manipulating anything, Steve. Armed with the conservation of energy principle, I am tracking down the energy that has to be there and balancing the energy equation. I am appalled that an engineer such as yourself would even hint that the conservation of energy principle is not valid. Your assertion is that the "powers don't add up". The powers (energy) always add up, Steve. It is your assertion that doesn't add up. You were ignorant of destructive interference energy when we started this discussion and apparently, you still are.

> Once you know the steady state solution, its always possible to work the
> numbers anyway you like.

It is not anyway I like, Steve. It is following the laws of physics. If you want to understand economics, follow the money. If you want to understand physics, follow the energy. The energy *does* add up. You were just ignorant of a portion of it. The conservation of energy principle is still in effect no matter how much energy you choose to leave out of the energy balance equation.

Thanks for proving my side of the argument with your example.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3621. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 13:17:40 UTC
From: hamish@cloud.net.au
Message-ID: <UDRK6.817$25.3382@news1.eburwd1.vic.optushome.com.au>
Source record: 163360
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.cb

In rec.radio.amateur.digital.misc Dave Hall <nojunkmail_n3cvj@worldlynx.net> wrote:
> You have to remember that most "safety" related laws and rules are
> written for the lowest common denominator in society. Just because YOU
> can safely drive a car on a particular road at 70 MPH, does not mean
> that everyone else can.

And although you may think you can safely drive on a particular road
at a particular speed, you may be over-judging your abilities.

I heard of a survey once that found that something like 90% of people
though they were above average drivers. Now if they were correct, it
means the distribution is very skewed; there must be some REALLY REALLY
awful drivers somewhere. It's more likely that they are just too
confident and can't properly judge their abilities.

The fastest speed limit in most states of Australia is 110km/hour,
which is about 69 MPH. It's fast enough for a legal limit.

Hamish
--
Hamish Moffatt VK3SB <hamish@debian.org> <hamish@cloud.net.au>

3622. Re: New Key

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 13:29:42 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AFBE946.986E60B5@spam.me.not>
Source record: 163361

Already did.

Really Kewl Quagga
or
Roping Kangaroos Quickly
or
Really Keys Quickly (not yet, but I'm working on the Morse)

I'm sure there's a few others... I must admit, the first one I thought
up wasn't exactly flattering... and we're not going to get into that
one...

-SSB (KC8RKQ)

Bob Miller wrote:
>
> Sideband <sideband@spam.me.not> wrote:
>
> >For any who are interested... my callsign came in tonight...
> >
> >Now I just gotta get this morse code thing licked. Thanks again for all
> >your help and support.
> >
> >-SSB (KC8RKQ)
>
> Contratulations! Now you need to think up a clever phrase for the acronym, rkq.
>
> Bob
> k5qwg (quick whisky gulper)
>
> >
> >Sideband wrote:
> >>
> >> Gents and Ladies:
> >>
> >> I'm proud to announce, (and yes, I'm tooting my own horn here) that I've
> >> just passed both the Technician and General Written Elements. I'll have
> >> my callsign by Thursday or Friday, but it's probably going to be a
> >> KC8R?? or an early KC8S?? according to AA5GO, W8DYH and WB8HRO, the
> >> three fine VE's who oversaw my testing and gave me the good news.
> >>
> >> Now I just gotta get the code requirement licked. But KC8HEZ said he'd
> >> help me out with that over the air, once I get a radio.
> >>
> >> Anyone got an inexpensive 2M set they're not using that they'd be

> >> willing to part with?
> >>
> >> -SSB

3623. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 14:09:43 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AFBF2A7.EAF25BC7@mwci.net>
Source record: 163362

Roger Sparks wrote:

> I think you are also
> making the case that a plate of metal is actually an super insulator which
> will not allow even capacitive coupling between the sides at high
> frequencies. For example, if a plate of metal were placed in series with
> one side of a dipole, with the connections for each side of the plate at the
> very center of the plate, then the only current path between the centers on
> each side of the plate would be around the edges of the plate. No current
> could pass through the metal at the points of connection, all current would
> have to flow around the plate edges, held to the metal surface by skin
> effect.
>
> Is this an accurate extension of the theory of skin effect?

No it is not. This kind of intuitive mind game is ridiculous. If there is a difference of voltage between the two points of attachment, then there is nothing whatsoever to prevent current flow directly through the metal. Skin effect does not, and cannot, prevent that.

Bill W0IYH

3624. Re: Quiz for the day - Part 2.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 14:21:05 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <lzSK6.21$he5.610@bgtnsc04-news.ops.worldnet.att.net>
Source record: 163363

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFBE512.B3A9F29A@IEEE.org...
> VE9SRB wrote:
> > You just manipulated the steady state relationship of Pdelivered =
> > Pforward - Preflected to get the answer you want.
>
> I'm not manipulating anything, Steve. Armed with the conservation of
> energy principle, I am tracking down the energy that has to be there
> and balancing the energy equation. I am appalled that an engineer such
> as yourself would even hint that the conservation of energy principle
> is not valid. Your assertion is that the "powers don't add up". The
> powers (energy) always add up, Steve. It is your assertion that
> doesn't add up. You were ignorant of destructive interference energy
> when we started this discussion and apparently, you still are.
>

The law of conservation of energy is always valid. However, it only demands
two things:

1) That the total power "flowing into" point X is equal to the total power
"flowing out" of point X

and

2) That Pdelivered = Pforward - Preflected

> > Once you know the steady state solution, its always possible to work the
> > numbers anyway you like.
>
> It is not anyway I like, Steve. It is following the laws of physics.
> If you want to understand economics, follow the money. If you want to
> understand physics, follow the energy. The energy *does* add up. You
> were just ignorant of a portion of it. The conservation of energy
> principle is still in effect no matter how much energy you choose
> to leave out of the energy balance equation.
>
> Thanks for proving my side of the argument with your example.
> --

Okay Cecil:

If you don't need voltage phase information or the steady state solution for
Pdelivered to arrive at the correct answer, solve this puzzle:

I adjusted the length of the 150 ohm line and the antenna impedance
terminating the 150 ohm line. Both were adjusted such that the total steady
state rearward (reflected) power in the 150 ohm is still 18.86 Watts.

The forward source power in the 50 ohm line is still 100 W. The forward source power in the 150 ohm line is still 75 W. The reflected source power in the 50 ohm line is still 25 W. The steady state reflected power in the 150 ohm line is still 18.86 W. The re-reflected power in the 150 ohm line is still 4.72 W and the rearward power delivered back into the 50 ohm line is still 14.15 W.

At this point the law of conservation of energy remains intact. The total power flowing into point X (100 + 18.86 = 118.86 W) is still equal to the total power flowing out of point X (75 + 4.72 + 25 + 14.15 = 118.86 W). Without the steady state answer for Pdelivered, come up with the correct solution for the steady state Pforward in the 150 ohm line and the steady state rearward power in the 50 ohm line.

The law of conservation of energy demands that Pforward in the 150 ohm line + Prearward in the 50 ohm line = 118.86 W. "Armed with the law of conservation of energy" come up with a unique solution.

Good Luck.

Steve

3625. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 14:22:21 UTC
From: richardharrison@webtv.net
Message-ID: <1775-3AFBF59D-121@storefull-118.iap.bryant.webtv.net>
Source record: 163365

Bill Sabin wrote:
"He does not say that this current is due to "over-the-edge" effect."

Weeks back I quoted Griffith`s over the edge example on page 241. Due to its length, I won`t requote. I will summarize.

The coil was in a shield box with a single hole for a wire connecting the hot-end of the coil with a capacitor outside the box. The ground-end of the shielded coil was connected through a bolt holding the otherwise insulated box to the chassis. The bolt was uninsulated. The ground-end of the capacitor is also bolted to the chassis. This coil and capacitor form a tank circuit.

Griffith says no tank current is conducted directly through the bolt holding the coil, box, and chassis together. Instead, the current is is confined to the surface by skin effect. R-F current flows from the ground-end of the coil across the floor of the shield box, up the wall of the box, over the edge of the hot-wire hole in the box, down the outside wall of the box, across the bottom of the elevated floor of the box, down the outside surface of the box mounting bolt to the chassis, and thence via the chassis surface to the ground-end of the capacitor.

The diagram of this current path is as said on page 241. It is completely consistent with skin effect action. Bill hooted when I quoted Griffith and I expect he will receive this summary with no greater welcome.

Best regards, Richard Harrison, KB5WZI

3626. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 14:34:10 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFBF862.EB7829B7@IEEE.org>
Source record: 163364

VE9SRB wrote:
> If you did not know the
> steady state answer, you would never have come up with this 2.76 W of
> destructive interference stuff.

This is a true statement, Steve. Any rational thinking person would
do the same thing. I want to emphasize that the only argument that
I have with you is your assertion that the powers "don't add up" and
your implication that the conservation of energy principle doesn't
apply to transmission lines.

In every case, I have searched for and found the power you said was
missing. You just didn't look far enough. In fact, your agenda requires
that you avoid looking for the "missing" power so that you can assert
that "powers don't add up". Steve, the powers *DO* add up, the
conservation of energy principle is alive and well, and 75 joules plus
8.33 joules does NOT equal 133.33 joules. Please stop spreading those
falsehoods on this newsgroup. Some innocent might take you seriously.
--
http://www.mindspring.com/~w6rca

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3627. Re: In search of a quality 2m antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 14:42:26 UTC
From: "Ryan Morse (N1QZF)" <ryanbeck@loa.com>
Message-ID: <9dgtpq$h67$1@nntpsp2-ld.pvd.loa.net>
Source record: 163001

Yeah, my Gandfather had great luck with the AEA Isopole. I think I just need to get it up higher. Currently it it about 10ft off the ground as a temporary installation. It will be permenently installed at about 45ft on my roof soon, and I'm sure this will improve my range dramaticly. But before I go and rent the 35ft ladder I need, I wanted to be sure this was the antenna I should be putting up.
I want to thank everyone for thier help! You've all been great! A very good first experiance to HAM newsgroups.
Ryan

"Peter J. Bertini" <commquart@home.com> wrote in message news:hIgK6.52616$Ce4.4413368@news1.rdc1.ct.home.com...
> Where do you live? I used an Isopole at 80 feet for
> years, and few antennas could touch it. You will have
> to go to a fairly large beam and rotor to see much
> improvement. If you live in southern New England,
> I can't imagine why you aren't hitting any machines..
> If you are in northern Maine, that could be part of
> the answer...
>
> Pete
>
>
> "Ryan Morse (N1QZF)" <ryanbeck@loa.com> wrote in message
> news:9daag1rii1@nntpsp2-ld.pvd.loa.net...
> > Hi Guys and Gals,
> > I'm just starting out with my Technician licence, and I'm looking
> > forward to working the local 2m repeaters, but I'm finding I have trouble
> > tripping them. I live in a valley, and am currently using a Kenwood
> > TM-2550A with a AEA Isopole 2m vertical antenna. I also own a Ringo
> Ranger,
> > but I'm having problems with that, (I think there's a short, and need to
> > track it down.) My question is, does anyone have a good antenna design or
> > suggestions to help me get my signal out of this hole? Also, I have no
> > manuals with any of my above equipment, (I inherited them from the
> > Grandfather, who became a silent key several years ago,) can anyone give
> > me pointers?
> > Thanks ahead of time for any help you can offer,
> >
> > N1QZF
> >

> > Ryan Morse
> >
> >
>
>

3628. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 14:43:25 UTC
From: richardharrison@webtv.net
Message-ID: <1777-3AFBFA8D-15@storefull-118.iap.bryant.webtv.net>
Source record: 163269

Bill Sabin wrote:
"No it is not."

A flat plate is a very short conductor with a large cross-section. An r-f current trying to penetrate through the short path encounters the largest opposing force, an inductance, which produces the most opposing flux at the very center of the plate where the wires attach.

Instead of penetrating the plate, the current will move to the outermost edge of the conductor, just as it would were the conductor a mile long. It is still a conductor no matter how thin you slice it.

This is an r-f phenomenon, and does not apply to d-c.

Best regards, Richard Harrison, KB5WZI

3629. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 14:50:49 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <d%SK6.16692$4f7.1323517@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163366

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFBF862.EB7829B7@IEEE.org...
> VE9SRB wrote:
> > If you did not know the
> > steady state answer, you would never have come up with this 2.76 W of
> > destructive interference stuff.
>
> This is a true statement, Steve. Any rational thinking person would
> do the same thing. I want to emphasize that the only argument that
> I have with you is your assertion that the powers "don't add up" and
> your implication that the conservation of energy principle doesn't
> apply to transmission lines.
>

The law of conservation of energy does apply to transmission lines. It requires that Pdelivered = Pforward - Preflected and that the total power flowing into point X (in the example) be equal to the total power flowing out of point X.

You're incorrectly applying the law of conservation of energy in adding two powers flowing in the same direction on the line.

P1 flowing forward in the line equal 100 W. P2 flowing forward in the line is equal to 25 W. What's the total forward power flowing in the line? What does the law of conservation of energy require in adding these two powers? It does not require that they add to 125 W. Without the phase relationship between V1 and V2, you cannot determine the correct answer. With the phase relationship between V1 and V2, I can.

> In every case, I have searched for and found the power you said was
> missing.

Only because you knew the delivered power and then manipulated the math to suit your purpose.

>You just didn't look far enough. In fact, your agenda requires
> that you avoid looking for the "missing" power so that you can assert
> that "powers don't add up". Steve, the powers *DO* add up, the
> conservation of energy principle is alive and well, and 75 joules plus
> 8.33 joules does NOT equal 133.33 joules. Please stop spreading those
> falsehoods on this newsgroup. Some innocent might take you seriously.

3630. Re: Quiz for the day - Part 2.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 14:59:31 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFBFE53.2E9743F7@IEEE.org>
Source record: 163367

VE9SRB wrote:
> The law of conservation of energy is always valid.

I'm glad to hear you say that, Steve. And you cannot have it both ways.
It follows directly from the conservation of energy principle that your
statement: 75 joules/sec plus 8.33 joules/sec equals 133.33 joules/sec
is false. You didn't look for the missing power because you didn't
want to find any missing power. I have shown that the above energy
equation needs an additional 50 joules/sec to satisfy the conservation
of energy principle. That 50 joules/sec is exactly the amount of power
involved in the destructive interference action at the Z0-match. It
doesn't take a rocket scientist to conclude that 50 joules/sec is
the power missing from your "equation".

> If you don't need voltage phase information or the steady state solution for
> Pdelivered to arrive at the correct answer, solve this puzzle:

Please stop the mind-fornication, Steve. I never said I didn't need the
phase information and I never said that your voltages and currents were
wrong. My *ONLY* argument with you is *YOUR ASSERTION* that "powers don't
add up", e.g. 75 joules/sec + 8.33 joules/sec = 133.33 joules/sec
I have proved that powers indeed do add up assuming you don't have an
agenda that prohibits you from looking for all the power components.

Please contribute to my "Back to Basics" posting and try to prove that
those two 50 volts add up to 100 volts.
--
http://www.mindspring.com/~w6rca

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3631. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 15:11:24 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <wiTK6.16701$4f7.1325322@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163368

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFB5A86.B0577DC2@IEEE.org...
> Richard Clark wrote:
> >
> > On Thu, 10 May 2001 19:01:28 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> > wrote:
> >
> > >All signals handled by 50 ohm lossless coax with no reflections
> > >on any coax.
> > >
> > >Assume two phase-locked transmitters which must be connected to a
> > >single antenna. XMTR1 puts out 50v at zero degrees and one amp at
> > >zero degrees. XMTR2 puts out 50v at zero degrees and one amp at zero
> > >degrees. A lossless matching network is designed such that the two
> > >transmitter signals are combined in phase to achieve maximum possible
> > >output power (100% efficiency) into 50 ohm coax to a 50 ohm antenna.
> > >
> > >What is the output voltage? What is the output current? What is the
> > >output power?
> >
> > What about source Z? 50 Ohms?
>
> Why would source Z matter if there are no reflections anywhere? If you
> put 50 volts on a 50 ohm matched line, one amp will flow. All lines
> are matched because there are no reflections anywhere. Seems to me,
> source Z would only affect XMTR efficiency, not the value of voltage
> and current at the outputs of the XMTRs.
> --

Source Z matters a lot. See my other post.

Steve

3632. G5RV on 6 meters? Opinions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 15:17:30 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010511111730.25369.00002088@ng-cv1.aol.com>
Source record: 163270

I recently purchased a G5RV antenna was was told that with a tuner, it can be used on 6m. Does anyone have any opinions on using it on this band? I plan on eventually building a 3 ele yagi for 6m, but until then I want to use the G5RV.
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com ICQ#13829227
http://egroups.com/group/vhfallmode

3633. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 15:20:16 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <QqTK6.16712$4f7.1326633@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163271

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFB2BD8.7B4A65F7@IEEE.org...
> All signals handled by 50 ohm lossless coax with no reflections
> on any coax.
>
> Assume two phase-locked transmitters which must be connected to a
> single antenna. XMTR1 puts out 50v at zero degrees and one amp at
> zero degrees. XMTR2 puts out 50v at zero degrees and one amp at zero
> degrees. A lossless matching network is designed such that the two
> transmitter signals are combined in phase to achieve maximum possible
> output power (100% efficiency) into 50 ohm coax to a 50 ohm antenna.
>
> What is the output voltage? What is the output current? What is the
> output power?
> --

Cecil:

This problem is not analogous to adding two forward traveling waves (voltages) in a transmission line. Its not even close.

Its also a little more complicated than you let on.

Correct me if these assumption are wrong:

I assume that XMTR1 when connected to a 50 ohm load has an output voltage of 50 V and an output current of 1 A. Delivered (output) power in this case would be 50 Watts.

I assume that XMTR 2 when connected to a 50 ohm load has an output voltage of 50 V and an output current of 1 A. Delivered (output) power in this case would be 50 W.

Moving on:

Now connect both in parallel to the same 50 ohm load. Both will "see" the same load but they may not see it as 50 ohms. We need to know the source Z and the length of coax connecting each to the load. If I assume that the source Z is 50 ohms and no coax is used in the connection, each transmitter will now see a load of 25 ohms (50 ohms in parallel with 50 ohms).

Cecil, are the XMTR's constant current sources, constant voltage sources, or constant power sources? Something has to change with the change in load impedance. This makes a difference in how to analyze the problem from here. Let me know.

Steve

3634. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 15:33:28 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC0648.5BD966AE@IEEE.org>
Source record: 163273

VE9SRB wrote:
> This problem is not analogous to adding two forward traveling waves
> (voltages) in a transmission line. Its not even close.

Of course it is, Steve. It proves that you cannot just willy nilly add voltages. The underlying energy MUST add up. The reason we don't get 100v from adding the two 50v signals is there is not 200 joules/sec of energy available.

If your transmission line voltages happen to add up, it is because they are supported by a sufficient amount of underlying energy. If you abandon your "powers don't add up" agenda, you can easily track down the sources of all the energy.

> Cecil, are the XMTR's constant current sources, constant voltage sources, or
> constant power sources?

Constant voltage sources in 50 ohm environments with no reflections anywhere.
--
http://www.mindspring.com/~w6rca

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3635. Re: G5RV on 6 meters? Opinions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 15:38:59 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC0793.41395BE4@IEEE.org>
Source record: 163274

VHFRadioBuff wrote:
> I recently purchased a G5RV antenna was was told that with a tuner, it can be
> used on 6m. Does anyone have any opinions on using it on this band? I plan on
> eventually building a 3 ele yagi for 6m, but until then I want to use the G5RV.

EZNEC sez my G5RV is resonant on 53.7 MHz. Radiation will be primarily
from lobes off the ends of the antenna. Not much broadside radiation.
--
http://www.mindspring.com/~w6rca

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3636. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 15:41:49 UTC
From: w2du@iag.net
Message-ID: <3afc06e9.7759938@news.onemain.com>
Source record: 163276

On Fri, 11 May 2001 15:20:16 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
>news:3AFB2BD8.7B4A65F7@IEEE.org...
>> All signals handled by 50 ohm lossless coax with no reflections
>> on any coax.
>>
>> Assume two phase-locked transmitters which must be connected to a
>> single antenna. XMTR1 puts out 50v at zero degrees and one amp at
>> zero degrees. XMTR2 puts out 50v at zero degrees and one amp at zero
>> degrees. A lossless matching network is designed such that the two
>> transmitter signals are combined in phase to achieve maximum possible
>> output power (100% efficiency) into 50 ohm coax to a 50 ohm antenna.
>>
>> What is the output voltage? What is the output current? What is the
>> output power?
>> --
>
>Cecil:
>
>This problem is not analogous to adding two forward traveling waves
>(voltages) in a transmission line. Its not even close.
>
>Its also a little more complicated than you let on.
>
>Correct me if these assumption are wrong:
>
>I assume that XMTR1 when connected to a 50 ohm load has an output voltage of
>50 V and an output current of 1 A. Delivered (output) power in this case
>would be 50 Watts.
>
>I assume that XMTR 2 when connected to a 50 ohm load has an output voltage
>of 50 V and an output current of 1 A. Delivered (output) power in this case
>would be 50 W.
>
>Moving on:
>
>Now connect both in parallel to the same 50 ohm load. Both will "see" the
>same load but they may not see it as 50 ohms. We need to know the source Z
>and the length of coax connecting each to the load. If I assume that the
>source Z is 50 ohms and no coax is used in the connection, each transmitter
>will now see a load of 25 ohms (50 ohms in parallel with 50 ohms).
>

>Cecil, are the XMTR's constant current sources, constant voltage sources, or
>constant power sources? Something has to change with the change in load
>impedance. This makes a difference in how to analyze the problem from here.
>Let me know.
>
>Steve
>
If the two xmtrs are connected to a common load through a hybrid, as Richard H suggested, the two xmtrs don't see each other and their source impedances are irrelevant. As long as line lengths to the hybrid from each xmtr are equal, and the phases are locked, any combination of the two transmitters can be operated and the only difference will be the voltage, current and power in the load for each combination.

Walt, W2DU
>
>

3637. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 15:55:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC0B82.3F69A34B@IEEE.org>
Source record: 163277

VE9SRB wrote:
> You're incorrectly applying the law of conservation of energy in adding two
> powers flowing in the same direction on the line.

This is so blatently false that I don't know where to start. When two
sets of waves are added in the same direction on a transmission line,
the resulting energy must be equal to the sum of the energy in each
set of waves. I simply cannot believe that you are serious.

> P1 flowing forward in the line equal 100 W. P2 flowing forward in the line
> is equal to 25 W. What's the total forward power flowing in the line?

Assuming that there are no reflections and no losses, 100 joules/sec will
combine with 25 joules/sec to equal 125 joules/sec. Energy in *MUST* equal
energy out, Steve.

> What
> does the law of conservation of energy require in adding these two powers?

Assuming they are indeed separate energies, the conservation of energy
principle requires that the sum of the energies in equal the sum of
the energies out.

> It does not require that they add to 125 W.

It does if indeed there is 100 joules/sec added to 25 joules/sec in a
lossless environment with no reflections. Energy1 + Energy2 equals
the sum of the energies, Steve. Your assertion otherwise is simply
ridiculous. Please present an example of combining two signals of
X joules/sec each in a lossless environment with no reflections
where the resulting sum is not 2X joules/sec.

> > In every case, I have searched for and found the power you said was
> > missing.
>
> Only because you knew the delivered power and then manipulated the math to
> suit your purpose.

There is no magic manipulation, Steve. I know the energy *MUST* exist because
of the conservation of energy principle. Any reasonably rational person would
simply look for it until he finds it. That's exactly what I did. You seem to
have an agenda that profits by ignoring the component energies. I have pointed
out where your energy balance is lacking and why your willy nilly addition of
phasor voltages while ignoring the underlying energy can get you into trouble.

What good does it do to talk out of both sides of your mouth on the energy
issue? You simply cannot have it both ways.

--
http://www.mindspring.com/~w6rca

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3638. Re: Baby Boomer Quad WAS: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:04:06 UTC
From: 2w8ji@contesting.com
Message-ID: <3afc0bf5.684711113@news.accessunited.com>
Source record: 163278

On Fri, 11 May 2001 02:41:53 GMT, "G&R" <stop the spam@limbo.hell>
wrote:

>Hi Bill,
>
>Yes I'll be glad to answer your question.
I'm more interested in the 10dBd gain claims than the price.

It looks like a freespace dipole is being compared to a over-a-large-
groundplane quad.

If that is the case, the gain claims are misleading. The normal
convention is to compare a dipole at the same avareage height, because
the question is always "how much signal will I gain over a dipole?".

If you want to compare a real-world antenna to a freespace antenna,
then you should use dBi.

The price is very clear, it is the gain that is misleading.

73 Tom

3639. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:08:02 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <C7UK6.16752$4f7.1330304@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163279

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3afc06e9.7759938@news.onemain.com...
> On Fri, 11 May 2001 15:20:16 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> >news:3AFB2BD8.7B4A65F7@IEEE.org...
> >> All signals handled by 50 ohm lossless coax with no reflections
> >> on any coax.
> >>
> >> Assume two phase-locked transmitters which must be connected to a
> >> single antenna. XMTR1 puts out 50v at zero degrees and one amp at
> >> zero degrees. XMTR2 puts out 50v at zero degrees and one amp at zero
> >> degrees. A lossless matching network is designed such that the two
> >> transmitter signals are combined in phase to achieve maximum possible
> >> output power (100% efficiency) into 50 ohm coax to a 50 ohm antenna.
> >>
> >> What is the output voltage? What is the output current? What is the
> >> output power?
> >> --
> >
> >Cecil:
> >
> >This problem is not analogous to adding two forward traveling waves
> >(voltages) in a transmission line. Its not even close.
> >
> >Its also a little more complicated than you let on.
> >
> >Correct me if these assumption are wrong:
> >
> >I assume that XMTR1 when connected to a 50 ohm load has an output voltage
of
> >50 V and an output current of 1 A. Delivered (output) power in this case
> >would be 50 Watts.
> >
> >I assume that XMTR 2 when connected to a 50 ohm load has an output
voltage
> >of 50 V and an output current of 1 A. Delivered (output) power in this
case
> >would be 50 W.
> >
> >Moving on:
> >
> >Now connect both in parallel to the same 50 ohm load. Both will "see"

the
> >same load but they may not see it as 50 ohms. We need to know the source
Z
> >and the length of coax connecting each to the load. If I assume that the
> >source Z is 50 ohms and no coax is used in the connection, each
transmitter
> >will now see a load of 25 ohms (50 ohms in parallel with 50 ohms).
> >
> >Cecil, are the XMTR's constant current sources, constant voltage sources,
or
> >constant power sources? Something has to change with the change in load
> >impedance. This makes a difference in how to analyze the problem from
here.
> >Let me know.
> >
> >Steve
> >
> If the two xmtrs are connected to a common load through a hybrid, as
Richard H
> suggested, the two xmtrs don't see each other and their source impedances
are
> irrelevant. As long as line lengths to the hybrid from each xmtr are
equal, and
> the phases are locked, any combination of the two transmitters can be
operated
> and the only difference will be the voltage, current and power in the load
for
> each combination.
>
> Walt, W2DU
> >

Hi Walt:

I agree. Cecil was not specific and I just wanted more info.

Steve

3640. FA: Isloop HF Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:15:22 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010511121522.13125.00002039@ng-df1.aol.com>
Source record: 163280

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1237271005

=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com ICQ#13829227
http://egroups.com/group/vhfallmode

3641. Re: G5RV on 6 meters? Opinions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:16:51 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010511121651.13125.00002042@ng-df1.aol.com>
Source record: 163281

>EZNEC sez my G5RV is resonant on 53.7 MHz. Radiation will be primarily
>from lobes off the ends of the antenna. Not much broadside radiation.

Have you ever actually used on on 6m?
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com ICQ#13829227
http://egroups.com/group/vhfallmode

3642. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:25:16 UTC
From: kb7qhc@home.com
Message-ID: <3afc1131.324807658@news.seanet.com>
Source record: 163282

On Thu, 10 May 2001 22:20:38 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> On Thu, 10 May 2001 19:01:28 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
>> wrote:
>>
>> >All signals handled by 50 ohm lossless coax with no reflections
>> >on any coax.
>> >
>> >Assume two phase-locked transmitters which must be connected to a
>> >single antenna. XMTR1 puts out 50v at zero degrees and one amp at
>> >zero degrees. XMTR2 puts out 50v at zero degrees and one amp at zero
>> >degrees. A lossless matching network is designed such that the two
>> >transmitter signals are combined in phase to achieve maximum possible
>> >output power (100% efficiency) into 50 ohm coax to a 50 ohm antenna.
>> >
>> >What is the output voltage? What is the output current? What is the
>> >output power?
>>
>> What about source Z? 50 Ohms?
>
>Why would source Z matter if there are no reflections anywhere? If you
>put 50 volts on a 50 ohm matched line, one amp will flow. All lines
>are matched because there are no reflections anywhere. Seems to me,
>source Z would only affect XMTR efficiency, not the value of voltage
>and current at the outputs of the XMTRs.

Hi Cecil,

If, as you put it, it doesn't matter, then simply state a value. If
you cannot provide a number, let us hear why.

73's
Richard Clark, KB7QHC

3643. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:28:33 UTC
From: kb7qhc@home.com
Message-ID: <3afd12fe.325268291@news.seanet.com>
Source record: 163284

On Fri, 11 May 2001 00:14:38 GMT, "Peter J. Bertini"
<radioconnection@home.com> wrote:

>70.71V, 1.414A, 100W
>
>What did I win?
>
>
>"
>

Hi Peter,

Win, Lose, or Draw, it would seem that Cecil isn't interested in
answers, just questions. ;-)

73's
Richard Clark, KB7QHC

3644. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:30:08 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <ksUK6.16773$4f7.1332338@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163283

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFC0648.5BD966AE@IEEE.org...
> VE9SRB wrote:
> > This problem is not analogous to adding two forward traveling waves
> > (voltages) in a transmission line. Its not even close.
>
> Of course it is, Steve. It proves that you cannot just willy nilly add
> voltages. The underlying energy MUST add up. The reason we don't get 100v
> from adding the two 50v signals is there is not 200 joules/sec of energy
> available.
>

The final circuit conditions and total power delivery to the load depend on how the sources are combined. Do you think that combining voltage sources in series is the same as combining voltage sources in parallel? Do you think that the total resulting power delivered to the load can be determined from the addition of the power delivered to the load as determined when each source is applied to the load independently?

Load impedance is 50 ohms. A single 50 V source applied across this load results in a voltage of 50 V and a current of 1 A. Total power is 50 W. This is the source's *independent* underlying power delivery to the load - 50 W.

Now place two of these sources (I am assuming zero source impedance) in series across the 50 ohm load. The total applied voltage increases to 100 V and the total current increases to 2 A. The total power delivered to the load increases to 200 W. The two *independent* underlying sources of power, 50 W each, when *combined* in series provide a total combined power output of 200 W. Why is 50 W + 50 W not equal to 100W? Why is 50 W + 50 W equal to 200 W? You must add the two source voltages in series not the two independent source powers. Each source in this case is effectively supplying 100 W of power because the effective source current increases to 2 A. The law of conservation of energy remains in tact.

Now place two sources (I am assuming zero source impedance) in parallel across the 50 ohm load. The total voltage remains at 50 V and the total current remains at 1 A. (Each source supplies 0.5 A). The total delivered power remains unchanged at 50 W. Each source is effectively supplying 25 W of power to the load because the effective source current decreases to 0.5 A. The law of conservation of energy remains in tact.

The law of conservation of energy requires that the total power dissipated in the load is equal to the power delivered by the source. You can't use the law of conservation of energy to determine totol power by adding powers from multiple sources as determined when they are *independently* applied to

the load. You have to determine how the sources behave when they are combined. This analysis occurs through the correct combination of source voltages and currents.

> If your transmission line voltages happen to add up, it is because they
> are supported by a sufficient amount of underlying energy. If you abandon
> your "powers don't add up" agenda, you can easily track down the sources
> of all the energy.
>
> > Cecil, are the XMTR's constant current sources, constant voltage sources, or
> > constant power sources?
>
> Constant voltage sources in 50 ohm environments with no reflections anywhere.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3645. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:36:56 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <IyUK6.16780$4f7.1332706@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163285

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFC0B82.3F69A34B@IEEE.org...
> VE9SRB wrote:
> > You're incorrectly applying the law of conservation of energy in adding
two
> > powers flowing in the same direction on the line.
>
> This is so blatently false that I don't know where to start. When two
> sets of waves are added in the same direction on a transmission line,
> the resulting energy must be equal to the sum of the energy in each
> set of waves. I simply cannot believe that you are serious.
>

A 50 V source (zero source impedance) applied across a 50 ohm load results
in a delivered power of 50 W.

What's the total power delivery in the load if two of these sources are
combined in series across the load. Is the total power equal to the sum of
the power as determined when each source is applied independently? Is the
total power delivery equal to 100 W?

Steve

3646. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:43:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AFC16C3.498B15D2@eznec.com>
Source record: 163286

"William E. Sabin" wrote:
>
> William E. Sabin wrote:
>
> > The current over the edge folklore is just simply dead wrong. Instead of quoting
> > this and that, explain to me how current can get over the edge and down the other
> > side, based on nothing but *valid* basic electrical principles.
>
> Instead of insisting that I prove that you're wrong, which is certainly a fun game for
> you, prove to me that you are right, which may not be quite as much fun.
>
> Bill W0IYH

I believe I have, with the results I posted from my measurements. Can
you explain the results while maintaining that current can't flow over
the edge of the shield? And, again I ask: Can you propose an experiment
that can show currents which can't be explained in this way?

Roy Lewallen, W7EL

3647. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:51:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3AFC18A6.3B71C833@eznec.com>
Source record: 163287

Your experiments aren't really needed to validate the phenomenon (not "theory") of skin effect. It's been known for at least a century I'm sure (perhaps our resident historian, Reg, knows which of the Ancients first recognized it), it directly follows from basic electromagnetic principles, and is derived, discussed, and quantified in virtually every electromagnetics text in existence. If you don't "believe" in skin effect, then keep well away from your microwave oven when operating!

Roy Lewallen, W7EL

Roger Sparks wrote:
> Hi Roy,
>
> Ok, then, I am thinking of making a series of 4 dipoles and testing them on
> 10 Meters. The test would compare lengths required to find resonance under
> 4 conditions. Make each resonate at same freq.
>
> The test configurations:
>
> 1) no plate loading. Record length.
>
> 2) loading with 2 12 inch diameter wire frames made as 4 spokes and round
> rim, #12 copper wire, 8 inch spacing. record resonant length
>
> 3) loading with 12 inch diameter copper mesh screen, tight weave, try to
> emulate coax braid.
> record resonant length
>
> 4) loading with two 12 inch diameter copper plates, spaced 8 inches apart,
> solder connections at the center. Plate thickness #18 gage (.040) or
> greater. Record resonant length.
>
> Expected results:
>
> Case of skin effect not observable this situation: Each loading situation
> would be capacity loading only. Only a small reduction in length will occur
> because the added capacity is very near the feed point. The capacity added
> by each method will be nearly equal, with the solid plate showing the most
> capacity.
>
> Case skin effect is very noticable:
> For the solid plate situation, skin effect will cause the current to flow
> over a path which is 12 inches longer compared to the case of no skin
> effect. Each series of test will require a shorter length of wire to
> restore resonance. There will be a large difference between the length for

> the open frame capacity and solid plate capacity.
>
> Of course the devil is in the details. Care is required to find the
> center/resonant frequency. The antenna site would have to be equal for each
> antenna. Care would be needed to to prevent feed line intoduced errors.
>
> Maybe this experiment has already been done and reported. I could perform
> this experiment, but don't know when because of other obligations. If two
> or three people performed it and got similar results, we would have a very
> good reference point.
>
> Roy, I like to explore questions this way. I love theory, but only
> experiment will valid the theory.
>
> 73, Roger, W7WKB

3648. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:53:51 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3AFC1B0D.2030500@aol.com>
Source record: 163290

Looks like you got a bunch of varying suggestions on what to try.

Go with the simplest methods first! Its cheaper!

Also, did you try cutting back the power to see what happens? You may need to reduce the power to help debug the areas having problems. If the problem occurs while at full power, does it occur at 100 or 50 or 5 watts? Also, 50 watts may cause RFI on the TV, but RFI elsewhere may only happen at 500 watts. It may help you decide how to spend money on solutions(or which RFI you can live with....).

good luck,
Keith, W4KAZ

3649. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:59:18 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <GTUK6.16808$4f7.1334458@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163288

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFC0648.5BD966AE@IEEE.org...
> VE9SRB wrote:
> > This problem is not analogous to adding two forward traveling waves
> > (voltages) in a transmission line. Its not even close.
>
> Of course it is, Steve. It proves that you cannot just willy nilly add
> voltages. The underlying energy MUST add up. The reason we don't get 100v
> from adding the two 50v signals is there is not 200 joules/sec of energy
> available.
>

Here's a compromise that might help with your application of the law of conservation of energy in the addition of forward power.

I will go back to the 75 W + 8.33 W = 133.33 W example. This power relationship is derived based on how the independent traveling waves combine. I still prefer to discuss this at the level of voltage and current.

Let's assume that one source (S1) is 75 W = 61.237 V at 1.225 A. The other source (S2) is 8.33 W = 20.408 V at 0.408 A. When these independent sources are combined, the total voltage and current become 81.645 V at 1.633 A, resulting in a total power delivery of 133.33 W. When viewing the two *combined together* S1 provides an effective output power of 100 W (61.237 V at 1.633 A) and S2 provides an effective output power of 33.33 W (20.408 V at 1.633 A). 100 + 33.33 = 133.33 W.

This however, does not equate to total power re-reflection at the Zo match.

Steve

3650. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 16:59:46 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <6UUK6.17593$t12.1349250@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163289

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFC0648.5BD966AE@IEEE.org...
> VE9SRB wrote:
> > This problem is not analogous to adding two forward traveling waves
> > (voltages) in a transmission line. Its not even close.
>
> Of course it is, Steve. It proves that you cannot just willy nilly add
> voltages. The underlying energy MUST add up. The reason we don't get 100v
> from adding the two 50v signals is there is not 200 joules/sec of energy
> available.
>

Here's a compromise that might help with your application of the law of conservation of energy in the addition of forward power.

I will go back to the 75 W + 8.33 W = 133.33 W example. This power relationship is derived based on how the independent traveling waves combine. I still prefer to discuss this at the level of voltage and current.

Let's assume that one source (S1) is 75 W = 61.237 V at 1.225 A. The other source (S2) is 8.33 W = 20.408 V at 0.408 A. When these independent sources are combined, the total voltage and current become 81.645 V at 1.633 A, resulting in a total power delivery of 133.33 W. When viewing the two *combined together* S1 provides an effective output power of 100 W (61.237 V at 1.633 A) and S2 provides an effective output power of 33.33 W (20.408 V at 1.633 A). 100 + 33.33 = 133.33 W.

This however, does not equate to total power re-reflection at the Zo match.

Steve

3651. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 17:23:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC200F.70A59B95@IEEE.org>
Source record: 163291

VE9SRB wrote:
> A 50 V source (zero source impedance) applied across a 50 ohm load results
> in a delivered power of 50 W.
>
> What's the total power delivery in the load if two of these sources are
> combined in series across the load.

Assuming that each source continues to deliver a constant 50w to the lossless system, the total power delivered to the load will equal 50w+50w=100w. The only way you can change that is to change the 50w delivered by each source.

If you change the power delivered by each source, the total power to the load will still equal the sum of the powers supplied by each source. There just ain't no way around it, Steve. The conservation of energy principle is alive and well. Energy in MUST equal energy out.
--
http://www.mindspring.com/~w6rca

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3652. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 17:25:10 UTC
From: jerry@no.node.net
Message-ID: <3afc1fb0.2472832@mdnews.btv.ibm.com>
Source record: 163292

I have found that the balun impedance will go real low and the ferrite will absorb all the rf. My first person experience of flaming baluns I found it out the hard way. I did some measurements afterwards as well with the burned up and new baluns from various sources.

Once you get to 3-4X the normal output Z, the input seems to go down to 5-6 ohms and losses zoom up.

fyi
Jerry AA2T

3653. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 17:27:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC20E6.D15F490A@IEEE.org>
Source record: 163293

Richard Clark wrote:
> If, as you put it, it doesn't matter, then simply state a value. If
> you cannot provide a number, let us hear why.

OK Richard, the source impedance is 0.05 ohms. Why all the diversions?
--
http://www.mindspring.com/~w6rca

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3654. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 17:33:39 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <TnVK6.190$he5.9717@bgtnsc04-news.ops.worldnet.att.net>
Source record: 163294

Cecil:

See the posts in the Back to Basics thread

Steve

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFC200F.70A59B95@IEEE.org...
> VE9SRB wrote:
> > A 50 V source (zero source impedance) applied across a 50 ohm load
results
> > in a delivered power of 50 W.
> >
> > What's the total power delivery in the load if two of these sources are
> > combined in series across the load.
>
> Assuming that each source continues to deliver a constant 50w to the
lossless
> system, the total power delivered to the load will equal 50w+50w=100w. The
> only way you can change that is to change the 50w delivered by each
source.
>
> If you change the power delivered by each source, the total power to the
> load will still equal the sum of the powers supplied by each source. There
> just ain't no way around it, Steve. The conservation of energy principle
> is alive and well. Energy in MUST equal energy out.
> --
> http://www.mindspring.com/~w6rca
>
>
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3655. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 17:37:50 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC236E.84D038CA@IEEE.org>
Source record: 163295

VE9SRB wrote:
> The final circuit conditions and total power delivery to the load depend on
> how the sources are combined. Do you think that combining voltage sources
> in series is the same as combining voltage sources in parallel? Do you
> think that the total resulting power delivered to the load can be determined
> from the addition of the power delivered to the load as determined when each
> source is applied to the load independently?

Of course not. Do you think energy in can be different from energy out?

> Load impedance is 50 ohms. A single 50 V source applied across this load
> results in a voltage of 50 V and a current of 1 A. Total power is 50 W.
> This is the source's *independent* underlying power delivery to the load -
> 50 W.
>
> Now place two of these sources (I am assuming zero source impedance) in
> series across the 50 ohm load. The total applied voltage increases to 100 V
> and the total current increases to 2 A. The total power delivered to the
> load increases to 200 W. The two *independent* underlying sources of power,
> 50 W each, when *combined* in series provide a total combined power output
> of 200 W.

Hogwash, they are no longer 50w sources. They have become 100w sources.
Limit the output of each source to 50w and see what you get. You have
simply substituted 100w sources for 50w sources. Nothing magic there.

> Now place two sources (I am assuming zero source impedance) in parallel
> across the 50 ohm load. The total voltage remains at 50 V and the total
> current remains at 1 A. (Each source supplies 0.5 A). The total delivered
> power remains unchanged at 50 W. Each source is effectively supplying 25 W
> of power to the load because the effective source current decreases to 0.5
> A. The law of conservation of energy remains in tact.

Of course, you have changed from 50w sources to 25w sources. Nothing magic
there.

> The law of conservation of energy requires that the total power dissipated
> in the load is equal to the power delivered by the source. You can't use
> the law of conservation of energy to determine total power by adding powers
> from multiple sources as determined when they are *independently* applied to
> the load.

Please stop your mind-fornicating ways, Steve. Nobody said you could. All
I have ever said is that your assertion that 75 joules/sec plus 8.33 joules/sec
equals 133.33 joules/sec is a violation of the conservation of energy principle.
It was and still is.

> You have to determine how the sources behave when they are
> combined. This analysis occurs through the correct combination of source
> voltages and currents.

No argument. But you are not allowed to violate the conservation of energy
principle in the process. You obviously have some agenda that prohibits
you from seeking out all the energy packets. Fortunately, I don't share
that agenda.
--
http://www.mindspring.com/~w6rca

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3656. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 17:48:01 UTC
From: w2du@iag.net
Message-ID: <3afc219b.14593714@news.onemain.com>
Source record: 163301

On Fri, 11 May 2001 16:59:18 GMT, "VE9SRB" <srbest@att.net> wrote:

>

>Let's assume that one source (S1) is 75 W = 61.237 V at 1.225 A. The other
>source (S2) is 8.33 W = 20.408 V at 0.408 A. When these independent
>sources are combined, the total voltage and current become 81.645 V at 1.633
>A, resulting in a total power delivery of 133.33 W. When viewing the two
>*combined together* S1 provides an effective output power of 100 W (61.237 V
>at 1.633 A) and S2 provides an effective output power of 33.33 W (20.408 V
>at 1.633 A). 100 + 33.33 = 133.33 W.
>
>This however, does not equate to total power re-reflection at the Zo match.
>
>Steve

I believe the point we're missing here is that we should be considering constant power, not constant voltage. With batteries in series the power delivered is not constant when the voltages of the batteries are added, because the current rises proportionately with voltage, thus the power is squared with every doubling of equal-voltage batteries. This is what makes Steve's 8.33 w + 75 w seem to add up to 133.33 w.

The point is that Steve's 8.33-watt source provides 20.408 volts at 0.408 amps, but when the other source is added in series the resulting total voltage across the same load would increase the current. Therefore Steve's 8.33 watt source would have to provide more than 8.33 watts, which it cannot --it's limited to providing ONLY 8.33 watts. Since it can't produce more than 8.33 watts Steve's concept is incorrect when applying it to power on transmission lines, because the initial source power is fixed--it cannot increase. Therefore the powers must add when the power from either source cannot increase beyond its actual limited value.

If we want to add voltages it must be done using the square root of the product of the voltages, which is the same as adding powers.

Walt, W2DU
>
>
>
>
>
>

3657. AZ/EL controller circuit for TV rotors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 17:50:13 UTC
From: Daniel <LavoieDnospam@istar.ca>
Message-ID: <pDVK6.16085$yw.550850@news20.bellglobal.com>
Source record: 163302

Anyone know where I could find an article on how to build an AZ/EL
controller with two TV rotors for satellite communications? Please email to
LAVOIEDatISTAR.CA (replace "at" with @)

Thanks

Daniel
VE3DCL

3658. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 17:50:54 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <2EVK6.207$he5.11353@bgtnsc04-news.ops.worldnet.att.net>
Source record: 163305

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFC236E.84D038CA@IEEE.org...
> VE9SRB wrote:
> > The final circuit conditions and total power delivery to the load depend
on
> > how the sources are combined. Do you think that combining voltage
sources
> > in series is the same as combining voltage sources in parallel? Do you
> > think that the total resulting power delivered to the load can be
determined
> > from the addition of the power delivered to the load as determined when
each
> > source is applied to the load independently?
>
> Of course not. Do you think energy in can be different from energy out?
>
> > Load impedance is 50 ohms. A single 50 V source applied across this
load
> > results in a voltage of 50 V and a current of 1 A. Total power is 50 W.
> > This is the source's *independent* underlying power delivery to the
load -
> > 50 W.
> >
> > Now place two of these sources (I am assuming zero source impedance) in
> > series across the 50 ohm load. The total applied voltage increases to
100 V
> > and the total current increases to 2 A. The total power delivered to
the
> > load increases to 200 W. The two *independent* underlying sources of
power,
> > 50 W each, when *combined* in series provide a total combined power
output
> > of 200 W.
>
> Hogwash, they are no longer 50w sources. They have become 100w sources.
> Limit the output of each source to 50w and see what you get. You have
> simply substituted 100w sources for 50w sources. Nothing magic there.
>

I said that: . "Each source in this case is effectively supplying 100 W of
power because the effective source current increases to 2
A. The law of conservation of energy remains in tact."

Why would you ignore that statement?

Besides, they are no longer 50 W sources only because they are no longer acting independenetly. As I have stated many times, the steady state condition occurs through the addtion of current and voltage. You still assert that series voltages don't add.

> > Now place two sources (I am assuming zero source impedance) in parallel
> > across the 50 ohm load. The total voltage remains at 50 V and the total
> > current remains at 1 A. (Each source supplies 0.5 A). The total
delivered
> > power remains unchanged at 50 W. Each source is effectively supplying
25 W
> > of power to the load because the effective source current decreases to
0.5
> > A. The law of conservation of energy remains in tact.
>
> Of course, you have changed from 50w sources to 25w sources. Nothing magic
> there.
>
> > The law of conservation of energy requires that the total power
dissipated
> > in the load is equal to the power delivered by the source. You can't
use
> > the law of conservation of energy to determine total power by adding
powers
> > from multiple sources as determined when they are *independently*
applied to
> > the load.
>
> Please stop your mind-fornicating ways, Steve. Nobody said you could. All
> I have ever said is that your assertion that 75 joules/sec plus 8.33
joules/sec
> equals 133.33 joules/sec is a violation of the conservation of energy
principle.
> It was and still is.
>

Mind-fornicating ways??

You the person trying to convince everyone that 50 V added in series with 50 V is not equal to 100 V. Remember - "voltages don't add powers do."

> > You have to determine how the sources behave when they are
> > combined. This analysis occurs through the correct combination of
source
> > voltages and currents.
>
> No argument. But you are not allowed to violate the conservation of energy
> principle in the process. You obviously have some agenda that prohibits
> you from seeking out all the energy packets. Fortunately, I don't share
> that agenda.

What's your agenda in trying to convince everyone that 50 V added in series with 50 V does not equal 100 V?

3659. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 17:58:31 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC2847.7DD24E5F@IEEE.org>
Source record: 163307

VE9SRB wrote:
> I will go back to the 75 W + 8.33 W = 133.33 W example. This power
> relationship is derived based on how the independent traveling waves
> combine. I still prefer to discuss this at the level of voltage and
> current.

I'll just bet you do since it masks your violation of the conservation
of energy principle. :-)

> Let's assume that one source (S1) is 75 W = 61.237 V at 1.225 A. The other
> source (S2) is 8.33 W = 20.408 V at 0.408 A. When these independent
> sources are combined, the total voltage and current become 81.645 V at 1.633
> A, resulting in a total power delivery of 133.33 W.

Absolutely false, Steve. Given lossless conditions and a fixed Z0 with no
reflections, combining 75w in phase with 8.33w will equal 83.33 watts.
Since Z0 equals 50 ohms, the resultant voltage is 65.55v and the resultant
current is 1.29a. The combining of these two energies happens in the
electromagnetic field. With only 75 joules/sec and 8.33 joules/sec existing
in the entire system as the only sources of energy, the combination *MUST*
equal 83.33 joules/sec. Otherwise, it violates the conservation of energy
principle.

The resulting voltage in your example above is the square root of the
sum of the squares of the two individual voltages.

In my "Back to Basics" thread, you admitted that combining two 50v at
one amp signals did not result in 100v at two amps. But now you come
back here and say combining 61.237v at 1.224a with 20.408v at 0.408a
results in 81.645v at 1.633a. So which is correct, Steve? You simply
cannot have it both ways.

Above, you are forgetting the 50w of joules/sec that was involved in
the destructive interference process. The energy balloon is squeezed
on the left side of the Z0-match so the energy balloon expands on
the right side of the Z0-match. That 50 joules/sec is dumped into
the electromagnetic waves to boost the underlying forward energy to
133.33 joules/sec. That 50 joules/sec becomes indistinguishable from
the 8.33 joules/sec of re-reflected power. It also was indistinguishable
from the reflected power while it was still a part of it.
--
http://www.mindspring.com/~w6rca

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3660. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 17:58:58 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <CLVK6.215$he5.11725@bgtnsc04-news.ops.worldnet.att.net>
Source record: 163306

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3afc219b.14593714@news.onemain.com...
> On Fri, 11 May 2001 16:59:18 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> > >
>
> > >Let's assume that one source (S1) is 75 W = 61.237 V at 1.225 A. The
other
> > >source (S2) is 8.33 W = 20.408 V at 0.408 A. When these independent
> > >sources are combined, the total voltage and current become 81.645 V at
1.633
> > >A, resulting in a total power delivery of 133.33 W. When viewing the two
> > >*combined together* S1 provides an effective output power of 100 W
(61.237 V
> > >at 1.633 A) and S2 provides an effective output power of 33.33 W (20.408
V
> > >at 1.633 A). 100 + 33.33 = 133.33 W.
> > >
> > >This however, does not equate to total power re-reflection at the Zo
match.
> > >
> > >Steve
>
> I believe the point we're missing here is that we should be considering
constant
> power, not constant voltage. With batteries in series the power delivered
is not
> constant when the voltages of the batteries are added, because the current
rises
> proportionately with voltage, thus the power is squared with every
doubling of
> equal-voltage batteries. This is what makes Steve's 8.33 w + 75 w seem to
add up
> to 133.33 w.
>
> The point is that Steve's 8.33-watt source provides 20.408 volts at 0.408
amps,
> but when the other source is added in series the resulting total voltage
across
> the same load would increase the current. Therefore Steve's 8.33 watt
source
> would have to provide more than 8.33 watts, which it cannot --it's limited
to
> providing ONLY 8.33 watts. Since it can't produce more than 8.33 watts

Steve's
> concept is incorrect when applying it to power on transmission lines,
because
> the initial source power is fixed--it cannot increase. Therefore the
powers must
> add when the power from either source cannot increase beyond its actual
limited
> value.
>
> If we want to add voltages it must be done using the square root of the
product
> of the voltages, which is the same as adding powers.
>
> Walt, W2DU
> >

In the transmission line, the two forward waves add as if they were in series. Vtotal = V1 + V2. Itotal = I1 + I2. Ptotal = |Vtotal| |Itotal|. I'm sorry that this fact is not consistent with Walter's concept of total power reflection.

Steve VE9SRB

3661. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:04:40 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC29B8.D91BBF43@IEEE.org>
Source record: 163308

VE9SRB wrote:
> This however, does not equate to total power re-reflection at the Zo match.

The power involved in the destructive interference is technically not
re-reflected. I agree with you on that point. Before the re-reflection,
the energy destined for destructive interference was indistinguishable
from the reflected power. After the destructive interference, that energy
is indistinguishable from the re-reflected power joining the forward wave.

Since these two component powers are indistinguishable before and after
the re-reflection, establishing a mental shortcut that says there is total
re-reflection at the Z0-match is not far-fetched at all. But I agree with
you that it is not perfectly technically correct to say so.
--
http://www.mindspring.com/~w6rca

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3662. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:07:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC2A64.4D293305@IEEE.org>
Source record: 163310

Richard Clark wrote:
>
> <radioconnection@home.com> wrote:
> >70.71V, 1.414A, 100W
> >What did I win?

> Win, Lose, or Draw, it would seem that Cecil isn't interested in
> answers, just questions. ;-)

His answer has not appeared on my server yet, Richard. Give me an
ever-loving break, will you? I'm trying to learn something.
--
http://www.mindspring.com/~w6rca

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3663. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:08:05 UTC
From: w2du@iag.net
Message-ID: <3afc28d5.16443865@news.onemain.com>
Source record: 163309

On Fri, 11 May 2001 17:58:58 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message

>> The point is that Steve's 8.33-watt source provides 20.408 volts at 0.408
>amps,
>> but when the other source is added in series the resulting total voltage
>across
>> the same load would increase the current. Therefore Steve's 8.33 watt
>source
>> would have to provide more than 8.33 watts, which it cannot --it's limited
>to
>> providing ONLY 8.33 watts. Since it can't produce more than 8.33 watts
>Steve's
>> concept is incorrect when applying it to power on transmission lines,
>because
>> the initial source power is fixed--it cannot increase. Therefore the
>powers must
>> add when the power from either source cannot increase beyond its actual
>limited
>> value.
>>
>> If we want to add voltages it must be done using the square root of the
>product
>> of the voltages, which is the same as adding powers.
>>
>> Walt, W2DU
>> >
>
>
>In the transmission line, the two forward waves add as if they were in
>series. Vtotal = V1 + V2. Itotal = I1 + I2. Ptotal = |Vtotal| |Itotal|.
>I'm sorry that this fact is not consistent with Walter's concept of total
>power reflection.
>
>Steve VE9SRB
>
Sorry Steve, two forward voltage waves on a transmission line cannot add in
series because there is no way the current can increase proportionately as a
result of the additional voltage. The total power is limited by the source
power, which cannot increase as it would have to in the case of batteries added
in series. Adding the voltages directly yields meaningless values of power--the
only way to obtain the correct total power is by first squaring the absolute
value of the voltages and then taking the square root of their product.

This fact is what I've been hammering you about for more than two years.

Walt
>
>
>
>

3664. Re: G5RV on 6 meters? Opinions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:08:35 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC2AA3.92E74E04@IEEE.org>
Source record: 163311

VHFRadioBuff wrote:
> >EZNEC sez my G5RV is resonant on 53.7 MHz. Radiation will be primarily
> >from lobes off the ends of the antenna. Not much broadside radiation.
>
> Have you ever actually used one on 6m?

Yep, but only for field strength measurements.
--
http://www.mindspring.com/~w6rca

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3665. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:12:38 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <qYVK6.219$he5.12633@bgtnsc04-news.ops.worldnet.att.net>
Source record: 163312

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFC2847.7DD24E5F@IEEE.org...
> VE9SRB wrote:
> > I will go back to the 75 W + 8.33 W = 133.33 W example. This power
> > relationship is derived based on how the independent traveling waves
> > combine. I still prefer to discuss this at the level of voltage and
> > current.
>
> I'll just bet you do since it masks your violation of the conservation
> of energy principle. :-)
>
> > Let's assume that one source (S1) is 75 W = 61.237 V at 1.225 A. The
other
> > source (S2) is 8.33 W = 20.408 V at 0.408 A. When these independent
> > sources are combined, the total voltage and current become 81.645 V at
1.633
> > A, resulting in a total power delivery of 133.33 W.
>
> Absolutely false, Steve. Given lossless conditions and a fixed Z0 with no
> reflections, combining 75w in phase with 8.33w will equal 83.33 watts.
> Since Z0 equals 50 ohms, the resultant voltage is 65.55v and the resultant
> current is 1.29a. The combining of these two energies happens in the
> electromagnetic field. With only 75 joules/sec and 8.33 joules/sec
existing
> in the entire system as the only sources of energy, the combination *MUST*
> equal 83.33 joules/sec. Otherwise, it violates the conservation of energy
> principle.
>
> The resulting voltage in your example above is the square root of the
> sum of the squares of the two individual voltages.
>
> In my "Back to Basics" thread, you admitted that combining two 50v at
> one amp signals did not result in 100v at two amps.

I admitted no such thing. Here's what I said when the sources are combined
in series:

A single 50 V source applied across this load results in a voltage of 50 V
and a current of 1 A. ... Now place two of these sources (I am assuming
zero source impedance) in series across the 50 ohm load. The total applied
voltage increases to 100 V and the total current increases to 2 A."

What's the agenda in misquoting me?

>But now you come
> back here and say combining 61.237v at 1.224a with 20.408v at 0.408a
> results in 81.645v at 1.633a. So which is correct, Steve? You simply
> cannot have it both ways.
>
> Above, you are forgetting the 50w of joules/sec that was involved in
> the destructive interference process. The energy balloon is squeezed
> on the left side of the Z0-match so the energy balloon expands on
> the right side of the Z0-match. That 50 joules/sec is dumped into
> the electromagnetic waves to boost the underlying forward energy to
> 133.33 joules/sec. That 50 joules/sec becomes indistinguishable from
> the 8.33 joules/sec of re-reflected power. It also was indistinguishable
> from the reflected power while it was still a part of it.
> --

You and Walter are to much.

Does anybody else on this newsgroup think that when you put two 1.5 V AA batteries in series the total voltage will be equal to 2.12 V (Sqrt (V1^2 + V1^2) instead of 3 V?

In the transmission line, forward voltages add as Vtotal = V1 + V2.

Steve

3666. lambda 2el yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:13:48 UTC
From: la8ak@online.no
Message-ID: <3afc2569.1292134206@news.online.no>
Source record: 163313

collecting information for different antennas to optimize opening angle i.e. max gain without the need to turn the rotator (contest factor) so I am curious as to gain of this antenna

also interested to know optimum stacking distance and if possible the gain when stacked 3 horisontal antennas in halfwave distance above each other

73
Jan-Martin
LA8AK

3667. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:16:30 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <20WK6.222$he5.12639@bgtnsc04-news.ops.worldnet.att.net>
Source record: 163314

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3afc28d5.16443865@news.onemain.com...
> On Fri, 11 May 2001 17:58:58 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
>
> >> The point is that Steve's 8.33-watt source provides 20.408 volts at
0.408
> >amps,
> >> but when the other source is added in series the resulting total
voltage
> >across
> >> the same load would increase the current. Therefore Steve's 8.33 watt
> >source
> >> would have to provide more than 8.33 watts, which it cannot --it's
limited
> >to
> >> providing ONLY 8.33 watts. Since it can't produce more than 8.33 watts
> >Steve's
> >> concept is incorrect when applying it to power on transmission lines,
> >because
> >> the initial source power is fixed--it cannot increase. Therefore the
> >powers must
> >> add when the power from either source cannot increase beyond its actual
> >limited
> >> value.
> >>
> >> If we want to add voltages it must be done using the square root of the
> >product
> >> of the voltages, which is the same as adding powers.
> >>
> >> Walt, W2DU
> >> >
> >
> >
> >In the transmission line, the two forward waves add as if they were in
> >series. Vtotal = V1 + V2. Itotal = I1 + I2. Ptotal = |Vtotal|
|Itotal|.
> >I'm sorry that this fact is not consistent with Walter's concept of total
> >power reflection.
> >
> >Steve VE9SRB
> >

> Sorry Steve, two forward voltage waves on a transmission line cannot add
in
> series because there is no way the current can increase proportionately as
a
> result of the additional voltage. The total power is limited by the source
> power, which cannot increase as it would have to in the case of batteries
added
> in series. Adding the voltages directly yields meaningless values of
power--the
> only way to obtain the correct total power is by first squaring the
absolute
> value of the voltages and then taking the square root of their product.
>
> This fact is what I've been hammering you about for more than two years.
>
> Walt
> >

Well Walter, your assertion that two forward voltages cannot add in series is in total disagreement with Johnson, Chipman, Terman, Slater and every other text on transmission line theory. I guess I'm in good company.

Steve

3668. Last Day: Icom TV R7000 on ebay

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:22:41 UTC
From: Headhamster <headhamster@earthlink.net>
Message-ID: <R5WK6.1554$N23.136755@newsread1.prod.itd.earthlink.net>
Source record: 163315
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.cb,rec.radio.scanner,rec.radio.shortwave,rec.radio.swap,sci.electronics.repair

I have the somewhat rare Icom TV R7000 for auction on ebay. This unit lets
you receive amateur and broadcast TV with your R7000.
http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1235808342
Please take a look.

Rich

3669. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:27:45 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC2F21.B8A997E1@IEEE.org>
Source record: 163316

"Peter O. Brackett" wrote:
> Understand that the definition of reflected power in wide use is merely a
> creation of a mathematical formalism, it does not yeild the actual energy in
> the reflected wave.

Then why does it succeed in predicting the position and magnitude
of TV ghosting?

> If you want to measure the actual power or energy contained in reflected
> waves, you will have to do that another way.

You and I have agreed on a mental exercise involving a one second long
lossless transmission line, Peter. You agreed every step of the way.
You even said that I do understand. Are you taking that all back?
Should we repeat the mental exercise?
--
http://www.mindspring.com/~w6rca

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3670. Re: Undertruck mount OK for an Icom AT-4 tuner?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:31:02 UTC
From: jeffreys@cyburban.com
Message-ID: <3afc2f61$0$41075$45beb828@newscene.com>
Source record: 163317

Thanks Doc:

I am mounting it in a custom made Stainless Steel enclosure to protect
from rocks.

I thought if it was outside, it would not have the benefits of shock absorbers
and would rattle it self to death.

Thanks.

--jeffrey

In article <3AF913AE.53133E4E@oio.net>, w5lz@oio.net says...
>
>
>
>Jeffrey,
> I think that as long as you provide protection for the
>tuner, it should work as you want to mount it. If it's
>attached to the body of the vehicle it will have the same
>'shock' protection as if it were inside the vehicle. I'd
>worry more about rocks and other junk from the road hitting
>it, and ground clearance...
> 'Doc

3671. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:38:45 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <VkWK6.16928$4f7.1340806@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163318

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3afc28d5.16443865@news.onemain.com...
> On Fri, 11 May 2001 17:58:58 GMT, "VE9SRB" <srbest@att.net> wrote:
>

I will not be responding to any more posts on this subject.

Regards,
Steve VE9SRB

3672. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:39:18 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <qlWK6.16929$4f7.1340033@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163219

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFC29B8.D91BBF43@IEEE.org...

I will not be responding to anymore posts on this subject.

Regards,
Steve VE9SRB

3673. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:40:33 UTC
From: w2du@iag.net
Message-ID: <3afc2c95.17403104@news.onemain.com>
Source record: 163220

On Fri, 11 May 2001 18:12:38 GMT, "VE9SRB" <srbest@att.net> wrote:

>You and Walter are to much.
>
>Does anybody else on this newsgroup think that when you put two 1.5 V AA
>batteries in series the total voltage will be equal to 2.12 V (Sqrt (V1^2 +
>V1^2) instead of 3 V?
>
>In the transmission line, forward voltages add as Vtotal = V1 + V2.
>
>Steve

OK Steve, you asked for it. Remember recently you told me you never said the total forward power ks 248.8 watts when 100 watts is the source power on a 50-ohm lossless line with a 150-ohm termination, but with a matching device that totally re-reflected the reflected power. Well let me tell you I have several hard copies of your email from months ago that say you did. Let me give you the numbers.

The source voltage is 70.71 v on the 50-ohm line for 100 watts input. The reflected power is 33.333 watts, and when added to the 100-watt source the total forward power is 133.33 watts. This is the number you presently agree is correct. Note that it is simple addition of the powers.

Now let's see what happens when we add the voltages concerned with these powers directly, as you did precisely in those days earlier when we were sparring about it like mad.

In the 50-ohm line the voltage related to 33.333 watts of reflected power is 40.82 volts. Adding this to the source voltage 70.71 v we get 111.53 v, as you did earlier. Now squaring and dividing by 50 we get 248.8 watts of total forward power. You say you never said this, but you did. I have it on hard copy. I can't produce it readily, because it is with my files in Florida.

The correct total forward power is thus 133.33 watts, obtained by direct addition of powers, which, in terms of voltages, means the absolute value of the voltages must be squared and the square root of the sum of the squares must be added.

The total forward power of 248.8 watts, obtained by direct addition is both obviously and evidently incorrect and meaningless.

Steve, how do you explain the difference?

Walt

3674. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:40:45 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC322D.3F3FEB32@IEEE.org>
Source record: 163221

VE9SRB wrote:
> Why would you ignore that statement?

Because it is irrelevant and violates the pre-existing boundary conditions.

> You the person trying to convince everyone that 50 V added in series with 50
> V is not equal to 100 V. Remember - "voltages don't add powers do."

They are not added in series, Steve. Their electric fields are added.
What is it about that concept that is so hard for you to understand.

Adding 50v at one amp to 50v at one amp in phase with no reflections
results in 70.71v at 1.414a. Neither voltage nor current are in series
or parallel. The electromagnetic fields are what add. The total voltage
is the square root of the sum of the squares of the individual voltages
and the total current is the square root of the sum of the squares of
the individual currents.

> What's your agenda in trying to convince everyone that 50 V added in series
> with 50 V does not equal 100 V?

Please stop mind-fornicating, Steve. They are NOT added in series. Their
electric fields are combined which results in a total voltage. Given
two identical sets of waves, each containing a fixed amount of energy, adding
those two waves in phase does not double the voltage and double the current.
That would be doubling the available energy and is not allowed under the
preservation of energy principle.
--
http://www.mindspring.com/~w6rca

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3675. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:43:06 UTC
From: w2du@iag.net
Message-ID: <3afc3272.18904072@news.onemain.com>
Source record: 163222

On Fri, 11 May 2001 18:16:30 GMT, "VE9SRB" <srbest@att.net> wrote:

>

>
>Well Walter, your assertion that two forward voltages cannot add in series
>is in total disagreement with Johnson, Chipman, Terman, Slater and every
>other text on transmission line theory. I guess I'm in good company.
>
>Steve
>
As I've been telling you all along, you do a great job of misinterpreting
Johnson.

Walt

3676. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:49:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC3443.2CD88E05@IEEE.org>
Source record: 163223

VE9SRB wrote:
> In the transmission line, the two forward waves add as if they were in
> series. Vtotal = V1 + V2. Itotal = I1 + I2. Ptotal = |Vtotal| |Itotal|.
> I'm sorry that this fact is not consistent with Walter's concept of total
> power reflection.

That fact is also not consistent with the conservation of energy
principle.

Steve, there is no way to add just two waves to put the voltages in
series AND the currents in series. That doubles the amount of available
power and violates the energy conservation principle.

V1*I1 + V2*I2 simply does not equal (V1+V2) * (I1+I2)

Set those equal to each other and you will find there is some left over
power. That left over power is equal to the power used in the destructive
interference pattern at the Z0-match. You are allowing your simplified
math model to try to dictate reality. You have it backwards. Reality
dictates math models.
--
http://www.mindspring.com/~w6rca

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3677. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 18:53:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC3535.19935CFD@IEEE.org>
Source record: 163224

VE9SRB wrote:
> Well Walter, your assertion that two forward voltages cannot add in series
> is in total disagreement with Johnson, Chipman, Terman, Slater and every
> other text on transmission line theory. I guess I'm in good company.

I've got Johnson. Please point out the section where Johnson adds
two voltages in series while at the same time adding two currents
in series.

Either voltages OR currents can be added in series. But both voltages
AND currents cannot be added in series at the same time. That clearly
violates the conservation of energy principle and I'll bet you $100
that Johnson doesn't do it anywhere in his book.
--
http://www.mindspring.com/~w6rca

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3678. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 19:02:33 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC3749.5F15369D@IEEE.org>
Source record: 163225

VE9SRB wrote:
> What's the agenda in misquoting me?

Aren't you the one who said the voltage would be 70.7v and the current would be 1.414a? If not, I am mistaken so are you disagreeing that the combination of two independent sources of 50v at one amp with no reflections would result in 70.7v at 1.414a?

> Does anybody else on this newsgroup think that when you put two 1.5 V AA
> batteries in series the total voltage will be equal to 2.12 V (Sqrt (V1^2 +
> V1^2) instead of 3 V?

GET THIS THROUGH YOUR HEAD, STEVE! We are not talking about putting voltages in series. We are talking about combining the electric fields of two voltages to get a resultant voltage. When you combine the electric fields of two voltages in phase, the resulting voltage is the square root of the sum of the squares of the two voltages. Same for current.

You simply cannot add voltages AND add currents at the same time. It violates the conservation of energy principle. If you think the voltages add in series at the same time as the currents add in series, you have introduced additional power. If you paid more attention to power and the conservation of energy, you wouldn't be making such blunders. That additional 50w of power comes from the destructive interference action.
--
http://www.mindspring.com/~w6rca

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3679. Re: AM/FM reception in Midtown NYC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 19:19:09 UTC
From: Norman McLeod <normac67@NAESPAM.btinternet.com>
Message-ID: <9dhds9$hn7bt$1@ID-87926.news.dfncis.de>
Source record: 163226

> Now I am obligated to to a home theatre installation in New York City. One
> of the many things for which I was unprepared was poor radio reception. We
> can recieve clearly maybe 5 FM, no AM, and no WX stations, on two different
> tuners

OK Pat - first question. Is your receiving aerial indoors? What kind of building is it in? Many buildings screen a lot of radio signals and also have high levels of interference. The cure is not 'signal boosters' (which boost the interference along with the noise) but a proper outdoor antenna.

Can you get more stations on an ordinary portable AM/FM radio of reasonable quality playing in the same room? If you can get more stations on a portable, this is a sure sign that there is something seriously wrong with the aerial you are using or the manner in which it has been connected.

What about reception on a reputable car radio in a vehicle parked outside the block? Can you get plenty of stations on it? If so, then it is likely that the building is attenutating the signals and an aerial outdoors is the best solution. This is not a difficult business on FM, although external AM aerials are hard to come by.

> 2. Information - if you live in a similar area, how do you deal with it? Is
> there a 'sure thing' product for NYC radio reception?

Being a Brit myself, I'm not familiar with NYC itself - but I would imagine that a busy urban area would have plenty of signals around. The main problem is 'multipath' reception, where the signal from the transmitter reflects off buildings and other objects, creating a distorted jumble of signals at the antenna. A directional outdoor antenna will help a lot, but with there being a variety of different transmitter sites in use it can be difficult to decide where to point it at!

Hope this Helps

Norman
Brighton, England

3680. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 19:34:22 UTC
From: kb7qhc@home.com
Message-ID: <3aff3eba.336464109@news.seanet.com>
Source record: 163227

On Fri, 11 May 2001 12:27:02 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> If, as you put it, it doesn't matter, then simply state a value. If
>> you cannot provide a number, let us hear why.
>
>OK Richard, the source impedance is 0.05 ohms. Why all the diversions?

Hi Cecil,

Diversions? I had to ask you twice for one thing, Steve responded to the same question on the first try. He also responded with a normal value whereas yours is fanciful and evidence of pulling yet another "Kirchoff's Laws thread" sucker punch on us.

You have vastly simplified the problem, but it won't reveal the answers that you probably have in mind. The problem is through this vast simplification, you have shot yourself in the foot through unnecessary elaboration (in other words SOS). You could of got by quite well with a standard configuration of source Z = 50 Ohms and standard combiner loss of 3dB with nearly infinite isolation. This is, afterall, the classic model for going "Back to Basics."

By making your combiner loss free, you have blown away absolutely any isolation between the two sources and now each source is loading the other with 0.05 Ohms in parallel with the Load. The only saving grace is the phase match with equal amplitudes, however this clearly reveals a contradiction in your description of what currents are flowing as a consequence.

In effect your combiner is nothing more than a "T" connector, and I would ask how you can place 50V across 50 Ohms in parallel with 0.05 Ohms and have BOTH source 1A of current? Your combiner may increase capacity or reserve, but it does not add power, and it cannot have both sources supporting 1 A of current to the load. There is the superposition of standard Mesh analysis that you may wish to review. This problem is one of the early examples for that topic.

It appears the ghost of Kirchoff has returned to haunt you. ;-)

73's
Richard Clark, KB7QHC

3681. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 19:39:15 UTC
From: kb7qhc@home.com
Message-ID: <3b003faf.336709452@news.seanet.com>
Source record: 163228

On Fri, 11 May 2001 13:07:32 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> <radioconnection@home.com> wrote:
>> >70.71V, 1.414A, 100W
>> >What did I win?
>
>> Win, Lose, or Draw, it would seem that Cecil isn't interested in
>> answers, just questions. ;-)
>
>His answer has not appeared on my server yet, Richard. Give me an
>ever-loving break, will you? I'm trying to learn something.

Hi Cecil,

His response is quoted above. Care to respond through me?

73's
Richard Clark, KB7QHC

3682. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 19:44:55 UTC
From: kb7qhc@home.com
Message-ID: <3b014047.336861330@news.seanet.com>
Source record: 163229

On Fri, 11 May 2001 05:50:39 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>Talk, or rather should I say, typing on a keyboard is cheap!
>
>Richard, you have been merely a spectator, and apparently still are.
>
>Standing or sitting in the grandstands and yelling at the umpire just
>doesn't cut it in this league.
>
>If you are a player, then get in the game. Do the calculations and "prove"
>it, man! Step up to the plate and take a swing.
>
>Otherwise, enjoy your hot dogs and beer, and don't mess with the players
>when they are too close to your for shouting.
>
>-Peter K1PO
>

Hi Peter,

This does not present any compelling argument that supports your
contentions.

As you asked for my intercession, your disappointment seems to have
clouded your judgement (but that's how we got here in the first
place).

73's
Richard Clark, KB7QHC

3683. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 19:54:18 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AFC436A.10D300EC@mwci.net>
Source record: 163230

Roy Lewallen wrote:

> > William E. Sabin wrote:
> >
> > > The current over the edge folklore is just simply dead wrong. Instead of quoting
> > > this and that, explain to me how current can get over the edge and down the other
> > > side, based on nothing but *valid* basic electrical principles.
> >
> > > Instead of insisting that I prove that you're wrong, which is certainly a fun game
for
>
> > you, prove to me that you are right, which may not be quite as much fun.
>
> I believe I have, with the results I posted from my measurements. Can
> you explain the results while maintaining that current can't flow over
> the edge of the shield? And, again I ask: Can you propose an experiment
> that can show currents which can't be explained in this way?

I spent an entire night struggling with your experiment and I told you about two errors in it, and you agreed. My conclusion was that the current-over-the-edge effect was not necessary to explain anything that was going on in that experiment. That conclusion was correct.

I would like to request, not complex experiments that can easily be misconstrued, but an analysis, based on the basic fundamental principles of electrical engineering, that substantiates the claim that the current-over-the-edge (call it "COTE") concept is a valid concept.

I have given you, in the most explicit terms, my reasons why COTE is not valid, based on principles that I firmly believe, after a long consideration, to be true. I do not need to repeat them here again (for the umpteenth time).

My belief is that the authors of the J and B text that you mentioned were incorrect, but either 1) did not realize it or 2) did not express themselves unambiguously. At issue is specifically the COTE concept. I am sure it is 1) not correct and 2) not necessary.

If a wave travels up the inside of the coax in the normal differential mode, as it travels, the potential on the outside of the braid is the same as the potential on the inside of the braid. People like to kid themselves that this does not happen, but it does, and skin effect
does not prevent it. True, skin effect confines the current to the inner surface, but our discussion of W.C. Johnson's excellent and rigorous mathematical analysis of skin effect made it perfectly clear that the voltage difference between the inner and outer surfaces of the braid is zero, skin effect notwithstanding. He was most emphatic about that and I have no reason whatsoever to dispute it. The burden is on you to convince otherwise.

And if there is anything in this world that is obvious to me, it is that the braid thickness
is *very* low impedance for a transverse applied voltage.

Bill W0IYH

3684. Re: Baby Boomer Quad WAS: X-beam, Hexbeam, Double M and supergain

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 20:35:24 UTC
From: G&R <"stop the spam"@limbo.hell>
Message-ID: <g2YK6.66314$_f3.1273589@news20.bellglobal.com>
Source record: 163231

Hi Tom,

Sorry I didn't respond to your initial post directly, so I've reposted our answer to Roy as his initial response to your statement is correct.

Additionally, Tom, please contact erwins@degendesigns.com (VE3 CVS) and ask for his impressions and results using the BBQ, I think you'd be surprised at the results. We were and are very pleased with the results. We could not have asked for better as the antenna does perform as the modelling has indicated.

****** Initial Response *********

Of course you are correct, the numbers were used as calculated by the program. This practice has been used by other suppliers as well, but we can and will correct this in the near future to make this clear, as we do not want to deceive with unrealistic claims.

The NEC4WIN program does have an automatic loop correction feature which yields fairly good results. Actual SWR and Z measurements (Autek Research RF-1) shows the modeling about 0.1 to 0.2 Mhz off which was correct for by trimming the capacity hats. For your interest Cebik's (W4RNL) article inspired us for this design. He modeled the diamond formation but only as a single bander. We found the square more advantageous for various reason, but mostly because it lent itself to a "nesting design" for multi-band use.

Should you wish more information, please contact VE3 CVS at erwins@degendesigns.com

73

Guenther
info@degendesigns.com

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:3AF5E814.B1B27D6A@eznec.com...
> The gain of a dipole at 50 feet on 20 meters is 7.64 dBi, or about 5.5
> "dBd". The plots on the Baby Boomer web site are for gain over ground at
> 50 foot height. This means that the gain of the Baby Boomer quad is
> about 3.5 dB relative to a dipole at the boom height. I'd expect NEC4WIN
> or any other modeling program to show a similar gain for a dipole at the
> boom height. I hope the manufacturers will change their plots to show
> 3.5 dB gain relative to a dipole at the same boom height, rather than
> the very misleading "9 dBd" (and similarly for the other bands).
>
> MININEC-based programs like NEC4WIN have to be used very carefully for
> quads because of MININEC's well known "corner cutting" error. It is

> possible to get good results by using a very large number of segments or
> segment length tapering, but if this isn't done, results won't be
> accurate. The forward gain won't usually be affected much, but the
> indicated F/B ratio can be badly off. See "MININEC: The Other Edge of
> the Sword", in QST, Feb. 1991. Because you don't have to worry about the
> "corner cutting problem", quad modeling is simpler with NEC-2 based
> programs. But results will be nearly identical when using NEC-2 or
> MININEC for quad modeling, as long as segment length tapering is used
> with MININEC.
>
> Roy Lewallen, W7EL
>
> Tom W8JI wrote:
> >
> > On Sun, 06 May 2001 19:40:17 GMT, "G&R" <stop the spam@limbo.hell>
> > wrote:
> >
> > >I wish you would also consider our Baby Boomer Quad (at
> > >www.degendesigns.com). We have used modeling software based on average
> > >ground conditions and based on our actual mounting conditions. To the
best
> > >of our experience our antenna does perform as indicated by our models.
> > >
> > >For your reference our software is NEC4WIN95VM as we feel it's the only
> > >software that can accurately model our antenna. There may be others,
> > >however based our field testing and modeling results it currently
performs
> > >the function the best.
> >
> > A two-element shortened quad with 9 to 10 dBd gain?
> >
> > I'd find out where the modeling error is, or are you twisting the
> > specs and comparing an antenna over ground to a dipole in freespace?!
> >
> > 73 Tom

******* End of Initial Response**********

"Tom W8JI" <2w8ji@contesting.com> wrote in message
news:3afc0bf5.684711113@news.accessunited.com...
> On Fri, 11 May 2001 02:41:53 GMT, "G&R" <stop the spam@limbo.hell>
> wrote:
>
> >Hi Bill,
> >
> >Yes I'll be glad to answer your question.
> I'm more interested in the 10dBd gain claims than the price.
>
> It looks like a freespace dipole is being compared to a over-a-large-
> groundplane quad.
>

> If that is the case, the gain claims are misleading. The normal
> convention is to compare a dipole at the same avareage height, because
> the question is always "how much signal will I gain over a dipole?".
>
> If you want to compare a real-world antenna to a freespace antenna,
> then you should use dBi.
>
> The price is very clear, it is the gain that is misleading.
>
> 73 Tom

3685. Re: AM/FM reception in Midtown NYC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 20:48:18 UTC
From: Matthew Delaney <delaney@ucs.net>
Message-ID: <tfojugqcinvae7@corp.supernews.com>
Source record: 163232

> visible solutions are unacceptable to the customer - If I make it work by
> attaching to the window frame, it does no good unless I can also hide it
> completely.

Maybe you can hide it within the window frame? All you need is small wire. Maybe if part of the frame (if it's not metal) can be removed. Or putting a dipole outside the window and running it inside under the frame. Or just painting over it in a matching color.

I've never tried them, so I have no idea if they really work, but I believe there are antennas out there that (attempt) to use the power lines as an antenna.

Matt

3686. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 21:01:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC5319.147AE82D@IEEE.org>
Source record: 163233

Richard Clark wrote:
> Diversions? I had to ask you twice for one thing, Steve responded to
> the same question on the first try. He also responded with a normal
> value whereas yours is fanciful and evidence of pulling yet another
> "Kirchoff's Laws thread" sucker punch on us.

The source impedance doesn't matter. You insisted on one. I gave you
one. Now you are still complaining.

> By making your combiner loss free, you have blown away absolutely any
> isolation between the two sources and now each source is loading the
> other with 0.05 Ohms in parallel with the Load.

There are no reflections anywhere, Richard. That's a boundary condition.
--
http://www.mindspring.com/~w6rca

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3687. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 21:08:08 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC54B8.343B0C5E@IEEE.org>
Source record: 163235

VE9SRB wrote:
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3AFC29B8.D91BBF43@IEEE.org...
>
> I will not be responding to anymore posts on this subject.

There's a moral here. If you don't pay attention to power,
someone may make off with the family joules.
--
http://www.mindspring.com/~w6rca

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3688. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 21:08:20 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AFC54C4.EAA1DDA0@spam.me.not>
Source record: 163234

Actually, I was waiting for it to show up in the FCC database. I have
it, and my first 2M set now. ::grin::

Now to work on my Code.....

-SSB (KC8RKQ)

CW wrote:
>
> Are you waiting for this to come in the mail? Unfortunatly, I don't know the
> number but you can call the FCC and get your callsign within about two days
> after passing the test. You can go on the air as soon as they give it to
> you. You do not have to wait for the paper copy in the mail. They should
> have told you about this when you took the test.
> --
> CW
> KC7NOD
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF9E20D.52583CF8@spam.me.not...
> > Heh. I'm not going to argue that one...
> >
> > -SSB (who still doesn't have his callsign... Maybe it'll show up
> > tomorrow...)
> >
> > W6RCecilA wrote:
> > >
> > > Sideband wrote:
> > > > Ever stop to think that maybe they all talk on the same frequencies
> > > > because there's too few frequencies for them to talk on?
> > >
> > > More likely, the frequency of their talking is just too high.
> > > --
> > > http://www.mindspring.com/~w6rca
> > >
> > > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3689. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 21:12:52 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC55D4.1E048D56@IEEE.org>
Source record: 163236

Richard Clark wrote:
>
> On Fri, 11 May 2001 13:07:32 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >Richard Clark wrote:
> >>
> >> <radioconnection@home.com> wrote:
> >> >70.71V, 1.414A, 100W
> >> >What did I win?
> >
> >> Win, Lose, or Draw, it would seem that Cecil isn't interested in
> >> answers, just questions. ;-)
> >
> >His answer has not appeared on my server yet, Richard. Give me an
> >ever-loving break, will you? I'm trying to learn something.
>
> His response is quoted above. Care to respond through me?

Yep, that's what we get when we add two in phase 50w forward powers when
no reflections exist. 50w in + 50w in = 100w out, all confined to 50 ohm
coax with no reflections.
--
http://www.mindspring.com/~w6rca

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3690. Re: G5RV on 6 meters? Opinions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 21:31:55 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dhlog$q1q$1@uranium.btinternet.com>
Source record: 163237

> EZNEC sez my G5RV is resonant on 53.7 MHz. Radiation will be
primarily
> from lobes off the ends of the antenna. Not much broadside
radiation.
==========
Cec,

There you go again, praying for support from your Goddess. You
don't need it

EZNEC may say that one particular G5RV is resonant on 53.7 MHz.
But EZNEC tells you next to nothing about YOUR particular G5RV
resonant frequs. Or anyone else's.

On my model of a G5RV there are resonances at 42.7, 43.5, 48.6,
49.2, 56.6, 60.69, 64.6, 71.3 MHz. None of which coincide with
yours. Or again - with anyone else's.

It is utter nonsense to waffle about the performance of 80m dipoles
at VHF. Except it is sure that at least 30% of the power put up
the feedline will be radiated. But only God knows where in the
Universe it will end up. Much of it gets no further than back
yards. In a practical situation EZNEC doesn't have a clue. And
neither does anyone else.

It's time the G5RV, Carolina Windoms, with other inconsequential
wires, were put to rest. Buried in the historical cellars of the
ARRL.

I do hope I have not caused any serious offence to the more
sentimental members of our fraternity.

Reg.

3691. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 21:36:32 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dhm10$31i$1@plutonium.btinternet.com>
Source record: 163238

> This is an r-f phenomenon, and does not apply to d-c.
==========

I'm sorry to say that d-c and a-c are all equally at home in our
part of the Universe.

Its just that skin depth is a long way down at d--c.

Reg

3692. FS: 4x22 element FO 432MHz Yagis

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 22:59:02 UTC
From: "D. Vanderplough" <davander@home.com>
Message-ID: <W8_K6.15731$ks3.5815906@news1.mntp1.il.home.com>
Source record: 163239

I have for sale four 70cm 22 element FO style antennas and four way power divider. These were homebrewed several years ago, not commercial, but all four work well. Also have 4 port power divider and hardware for an H-frame. I was going to install these myself and play around with moonbounce, but have reconsidered and decided to part with the setup. Sorry, no phasing lines.

I am asking $200 for the entire array. I am in Northwest Indiana and will not ship these, they must be picked up.

Dan K9RQ
davander@home.com

--

3693. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 23:01:45 UTC
From: 2w8ji@contesting.com
Message-ID: <3afc6c7f.709429461@news.accessunited.com>
Source record: 163240

On Fri, 11 May 2001 00:58:28 GMT, noname@aol.com (Dave) wrote:

>Hi,
>
>Does anyone know where I can find information on the impedance
>transformation that occurs when a balun is operated in the
>presence of high SWR? I note that the ARRL Handbook is silent on
>this point, simply stating that "loads with reactive components
>should use appropriate networks to cancel the reactance." So I
>take it that a 4:1 balun does not just divide the twin lead
>impedances by 4.

Sevek has a lot of things right in his book, but his concept of what a balun should do is wrong. The voltage baluns he favors are impedance critical, and do not provide what you really want in most antenna systems. They tend to be lossy and power limited except over a limted range of impedances and frequencies.

If you are going to have a reactive load, or a mismatched load, stay away from a voltage-type balun. In general, you also do not want a balun with a step-up ratio when feeding balanced feeders on multiple bands.

Choke baluns are virtually impedance non-critical, and generally are 1:1 ratio. They look like a very short section of transmission line for normal-mode currents, so they do not modify the impedance much. They look like a high impedance for common-mode currents that cause problems.

The best choice is a choke balun, with a design selected for the power levels you run. Stay away from strings of beads, because the choking impedance is generally not high enough.

How much power are you going to run, and what type of antenna system? I use a stack of four 61 material 2 inch diameter cores wound with 20 turns of twisted-pair HV teflon wire. That balun works very well from 1.8 to 30 MHz, and handles well over 1500 watts without great concern about the feed impedance.

73 Tom

3694. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 23:06:23 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <Pf_K6.3245$la.34428@news1.sttls1.wa.home.com>
Source record: 163241

I guess Bill and I are the only skeptics that think that skin effect just doesn't work quite like has been described in the ARRL Antenna Book and on this news group. It is usually up to the skeptics to offer evidence to support the new position.

I am trying to get a line on the copper sheets. They are not readily available in a small town like ours. I will find them some place. I could find aluminum but I don't think I could make a good attachment without drilling a hole, which could compromise the validity of the experiment.

I won't get this done soon, but if I never start I will never finish.

73, Roger, W7WKB

3695. Re: lambda 2el yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 23:08:26 UTC
From: 2w8ji@contesting.com
Message-ID: <3afc707c.710450909@news.accessunited.com>
Source record: 163242

Why are the auction people spamming this discussion group?

3696. Re: Last Day: Icom TV R7000 on ebay

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 23:10:26 UTC
From: 2w8ji@contesting.com
Message-ID: <3afc70dc.710546444@news.accessunited.com>
Source record: 163244
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.cb,rec.radio.scanner,rec.radio.shortwave,rec.radio.swap,sci.electronics.repair

On Fri, 11 May 2001 18:22:41 GMT, "Headhamster"
<headhamster@earthlink.net> wrote:

>I have the somewhat rare Icom TV R7000 for auction on ebay. This unit lets
>you receive amateur and broadcast TV with your R7000.
>http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1235808342
>Please take a look.
>
>Rich

Rich, Why are you spamming the antenna discussion forum with auction
crap?

This forum is NOT for things being sold. Read the FAQ for this
newsgroup.

73 Tom

3697. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 23:13:44 UTC
From: atkes@imap1.asu.edu
Message-ID: <9dhrn8$mv1$1@news.asu.edu>
Source record: 163243

Roger Sparks (sparksrc@home.com) wrote:

snip

: Ok, then, I am thinking of making a series of 4 dipoles and testing them on
: 10 Meters. The test would compare lengths required to find resonance under
: 4 conditions. Make each resonate at same freq.

: The test configurations:

: 1) no plate loading. Record length.

: 2) loading with 2 12 inch diameter wire frames made as 4 spokes and round
: rim, #12 copper wire, 8 inch spacing. record resonant length

: 3) loading with 12 inch diameter copper mesh screen, tight weave, try to
: emulate coax braid.
: record resonant length

: 4) loading with two 12 inch diameter copper plates, spaced 8 inches apart,
: solder connections at the center. Plate thickness #18 gage (.040) or
: greater. Record resonant length.

snip

Roger,

You might want to look up slow wave structures in a text such as S. Ramo, J.R. Whinnery, and T. van Duzer, "Fields and Waves in Communication electronics", (Wiley, New York, 1984), where structures like this are placed in waveguides to slow the propagation.

I think part of the problem is a misunderstanding of how conductors and insulators work. Good conductors absorb electromagnetic energy that enters them. In antennas and transmission lines, conductors guide the electromagnetic waves. The conductor is analogous to a water pipe. The water does not flow inside the metal of the pipe. It is guided by the pipe and flows in the region where there isn't metal. Similarly electromagnetic energy is absorbed in a conductor. Very strong absorbers reflect most of the incident energy. And while it is true that most of the energy is reflected from a conductor the small amount of energy that enters the conductor is absorbed.

A good insulator on the other hand, does not absorb much electromagnetic energy.

Because a conductor is a good reflector and absorber, it mostly guides the waves, but it absorbs within a few skin depths any electromagnetic

energy that manages to enter. A current through the bulk of the conductor would correspond to electromagnetic energy penetrating deeply into a material that is very absorptive. This simply does not happen.

Please look at the figure of the current density as a function of depth on my web page <http://fermi.la.asu.edu/w9cf/skin/skin.html>. (It may be jumpy until your browser downloads the entire animated gif file.) This figure is the same as shown in many texts except that it shows the dynamics rather than requiring you to use your imagination. Notice that the current is not all in the same direction. It is hard to predict what people, who are making wrong assumptions, will think, but if you don't like the current on opposite sides of a conductor being uncoupled. What do you think about the current changing direction just inside the conductor? How does that square with your version of Ohm's law? If on the other hand you view this as a picture of a small amount of electromagnetic energy being absorbed, you are viewing a wave entering the conductor and decaying away in a few cycles. Viewing a conductor as a good reflector which absorbs any energy that enters is not only correct, but gives a good understanding of how things work. The electromagnetic energy in coax is flowing in the space between the conductors. It is guided by (i.e. reflected from) the conductors to keep it confined in that region. A small part of the energy is not reflected and is absorbed in the conductor.

When it reaches the end, some of the energy is guided around and back down the outside of the coax unless you make some effort to choke it off. In terms of the current, it loops around from the inside to the outside of the coax.

Just to reinforce this a little, insulators have a dielectric constant which has a small imaginary part. That imaginary part corresponds to the absorption of electromagnetic energy. So for example my American Institute of Physics handbook says polyethylene has a dielectric constant at hf frequencies of roughly K = 2.355 (1 + i 120 10^-6) so the imaginary part (and therefore the absorption) is quite small. On the other hand, copper has a dielectric constant at 14 MHz of about K = i 7.5 10^10. Notice that this is extremely large and purely imaginary (i.e. enormous absorption) in fact this absorptive imaginary part is so large that it is quite difficult to measure a real part.

Once you understand this, you realize that high frequency electromagnetic energy will never "cut across" a large amount of conductor. That is absolutely the worst path. It is much easier for it to run along the surface until it gets to an edge and then "loop around and double back." All of this is well known and described in many text books. Incorrectly applying concepts from circuit theory can lead you astray, however, there is no controversy among people who understand Maxwell's equations and how conductors work.

73 Kevin w9cf

3698. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-11 23:26:13 UTC
From: kb7qhc@home.com
Message-ID: <3afc7069.349183689@news.seanet.com>
Source record: 163245

On Fri, 11 May 2001 16:01:13 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> Diversions? I had to ask you twice for one thing, Steve responded to
>> the same question on the first try. He also responded with a normal
>> value whereas yours is fanciful and evidence of pulling yet another
>> "Kirchoff's Laws thread" sucker punch on us.
>
>The source impedance doesn't matter. You insisted on one. I gave you
>one. Now you are still complaining.

Sorry, Cecil, there is no technical complaint there. You will note
however, that there are serious problems when source Z is taken for
granted, or handled casually.

This, in fact, is one property of combiners that allows you to neglect
that treatment, BUT only if you have conserved the isolation
characteristic. You, however, have destroyed that completely and your
model is intensely source Z dependant.

>
>> By making your combiner loss free, you have blown away absolutely any
>> isolation between the two sources and now each source is loading the
>> other with 0.05 Ohms in parallel with the Load.
>
>There are no reflections anywhere, Richard. That's a boundary condition.

Sorry, Cecil, there is no mention of reflections anywhere in there,
each source is directly loading the other, not indirectly through
reflection. In fact that would be impossible if the combiner
exhibited its normal isolation, but you have rendered that to 0 and
only through co-phasing and "exact" amplitude match do you manage to
keep one source from pulling the other. However, this says nothing of
the simple fact that two sources in direct parallel (such as you model
exhibits) do not add anything - literally.

If you had simply observed the commonplace combiner, accepted its 3 dB
loss and infinite isolation, you would not have needed the unnecessary
elaboration of synchronizing the amplitudes of the two sources.

I will leave it to Peter to offer the simpler DC analysis to show that
two batteries in parallel do not increase either the voltage presented
to the load, nor the current going through it. Simple Mesh analysis
employing the conventions of Kirchoff more than adequately illustrate
this in the math, but intuition should suggest that step merely

confirms common sense.

You have yet to answer how these two sources of your model manage to both feed 1A of current through the common Load that is strapped in parallel to the two parallel sources. This is typically the second or third exercise in the Circuit Analysis topic Mesh or Nodal analysis (often illustrating the concept of super-position). There is no need to respond to this however, unless you wish to run this through again with a better model.

73's
Richard Clark, KB7QHC

3699. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 00:21:36 UTC
From: 2w8ji@contesting.com
Message-ID: <3afc7e23.713946185@news.accessunited.com>
Source record: 163246

On Fri, 11 May 2001 23:06:23 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:

>I guess Bill and I are the only skeptics that think that skin effect just
>doesn't work quite like has been described in the ARRL Antenna Book and on
>this news group. It is usually up to the skeptics to offer evidence to
>support the new position.

Well, at least you and Bill are consistent!

One person arguing against you here initially claimed skin effect
wouldn't isolate the inside of a shield from the outside in a loop
antenna, and that the magnetic field COULD penetrate the shield.

I of course argued that the only way the conductor inside the shield
could be excited was by current "spilling over the edges" at the
shield opening.

It is quite easy to see we often have a problem with the concept of
skin effect. That's unfortunate, because it is a very important
effect.

>I am trying to get a line on the copper sheets. They are not readily
>available in a small town like ours. I will find them some place. I could
>find aluminum but I don't think I could make a good attachment without
>drilling a hole, which could compromise the validity of the experiment.

Try industrial roofing supply houses, or if you have a McMaster-Carr
distributor locally you might contact them. They sell small amounts of
many thousands of different materials at a reasonable price, including
coppersheeting of various thickness. The copper I used in my
experiment was about one or two feet square, and I did my tests at
mid-HF.

Very clearly, nothing measurable penetrates the conductor. Neither
magnetic or electric.

I initially did my tests because I also had a problem with this
concept. Now I am firmly in agreement with Roy, Kevin, and all of the
textbooks. I initially thought it made little difference how one
viewed this, but now that I look at problems this way I have zero
conflicts with how things behave. My RF life is more comfortable
sticking with the correct way of viewing this problem.

Like a reformed smoker, you won't find me ever going back to my old
ways!!

73 Tom

3700. QST-QST-QST INVITATION TO 3 ANTENNA REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 00:34:08 UTC
From: fractenna@aol.com
Message-ID: <20010511203408.12882.00003232@ng-cs1.aol.com>
Source record: 163247

QST--

You are invited to join one or all of the following lists on yahoo groups (formerly e-groups). All these reflectors are e-mail based, friendly, objective, and moderated ,so that no spam, porn, off-topic, or personal-offensive posts are sent out. Membership is screened against those with a history of disruption/trolling. You will receive no off-list e-mails by subscribing:again; no spam.

Occasionally free offers of antenna files and other info are presented, along with photos of relevant antennas (unlike most NG's you CAN do attachments).

These lists (with some recent subscriber sizes) are:
ANTENNAS@YAHOOROUPS.COM 230 members
CROSSFIELDANTENNA@YAHOOGROUPS.COM 70 members
FRACTALANTENNA@YAHOOGROUPS.COM 320 members

Please review the descriptions at:

http://www.yahoogroups.com

Note the CFA list specifically deals with this antenna in an objectively critical fashion and no posts will be allowed that make grandiose claims without supporting data presented. To date, no data has been presented which requires the extraordinary claims made by some pundits: there is no evidence for better performance than any other small vertical antenna (and that performance is poor).

Fractal antenna posts should go the the fractal antenna reflector; not the antennas reflector. Note that Dr. Cohen, N1IR, the founder of fractal element antenna technology, uses this forum to answer questions on the web--exclusively. If you have a web-based question for him, kindly post it on the FAR assuming it is of general interest.

To subscribe to any list, either go through the process at egroups, or to skip the process (and some say 'annoying questions') just do:

---------- -subscribe@yahoogroups.com
where the ---------- is the name of a given list (such as 'fractalantenna')

Kindly do not query this e-mail address; the info here is complete for your information pleasure.

73,
Phil de
N1ZKT

3701. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 00:47:44 UTC
From: Harold <hsnyder@houston.flightlessbird.com>
Message-ID: <QK%K6.39472$Cc1.9204677@typhoon.austin.rr.com>
Source record: 163248

Keith,

Thanks for the comments.

I did some tests with reduced power and found that the TVI went away at about 40 watts. That is about what I expected, at some point the interference would be negligible

In my first message I mentioned that 20 and 10 meters were clean, even with the amplifier.

I had never run the amplifier on 15 meters until today because I knew I had a problem. It loaded up fine into the dummy load. After switching to the antenna, bang, instantaneous with key down on the mic (ssb) the exciter tripped out.

This makes me think that the problem is in the feedline or antenna. I hope it isn't just another problem.

-Harold
wd5kca

"kazering" <kazeringue@aol.com> wrote in message
news:3AFC1B0D.2030500@aol.com...
> Looks like you got a bunch of varying suggestions on what to
> try.
>
> Go with the simplest methods first! Its cheaper!
>
> Also, did you try cutting back the power to see what
> happens? You may need to reduce the power to help debug the
> areas having problems. If the problem occurs while at full
> power, does it occur at 100 or 50 or 5 watts? Also, 50
> watts may cause RFI on the TV, but RFI elsewhere may only
> happen at 500 watts. It may help you decide how to spend
> money on solutions(or which RFI you can live with....).
>
> good luck,
> Keith, W4KAZ
>

3702. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 01:18:58 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFC8F82.E6A0CE50@IEEE.org>
Source record: 163249

Reg Edwards wrote:
>
> Echos and reflections involve both location and time.
>
> Should watts be summed only when they occur at the same place at
> the same time ?
>
> I think the problems would evaporate if watts were barred from the
> discussion.

That's why I imagine a one second long transmission line. Then everything
can be in joules.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3703. Re: Leaky Feeder

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 01:26:16 UTC
From: "J. Mc Laughlin" <n8tt@tir.com>
Message-ID: <3AFC9138.3D784AB4@tir.com>
Source record: 163250

Dear Paul: Andrew's "leaky coax" works just as they say it does. I
designed an elaborate system using their product to provide coverage
in basement areas and an under-the-road tunnel that has been doing the
job for many years. A vertical run using regular coax goes to a roof
mounted antenna. The improvement was dramatic. The system was
designed for a 150/450 MHz system, but I have found that even cell
phone coverage is improved. I do not know the frequency of DECT.
The system requires no maintenance and can be very cost effective.
73 Mac

Paul Huish wrote:
>
> We have some DECT phones in our building but there are areas they do not
> cover.
> Would it be possible to run 'leaky feeder' coax round the building and
> connect that in some way to (or instead of) the DECT base station antenna?
> Any suggestions?
>
> Thanks
>
> Paul
>
> --
> --
> Paul.Huish@Interhouse.Redbus.com
> Facilities Manager, Redbus Interhouse
> 6&7 Harbour Exchange Square, London, E14 9GE
> Tel: 020 7531 8744, Mob: 00 33 672 21 68 17
> Fax: 020 7531 8701
> --

--
J. Mc Laughlin n8tt@tir.com Michigan ~

3704. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 01:40:01 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AFC9471.9582C8AB@mwci.net>
Source record: 163251

atkes@imap1.asu.edu wrote:

> When it reaches the end, some of the energy is guided around and back
> down the outside of the coax unless you make some effort to choke it
> off. In terms of the current, it loops around from the inside to the
> outside of the coax.

False.

Imagine a coax, vertically mounted, resistively terminated at the top, fed at the bottom. The Poynting vector is entirely within the interior of the coax, it points toward the resistor, and there is no radio frequency Poynting vector on the outer surface of the coax. And this is correct for any electrical length of the coax. The longitudinal braid impedance can be 0.0 ohms, no difference.

There is *zero* current flowing down the outside.

To get a Poynting vector pointing downward on the outside there must be a common mode path that is a destination for it. There must be something else that is creating that destination. That something is an unbalance of some kind that instigates a common mode current. And there must be a *closed* path for it that includes the coax braid but is not limited to it.

And the path for that common mode Poynting vector is not from the center of the coax, "spilling" over the edge. That path is produced elsewhere in the system. In other words, the so-called spillover is not involved in the common mode path.

There is more involved than incident and reflected waves and absorptions and Poynting vectors. There are impedances and electric charges and circuits aspects involved. And they do not take a back seat.

Fig 24 and text in Chap 26 of the ARRL Antenna Book assert that this current over the edge is just simply always there, period.

False.

Bill W0IYH

3705. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 01:53:08 UTC
From: w2du@iag.net
Message-ID: <3afc6ed8.7933237@news.onemain.com>
Source record: 163252

On Fri, 11 May 2001 16:08:08 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>VE9SRB wrote:

>> I will not be responding to anymore posts on this subject.
>
>There's a moral here. If you don't pay attention to power,
>someone may make off with the family joules.
>--
>http://www.mindspring.com/~w6rca

Excellent point, Cecil.

Perhaps the following explanation will help in understanding why the total forward power results from the addition of the source and reflected powers, and not the addition of their respective voltages. The reflected power is a direct result of the changing electromagnetic field surrounding the discontinuity of mismatched termination as the electric and magnetic fields encounter it. The changing fields surrounding the conductor of the termination generate new electric and magnetic fields that launch new rearward traveling waves of voltage and current waves in a process identical with that in a mechanical generator. At the mismatch the fields are changing around the conductor, while in the mechanical generator the conductors are moving around the fields with the same result. Thus the mismatch or discontinuity results in what can be called a 'reflection generator'. When the reflection generation process is complete the energy in the fields is rearranged such that the energy propagating in rearward direction is that of the reflected power.

Let's come now to the matching point in a matching device where two sets of complementary reflected waves join the forward waves. One set of reflected waves is generated by the terminating mismatch and the other by an intentional mismatch that generates canceling reflections of the same magnitude as the terminating mismatch, but of opposite voltage and current polarities. When these reflected voltages and currents reach the totally-re-reflecting matching point their respective fields are changed abruptly, launching propagation of their energy in the forward direction and adding their energies to those of the electric and magnetic fields of the forward-traveling source wave.

Thus the addition of the electromagnetic fields of both the source and reflected waves results in the addition of their respective energies, which is why the re-reflected power contained in the reflected waves adds to the source power to establish the total forward power. Consequently, this is the reason total power is not determined by the simple addtion of the source and reflected voltages.

Walt, W2DU

3706. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 02:04:12 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9di5m2$cd2$1@slb3.atl.mindspring.net>
Source record: 163253

Richard:

Thanks,

[snip]
>
> I will leave it to Peter to offer the simpler DC analysis to show that
> two batteries in parallel do not increase either the voltage presented
> to the load, nor the current going through it
[snip]

I was beginning to think that DC was too simple!

-Peter K1PO

3707. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 02:09:07 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9di5vb$lc0$1@slb7.atl.mindspring.net>
Source record: 163254

Cecil:

Recall from basic Physics that Volts actually have units of Joules per Couloumb.

A unit of 1 volt is actually a unit of 1 Joule of energy as held by 1 Couloumb of charge.

Voltage and energy are inexrtixibly intertwined. Voltage is actually a measure of energy per couloumb.

So where do you get off, claiming that a voltage needs an energy to cause it?

Heh, heh... a voltage is itself an energy...

What?

-Peter K1PO

\
"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFC0648.5BD966AE@IEEE.org...
> VE9SRB wrote:
> > This problem is not analogous to adding two forward traveling waves
> > (voltages) in a transmission line. Its not even close.
>
> Of course it is, Steve. It proves that you cannot just willy nilly add
> voltages. The underlying energy MUST add up. The reason we don't get 100v
> from adding the two 50v signals is there is not 200 joules/sec of energy
> available.
>
> If your transmission line voltages happen to add up, it is because they
> are supported by a sufficient amount of underlying energy. If you abandon
> your "powers don't add up" agenda, you can easily track down the sources
> of all the energy.
>
> > Cecil, are the XMTR's constant current sources, constant voltage sources, or
> > constant power sources?
>
> Constant voltage sources in 50 ohm environments with no reflections anywhere.
> --
> http://www.mindspring.com/~w6rca
>
>

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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3708. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 02:20:51 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9di6lo$pq0$1@slb5.atl.mindspring.net>
Source record: 163255

Kevin:

All of your assertions seem to be about current and not voltage.

I agree that skin effect attenuates currents very rapidly with depth "under the skin", however "voltage" is a different issue and like an image in a mirror, there is a residual image of the full voltage on the other side of the conductor. It just cannot deliver or drive any power through such a large resistance as presented by numerous skin depth layers.

Nonetheless the voltage is there.

That's all that some folks were trying to say. The voltage is there, but the available current is attenuated by the "resistance" presented by the skin effect layers.

Attempting to measure the voltage with conventional instruments with measurement impedances in the neighborhood of only a few MegOhms is futile when the source resistance across the skin effect divide may be petaOhms... with attenuation ratios in the hundreds of dB's.

Nonetheless, the voltage is there, just as Maxwell's celebrated equations predict it to be.

In fact I lview the skin effect resistance as part of the common mode impedance which defines the ratio of differential mode to common mode transfer function for coaxial cable and that particular function defines the "common mode rejection ratio" or "common mode response" of the coaxial cable.

-Peter K1PO

<atkes@imap1.asu.edu> wrote in message news:9dhrn8$mv1$1@news.asu.edu...
> Roger Sparks (sparksrc@home.com) wrote:
>
> snip
>
> : Ok, then, I am thinking of making a series of 4 dipoles and testing them on
> : 10 Meters. The test would compare lengths required to find resonance under
> : 4 conditions. Make each resonate at same freq.
>
> : The test configurations:
>
> : 1) no plate loading. Record length.
>

> : 2) loading with 2 12 inch diameter wire frames made as 4 spokes and
round
> : rim, #12 copper wire, 8 inch spacing. record resonant length
>
> : 3) loading with 12 inch diameter copper mesh screen, tight weave, try
to
> : emulate coax braid.
> : record resonant length
>
> : 4) loading with two 12 inch diameter copper plates, spaced 8 inches
apart,
> : solder connections at the center. Plate thickness #18 gage (.040) or
> : greater. Record resonant length.
>
> snip
>
> Roger,
>
> You might want to look up slow wave structures in a text such as S.
> Ramo, J.R. Whinnery, and T. van Duzer, "Fields and Waves in
> Communication electronics", (Wiley, New York, 1984), where structures
> like this are placed in waveguides to slow the propagation.
>
> I think part of the problem is a misunderstanding of how conductors and
> insulators work. Good conductors absorb electromagnetic energy that
> enters them. In antennas and transmission lines, conductors guide the
> electromagnetic waves. The conductor is analogous to a water pipe. The
> water does not flow inside the metal of the pipe. It is guided by the
> pipe and flows in the region where there isn't metal. Similarly
> electromagnetic energy is absorbed in a conductor. Very strong
> absorbers reflect most of the incident energy. And while it is true
> that most of the energy is reflected from a conductor the small amount
> of energy that enters the conductor is absorbed.
>
> A good insulator on the other hand, does not absorb much electromagnetic
> energy.
>
> Because a conductor is a good reflector and absorber, it mostly guides
> the waves, but it absorbs within a few skin depths any electromagnetic
> energy that manages to enter. A current through the bulk of the conductor
> would correspond to electromagnetic energy penetrating deeply into a
> material that is very absorptive. This simply does not happen.
>
> Please look at the figure of the current density as a function of depth
> on my web page <http://fermi.la.asu.edu/w9cf/skin/skin.html>. (It may
> be jumpy until your browser downloads the entire animated gif file.)
> This figure is the same as shown in many texts except that it shows the
> dynamics rather than requiring you to use your imagination. Notice that
> the current is not all in the same direction. It is hard to predict
> what people, who are making wrong assumptions, will think, but if you

> don't like the current on opposite sides of a conductor being
> uncoupled. What do you think about the current changing direction just
> inside the conductor? How does that square with your version of Ohm's
> law? If on the other hand you view this as a picture of a small amount
> of electromagnetic energy being absorbed, you are viewing a wave entering
> the conductor and decaying away in a few cycles. Viewing a conductor as a
> good reflector which absorbs any energy that enters is not only correct,
> but gives a good understanding of how things work. The electromagnetic
> energy in coax is flowing in the space between the conductors. It is
> guided by (i.e. reflected from) the conductors to keep it confined in
> that region. A small part of the energy is not reflected and is absorbed
> in the conductor.
>
> When it reaches the end, some of the energy is guided around and back
> down the outside of the coax unless you make some effort to choke it
> off. In terms of the current, it loops around from the inside to the
> outside of the coax.
>
> Just to reinforce this a little, insulators have a dielectric constant
> which has a small imaginary part. That imaginary part corresponds to
> the absorption of electromagnetic energy. So for example my American
> Institute of Physics handbook says polyethylene has a dielectric
> constant at hf frequencies of roughly K = 2.355 (1 + i 120 10^-6) so
> the imaginary part (and therefore the absorption) is quite small. On the
> other hand, copper has a dielectric constant at 14 MHz of about
> K = i 7.5 10^10. Notice that this is extremely large and purely imaginary
> (i.e. enormous absorption) in fact this absorptive imaginary part is so
> large that it is quite difficult to measure a real part.
>
> Once you understand this, you realize that high frequency electromagnetic
> energy will never "cut across" a large amount of conductor. That is
> absolutely the worst path. It is much easier for it to run along the
> surface until it gets to an edge and then "loop around and double back."
> All of this is well known and described in many text books.
> Incorrectly applying concepts from circuit theory can lead you astray,
> however, there is no controversy among people who understand Maxwell's
> equations and how conductors work.
>
> 73 Kevin w9cf

3709. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 02:28:33 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9di73p$v2e$1@slb0.atl.mindspring.net>
Source record: 163256

Bill:

FWIW... see my posts in which I support your position completely. The voltage on the outside surface of the coax equals the voltage on the inside surface and they are separated by an extremely large impedance, of perhaps petaOhms at HF.

The "end run effect" is a non-starter, that's simply not how low common mode rejection of coaxial cable arises. As you point out there is simply no potential to drive currents up and over the "finish line".

-Peter K1PO

.

"William E. Sabin" <sabinw@mwci.net> wrote in message news:3AFBD485.3BE74473@mwci.net...
>
>
> Roy Lewallen wrote:
>
> > Kraus, _Antennas_, Second Edition, p. 741:
> >
> > "If a [lambda]/2 dipole antenna is fed by a single coaxial line as in
> > Fig 16-27a, current can flow back along the outside of the coaxial cable
> > making the current distribution on the dipole unbalanced, as suggested
> > in the figure. . .
>
> He does not say that this current is due to the "over-the-edge" effect. That is what
> I object to, as I have said very carefully.
>
> > Jordan and Balmain, _Electromagnetic Waves and Radiating Systems_,
> > p. 407:
> >
> > "In Fig. 11-39(a) a balanced dipole antenna is shown connected directly
> > to the end of an unbalanced (coaxial) line. The currents I1 [on the
> > center conductor] and I2 [inner surface of the shield] must be equal and
> > opposite. At the junction A, current I2 divides into I3 [outside surface
> > of the shield], which flows down the outside of the outer conductor of
> > the line and K2 - I3 which flows on the second arm of the dipole."
> >
> > Figure 11-39 is virtually identical to the illustration in Walt
> > Maxwell's QST article "Some Aspects of the Balun Problem" and in my
> > Compendium article "Baluns: What They Do and How They Do It". The
> > current flow described by Jordan and Balmain is the same as explained in

> > both those articles, and is in agreement with the measurements I posted
> > a few days ago.
>
> If what J and B and W2DU and W7EL say is that the return current is due to
the
> "over-the-edge" effect, then all of you are wrong, no matter how many
places it is
> published. The current over-the-edge idea as you guys have described it
cannot
> happen. All you have to do is use your own knowledge of Ohm's law.
Specifically, a
> current cannot flow in a certain direction unless there is a voltage
difference of
> the correct polarity. At the open end of the coax that condition does not
and cannot
> exist simultaneously on both the inside and outside surfaces in *opposite*
> directions. And using skin effect to get around that dilemma is bull shit.
>
> This is what I mean by "emotion". Instead of using your head, you are
believing what
> you and your circle of friends *want* to believe and you invoke the
"magical"
> properties of skin effect to try to justify what you cannot explain. And
all of you
> completely ignore that the braid cannot have a transverse voltage between
its
> surfaces. Somehow that just doesn't seem to matter.
>
> The current over the edge folklore is just simply dead wrong. Instead of
quoting
> this and that, explain to me how current can get over the edge and down
the other
> side, based on nothing but *valid* basic electrical principles.
>
> Bill W0IYH
>

3710. Re: Quiz for the day

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 02:33:42 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9di7dr$7fj$1@slb5.atl.mindspring.net>
Source record: 163257

Reg:

Hooray... a voice of reason.

Dont' deal with watts, especially when such watts are fictional to begin with.

"All you really need are volts and amps".

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:9dge7b$86b$1@uranium.btinternet.com...
> Echos and reflections involve both location and time.
>
> Should watts be summed only when they occur at the same place at
> the same time ?
>
> I think the problems would evaporate if watts were barred from the
> discussion.
> ----
> Reg
>
>

3711. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 02:42:11 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9di7to$3ck$1@slb5.atl.mindspring.net>
Source record: 163258

Cecil:

[snip]
> Then why does it succeed in predicting the position and magnitude
> of TV ghosting?
>
[snip]

If you are referring to the so-called "reflected power" then yes...

Position, it does predict that exactly.

Magnitude, yes it predicts voltages, but not powers since it is actually a "made up" power calculated from voltages.

[snip]

[snip]
> You and I have agreed on a mental exercise involving a one second long
> lossless transmission line, Peter. You agreed every step of the way.
> You even said that I do understand. Are you taking that all back?
> Should we repeat the mental exercise?
\
[snip]

Nope, no need to do that...

I agree that there is a finite amount of energy "stored" on the line in the magnetic and electric fields, it's just that it is not directly related to that value called by most, the "reflected power".

Don't wonder about this! Don't try to describe it in words! Do some quantitative calculations based upon the exact and precise definitions of reflected voltage and current.

Do the calculations yourself and see! All you really need to examine is the DC case. For if it works at DC it must also be true at AC or HF or RF or microwaves...

The laws of Physics don't change with frequency!

Happy analysis and computations.

-Peter K1PO

3712. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 02:51:17 UTC
From: atkes@imap1.asu.edu
Message-ID: <9di8f5$o7g$1@news.asu.edu>
Source record: 163259

Peter O. Brackett (ab4bc@ix.netcom.com) wrote:
: Kevin:

: All of your assertions seem to be about current and not voltage.

: I agree that skin effect attenuates currents very rapidly with depth "under
: the skin", however "voltage" is a different issue and like an image in a
: mirror, there is a residual image of the full voltage on the other side of
: the conductor. It just cannot deliver or drive any power through such a
: large resistance as presented by numerous skin depth layers.

: Nonetheless the voltage is there.

: That's all that some folks were trying to say. The voltage is there, but
: the available current is attenuated by the "resistance" presented by the
: skin effect layers.

: Attempting to measure the voltage with conventional instruments with
: measurement impedances in the neighborhood of only a few MegOhms is futile
: when the source resistance across the skin effect divide may be petaOhms...
: with attenuation ratios in the hundreds of dB's.

: Nonetheless, the voltage is there, just as Maxwell's celebrated equations
: predict it to be.

: In fact I lview the skin effect resistance as part of the common mode
: impedance which defines the ratio of differential mode to common mode
: transfer function for coaxial cable and that particular function defines the
: "common mode rejection ratio" or "common mode response" of the coaxial
: cable.

Peter,

Before I can answer about the voltage, you need to tell me what your definition of voltage is. Maxwell's equations, celebrated or not, don't have voltage in them anywhere. Some people equate voltage with the scalar potential. The problem with that is that it is not a gauge invariant quantity, and therefore is inherently unmeasureable. Others, like me, most texts, and voltmeters, use the line integral of the electric field to define the voltage. Of course that means that you cannot in general uniquely define the voltage difference between two points without defining a path. In that case, it is typically easier to describe the electric field everywhere. Maxwell's equations do tell you about that. As far as the electric field in a good conductor, Ohm's law tells you it is given by J = sigma E, so once you know the conductivity and the current density, you know the electric field. If you are happy with voltage difference being the line integral along a specified path

of the electric field, then if the current density decays, so does the electric field, and it is trivial to calculate the voltage difference along whatever path you choose -- just don't expect the result along different paths to agree with each other. Faraday's law guarantees that they won't in general.

The nice thing about current, electric, and magnetic fields is that everyone agrees on what they are.

73 Kevin w9cf

3713. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 02:55:45 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9di8mr$1s9$1@slb0.atl.mindspring.net>
Source record: 163260

Michael:

Wake up man!

I did not say that there is no such thing as reflections!

I did not say that there is no such thing as reflections!

I did not say that there is no such thing as reflelctions!

Got it yet?

If not then try this...

Reflections are real.

Reflections are real.

Reflections are real.

What is a fiction is the value presented by so-called wattmeters and called "reflected power". That quantity is not present in the circuit under test!

Do the calculations yourself and see.

Do you know what your danged wattmeter is actually measuring?

I think not...

Does b = V - IR mean anything to you?

What is V? What is I? What is R? Where are they? How does the reflected voltage meter work?

Get with it man!

Wake up and smell the roses!

Open up your wattmeter, draw out the schematic diagram, figure out just what it is "measuring". Analyze the circuit and calculate what it's meter face displays when it is operating?

Have you ever done this?

If not then when will you do it?

I, on the other hand have done this, and I have presented the analysis here for all to review. And none have refuted my analysis and computations.
What?

Heck, man, I design these things for a living.

What are you trying to tell me?

Let's see some circuit analysis of wattmeters and reflected volmeters and some quantitative calculations with real numbers in evididence.

Don't just sit there in the stands drinking beer and eating hot dogs and yelling down at the umpire, come on down and get in the game man. We need a new player at the plate. Take a swing at my real world analysis and examples and refute me with facts and computations.

Words on a NG are cheap!

The only price that understanding will pay, is the price of thouough analysis and solving problems numerically! Complete all the exercises at the end of the chapter or... you will fail the test!

All the rest is "hot air".

As the Nike commercial says...

"Just do it!"

Analyze your favorite /SWR meter circuit and then tell me what the meter is indicating! I have done that and published it here for all to see. Have you? If not then...

Go away and chase DX...

Best Regards,

-Peter K1PO

"Michael Tope" <W4EF@earthlink.net> wrote in message
news:K3vK6.3270$8x4.301682@newsread2.prod.itd.earthlink.net...
> Hi Peter,
>
> You might try the following experiment. Get yourself
> a gated RF source, a fast RF switch and a long 50 ohm
> transmission line. Place a 25 ohm resistive termination
> at the end of the transmission line and connect an
> oscilloscope across the resistor. Connect the other
> channel of the O-scope across the input of the
> transmission line. Now setup the gated source so
> that is generates a burst of RF which is shorter
> than the round trip delay time of the cable. Also setup
> the switch so that the generator is removed from
> the circuit and replaced with a 50 ohm termination
> at the end of the RF burst. Note the amplitude of the
> incident RF burst from the oscilloscope, and the
> amplitude of the burst when it reaches the termination
> at the far end of the transmission line. Then observe
> the amplitude of RF burst envelope when it returns to
> the 50 ohm source termination. Do this experiment and
> then come back and tell us whether or not you still
> consider refleted power to be some kind of fictious

> mathematical formalism.
>
> 73 de Mike, W4EF.....................................
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> news:9dd6pplbo1@slb0.atl.mindspring.net...
> > Walt:
> >
> > Your measurement setups use instruments that measure that "ficticious"
> > reflected power and the "formalism" has been set up to make that an easy
> > thing to do... it does not prove that the "reflected power" exists or
not,
> > it's just part of the measurement "formalism".
> >
> > Measuring one thing, and calling it another, is just playing with words.
> > You must know quantitatively exactly what you are discussing. Unless
you
> > understand the "Internal Operation" of the measuring instruments, you
have
> > but a faint understanding of what is happening. When a meter face
> displays,
> > Watts, you must be sure that the meter is measuring watts, for it may be
> > measuring volts or amps or something else and just "calling" them watts.
> >
> > Unfortunately the fictional mathematical "formalism" of the the
> "Scattering
> > Formalism" is built into the "labels" on most if not all of the
> instruments
> > that you use in your lab setups.
> >
> > Walt, don't depend upon others and the makers of instruments to guide
you.
> > Understand the instruments themselves, try to design instruments to make
> > those measurements yourself, if only in sketch form. It will help you
> > immeasureably with understanding.
> >
> > Walt, I recommed that you either set up a simple DC circuit, or use the
> one
> > that I set up, of a voltage source with an internal resistance and a
> > mismatched load resistance, and do the calculations yourself.
> >
> > It only takes a few minutes... and it will be illuminating, you will
then
> > understand more about reflections than you ever thought possible.
> >
> > And you don't have to depend upon what HP or Daiwa or Tektronix, or PRD,
> or
> > whomever puts on the labels of their instruments, or what people call
> > things, you will know in a very simple quantitative way, just what
> mismatch,
> > reflection coefficient, VSWR, reflected voltage, and reflected power

are!
> >
> > And you will have done it all yourself.
> >
> > Walt, just do it!
> >
> > It only takes a few moments, probably less time than it takes to type a
> > reply to this posting. Stop, analyze, calculate and think at the volts
> and
> > amps level. Leave the power till later, once you have established the
> volts
> > and amps.
> >
> > Why is it that you seem to refuse to do this simple task? I have done
it
> > here on the NG and you refuse to comment or elaborate.
> >
> > Could it be perhaps that you are incapbable of analyzing a simple DC
> circuit
> > with only two resistors in series?
> >
> > Could it be perhaps that you don't really know the equations and
formulas
> of
> > reflection mechanics.
> >
> > Could it be that you don't know the formula for reflected voltage?
> >
> > Could it be that.....???? I wonder????
> >
> > Prove to me that it is not so!
> >
> > Here's my extremely simple challenge.
> >
> > Draw a schematic diagram containing only three elements, a 10 volt
> battery
> > with an internal resistance of 10 Ohms, connected to a 5 Ohm resistor
load
> > and then do the following very simple quantitative DC analysis.
> >
> > 1. Compute the current I through the load and write it down. I = ?
> > 2. Compute the voltage across the load and write it down V = ?
> > 3. Compte the reflection coefficient at the battery terminals and write
it
> > down, rho = ?
> > 4. Compute the VSWR at the load and write it down, VSWR = ?
> > 5. Compute the reflected voltage at the load and write it down, b = ?
> > 6. Compute the power dissipated in the load and write it down, Pload = ?
> > 7. Compute the power dissipated in the internal resistance and write it
> down

> > , Pint = ?
> > 8. Compute the incident or forward power, and write it down, Pf = ?
> > 9. Compute the reflected power and write it down, Pr = ?
> >
> > 10. Now ask yourself where that Pr is generated and where it is
> dissipated.
> >
> > A power that has no source and no sink, no generator and no load, is a
> pale
> > imitation of a real power!
> >
> > Walt, until you thoroughly analyze a simple DC mismatched circuit setup
as
> > above, using all the equations of reflections mechanics, which are just
as
> > valid at DC as at AC, and then stare at the results and ask why?...
> >
> > YOU SIMPLY DO NOT YET UNDERSTAND REFLECTIONS.
> >
> > Once you understand deeply the DC analysis, then and only then are you
> > qualified to go on to understand reflections in AC, HF, RF and
microwaves
> > and to discuss the operation of circulators and directional couplers.
> >
> > Walt, just do it!
> >
> > 10 simple answers, 10 simple questions. Anyone who calls himself an
> > engineer can do it. Can you do it?
> >
> > Best,
> >
> > -Peter K1PO
> >
> >
> >
> >
> >
> > "Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
> > news:3af9fc6a.11565940@news.onemain.com...
> > > On Thu, 10 May 2001 01:11:52 GMT, nospam_n7ws@arrl.net (Wes Stewart)
> > wrote:
> > >
> > >
> > > >Quote #1.
> > > >
> > > >Picture this. I have an x-band source that uses a high quality
> > > >isolator (terminated circulator) on its output. Any power returned
to
> > > >this source is dissipated in the isolator. In addition, there is a
> > > >sampling loop that measures output level and via feedback stabilizes

> > > >the output power (ALC, if you will) This loop has the effect of
> > > >further improving the source match.
> > > >
> > > >I connect this generator to a waveguide high-directivity dual
> > > >directional coupler. We will use waveguide so you can throw away
your
> > > >volt and ammeters.
> > > >
> > > >I place two waveguide thermistor power sensors to the two coupled
> > > >ports on the directional coupler. I place a shorting plate on the
> > > >output of the coupler. If the coupler is a good one, I will measure
> > > >the same power on each of the sensors.
> > > >
> > > >The forward power (your Pi) is sampled by the forward-reading coupler
> > > >at a level equal to the coupling factor, e.g. -30 dB. The output
> > > >short circuit totally reflects the incident power and returns it to
> > > >the source. The reverse-reading sensor samples this, also at -30 dB
> > > >and displays the same value as the forward sensor. Any differences
> > > >between the two can be normalized out.
> > > >
> > > >Because of the 'perfect' source match, there is no re-reflection of
> > > >the reflected power; it is totally dissipated by the generator. This
> > > >system will now reliably measure the return loss (within the
> > > >directivity uncertainty limits discussed earlier) of a load placed on
> > > >the output. For most purposes, we can ignore the forward sensor
> > > >reading because it remains constant regardless of load impedance.
> > > >
> > > >A few words about the power sensors. Contrary to what you claim
> > > >above, the resistance of the thermistors doesn't have to be anywhere
> > > >near the system impedance. The thermistors (today thermocouples are
> > > >also used) simply measures temperature rise in a termination. The
> > > >thermistor is not necessarily the termination. It is usual to have
> > > >matched thermistors in a self-nulling bridge circuit. The second
> > > >thermistor is heated by applying an easily measured DC or low
> > > >frequency AC signal to it. This applied signal power is adjusted to
> > > >null the bridge at which time the applied power equals the r-f power.
> > > >This is a substitution method where a difficult to measure quantity
> > > >(microwave power) is determined by measuring the low frequency or DC
> > > >power. End #1
> > >
> > > Irrefutable proof the reflected power exists!
> > >
> > > >Quote #2:
> > > >
> > > >Let's take two of my waveguide dual-directional couplers
> > > >(reflectometers) and connect them thus:
> > > >
> > > >The input port of coupler #1 attaches directly to the output of a
> > > >well-matched source, as before. On the output port of coupler #1 we
> > > >attach a waveguide E- H tuner (the waveguide equivalent of your

> > > >antenna tuner). On the output of the tuner we attach the input port
> > > >of coupler #2.
> > > >
> > > >On the output of coupler #2 we attach a 3 dB attenuator followed by a
> > > >short circuit.
> > > >
> > > >So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho =
0.5
> > > >
> > > >If I temporarily remove the tuner, as expected, both reflectometers
> > > >measure a 6 dB power ratio between the forward and reflected coupled
> > > >ports.
> > > >
> > > >We assume that maximum available power out of the source is 1.0 W.
> > > >Because we have a non-reflective source, there is a mismatch loss
> > > >given as:
> > > >
> > > >-10 * log(1 - rho^2) = 1.25 dB
> > > >
> > > >or leaving off the -10 log, a power ratio of 0.75.
> > > >
> > > >So of the available power, 0.75 W makes it into the input port of
> > > >coupler #1.
> > > >
> > > >If our couplers are 30 dB, as in my previous example, then we read
the
> > > >following: (give or take coupling loss)
> > > >
> > > >1. Coupler #1 forward port = 0.75 mW.
> > > >2. Coupler #1 reflected port = 0.1875 mW.
> > > >3. Coupler #2 forward port = 0.75 mW.
> > > >4. Coupler #2 reflected port = 0.1875 mW.
> > > >
> > > >Okay, now we put the tuner back in between the two couplers. If we
> > > >fiddle fart around with the tuner, the power reading at the reflected
> > > >port of coupler #1 can be reduced to zero, or nearly so. We have
> > > >"re-reflected" the nasty reflected (dare I say) power back toward the
> > > >load.
> > > >
> > > >The mismatch loss now goes away and the forward port of coupler #1
> > > >reads 1.0 mW.
> > > >
> > > >Let's examine the readings on the thermistor power sensors on the
> > > >coupled ports of coupler #2. Since we tweaked the tuner, we now have
> > > >1.0 W migrating around in the second coupler so the forward coupler
> > > >reads 1.0 mW. (1.25 dB higher than before and no surprise)
> > > >
> > > >With 1.0 W incident on a 6 dB return loss load, the reflected power
is
> > > >0.25 W. The coupling factor is 30 dB so the power appearing at the

> > > >reflected port of coupler #2 is 0.25 mW. The ratio of the reflected
> > > >power to the forward power readings is .25 / 1.0 = - 6dB, just as
> > > >before and (to me anyway) again no surprise.
> > > >
> > > >But wait! We just tuned (conjugately matched) this system to "remove
> > > >the termination" and that pesky reflected power still showing up on
> > > >the coupled port!!!
> > > >
> > > >No voltmeter, no ammeter, no hanky panky, just real reflected power
> > > >heating up the thermistor. Funny how this works. End #2
> > > >
> > > >So....now what?
> > >
> > > Accurate experimental data proves that a concept or theorem is either
> true
> > or
> > > false. Wes' experiments have proved Peter's concept that reflected
power
> > is
> > > fictitous false, which we've known all along.
> > >
> > > And Wes, I've performed similar experiments in my own lab, but with
> coax,
> > using
> > > an HP-8405A Vector Voltmeter and an HP-778D Dual Directional Coupler,
> with
> > > similar results. Bravo!
> > >
> > > >Wes Stewart N7WS
> > >
> >
> >
>
>

3714. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 02:58:22 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9di8sflcf1@slb4.atl.mindspring.net>
Source record: 163261

Reg:

Our French friends have a word for what the point you have just made.

"Touche!"

"En Guarde...}

Best Regards,

Your friend in wave mechanics,

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9dgbs8bru1@plutonium.btinternet.com...
> "Indicates" is a legitimate and apt description where a measuring
> instrument is involved. It allows a distinction to be be made
> between what the instrument responds to and what is indicated.
>
> For example, an ordinary moving coil AC ammeter + bridge rectifier
> responds to the average value of an alternating current but but the
> pointer indicates the RMS value.
>
> It is important for a user to be aware of this - the meter
> indicates correctly only when the alternating current has a
> sinewaveform. Other shapes of waveform results in errors.
>
> Then there's the case of the meter which responds to both the
> current flowing through any value impedance and the voltage across
> it. But the meter indicates SWR when there may not be a
> transmission line around on which to develop any standing waves.
> ----
> Reg, G4FGQ
> ==
>
> Richard Clark wrote
> > "Reg Edwards"
> >
> > >The scope measures or indicates volts - not power.
> > >---
> > >Reg, G4FGQ
> > >
> > >
> >
> > ah Punchinello,

> >
> > Yet another old wive's tale. Is it such a mysterious process to
> > comprehend the intention of "indicates?" I cannot believe that
> such a
> > term is so abstract as to profoundly stupefy any but the most
> learned
> > engineer. Take a step down from your ivory tower and observe how
> > simple these expedients successfully allow people to go about
> their
> > usual occupation without becoming brain-locked over trivial
> > distinctions. ;-)
> >
> > 73's
> > Richard Clark, KB7QHC
>
>

3715. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 03:00:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9di8v7btf1@slb3.atl.mindspring.net>
Source record: 163262

Cecil:

Techno-babble...

Man look at my simple DC examples of "reflection" and refute them if you
can.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFB0AE6.F728F4EC@IEEE.org...
> Michael Tope wrote:
> > Do this experiment and
> > then come back and tell us whether or not you still
> > consider refleted power to be some kind of fictious
> > mathematical formalism.
>
> Mike, I already gave Peter a thought experiment. He agreed with everything
> I said and then said I was wrong and the IEEE Dictionary was wrong. He
> doesn't speak the same language as I so he has rendered communications
> impossible.
>
> Here was my thought experiment: Everything in the system is lossless
except
> the load.
>
> 100w XMTR---51.5 ohm coax---X---one second long 300 ohm feedline---51.5
ohm load
>
> Peter agreed that, after steady-state conditions are reached, the 300 ohm
> feedline contains 300 joules of energy, that the XMTR had generated 300
> more joules than the load had accepted, and that those 300 joules could
not
> stand still. He recently agreed that TV ghosting would occur exactly where
> wave reflection theory predicts. He doesn't realize that same-cycle
> reflections are akin to division by zero in that they are a case too
> mathematically trivial to prove much of anything.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3716. Re: G5RV on 6 meters? Opinions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 03:02:32 UTC
From: Marty Tippin <martyt@pobox.com>
Message-ID: <hl6pft82l20df19g20kact9eimn73oe9o0@4ax.com>
Source record: 163263

The short answer (without all the philosophical, theoretical crap) is
that a G5RV is worthless on 6m. I tried to use mine and it would
resonate no problem, using just the internal tuner in my FT-920..

But that doesn't mean it could hear anything (and it couldn't). 6m is
lonely enough even with a decent antenna. There's no sense in
handicapping yourself even more.

Build a small 3 or 4 element beam and you'll be absolutely amazed at
how well it works.

In the mean time, try a simple flat-top, half-wave dipole for 6m - at
least you know which way it's going to radiate (broadside). It still
won't work very well but you'll be able to get a few QSOs in the log.

73,

-Marty NW0L
martyt@pobox.com

On 11 May 2001 15:17:30 GMT, vhfradiobuff@aol.comspamsux
(VHFRadioBuff) wrote:

>I recently purchased a G5RV antenna was was told that with a tuner, it can be
>used on 6m. Does anyone have any opinions on using it on this band? I plan on
>eventually building a 3 ele yagi for 6m, but until then I want to use the G5RV.
>=-
>73! de KC2SSB (ex: KF4KHC/HL9HCT)
>Toms River, NJ USA! Grid FM29
>http://vhfradiobuff.tripod.com ICQ#13829227
>http://egroups.com/group/vhfallmode

3717. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 03:10:22 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9di9ivodo1@slb4.atl.mindspring.net>
Source record: 163264

Richard:

Are you saying that the same reflection rules do not apply for a short transmission line as for a long one.

Richard, what is the magical length below which your vaunted reflection mechanics fails to work.

Is it 50 feet, is it 30 feet, is it 10 feet, is it perhaps, 1 inch, is it perhaps 1 micron.... what?

Your argument is completely absurd!

Reflection mechanics either works at both AC and at DC and at all lengths of transmission line from 100 miles down to a micron or it doesn't work at all!

What poppy cock!

Tell us Richard what is that magical length below which the reflectometer fails to work?

And what is the distance over which the reflectometer in my FT-1000D transmitter works. Is that meter stretched out over a large fraction of a wavelength? Hell no. It's stretched out over a fraction of an inch at most....

Stop blowing hot air and get real!

the reflected voltage as defined by your "exhalted" reflection formalism is entirely defined by the value of "b":

b = V - IR. Where V and I are measuered at exactly, precisely the same point in time and space!

And so two lumped impedances Z1 and Z2 connected together at one point must exhibit exactly the same reflection mechanics described by your formalism with a reflection coefficient of...

rho = (Z1 - Z2)/(Z1 + Z2)

Give it up Richard, your case is long ago "flushed" along with the rest of that ficticious techno babble.

The truth often hurts, but once you recognize it as such, you are "saved"! Reflected Power as promulgated by the high priests of reflection is a fiction! And...don't drink any of their Koolaid. Figure it out for yourself!

Come on over to the "dark side", you will not regret it. Heh, heh.

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:15898-3AFAA152-3@storefull-116.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "Measuring one thing and calling it another is just playing with words."
>
> We have many useful plays on words. Your analog multimeter is deflected
> by current while it is scaled for volts or ohms. No problem.
>
> Proportionality is not fiction. Display is in the scaling and
> calibration.
>
> Peter`s voltage source with its internal resistance and external load
> lacks one essential ingredient for a distinct reflection to be sensed.
> It needs a transmission line. You need a delay or a directional coupler
> to distinguish the initial signal from the reflection.
>
> If you want a reflection sensed without those misleading instruments,
> you can use your ears to hear an echo. But, you must have enough
> round-trip travel time to sort out the echo from the initial signal.
> Else, you need highly directional transducers, a directional coupler, or
> other tricks to distinguish the sound from the echo.
>
> Where is the delay in Peter`s battery and load resistor? A transmission
> line has energy storage in its inductance and capacitance. More
> importantly, a transmission line has significant length so that whatever
> the vave velocity there is phase rotation along its length.
>
> The formula for the magnitude of the reflected voltage at any point
> along a transmission line is: the magnitude of the vector value of the
> reflected voltage at the load times e (the base of the logarithm) to the
> minus alpha times (l) power. (l) is the distance back from the load.
>
> The phase drops back beta radians for each unit of distance that the
> wave travels toward the generator.
>
> The magnitude of the reflected voltage at the load depends on the
> reflection coefficient which has phase and magnitude.
>
> This is getting tedious to type for a non-typist. If you want the whole
> story, just consult Terman.
>
> Best regards, Richard Harrison, KB5WZI
>

3718. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 03:11:28 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9di9k7$m2a$1@slb7.atl.mindspring.net>
Source record: 163265

Walt:

RF lab in Florida? My challenge only involves DC. What?

-Peter K1PO

"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3afaaf74.3876744@news.onemain.com...
> On Thu, 10 May 2001 00:52:28 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com>
> wrote:
>
>
> >Once you understand deeply the DC analysis, then and only then are you
> >qualified to go on to understand reflections in AC, HF, RF and microwaves
> >and to discuss the operation of circulators and directional couplers.
> >
> >Walt, just do it!
> >
> >10 simple answers, 10 simple questions. Anyone who calls himself an
> >engineer can do it. Can you do it?
> >
> >Best,
> >
> >-Peter K1PO
> >
> OK Peter, you're on. I can do the paper work, but my RF lab is in Florida.
We
> just arrived in Michigan last week for our 6mo summer stay, so I won't
have any
> lab equipment until Nov.--any measurements must wait.
>
> I've got some other chores at the moment, but I'll get back with you.
>
> OTH, how can you dispel Wes' data?
>
> Walt
>

3719. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 03:17:59 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dia0e$26e$1@slb1.atl.mindspring.net>
Source record: 163266

Wes:

I love that dry heat.

Back when I worked for Motorola, I spent a month in Phoenix in August, at MICARL... I grew to love it there, especially in August.

One of my favorite things to do after work was to go up to Pinacle Peak, in the foothills behind Scottsdale, overlooking the desert floor of the Valley of the Sun, and eat one of those famous cowboy steak dinners grilled over a mesquite fire, and watch the sun go down.

However there is one thing I am curious about my travels in AZ... as I drove along the the "open range" on the way up to Pinacle Peak, I would come upon several roadside signs asserting,

"No shooting".

Invariably those signs were full of bullet holes!

What?

Is there no respect for "law" in AZ?

-Peter K1PO

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
news:3afa45b8.108407328@news.aepnet.com...
> On Thu, 10 May 2001 00:20:21 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com>
> wrote:
>
> >Wes:
> >
> >Thanks, I'll draw out your rather complicated and elaborate measurement
> >setup and comment on it step by step.
> >
> >But you'd better be ready to "think deeply", and not in a black box
sense,
> >about circulators and directional couplers, since a lot of stuff goes on
> >inside circulators and directional couplers that is "called" something
else
> >on the outside. Labels on ports, just as labels on meter faces, are not
> >necessarily meant to be taken literally.
> >
> >It happens that I am deeply familiar with the internal operations and
"guts"

> >of both circulators and directional couplers, having designed several
> >versions of both, and put them into large scale production. From what I
can
> >tell from your remarks, our look at your setup will entail a careful
review
> >of the insides of circulators. Just as an understanding of "reflected
> >power" as indicated on ham VSWR meters requires a careful analysis of the
> >circuitry inside the "meter" that generates the readings.
>
> I'll make it easier on you. Remove the circulator and replace it with a
30 dB
> attenuator and up the source power to 1 KW.
> >
> >On your side, I insist that you critique my analysis of the very simple
> >three element, one source, two resistors, DC circuit source missmatch
> >example.
>
> You can "insist" all you want. I want to talk about the weather for a
month or
> so. Another 100+ day today.
>
> Wes Stewart N7WS
>
>

3720. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 03:24:09 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9diac0foh1@nntp9.atl.mindspring.net>
Source record: 163267

Cecil:

OK Cecil you't on....

Here's my simple example.

A simple DC circuit containing only three elements hooked in series. Any high school Physics student can analyze this one. Or at least they could when I went to high school! Admittedly a few years ago, when men were men and woment were double breasted!

A 10 volt pure DC source, in series with an internal resistance of 50 Ohms pure resistance connected in series with pure resistance of 25 Ohms.

What is the current through the load?

What is the voltage across the load?

What is the reflection coefficient?

What is the formula used to calculate the reflected voltage?

What is the reflected voltage?

What is the power in the load?

What is the power in the internal resistance?

Where is the reflected power generated?

Simple, three elements, one DC source, one 50 Ohm resistor, one 25 Ohm resistor, a few simple quantitative questions.

Just do it!

-Peter K1PO

Where is the reflected power dissipated?.
"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFB0C09.69BFF2D0@IEEE.org...
> "Peter O. Brackett" wrote:
> > Thanks, I'll draw out your rather complicated and elaborate measurement
> > setup and comment on it step by step.
>
> Great, Peter, there's no meeting of the minds on the simple stuff and you
> want to make it more complicated. Good thing you're not a teacher.
> "Students, you didn't understand yesterday's lesson so today we will
> improve it by making it more complicated." Peter, how about some simple
> examples that are not impossible to follow? After everyone understands,

> add one item of complication and iterate.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3721. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 03:26:45 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9diahanmf1@slb5.atl.mindspring.net>
Source record: 163268

Steve:

Heh, heh....

You are much more trusting than me...

I say, as Richard Feynman once didm after spending a sabatical semester at an un-named Brazillian University, "What kind of Physics are you teaching here?"

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message news:3RCK6.15220$4f7.1189128@bgtnsc06-news.ops.worldnet.att.net...
>
> "David Robbins" <k1ttt@berkshire.net> wrote in message
> news:3AFAE1DA.8C75CA80@berkshire.net...
> > in all these discussions about z0 match, swr, reflections, conjugate
> matches,
> > kirchoff's laws, voltage vs current vs power addition, etc that you guys
> have
> > had has anyone disproved the basic transmission line formulas and
network
> > analysis taught in undergraduate level ee classes? has anyone proved
that
> > current amplifier matching networks don't work? or that common power
> meters
> > don't let us operate legally within the fcc's rules? have the
> transmission line
> > analysis done by jackson or circuit analysis by desoer&kuh been thrown
> out? or
> > are you just arguing about which direction to look down the wire and how
> to
> > properly add voltages, currents, and powers? is there anything of
> practical
> > value here or should i just ignore these recurring themes and stick with
> what i
> > learned in college and apply every day?
> >
>
> David:
>
> I am certain that what you learned in college is correct. Stick with it.
>
> Steve
>

>
>
>

3722. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 03:32:16 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9diar7$o8f$1@slb6.atl.mindspring.net>
Source record: 163169

Richard:

What?

Still no calculations?

Still no quantitative refutations?

Still no circuit analysis.

No equations with values plugged in?

What do you want? Multiple choice questions? This NG is wide open man,
it's not your VE's passing out questions from a question pool.

Participation here requires substantial contributions. Give examples with
numerical analysis and results.

If you can't run with the big dog's then stay on the porch.

Just plain rhetoric don't cut it!

Man, I've made contributions here. I've given circuits, circuit
descriptions, equations, analysis, I've put it all out there on the table
for everyone to take potshots at.

And.... where have you been my friend?

What?

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b014047.336861330@news.seanet.com...
> On Fri, 11 May 2001 05:50:39 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >Talk, or rather should I say, typing on a keyboard is cheap!
> >
> >Richard, you have been merely a spectator, and apparently still are.
> >
> >Standing or sitting in the grandstands and yelling at the umpire just
> >doesn't cut it in this league.
> >
> >If you are a player, then get in the game. Do the calculations and
"prove"
> >it, man! Step up to the plate and take a swing.

> >
> >Otherwise, enjoy your hot dogs and beer, and don't mess with the players
> >when they are too close to your for shouting.
> >
> >-Peter K1PO
> >
>
> Hi Peter,
>
> This does not present any compelling argument that supports your
> contentions.
>
> As you asked for my intercession, your disappointment seems to have
> clouded your judgement (but that's how we got here in the first
> place).
>
> 73's
> Richard Clark, KB7QHC

3723. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 03:41:19 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dibcvhhm1@slb4.atl.mindspring.net>
Source record: 163171

Cecil:

As long as the family Joules are fictional it simply doesn't matter!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFC54B8.343B0C5E@IEEE.org...
> VE9SRB wrote:
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > news:3AFC29B8.D91BBF43@IEEE.org...
> >
> > I will not be responding to anymore posts on this subject.
>
> There's a moral here. If you don't pay attention to power,
> someone may make off with the family joules.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3724. Re: Homemade antenna ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 03:43:51 UTC
From: Bob Headrick <bobh@proaxis.com>
Message-ID: <3afcb17b_1@news.pacifier.com>
Source record: 163172

<john-eileen@prodigy.net> wrote in message
news:9dib15$5pte$1@newssvr06-en0.news.prodigy.com...
> I have a handheld HTX-202 Radio Shack 2 Meter radio. I really need
some
> type of antenna at home. Please email suggestions and or instruction
to
> make a simple antenna. thanks john-eileen@prodigy.net

http://www.qsl.net/wb3gck/jpole.htm has instructions to make a jpole
antenna out of TV twinlead. It should get out much better than a rubber
duck, and is cheap and easy to build.

- 73 Bob W7OV

3725. Re: Homemade antenna ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 03:46:27 UTC
From: Bob Headrick <bobh@proaxis.com>
Message-ID: <3afcb217_1@news.pacifier.com>
Source record: 163173

<john-eileen@prodigy.net> wrote in message
news:9dib15$5pte$1@newssvr06-en0.news.prodigy.com...
> I have a handheld HTX-202 Radio Shack 2 Meter radio. I really need
some
> type of antenna at home. Please email suggestions and or instruction
to
> make a simple antenna. thanks john-eileen@prodigy.net

http://www.qsl.net/wb3gck/jpole.htm has instructions to make a jpole antenna out of TV twinlead. It should get out much better than a rubber duck, and is cheap and easy to build.

- 73 Bob W7OV

3726. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 03:49:13 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dibr1aev1@slb6.atl.mindspring.net>
Source record: 163174

Kevin:

You are correct, to compute the voltage, just use the "line integral" to integrate directly through the shield perpendicular to the inside and outside surfaces, from the outer surface to the inner surface.

That integral is zero...

thus in the presence of only a common mode current, the voltage difference between the inside of the shield and the outside of the shield is zero and so the inside "voltage" and the "outside" voltage are the same.

If both common mode and differential mode currents are present, the line integral will evaluate to the "superposition" of the effect of the two currents and the inside and outside voltages will not be the same.

-Peter K1PO

<atkes@imap1.asu.edu> wrote in message news:9di8f5$o7g$1@news.asu.edu...
> Peter O. Brackett (ab4bc@ix.netcom.com) wrote:
> : Kevin:
>
> : All of your assertions seem to be about current and not voltage.
>
> : I agree that skin effect attenuates currents very rapidly with depth
"under
> : the skin", however "voltage" is a different issue and like an image in a
> : mirror, there is a residual image of the full voltage on the other side
of
> : the conductor. It just cannot deliver or drive any power through such a
> : large resistance as presented by numerous skin depth layers.
>
> : Nonetheless the voltage is there.
>
> : That's all that some folks were trying to say. The voltage is there,
but
> : the available current is attenuated by the "resistance" presented by the
> : skin effect layers.
>
> : Attempting to measure the voltage with conventional instruments with
> : measurement impedances in the neighborhood of only a few MegOhms is
futile
> : when the source resistance across the skin effect divide may be
petaOhms...
> : with attenuation ratios in the hundreds of dB's.
>

> : Nonetheless, the voltage is there, just as Maxwell's celebrated
equations
> : predict it to be.
>
> : In fact I lview the skin effect resistance as part of the common mode
> : impedance which defines the ratio of differential mode to common mode
> : transfer function for coaxial cable and that particular function defines
the
> : "common mode rejection ratio" or "common mode response" of the coaxial
> : cable.
>
> Peter,
>
> Before I can answer about the voltage, you need to tell me what your
> definition of voltage is. Maxwell's equations, celebrated or not, don't
> have voltage in them anywhere. Some people equate voltage with the
> scalar potential. The problem with that is that it is not a gauge
> invariant quantity, and therefore is inherently unmeasureable. Others,
> like me, most texts, and voltmeters, use the line integral of the
> electric field to define the voltage. Of course that means that you
> cannot in general uniquely define the voltage difference between two
> points without defining a path. In that case, it is typically easier to
> describe the electric field everywhere. Maxwell's equations do tell you
> about that. As far as the electric field in a good conductor, Ohm's law
> tells you it is given by J = sigma E, so once you know the conductivity
> and the current density, you know the electric field. If you are happy
> with voltage difference being the line integral along a specified path
> of the electric field, then if the current density decays, so does the
> electric field, and it is trivial to calculate the voltage difference
> along whatever path you choose -- just don't expect the result along
> different paths to agree with each other. Faraday's law guarantees that
> they won't in general.
>
> The nice thing about current, electric, and magnetic fields is that
> everyone agrees on what they are.
>
> 73 Kevin w9cf

3727. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 04:09:25 UTC
From: atkes@imap1.asu.edu
Message-ID: <9did1l$oh2$2@news.asu.edu>
Source record: 163175

Peter O. Brackett (ab4bc@ix.netcom.com) wrote:
: Kevin:

: You are correct, to compute the voltage, just use the "line integral" to
: integrate directly through the shield perpendicular to the inside and
: outside surfaces, from the outer surface to the inner surface.

: That integral is zero...

: thus in the presence of only a common mode current, the voltage difference
: between the inside of the shield and the outside of the shield is zero and
: so the inside "voltage" and the "outside" voltage are the same.

They are not even well defined since you have to define a point to be
at zero voltage, and then define the particular path to integrate along
to get from the zero point to each of these. You get a different answer
for different paths in general.

: If both common mode and differential mode currents are present, the line
: integral will evaluate to the "superposition" of the effect of the two
: currents and the inside and outside voltages will not be the same.

Your last comment is not correct. Since the current is not going into
the conductor rather is perpendicular to the surface normal, Ohm's law
says that the electric field also has no component from one side to the
other (Actually there is a tiny component into the conductor but it is
down by a factor of 1/sqrt(sigma) so it is negligible). Therefore the
voltage difference along this path is zero whether there is common mode
current or not. What's your point? My point is that this line integral
is completely useless since it is always essentially zero, and talking
about this voltage difference in this situation is silly.

73 Kevin w9cf

3728. Re: G5RV on 6 meters? Opinions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 04:27:06 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010512002706.11034.00002365@ng-cc1.aol.com>
Source record: 163176

Thank you for your opinion, but your input was non-productive. I only asked if anyone had any experience with using a G5RV on 6 meters... nothing more. If you have and experience, and you wish to actually contribute to the actual discussion at hand instead of looking for an opportunity to blast someone you obviously have a dislike for, I would appretiate your input.
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com ICQ#13829227
http://egroups.com/group/vhfallmode

3729. Re: G5RV on 6 meters? Opinions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 04:28:36 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010512002836.11034.00002366@ng-cc1.aol.com>
Source record: 163177

Thanks for the info. I have gotten a few opinions on this topic and it seems
that I would be best to pack the G5RV away until I upgrade my license and have
an all band HF rig to play with.
=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com ICQ#13829227
http://egroups.com/group/vhfallmode

3730. yagi plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 04:30:47 UTC
From: Serial # 19781010 <KE4PJR@arrl.net>
Message-ID: <c1fpft8e6cub826kphpkql1vtt4t9vvhjo@4ax.com>
Source record: 163178

I am trying to find some plans to build a decent yagi for side band on
2 meters. Any one have any suggestions or good urls? TIA and 73
Billy KE4PJR

3731. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 04:31:01 UTC
From: richardharrison@webtv.net
Message-ID: <14185-3AFCBC85-168@storefull-115.iap.bryant.webtv.net>
Source record: 163180

Peter, K1PO wrote:
"The "end run effect" is a non-starter...".

The "coaxial antenna" with its inside-out !/4-wave skirt works very well and it depends completely on current up and over the edge to excite the outside antenna skirt.

Best regards, Richard Harrison, KB5WZI

3732. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 04:44:34 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AFCBFB2.B412EE7B@bwcc.com>
Source record: 163179

Roy Lewallen wrote:
> Denver Braughler wrote:
> > Roy Lewallen wrote:
> > > How can this be?
> > Obviously you didn't drill a hole in the middle of
> > each side to stick your voltmeter probes in to measure
> > the potential between the two sides on the inside.
>
> Certainly not, but I've sure heard the arcs and seen their effects. And
> any fields text shows the E field distribution.
You guys are terrific and I appreciate the replies.

I hope you know that my remark was a tongue-in-cheek reference
to an earlier thread.

> > Did you tell us what kept the current from spilling over the edges and running back down the outsides?
> No, it wasn't relevant to the question.
Well, yes and no.
Since you were asserting the voltage wasn't on the outsides, it seemed logical enough to me to ask how it got there.

> But the explanation lies with the direction currents
> flow inside the waveguide.
And I really do appreciate the education the link to a relevant reference.

I didn't mean to come across as seriously challenging the existence skin effect.

3733. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 04:56:04 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3AFCC264.DC3DC7AD@bwcc.com>
Source record: 163181

"Peter O. Brackett" wrote:
> Think of a Thevinin voltage source with 10,000 Volts behind
> 100,000,000,000,000 Ohms.
>
> As you point out that resistance expressed as a ratio to the resistance
> through your hand and body, and hence the voltage divider ratio for the
> voltage that you would "feel" may very well be in excess of say, "280dB", a
> very large ratio as you point out.
>
> Would you "feel it"? NO!
>
> Is it there? YES!
Is it where? It's there, I suppose, unless any current actually flows.
Is this like blowing air through a sixty mile long capillary tube at 76000 torr?
The pressure is there until someone actually lets a few molecules flow out the far end.

> In fact there truly is a "very faint image" of the voltage inside the
> waveguide, or coax, actually present on the outside of the coax or
> waveguide, it's just that voltage is almost unobservable due to the very
> very high impedance it must be "seen" through.
I'll accept this depending on whether you mean what you should mean.

> In practice you can "say" that the voltage is not present on the outside,
> but it is there nonetheless... it just can't deliver much current. And your
> hand can't feel an infinitesimal current.
It's not there because of the current.

> But Maxwell demands that the voltage be there.
Ohm demands that it is NOT there. The voltage will drop if any current flows.
Current will flow if the voltage is there.
Therefore, the voltage is not there.

> Nit picking? Sure.
I'm not sure it's right.

> Is there a voltage there? Yes.
No.

> Is there a significant current due to the
> voltage? No.
Is there a significant voltage because of the current? No.

> But you simply can't say that there is no "voltage" on the outside or the
> inside of a coaxial shield due to voltages on the opposite side, those
> voltages are always present, and the voltage is not attenuated, until an
> impedance is connected to it, say to try to measure it,

I disagree. What about Ohm?

> And so, for all practical purposes, the metalic conductor in the several
> skin depth layers can be considered to be a very high impedance insulating
> layer...
Good for you!

> But the voltage behind the Ohms just doesn't go away.
But the ohms are under the skin.
So the voltage is on the inside but not the outside.

Well, that's how I see it.

3734. Re: QST-QST-QST INVITATION TO 3 ANTENNA REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 04:58:39 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AFCC2FF.F3C57534@spam.me.not>
Source record: 163182

10-9?

-SSB

Fractenna wrote:
>
> QST--
>
> You are invited to join one or all of the following lists on yahoo
> groups (formerly e-groups). All these reflectors are e-mail based, friendly,
> objective, and moderated ,so that no spam, porn, off-topic, or
> personal-offensive posts are sent out. Membership is screened against those
> with a history of disruption/trolling. You will receive no off-list e-mails by
> subscribing:again; no spam.
>
> Occasionally free offers of antenna files and other info are presented, along
> with photos of relevant antennas (unlike most NG's you CAN do attachments).
>
> These lists (with some recent subscriber sizes) are:
> ANTENNAS@YAHOOROUPS.COM 230 members
> CROSSFIELDANTENNA@YAHOOGROUPS.COM 70 members
> FRACTALANTENNA@YAHOOGROUPS.COM 320 members
>
> Please review the descriptions at:
>
> http://www.yahoogroups.com
>
> Note the CFA list specifically deals with this antenna in an objectively
> critical fashion and no posts will be allowed that make grandiose claims
> without supporting data presented. To date, no data has been presented which
> requires the extraordinary claims made by some pundits: there is no evidence
> for better performance than any other small vertical antenna (and that
> performance is poor).
>
> Fractal antenna posts should go the the fractal antenna reflector; not the
> antennas reflector. Note that Dr. Cohen, N1IR, the founder of fractal element
> antenna technology, uses this forum to answer questions on the
> web--exclusively. If you have a web-based question for him, kindly post it on
> the FAR assuming it is of general interest.
>
> To subscribe to any list, either go through the process at egroups, or to skip
> the process (and some say 'annoying questions') just do:
>
> ----------------- -subscribe@yahoogroups.com
> where the ------------ is the name of a given list (such as 'fractalantenna')

>
> Kindly do not query this e-mail address; the info here is complete for your
> information pleasure.
>
> 73,
> Phil de
> N1ZKT

3735. The Double Shielded Coax Experiment

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 05:13:29 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <ZD3L6.5385$la.63844@news1.sttls1.wa.home.com>
Source record: 163183

THE DOUBLE SHIELDED COAX EXPERIMENT

Goal

To test how skin effect on a central conductor would affect the capacity reading of a short tubular coaxial line.

Description of equipment

37 1/2 inches of #14 stranded antenna wire
33 1/2 inches of 5/8 O.D. copper water pipe
33 1/2 inches of 11/16 O.D. iron/zinc conduit
33 inches of 1 inch I;D. copper pipe
PVC and PE pipe and tubing for insulation
Autek VA-1 RX vector analysis testing device

Description of experiment

The #14 wire and 1 inch copper pipe were the inner and outer elements of an unterminated coaxial line. The test frequency was 28.0 Mhz.
An unterminated piece of coax 33 inches long tested at 28 Mhz should show a capacitive reactance. If a conductive tube is placed between the inner and outer coaxial elements, then currents would flow on the middle tube proportional to the currents on the coaxial line. The currents would absorb energy, create a skin effect, and should change the capacity reading of the experiment.

The thickness of each material was as thick or thicker than the wire making up the shield of RG-8 coaxial line.

The test was performed under 3 conditions, no middle tube, a copper middle tube, and a iron middle tube. The insulating materials were the same in all test.

The results

Conditions Capacity R + J

No middle cond. 46 pf 55 - J122
Copper middle 47 pf 52 - J117
Iron/zinc middle 46 pf 52 - J121

Accuracy

The Autek instrument is accurate to about 3-4% typical, with accuracy going down to about 8% at 30 Mhz.

The insulating material was material available so the fit was not perfect. As a result, the central wire was not located exactly at the center of the

tubes.

Conclusion

The readings were nearly equal and did not show any clear trend. No importance should be attached to the differences in the readings observed because they were well within the accuracy range of the measuring device.

A conductive tube placed between two plates of a capacitor appears to be transparent to the electrical fields between the two plates.

Final comment

More experiments are needed before most of us can comfortably understand the role of skin effect as a shield.

73, Roger, W7WKB

3736. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 05:13:29 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <ZD3L6.5386$la.63844@news1.sttls1.wa.home.com>
Source record: 163184

Hi Kevin,

Thanks for taking time to carefully explain a number of different points about skin effect. I have viewed your site before and found it very helpful.

I have appreciated you comments from previous postings. I find myself in the awkward position of being an amateur in the midst of professionals, an amateur who has experimented extensively and carefully condsidered the thoughts of others, and unfortunately has come to the conclusion that something in theory is wrong in a subtle way. I read each comment carefully to integrate it with my results, challenging myself especially hard because I recognize I am an amateur.

I began my interest in skin effect because like others who have written on this news group, I thought a coax braid was a complete shield., that skin effect was as effective as portraid in the ARRL Antenna book. It was with great surprise that I learned that a balun could be made from coax wraped on a ferrite core. I thought the shield would prevent any transformer action. I was even more surprised to learn that a coax line makes a very good 1:1 transformer.

I worked on a very unbalanced antenna and made the thing work just fine. The difficulty in making it work evaporated when I changed away from the idea of a perfect coax shield in favor of a twin lead model. I know this is heresy.

I ran an experiment I called the Double Shielded Coax Experiment which I thought was a reasonable test of skin effect. A reposting of that experiment is entitled "The Double Shielded Coax Experiment" and should appear at the same time as this reply. I expected a large change in capacity due to the skin effect which would force the currents into a different path compared to the path that would be followed if skin effect did not apply in this experiment. No large change was found.

I looked carefully at the construction of the braided shield. The layers are interwoven so that the tops and bottoms contact and alternate. The contacts between wires are points on the overlays. Inside and outside currents would have to go through these point contacts and would have to mix.

For these reasons and others, I still have a need to further test and experiment to convince myself that skin effect really works as you describe in your well written and referenced reply.

Do you think the dipole/disk test I proposed will be a valid test? If not, what changes should I make?

Thanks for your interest.

73, Roger, W7WKB

3737. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 05:14:06 UTC
From: Michael Tope <W4EF@earthlink.net>
Message-ID: <yE3L6.3349$N23.300158@newsread1.prod.itd.earthlink.net>
Source record: 163185

Hi Peter,

I think I see where you are going with this Peter. VSWR meters and wattmeters are bridge circuits which simply measure the imbalance due to impedance mismatch at the output. The interesting thing is about this is that there is consistency between this steady state view of things and the time domain view of things. Think about the following thought experiment. Connect your favorite wattmeter (one of your own designs if you wish) to a very long transmission line of negligible loss terminated with a 100 ohm resistor. Next, turn on the your transmitter and quickly check the wattmeter forward and reflected power before the incident wave has a chance to reach the mismatched load and bounce back. I think you will agree that reflected power reading will be zero. Now if we wait a moment for the reflected wave to return from the mismatch at the end of our long transmission line, we will see the reading change as the standing wave is setup on our line. If we assume a source match, the reflected wave will be absorbed by the load, and we will reach a steady state condition in one iteration of the bounce diagram. Of course, we could get the same wattmeter reading by putting a 100 ohm resistor at the output of the meter. In this case though, the transient response will be much much shorter. Once things are settled in, the transmitter doesn't care if its looking into the long coax with the mismatch at the end, or a 100 ohm resistor attached to its output terminals. As long as its pumping out a steady sine wave it can't tell the difference. In this case, the concept of reflected power can indeed be thought of a nothing but mere mathematical formalism. Now, if all of a sudden I start amplitude modulating my sine wave, the concept of reflected power becomes

significant again. When I diddle the amplitude of my sine wave excitation, all
of sudden it matters whether or not the transmitter is looking across the 50 ohm
surge impedance of the long transmission line or the 100 ohm resistive termination.
Your wattmeter will respond differently too (there will be a lag in the reflected power
response equal to the round trip delay of the cable). The two cases are no longer
equivalent.

Now of course I am avoiding your DC circuit example. I am tired and don't feel like
thinking about it tonight. Tomorrow I will take a look at it and see if I can figure out
what you are getting at (that is if I am not chasing DX). Who knows, I might even
get ambitious and take my Drake W-4 apart and analyze it

73 de Mike, W4EF.....

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9di8mr$1s9$1@slb0.atl.mindspring.net...
> Michael:
>
> Wake up man!
>
> I did not say that there is no such thing as reflections!
>
> I did not say that there is no such thing as reflections!
>
> I did not say that there is no such thing as reflelctions!
>
> Got it yet?
>
> If not then try this...
>
> Reflections are real.
>
> Reflections are real.
>
> Reflections are real.
>
> What is a fiction is the value presented by so-called wattmeters and
called
> "reflected power". That quantity is not present in the circuit under
test!
>
> Do the calculations yourself and see.
>

> Do you know what your danged wattmeter is actually measuring?
>
> I think not...
>
> Does b = V - IR mean anything to you?
>
> What is V? What is I? What is R? Where are they? How does the
reflected
> voltage meter work?
>
> Get with it man!
>
> Wake up and smell the roses!
>
> Open up your wattmeter, draw out the schematic diagram, figure out just
what
> it is "measuring". Analyze the circuit and calculate what it's meter face
> displays when it is operating?
>
> Have you ever done this?
>
> If not then when will you do it?
>
> I, on the other hand have done this, and I have presented the analysis
here
> for all to review. And none have refuted my analysis and computations.
> What?
>
> Heck, man, I design these things for a living.
>
> What are you trying to tell me?
>
> Let's see some circuit analysis of wattmeters and reflected volmeters and
> some quantitative calculations with real numbers in evididence.
>
> Don't just sit there in the stands drinking beer and eating hot dogs and
> yelling down at the umpire, come on down and get in the game man. We need
a
> new player at the plate. Take a swing at my real world analysis and
> examples and refute me with facts and computations.
>
> Words on a NG are cheap!
>
> The only price that understanding will pay, is the price of thouough
> analysis and solving problems numerically! Complete all the exercises at
> the end of the chapter or... you will fail the test!
>
> All the rest is "hot air".
>
> As the Nike commercial says...

>
> "Just do it!"
>
> Analyze your favorite /SWR meter circuit and then tell me what the meter
is
> indicating! I have done that and published it here for all to see. Have
> you? If not then...
>
> Go away and chase DX...
>
> Best Regards,
>
> -Peter K1PO
>
> "Michael Tope" <W4EF@earthlink.net> wrote in message
> news:K3vK6.3270$8x4.301682@newsread2.prod.itd.earthlink.net...
> > Hi Peter,
> >
> > You might try the following experiment. Get yourself
> > a gated RF source, a fast RF switch and a long 50 ohm
> > transmission line. Place a 25 ohm resistive termination
> > at the end of the transmission line and connect an
> > oscilloscope across the resistor. Connect the other
> > channel of the O-scope across the input of the
> > transmission line. Now setup the gated source so
> > that is generates a burst of RF which is shorter
> > than the round trip delay time of the cable. Also setup
> > the switch so that the generator is removed from
> > the circuit and replaced with a 50 ohm termination
> > at the end of the RF burst. Note the amplitude of the
> > incident RF burst from the oscilloscope, and the
> > amplitude of the burst when it reaches the termination
> > at the far end of the transmission line. Then observe
> > the amplitude of RF burst envelope when it returns to
> > the 50 ohm source termination. Do this experiment and
> > then come back and tell us whether or not you still
> > consider refleted power to be some kind of fictious
> > mathematical formalism.
> >
> > 73 de Mike, W4EF.....................................
> > "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> > news:9dd6pplbo1@slb0.atl.mindspring.net...
> > > Walt:
> > >
> > > Your measurement setups use instruments that measure that "ficticious"
> > > reflected power and the "formalism" has been set up to make that an
easy
> > > thing to do... it does not prove that the "reflected power" exists or
> not,
> > > it's just part of the measurement "formalism".

> > >
> > > Measuring one thing, and calling it another, is just playing with
words.
> > > You must know quantitatively exactly what you are discussing. Unless
> you
> > > understand the "Internal Operation" of the measuring instruments, you
> have
> > > but a faint understanding of what is happening. When a meter face
> > displays,
> > > Watts, you must be sure that the meter is measuring watts, for it may
be
> > > measuring volts or amps or something else and just "calling" them
watts.
> > >
> > > Unfortunately the fictional mathematical "formalism" of the the
> > "Scattering
> > > Formalism" is built into the "labels" on most if not all of the
> > instruments
> > > that you use in your lab setups.
> > >
> > > Walt, don't depend upon others and the makers of instruments to guide
> you.
> > > Understand the instruments themselves, try to design instruments to
make
> > > those measurements yourself, if only in sketch form. It will help you
> > > immeasureably with understanding.
> > >
> > > Walt, I recommed that you either set up a simple DC circuit, or use
the
> > one
> > > that I set up, of a voltage source with an internal resistance and a
> > > mismatched load resistance, and do the calculations yourself.
> > >
> > > It only takes a few minutes... and it will be illuminating, you will
> then
> > > understand more about reflections than you ever thought possible.
> > >
> > > And you don't have to depend upon what HP or Daiwa or Tektronix, or
PRD,
> > or
> > > whomever puts on the labels of their instruments, or what people call
> > > things, you will know in a very simple quantitative way, just what
> > mismatch,
> > > reflection coefficient, VSWR, reflected voltage, and reflected power
> are!
> > >
> > > And you will have done it all yourself.
> > >
> > > Walt, just do it!
> > >

> > > It only takes a few moments, probably less time than it takes to type
a
> > > reply to this posting. Stop, analyze, calculate and think at the
volts
> > and
> > > amps level. Leave the power till later, once you have established the
> > volts
> > > and amps.
> > >
> > > Why is it that you seem to refuse to do this simple task? I have done
> it
> > > here on the NG and you refuse to comment or elaborate.
> > >
> > > Could it be perhaps that you are incapbable of analyzing a simple DC
> > circuit
> > > with only two resistors in series?
> > >
> > > Could it be perhaps that you don't really know the equations and
> formulas
> > of
> > > reflection mechanics.
> > >
> > > Could it be that you don't know the formula for reflected voltage?
> > >
> > > Could it be that.....???? I wonder????
> > >
> > > Prove to me that it is not so!
> > >
> > > Here's my extremely simple challenge.
> > >
> > > Draw a schematic diagram containing only three elements, a 10 volt
> > battery
> > > with an internal resistance of 10 Ohms, connected to a 5 Ohm resistor
> load
> > > and then do the following very simple quantitative DC analysis.
> > >
> > > 1. Compute the current I through the load and write it down. I = ?
> > > 2. Compute the voltage across the load and write it down V = ?
> > > 3. Compte the reflection coefficient at the battery terminals and
write
> it
> > > down, rho = ?
> > > 4. Compute the VSWR at the load and write it down, VSWR = ?
> > > 5. Compute the reflected voltage at the load and write it down, b = ?
> > > 6. Compute the power dissipated in the load and write it down, Pload =
?
> > > 7. Compute the power dissipated in the internal resistance and write
it
> > down
> > > , Pint = ?

> > > 8. Compute the incident or forward power, and write it down, Pf = ?
> > > 9. Compute the reflected power and write it down, Pr = ?
> > >
> > > 10. Now ask yourself where that Pr is generated and where it is
> > dissipated.
> > >
> > > A power that has no source and no sink, no generator and no load, is a
> > pale
> > > imitation of a real power!
> > >
> > > Walt, until you thoroughly analyze a simple DC mismatched circuit
setup
> as
> > > above, using all the equations of reflections mechanics, which are
just
> as
> > > valid at DC as at AC, and then stare at the results and ask why?...
> > >
> > > YOU SIMPLY DO NOT YET UNDERSTAND REFLECTIONS.
> > >
> > > Once you understand deeply the DC analysis, then and only then are you
> > > qualified to go on to understand reflections in AC, HF, RF and
> microwaves
> > > and to discuss the operation of circulators and directional couplers.
> > >
> > > Walt, just do it!
> > >
> > > 10 simple answers, 10 simple questions. Anyone who calls himself an
> > > engineer can do it. Can you do it?
> > >
> > > Best,
> > >
> > > -Peter K1PO
> > >
> > >
> > >
> > >
> > >
> > > "Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
> > > news:3af9fc6a.11565940@news.onemain.com...
> > > > On Thu, 10 May 2001 01:11:52 GMT, nospam_n7ws@arrl.net (Wes
tewart)
> > > wrote:
> > > >
> > > >
> > > > >Quote #1.
> > > > >
> > > > >Picture this. I have an x-band source that uses a high quality
> > > > >isolator (terminated circulator) on its output. Any power returned
> to

> > > > >this source is dissipated in the isolator. In addition, there is a
> > > > >sampling loop that measures output level and via feedback
stabilizes
> > > > >the output power (ALC, if you will) This loop has the effect of
> > > > >further improving the source match.
> > > > > >
> > > > >I connect this generator to a waveguide high-directivity dual
> > > > >directional coupler. We will use waveguide so you can throw away
> your
> > > > >volt and ammeters.
> > > > > >
> > > > >I place two waveguide thermistor power sensors to the two coupled
> > > > >ports on the directional coupler. I place a shorting plate on the
> > > > >output of the coupler. If the coupler is a good one, I will
measure
> > > > >the same power on each of the sensors.
> > > > > >
> > > > >The forward power (your Pi) is sampled by the forward-reading
coupler
> > > > >at a level equal to the coupling factor, e.g. -30 dB. The output
> > > > >short circuit totally reflects the incident power and returns it to
> > > > >the source. The reverse-reading sensor samples this, also at -30
dB
> > > > >and displays the same value as the forward sensor. Any differences
> > > > >between the two can be normalized out.
> > > > > >
> > > > >Because of the 'perfect' source match, there is no re-reflection of
> > > > >the reflected power; it is totally dissipated by the generator.
This
> > > > >system will now reliably measure the return loss (within the
> > > > >directivity uncertainty limits discussed earlier) of a load placed
on
> > > > >the output. For most purposes, we can ignore the forward sensor
> > > > >reading because it remains constant regardless of load impedance.
> > > > > >
> > > > >A few words about the power sensors. Contrary to what you claim
> > > > >above, the resistance of the thermistors doesn't have to be
anywhere
> > > > >near the system impedance. The thermistors (today thermocouples
are
> > > > >also used) simply measures temperature rise in a termination. The
> > > > >thermistor is not necessarily the termination. It is usual to have
> > > > >matched thermistors in a self-nulling bridge circuit. The second
> > > > >thermistor is heated by applying an easily measured DC or low
> > > > >frequency AC signal to it. This applied signal power is adjusted
to
> > > > >null the bridge at which time the applied power equals the r-f
power.
> > > > >This is a substitution method where a difficult to measure quantity
> > > > >(microwave power) is determined by measuring the low frequency or

DC
> > > > >power. End #1
> > > >
> > > > Irrefutable proof the reflected power exists!
> > > >
> > > > >Quote #2:
> > > > >
> > > > >Let's take two of my waveguide dual-directional couplers
> > > > >(reflectometers) and connect them thus:
> > > > >
> > > > >The input port of coupler #1 attaches directly to the output of a
> > > > >well-matched source, as before. On the output port of coupler #1
we
> > > > >attach a waveguide E- H tuner (the waveguide equivalent of your
> > > > >antenna tuner). On the output of the tuner we attach the input
port
> > > > >of coupler #2.
> > > > >
> > > > >On the output of coupler #2 we attach a 3 dB attenuator followed by
a
> > > > >short circuit.
> > > > >
> > > > >So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho =
> 0.5
> > > > >
> > > > >If I temporarily remove the tuner, as expected, both reflectometers
> > > > >measure a 6 dB power ratio between the forward and reflected
coupled
> > > > >ports.
> > > > >
> > > > >We assume that maximum available power out of the source is 1.0 W.
> > > > >Because we have a non-reflective source, there is a mismatch loss
> > > > >given as:
> > > > >
> > > > >-10 * log(1 - rho^2) = 1.25 dB
> > > > >
> > > > >or leaving off the -10 log, a power ratio of 0.75.
> > > > >
> > > > >So of the available power, 0.75 W makes it into the input port of
> > > > >coupler #1.
> > > > >
> > > > >If our couplers are 30 dB, as in my previous example, then we read
> the
> > > > >following: (give or take coupling loss)
> > > > >
> > > > >1. Coupler #1 forward port = 0.75 mW.
> > > > >2. Coupler #1 reflected port = 0.1875 mW.
> > > > >3. Coupler #2 forward port = 0.75 mW.
> > > > >4. Coupler #2 reflected port = 0.1875 mW.
> > > > >

> > > > >Okay, now we put the tuner back in between the two couplers. If we
> > > > >fiddle fart around with the tuner, the power reading at the
reflected
> > > > >port of coupler #1 can be reduced to zero, or nearly so. We have
> > > > >"re-reflected" the nasty reflected (dare I say) power back toward
the
> > > > >load.
> > > > >
> > > > >The mismatch loss now goes away and the forward port of coupler #1
> > > > >reads 1.0 mW.
> > > > >
> > > > >Let's examine the readings on the thermistor power sensors on the
> > > > >coupled ports of coupler #2. Since we tweaked the tuner, we now
have
> > > > >1.0 W migrating around in the second coupler so the forward coupler
> > > > >reads 1.0 mW. (1.25 dB higher than before and no surprise)
> > > > >
> > > > >With 1.0 W incident on a 6 dB return loss load, the reflected power
> is
> > > > >0.25 W. The coupling factor is 30 dB so the power appearing at the
> > > > >reflected port of coupler #2 is 0.25 mW. The ratio of the
reflected
> > > > >power to the forward power readings is .25 / 1.0 = - 6dB, just as
> > > > >before and (to me anyway) again no surprise.
> > > > >
> > > > >But wait! We just tuned (conjugately matched) this system to
"remove
> > > > >the termination" and that pesky reflected power still showing up on
> > > > >the coupled port!!!
> > > > >
> > > > >No voltmeter, no ammeter, no hanky panky, just real reflected power
> > > > >heating up the thermistor. Funny how this works. End #2
> > > > >
> > > > >So....now what?
> > > >
> > > Accurate experimental data proves that a concept or theorem is
either
> > true
> > > or
> > > false. Wes' experiments have proved Peter's concept that reflected
> power
> > > is
> > > fictitous false, which we've known all along.
> > > >
> > > And Wes, I've performed similar experiments in my own lab, but with
> > coax,
> > > using
> > > an HP-8405A Vector Voltmeter and an HP-778D Dual Directional
Coupler,
> > with

> > > > similar results. Bravo!
> > > >
> > > > >Wes Stewart N7WS
> > > >
> > >
> > >
> >
> >
>
>

3738. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 05:19:14 UTC
From: Michael Tope <W4EF@earthlink.net>
Message-ID: <mJ3L6.3356$N23.300485@newsread1.prod.itd.earthlink.net>
Source record: 163186

Hi Peter,

I think I see where you are going with this Peter. VSWR meters and
wattmeters are bridge circuits which simply measure the imbalance
due to impedance mismatch at the output. The interesting thing is
about this is that there is consistency between this steady state view
of things and the time domain view of things. Think about the following
thought experiment. Connect your favorite wattmeter (one of your
own designs if you wish) to a very long transmission line of negligible
loss terminated with a 100 ohm resistor. Next, turn on the your transmitter
and quickly check the wattmeter forward and reflected power before
the incident wave has a chance to reach the mismatched load and bounce
back. I think you will agree that reflected power reading will be zero. Now
if we wait a moment for the reflected wave to return from the mismatch
at the end of our long transmission line, we will see the reading change
as the standing wave is setup on our line. If we assume a source
match, the reflected wave will be absorbed by the load, and we will reach
a steady state condition in one iteration of the bounce diagram. Of
course, we could get the same wattmeter reading by putting a 100 ohm
resistor at the output of the meter. In this case though, the transient
response will be much much shorter. Once things are settled in, the
transmitter doesn't care if its looking into the long coax with the mismatch
at the end, or a 100 ohm resistor attached to its output terminals. As long
as its pumping out a steady sine wave it can't tell the difference. In this
case,
the concept of reflected power can indeed be thought of a nothing but mere
mathematical formalism. Now, if all of a sudden, I start amplitude
modulating
my sine wave, the concept of reflected power becomes significant again.
When I diddle the amplitude of my sine wave excitation, all of sudden it
matters whether or not the transmitter is looking across the 50 ohm
surge impedance of the long transmission line or the 100 ohm resistive
termination. Your wattmeter will respond differently too (there will be a
lag in the reflected power response equal to the round trip delay of the
cable). The two cases are no longer equivalent.

Now of course I am avoiding your DC circuit example. I am tired and don't
feel like thinking about it tonight. Tomorrow I will take a look at it and
see if I
can figure out what you are getting at (that is if I am not chasing DX). Who
knows, I might even get ambitious and take my Drake W-4 apart and analyze
it.

73 de Mike, W4EF.....

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9di8mr$1s9$1@slb0.atl.mindspring.net...
> Michael:
>
> Wake up man!
>
> I did not say that there is no such thing as reflections!
>
> I did not say that there is no such thing as reflections!
>
> I did not say that there is no such thing as reflelctions!
>
> Got it yet?
>
> If not then try this...
>
> Reflections are real.
>
> Reflections are real.
>
> Reflections are real.
>
> What is a fiction is the value presented by so-called wattmeters and
called
> "reflected power". That quantity is not present in the circuit under
test!
>
> Do the calculations yourself and see.
>
> Do you know what your danged wattmeter is actually measuring?
>
> I think not...
>
> Does b = V - IR mean anything to you?
>
> What is V? What is I? What is R? Where are they? How does the
reflected
> voltage meter work?
>
> Get with it man!
>
> Wake up and smell the roses!
>
> Open up your wattmeter, draw out the schematic diagram, figure out just
what
> it is "measuring". Analyze the circuit and calculate what it's meter face
> displays when it is operating?
>
> Have you ever done this?
>
> If not then when will you do it?

>
> I, on the other hand have done this, and I have presented the analysis
here
> for all to review. And none have refuted my analysis and computations.
> What?
>
> Heck, man, I design these things for a living.
>
> What are you trying to tell me?
>
> Let's see some circuit analysis of wattmeters and reflected volmeters and
> some quantitative calculations with real numbers in evididence.
>
> Don't just sit there in the stands drinking beer and eating hot dogs and
> yelling down at the umpire, come on down and get in the game man. We need
a
> new player at the plate. Take a swing at my real world analysis and
> examples and refute me with facts and computations.
>
> Words on a NG are cheap!
>
> The only price that understanding will pay, is the price of thouough
> analysis and solving problems numerically! Complete all the exercises at
> the end of the chapter or... you will fail the test!
>
> All the rest is "hot air".
>
> As the Nike commercial says...
>
> "Just do it!"
>
> Analyze your favorite /SWR meter circuit and then tell me what the meter
is
> indicating! I have done that and published it here for all to see. Have
> you? If not then...
>
> Go away and chase DX...
>
> Best Regards,
>
> -Peter K1PO
>
> "Michael Tope" <W4EF@earthlink.net> wrote in message
> news:K3vK6.3270$8x4.301682@newsread2.prod.itd.earthlink.net...
> > Hi Peter,
> >
> > You might try the following experiment. Get yourself
> > a gated RF source, a fast RF switch and a long 50 ohm
> > transmission line. Place a 25 ohm resistive termination
> > at the end of the transmission line and connect an

> > oscilloscope across the resistor. Connect the other
> > channel of the O-scope across the input of the
> > transmission line. Now setup the gated source so
> > that is generates a burst of RF which is shorter
> > than the round trip delay time of the cable. Also setup
> > the switch so that the generator is removed from
> > the circuit and replaced with a 50 ohm termination
> > at the end of the RF burst. Note the amplitude of the
> > incident RF burst from the oscilloscope, and the
> > amplitude of the burst when it reaches the termination
> > at the far end of the transmission line. Then observe
> > the amplitude of RF burst envelope when it returns to
> > the 50 ohm source termination. Do this experiment and
> > then come back and tell us whether or not you still
> > consider refleted power to be some kind of fictious
> > mathematical formalism.
> >
> > 73 de Mike, W4EF.....................................
> > "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> > news:9dd6pplbo1@slb0.atl.mindspring.net...
> > > Walt:
> > >
> > > Your measurement setups use instruments that measure that "ficticious"
> > > reflected power and the "formalism" has been set up to make that an
easy
> > > thing to do... it does not prove that the "reflected power" exists or
> not,
> > > it's just part of the measurement "formalism".
> > >
> > > Measuring one thing, and calling it another, is just playing with
words.
> > > You must know quantitatively exactly what you are discussing. Unless
> you
> > > understand the "Internal Operation" of the measuring instruments, you
> have
> > > but a faint understanding of what is happening. When a meter face
> > displays,
> > > Watts, you must be sure that the meter is measuring watts, for it may
be
> > > measuring volts or amps or something else and just "calling" them
watts.
> > >
> > > Unfortunately the fictional mathematical "formalism" of the the
> > "Scattering
> > > Formalism" is built into the "labels" on most if not all of the
> > instruments
> > > that you use in your lab setups.
> > >
> > > Walt, don't depend upon others and the makers of instruments to guide
> you.

> > > Understand the instruments themselves, try to design instruments to
make
> > > those measurements yourself, if only in sketch form. It will help you
> > > immeasureably with understanding.
> > >
> > > Walt, I recommed that you either set up a simple DC circuit, or use
the
> > one
> > > that I set up, of a voltage source with an internal resistance and a
> > > mismatched load resistance, and do the calculations yourself.
> > >
> > > It only takes a few minutes... and it will be illuminating, you will
> then
> > > understand more about reflections than you ever thought possible.
> > >
> > > And you don't have to depend upon what HP or Daiwa or Tektronix, or
PRD,
> > or
> > > whomever puts on the labels of their instruments, or what people call
> > > things, you will know in a very simple quantitative way, just what
> > mismatch,
> > > reflection coefficient, VSWR, reflected voltage, and reflected power
> are!
> > >
> > > And you will have done it all yourself.
> > >
> > > Walt, just do it!
> > >
> > > It only takes a few moments, probably less time than it takes to type
a
> > > reply to this posting. Stop, analyze, calculate and think at the
volts
> > and
> > > amps level. Leave the power till later, once you have established the
> > volts
> > > and amps.
> > >
> > > Why is it that you seem to refuse to do this simple task? I have done
> it
> > > here on the NG and you refuse to comment or elaborate.
> > >
> > > Could it be perhaps that you are incapbable of analyzing a simple DC
> > circuit
> > > with only two resistors in series?
> > >
> > > Could it be perhaps that you don't really know the equations and
> formulas
> > of
> > > reflection mechanics.
> > >

> > > Could it be that you don't know the formula for reflected voltage?
> > >
> > > Could it be that.....???? I wonder????
> > >
> > > Prove to me that it is not so!
> > >
> > > Here's my extremely simple challenge.
> > >
> > > Draw a schematic diagram containing only three elements, a 10 volt
> > battery
> > > with an internal resistance of 10 Ohms, connected to a 5 Ohm resistor
> load
> > > and then do the following very simple quantitative DC analysis.
> > >
> > > 1. Compute the current I through the load and write it down. I = ?
> > > 2. Compute the voltage across the load and write it down V = ?
> > > 3. Compte the reflection coefficient at the battery terminals and
write
> it
> > > down, rho = ?
> > > 4. Compute the VSWR at the load and write it down, VSWR = ?
> > > 5. Compute the reflected voltage at the load and write it down, b = ?
> > > 6. Compute the power dissipated in the load and write it down, Pload =
?
> > > 7. Compute the power dissipated in the internal resistance and write
it
> > down
> > > , Pint = ?
> > > 8. Compute the incident or forward power, and write it down, Pf = ?
> > > 9. Compute the reflected power and write it down, Pr = ?
> > >
> > > 10. Now ask yourself where that Pr is generated and where it is
> > dissipated.
> > >
> > > A power that has no source and no sink, no generator and no load, is a
> > pale
> > > imitation of a real power!
> > >
> > > Walt, until you thoroughly analyze a simple DC mismatched circuit
setup
> as
> > > above, using all the equations of reflections mechanics, which are
just
> as
> > > valid at DC as at AC, and then stare at the results and ask why?...
> > >
> > > YOU SIMPLY DO NOT YET UNDERSTAND REFLECTIONS.
> > >
> > > Once you understand deeply the DC analysis, then and only then are you
> > > qualified to go on to understand reflections in AC, HF, RF and

> microwaves
> > > and to discuss the operation of circulators and directional couplers.
> > >
> > > Walt, just do it!
> > >
> > > 10 simple answers, 10 simple questions. Anyone who calls himself an
> > > engineer can do it. Can you do it?
> > >
> > > Best,
> > >
> > > -Peter K1PO
> > >
> > >
> > >
> > >
> > >
> > > "Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
> > > news:3af9fc6a.11565940@news.onemain.com...
> > > > On Thu, 10 May 2001 01:11:52 GMT, nospam_n7ws@arrl.net (Wes
tewart)
> > > wrote:
> > > > >
> > > > >
> > > > >Quote #1.
> > > > >
> > > > >Picture this. I have an x-band source that uses a high quality
> > > > >isolator (terminated circulator) on its output. Any power returned
> to
> > > > >this source is dissipated in the isolator. In addition, there is a
> > > > >sampling loop that measures output level and via feedback
stabilizes
> > > > >the output power (ALC, if you will) This loop has the effect of
> > > > >further improving the source match.
> > > > >
> > > > >I connect this generator to a waveguide high-directivity dual
> > > > >directional coupler. We will use waveguide so you can throw away
> your
> > > > >volt and ammeters.
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> > > > >I place two waveguide thermistor power sensors to the two coupled
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> > > > >output of the coupler. If the coupler is a good one, I will
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coupler
> > > > >at a level equal to the coupling factor, e.g. -30 dB. The output
> > > > >short circuit totally reflects the incident power and returns it to
> > > > >the source. The reverse-reading sensor samples this, also at -30

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> > > > >and displays the same value as the forward sensor. Any differences
> > > > >between the two can be normalized out.
> > > > >
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> > > > >the reflected power; it is totally dissipated by the generator.
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> > > > >matched thermistors in a self-nulling bridge circuit. The second
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> > > > >frequency AC signal to it. This applied signal power is adjusted
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> > > > >This is a substitution method where a difficult to measure quantity
> > > > >(microwave power) is determined by measuring the low frequency or
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> > > > >power. End #1
> > > >
> > > > Irrefutable proof the reflected power exists!
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> > > > >Let's take two of my waveguide dual-directional couplers
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> > > > >attach a waveguide E- H tuner (the waveguide equivalent of your
> > > > >antenna tuner). On the output of the tuner we attach the input
port
> > > > >of coupler #2.
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> > > > >On the output of coupler #2 we attach a 3 dB attenuator followed by
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> > > > >short circuit.
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> > > > >coupler #1.
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> > > > >fiddle fart around with the tuner, the power reading at the
reflected
> > > > >port of coupler #1 can be reduced to zero, or nearly so. We have
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> > > > >coupled ports of coupler #2. Since we tweaked the tuner, we now
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> > > > >1.0 W migrating around in the second coupler so the forward coupler
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> > > > >
> > > > >With 1.0 W incident on a 6 dB return loss load, the reflected power
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> > > > >0.25 W. The coupling factor is 30 dB so the power appearing at the
> > > > >reflected port of coupler #2 is 0.25 mW. The ratio of the
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> > > > >before and (to me anyway) again no surprise.
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"remove
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> > > > >the coupled port!!!
> > > > >
> > > > >No voltmeter, no ammeter, no hanky panky, just real reflected power
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> > > > >
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> > > >
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> power
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> > > >
> > >
> > >
> >
> >
>
>

3739. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 05:19:33 UTC
From: Michael Tope <W4EF@earthlink.net>
Message-ID: <FJ3L6.3357$N23.301587@newsread1.prod.itd.earthlink.net>
Source record: 163187

Hi Peter,

I think I see where you are going with this Peter. VSWR meters and wattmeters are bridge circuits which simply measure the imbalance due to impedance mismatch at the output. The interesting thing is about this is that there is consistency between this steady state view of things and the time domain view of things. Think about the following thought experiment. Connect your favorite wattmeter (one of your own designs if you wish) to a very long transmission line of negligible loss terminated with a 100 ohm resistor. Next, turn on the your transmitter and quickly check the wattmeter forward and reflected power before the incident wave has a chance to reach the mismatched load and bounce back. I think you will agree that reflected power reading will be zero. Now if we wait a moment for the reflected wave to return from the mismatch at the end of our long transmission line, we will see the reading change as the standing wave is setup on our line. If we assume a source match, the reflected wave will be absorbed by the load, and we will reach a steady state condition in one iteration of the bounce diagram. Of course, we could get the same wattmeter reading by putting a 100 ohm resistor at the output of the meter. In this case though, the transient response will be much much shorter. Once things are settled in, the transmitter doesn't care if its looking into the long coax with the mismatch at the end, or a 100 ohm resistor attached to its output terminals. As long as its pumping out a steady sine wave it can't tell the difference. In this case,
the concept of reflected power can indeed be thought of a nothing but mere mathematical formalism. Now, if all of a sudden, I start amplitude modulating
my sine wave, the concept of reflected power becomes significant again. When I diddle the amplitude of my sine wave excitation, all of sudden it matters whether or not the transmitter is looking across the 50 ohm surge impedance of the long transmission line or the 100 ohm resistive termination. Your wattmeter will respond differently too (there will be a lag in the reflected power response equal to the round trip delay of the cable). The two cases are no longer equivalent.

Now of course I am avoiding your DC circuit example. I am tired and don't feel like thinking about it tonight. Tomorrow I will take a look at it and see if I
can figure out what you are getting at (that is if I am not chasing DX). Who knows, I might even get ambitious and take my Drake W-4 apart and analyze it.

73 de Mike, W4EF.....

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9di8mr$1s9$1@slb0.atl.mindspring.net...
> Michael:
>
> Wake up man!
>
> I did not say that there is no such thing as reflections!
>
> I did not say that there is no such thing as reflections!
>
> I did not say that there is no such thing as reflelctions!
>
> Got it yet?
>
> If not then try this...
>
> Reflections are real.
>
> Reflections are real.
>
> Reflections are real.
>
> What is a fiction is the value presented by so-called wattmeters and
called
> "reflected power". That quantity is not present in the circuit under
test!
>
> Do the calculations yourself and see.
>
> Do you know what your danged wattmeter is actually measuring?
>
> I think not...
>
> Does b = V - IR mean anything to you?
>
> What is V? What is I? What is R? Where are they? How does the
reflected
> voltage meter work?
>
> Get with it man!
>
> Wake up and smell the roses!
>
> Open up your wattmeter, draw out the schematic diagram, figure out just
what
> it is "measuring". Analyze the circuit and calculate what it's meter face
> displays when it is operating?
>
> Have you ever done this?
>
> If not then when will you do it?

>
> I, on the other hand have done this, and I have presented the analysis
here
> for all to review. And none have refuted my analysis and computations.
> What?
>
> Heck, man, I design these things for a living.
>
> What are you trying to tell me?
>
> Let's see some circuit analysis of wattmeters and reflected volmeters and
> some quantitative calculations with real numbers in evididence.
>
> Don't just sit there in the stands drinking beer and eating hot dogs and
> yelling down at the umpire, come on down and get in the game man. We need
a
> new player at the plate. Take a swing at my real world analysis and
> examples and refute me with facts and computations.
>
> Words on a NG are cheap!
>
> The only price that understanding will pay, is the price of thouough
> analysis and solving problems numerically! Complete all the exercises at
> the end of the chapter or... you will fail the test!
>
> All the rest is "hot air".
>
> As the Nike commercial says...
>
> "Just do it!"
>
> Analyze your favorite /SWR meter circuit and then tell me what the meter
is
> indicating! I have done that and published it here for all to see. Have
> you? If not then...
>
> Go away and chase DX...
>
> Best Regards,
>
> -Peter K1PO
>
> "Michael Tope" <W4EF@earthlink.net> wrote in message
> news:K3vK6.3270$8x4.301682@newsread2.prod.itd.earthlink.net...
> > Hi Peter,
> >
> > You might try the following experiment. Get yourself
> > a gated RF source, a fast RF switch and a long 50 ohm
> > transmission line. Place a 25 ohm resistive termination
> > at the end of the transmission line and connect an

> > oscilloscope across the resistor. Connect the other
> > channel of the O-scope across the input of the
> > transmission line. Now setup the gated source so
> > that is generates a burst of RF which is shorter
> > than the round trip delay time of the cable. Also setup
> > the switch so that the generator is removed from
> > the circuit and replaced with a 50 ohm termination
> > at the end of the RF burst. Note the amplitude of the
> > incident RF burst from the oscilloscope, and the
> > amplitude of the burst when it reaches the termination
> > at the far end of the transmission line. Then observe
> > the amplitude of RF burst envelope when it returns to
> > the 50 ohm source termination. Do this experiment and
> > then come back and tell us whether or not you still
> > consider refleted power to be some kind of fictious
> > mathematical formalism.
> >
> > 73 de Mike, W4EF.....................................
> > "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> > news:9dd6pplbo1@slb0.atl.mindspring.net...
> > > Walt:
> > >
> > > Your measurement setups use instruments that measure that "ficticious"
> > > reflected power and the "formalism" has been set up to make that an
easy
> > > thing to do... it does not prove that the "reflected power" exists or
> not,
> > > it's just part of the measurement "formalism".
> > >
> > > Measuring one thing, and calling it another, is just playing with
words.
> > > You must know quantitatively exactly what you are discussing. Unless
> you
> > > understand the "Internal Operation" of the measuring instruments, you
> have
> > > but a faint understanding of what is happening. When a meter face
> > displays,
> > > Watts, you must be sure that the meter is measuring watts, for it may
be
> > > measuring volts or amps or something else and just "calling" them
watts.
> > >
> > > Unfortunately the fictional mathematical "formalism" of the the
> > "Scattering
> > > Formalism" is built into the "labels" on most if not all of the
> > instruments
> > > that you use in your lab setups.
> > >
> > > Walt, don't depend upon others and the makers of instruments to guide
> you.

> > > Understand the instruments themselves, try to design instruments to
make
> > > those measurements yourself, if only in sketch form. It will help you
> > > immeasureably with understanding.
> > >
> > > Walt, I recommed that you either set up a simple DC circuit, or use
the
> > one
> > > that I set up, of a voltage source with an internal resistance and a
> > > mismatched load resistance, and do the calculations yourself.
> > >
> > > It only takes a few minutes... and it will be illuminating, you will
> then
> > > understand more about reflections than you ever thought possible.
> > >
> > > And you don't have to depend upon what HP or Daiwa or Tektronix, or
PRD,
> > or
> > > whomever puts on the labels of their instruments, or what people call
> > > things, you will know in a very simple quantitative way, just what
> > mismatch,
> > > reflection coefficient, VSWR, reflected voltage, and reflected power
> are!
> > >
> > > And you will have done it all yourself.
> > >
> > > Walt, just do it!
> > >
> > > It only takes a few moments, probably less time than it takes to type
a
> > > reply to this posting. Stop, analyze, calculate and think at the
volts
> > and
> > > amps level. Leave the power till later, once you have established the
> > volts
> > > and amps.
> > >
> > > Why is it that you seem to refuse to do this simple task? I have done
> it
> > > here on the NG and you refuse to comment or elaborate.
> > >
> > > Could it be perhaps that you are incapbable of analyzing a simple DC
> > circuit
> > > with only two resistors in series?
> > >
> > > Could it be perhaps that you don't really know the equations and
> formulas
> > of
> > > reflection mechanics.
> > >

> > > Could it be that you don't know the formula for reflected voltage?
> > >
> > > Could it be that.....???? I wonder????
> > >
> > > Prove to me that it is not so!
> > >
> > > Here's my extremely simple challenge.
> > >
> > > Draw a schematic diagram containing only three elements, a 10 volt
> > battery
> > > with an internal resistance of 10 Ohms, connected to a 5 Ohm resistor
> load
> > > and then do the following very simple quantitative DC analysis.
> > >
> > > 1. Compute the current I through the load and write it down. I = ?
> > > 2. Compute the voltage across the load and write it down V = ?
> > > 3. Compte the reflection coefficient at the battery terminals and
write
> it
> > > down, rho = ?
> > > 4. Compute the VSWR at the load and write it down, VSWR = ?
> > > 5. Compute the reflected voltage at the load and write it down, b = ?
> > > 6. Compute the power dissipated in the load and write it down, Pload =
?
> > > 7. Compute the power dissipated in the internal resistance and write
it
> > down
> > > , Pint = ?
> > > 8. Compute the incident or forward power, and write it down, Pf = ?
> > > 9. Compute the reflected power and write it down, Pr = ?
> > >
> > > 10. Now ask yourself where that Pr is generated and where it is
> > dissipated.
> > >
> > > A power that has no source and no sink, no generator and no load, is a
> > pale
> > > imitation of a real power!
> > >
> > > Walt, until you thoroughly analyze a simple DC mismatched circuit
setup
> as
> > > above, using all the equations of reflections mechanics, which are
just
> as
> > > valid at DC as at AC, and then stare at the results and ask why?...
> > >
> > > YOU SIMPLY DO NOT YET UNDERSTAND REFLECTIONS.
> > >
> > > Once you understand deeply the DC analysis, then and only then are you
> > > qualified to go on to understand reflections in AC, HF, RF and

> microwaves
> > > and to discuss the operation of circulators and directional couplers.
> > >
> > > Walt, just do it!
> > >
> > > 10 simple answers, 10 simple questions. Anyone who calls himself an
> > > engineer can do it. Can you do it?
> > >
> > > Best,
> > >
> > > -Peter K1PO
> > >
> > >
> > >
> > >
> > >
> > > "Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
> > > news:3af9fc6a.11565940@news.onemain.com...
> > > > On Thu, 10 May 2001 01:11:52 GMT, nospam_n7ws@arrl.net (Wes
tewart)
> > > wrote:
> > > > >
> > > > >
> > > > >Quote #1.
> > > > >
> > > > >Picture this. I have an x-band source that uses a high quality
> > > > >isolator (terminated circulator) on its output. Any power returned
> to
> > > > >this source is dissipated in the isolator. In addition, there is a
> > > > >sampling loop that measures output level and via feedback
stabilizes
> > > > >the output power (ALC, if you will) This loop has the effect of
> > > > >further improving the source match.
> > > > >
> > > > >I connect this generator to a waveguide high-directivity dual
> > > > >directional coupler. We will use waveguide so you can throw away
> your
> > > > >volt and ammeters.
> > > > >
> > > > >I place two waveguide thermistor power sensors to the two coupled
> > > > >ports on the directional coupler. I place a shorting plate on the
> > > > >output of the coupler. If the coupler is a good one, I will
measure
> > > > >the same power on each of the sensors.
> > > > >
> > > > >The forward power (your Pi) is sampled by the forward-reading
coupler
> > > > >at a level equal to the coupling factor, e.g. -30 dB. The output
> > > > >short circuit totally reflects the incident power and returns it to
> > > > >the source. The reverse-reading sensor samples this, also at -30

dB
> > > > >and displays the same value as the forward sensor. Any differences
> > > > >between the two can be normalized out.
> > > > >
> > > > >Because of the 'perfect' source match, there is no re-reflection of
> > > > >the reflected power; it is totally dissipated by the generator.
This
> > > > >system will now reliably measure the return loss (within the
> > > > >directivity uncertainty limits discussed earlier) of a load placed
on
> > > > >the output. For most purposes, we can ignore the forward sensor
> > > > >reading because it remains constant regardless of load impedance.
> > > > >
> > > > >A few words about the power sensors. Contrary to what you claim
> > > > >above, the resistance of the thermistors doesn't have to be
anywhere
> > > > >near the system impedance. The thermistors (today thermocouples
are
> > > > >also used) simply measures temperature rise in a termination. The
> > > > >thermistor is not necessarily the termination. It is usual to have
> > > > >matched thermistors in a self-nulling bridge circuit. The second
> > > > >thermistor is heated by applying an easily measured DC or low
> > > > >frequency AC signal to it. This applied signal power is adjusted
to
> > > > >null the bridge at which time the applied power equals the r-f
power.
> > > > >This is a substitution method where a difficult to measure quantity
> > > > >(microwave power) is determined by measuring the low frequency or
DC
> > > > >power. End #1
> > > >
> > > > Irrefutable proof the reflected power exists!
> > > >
> > > > >Quote #2:
> > > > >
> > > > >Let's take two of my waveguide dual-directional couplers
> > > > >(reflectometers) and connect them thus:
> > > > >
> > > > >The input port of coupler #1 attaches directly to the output of a
> > > > >well-matched source, as before. On the output port of coupler #1
we
> > > > >attach a waveguide E- H tuner (the waveguide equivalent of your
> > > > >antenna tuner). On the output of the tuner we attach the input
port
> > > > >of coupler #2.
> > > > >
> > > > >On the output of coupler #2 we attach a 3 dB attenuator followed by
a
> > > > >short circuit.
> > > > >

> > > > >So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho =
> 0.5
> > > > >
> > > > >If I temporarily remove the tuner, as expected, both reflectometers
> > > > >measure a 6 dB power ratio between the forward and reflected
coupled
> > > > >ports.
> > > > >
> > > > >We assume that maximum available power out of the source is 1.0 W.
> > > > >Because we have a non-reflective source, there is a mismatch loss
> > > > >given as:
> > > > >
> > > > >-10 * log(1 - rho^2) = 1.25 dB
> > > > >
> > > > >or leaving off the -10 log, a power ratio of 0.75.
> > > > >
> > > > >So of the available power, 0.75 W makes it into the input port of
> > > > >coupler #1.
> > > > >
> > > > >If our couplers are 30 dB, as in my previous example, then we read
> the
> > > > >following: (give or take coupling loss)
> > > > >
> > > > >1. Coupler #1 forward port = 0.75 mW.
> > > > >2. Coupler #1 reflected port = 0.1875 mW.
> > > > >3. Coupler #2 forward port = 0.75 mW.
> > > > >4. Coupler #2 reflected port = 0.1875 mW.
> > > > >
> > > > >Okay, now we put the tuner back in between the two couplers. If we
> > > > >fiddle fart around with the tuner, the power reading at the
reflected
> > > > >port of coupler #1 can be reduced to zero, or nearly so. We have
> > > > >"re-reflected" the nasty reflected (dare I say) power back toward
the
> > > > >load.
> > > > >
> > > > >The mismatch loss now goes away and the forward port of coupler #1
> > > > >reads 1.0 mW.
> > > > >
> > > > >Let's examine the readings on the thermistor power sensors on the
> > > > >coupled ports of coupler #2. Since we tweaked the tuner, we now
have
> > > > >1.0 W migrating around in the second coupler so the forward coupler
> > > > >reads 1.0 mW. (1.25 dB higher than before and no surprise)
> > > > >
> > > > >With 1.0 W incident on a 6 dB return loss load, the reflected power
> is
> > > > >0.25 W. The coupling factor is 30 dB so the power appearing at the
> > > > >reflected port of coupler #2 is 0.25 mW. The ratio of the
reflected

> > > > >power to the forward power readings is .25 / 1.0 = - 6dB, just as
> > > > >before and (to me anyway) again no surprise.
> > > > >
> > > > >But wait! We just tuned (conjugately matched) this system to
"remove
> > > > >the termination" and that pesky reflected power still showing up on
> > > > >the coupled port!!!
> > > > >
> > > > >No voltmeter, no ammeter, no hanky panky, just real reflected power
> > > > >heating up the thermistor. Funny how this works. End #2
> > > > >
> > > > >So....now what?
> > > >
> > > > Accurate experimental data proves that a concept or theorem is
either
> > true
> > > or
> > > > false. Wes' experiments have proved Peter's concept that reflected
> power
> > > is
> > > > fictitous false, which we've known all along.
> > > >
> > > > And Wes, I've performed similar experiments in my own lab, but with
> > coax,
> > > using
> > > > an HP-8405A Vector Voltmeter and an HP-778D Dual Directional
Coupler,
> > with
> > > > similar results. Bravo!
> > > >
> > > > >Wes Stewart N7WS
> > > >
> > >
> > >
> >
> >
>
>

3740. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 05:21:30 UTC
From: noname@aol.com
Message-ID: <3afcb981.44632748@news.compuserve.com>
Source record: 163188

Hi Cecil,

Thanks for the input.

>Where are you going to get a balun
>>that will balance the currents when it is looking into a 3k+j3k ohm
>>load?

Based on what you say and the comment in the Handbook, I take it
that transformers - which is all baluns really are - don't like
it when the current and voltage in the windings are out of phase.
Of course, the current and voltage are forced out of phase by the
transformer, but that is its own "natural" phase difference. The
high SWR forces other phase differences that the transformer
cannot accomodate?

I guess another concern is that with a high SWR there is power
being forced both dirctions simultaneously, i.e. both to and from
the antenna?

So what happens in the event of the 3k+j3k that you mention?
Does the loss within the balun rise sharply? Do we find that
instead of the 1 dB or less of loss typical of a balun, when the
high SWR is present that the loss goes up to 9 - 12 dB or higher?
I have seen several comments where hams have said that
such-and-such a balun burned up, caught on fire, or whatever,
implying a lot of power dissipated in the balun.

Dave
AB9CA

On Thu, 10 May 2001 20:58:07 -0500, W6RCecilA
<Cecil.A.Moore@IEEE.org> wrote:

>Dave wrote:
>> Does anyone know where I can find information on the impedance
>> transformation that occurs when a balun is operated in the
>> presence of high SWR?
>
>Jerry Sevick has some information in his book, "Transmission Line
>Transformers". The sad fact is that there is no balun that will
>do the job you need done. Where are you going to get a balun
>that will balance the currents when it is looking into a 3k+j3k ohm
>load? My advice is not to allow the balun to see an impedance
>far away from its design impedance. Baluns are not magic.
>--
>http://www.mindspring.com/~w6rca

>
>
>-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
>http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
>------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3741. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 05:21:34 UTC
From: noname@aol.com
Message-ID: <3afcbde6.45757062@news.compuserve.com>
Source record: 163189

Hi Jerry,

Thanks for the info.

>>Once you get to 3-4X the normal output Z, the input seems to go
>>down to 5-6 ohms and losses zoom up.

An interesting comment. Are you saying that even if the core is
not saturated in the usual sense, with the conflicting currents
and voltages present, the core ceases to behave normally and
becomes basically a power sink rather than a power transfer
device?

When you ran your tests did you run them at low power levels so
the cores were no where near saturation.

Dave
AB9CA

On Fri, 11 May 2001 17:25:10 GMT, jerry@no.node.net (JR) wrote:

>I have found that the balun impedance will go real low and the
>ferrite will absorb all the rf. My first person experience of
>flaming baluns I found it out the hard way. I did some
>measurements afterwards as well with the burned up and
>new baluns from various sources.
>
>Once you get to 3-4X the normal output Z, the input seems to go
>down to 5-6 ohms and losses zoom up.
>
>fyi
>Jerry AA2T
>

3742. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 05:21:37 UTC
From: noname@aol.com
Message-ID: <3afcc567.47678987@news.compuserve.com>
Source record: 163190

Hi Tom,

>If you are going to have a reactive load, or a mismatched load, stay
>away from a voltage-type balun.

That is a comment I have seen other places. Unfortunately the folks who make most of the antenna tuners appear to ignore that advise. I know that the balun in my MFJ 949E is the voltage variety.

>In general, you also do not want a
>balun with a step-up ratio when feeding balanced feeders on multiple
>bands.

Since none of the low-loss parallel-conductor feeder cable happens to be 50 ohms, the only solutions would involve some feeder arrangement the avoids a balun entirely? Either an honest to gosh balanced-line transmatch, with a balun between the xmit and the transmatch; or a length of impedance matching feeder. What other ways are there to eliminate the balun (or high SWR on the balun)? These are the only two I know of.

>How much power are you going to run, and what type of antenna system?

Power level is QRP (I'm trying to conserve milliwatts here!) and the antenna will be something portable. Either a doublet or vertical. They each have their pros and cons.

On a related thought, did I not see a comment on another thread about your having looked into the effects of running parallel conductor cable on or slightly under the ground? My plans are to throw the twin lead feeder on the ground to run to the antenna (about 50'). I don't envision that this will have much effect on the feeder losses. But, since the ground has more loss than air, but lots less than metal, I do expect it will unbalance the line somewhat and result a small amount of line radiation.

Dave
AB9CA

On Fri, 11 May 2001 23:01:45 GMT, 2w8ji@contesting.com (Tom W8JI) wrote:

>On Fri, 11 May 2001 00:58:28 GMT, noname@aol.com (Dave) wrote:
>
>>Hi,
>>

>>Does anyone know where I can find information on the impedance
>>transformation that occurs when a balun is operated in the
>>presence of high SWR? I note that the ARRL Handbook is silent on
>>this point, simply stating that "loads with reactive components
>>should use appropriate networks to cancel the reactance." So I
>>take it that a 4:1 balun does not just divide the twin lead
>>impedances by 4.
>
>Sevek has a lot of things right in his book, but his concept of what a
>balun should do is wrong. The voltage baluns he favors are impedance
>critical, and do not provide what you really want in most antenna
>systems. They tend to be lossy and power limited except over a limted
>range of impedances and frequencies.
>
>If you are going to have a reactive load, or a mismatched load, stay
>away from a voltage-type balun. In general, you also do not want a
>balun with a step-up ratio when feeding balanced feeders on multiple
>bands.
>
>Choke baluns are virtually impedance non-critical, and generally are
>1:1 ratio. They look like a very short section of transmission line
>for normal-mode currents, so they do not modify the impedance much.
>They look like a high impedance for common-mode currents that cause
>problems.
>
>The best choice is a choke balun, with a design selected for the power
>levels you run. Stay away from strings of beads, because the choking
>impedance is generally not high enough.
>
>How much power are you going to run, and what type of antenna system?
>I use a stack of four 61 material 2 inch diameter cores wound with 20
>turns of twisted-pair HV teflon wire. That balun works very well from
>1.8 to 30 MHz, and handles well over 1500 watts without great concern
>about the feed impedance.
>
>73 Tom

3743. Re: G5RV on 6 meters? Opinions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 06:24:20 UTC
From: yardleyite@aol.com
Message-ID: <20010512022420.08623.00005803@ng-md1.aol.com>
Source record: 163191

Don't pack up your G5RV for use on 6 meters! I have one up that I use primarily on HF. I tried it on 6M with a tuner and my Yaesu FT-620-B (10 watts output) and have had surprisingly good results. It's better than a dipole but not as good as a beam. It does exhibit some gain off of it's lobes and is directional.I have my G5RV suspended at about 60' high.
Good luck and 73.
Joe Cro N3IBX

3744. Homemade antenna ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 06:35:55 UTC
From: john-eileen@prodigy.net
Message-ID: <9dib15$5pte$1@newssvr06-en0.news.prodigy.com>
Source record: 163170

I have a handheld HTX-202 Radio Shack 2 Meter radio. I really need some type of antenna at home. Please email suggestions and or instruction to make a simple antenna. thanks john-eileen@prodigy.net

3745. Re: G5RV on 6 meters? Opinions?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 08:33:56 UTC
From: Ed Cregger <663jlm@vei.net>
Message-ID: <tfpt6v56p4lsd7@corp.supernews.com>
Source record: 163192

As an aside, I have been using my Van Gordon All Bander dipole on six meters with some success. No, it's nowhere near as effective as a dedicated six meter antenna in most directions, but, it gets me through in a pinch. I use an MFJ-989C tuner to match the 450 ohm twinlead on 50.125 and thereabouts. I have made some contacts using this set up, so, it is better than nothing.

Ed Cregger, NM2K
nm2k@my-deja.com

"Yardleyite" <yardleyite@aol.com> wrote

> Don't pack up your G5RV for use on 6 meters! I have one up that I use primarily
> on HF. I tried it on 6M with a tuner and my Yaesu FT-620-B (10 watts output)
> and have had surprisingly good results. It's better than a dipole but not as
> good as a beam. It does exhibit some gain off of it's lobes and is
> directional.I have my G5RV suspended at about 60' high.
> Good luck and 73.
> Joe Cro N3IBX

3746. help fo butternut

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 09:07:23 UTC
From: iz1dxg <iz1dxg@libero.it>
Message-ID: <f37L6.8251$RX4.559973@news.infostrada.it>
Source record: 163193

i just bought a butternut hfv6 x but i'm disappointed because it is ground
monted and receive quite well, but on trasmission is not very good at all.
i explain better:
the antenna is ground mounted it has only 6 radials of variuos lenght (the
longer is 30 feet)and it is mounted in a corner of my little garden.
Can somebody tell me why it doesn't work on trasmission ??
Do i have to increase the number of radials???
Ah i was forgetting R.O.S. semms to be pretty good with only 6 radials about
1:1.7 in all band
Thanks in advaNCE for any advice.

Robert iz1dxg

3747. Re: yagi plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 09:29:33 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <DAiPr5A9JQ$6EA51@ifwtech.com>
Source record: 163196

KE4PJR wrote:
>I am trying to find some plans to build a decent yagi for side band on
>2 meters. Any one have any suggestions or good urls? TIA and 73

Take a look at the 'VHF/UHF Long Yagi Workshop' on my website, for good
modern designs and practical how-to-build-it information.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

3748. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 09:58:51 UTC
From: 2w8ji@contesting.com
Message-ID: <3afd044e.748298635@news.accessunited.com>
Source record: 163194

>That is a comment I have seen other places. Unfortunately the
>folks who make most of the antenna tuners appear to ignore that
>advise. I know that the balun in my MFJ 949E is the voltage
>variety.

Yes, while most tuners have current baluns the 949E has a voltage
balun.

>Since none of the low-loss parallel-conductor feeder cable
>happens to be 50 ohms, the only solutions would involve some
>feeder arrangement the avoids a balun entirely? Either an honest
>to gosh balanced-line transmatch, with a balun between the xmit
>and the transmatch; or a length of impedance matching feeder.
>What other ways are there to eliminate the balun (or high SWR on
>the balun)? These are the only two I know of.

There is an incorrect but common assumtion the balun ratio has
something to do with feedline design impedance. The impedance at the
end of a 450 ohm line feeding a typical multiband dipole is almost
never 450 ohms. It varies from a few ohms to many thousands of ohms.

Why would anyone care if the balun had a transformation ratio? The
impedance is all over the place! What you want is a wide-range balun,
and that is a 1:1 choking-type balun.

Second point, moving the balun to the input of the tuner does nothing
to improve balance of the system. If the tuner is a grounded center
true symmetrical tuner it can help balance, but most tuners are not
built that way. If they are constructed as a symmetrical grounded
center matching system, they are voltage-type balanced systems...and
that is undesirable anyway.

I leave my baluns on the output, because it is cheaper and better that
way.

>>How much power are you going to run, and what type of antenna system?
>
>Power level is QRP (I'm trying to conserve milliwatts here!) and
>the antenna will be something portable. Either a doublet or
>vertical. They each have their pros and cons.

Ahhh, then you task is more simple. You just need to scale down the
balun size I use while maintaning a high impedance. The balun in your
tuner can be rewired as a 1:1 choke balun, but I'd stack a few more
cores and use a higher voltage wire.

>On a related thought, did I not see a comment on another thread
>about your having looked into the effects of running parallel
>conductor cable on or slightly under the ground? My plans are to
>throw the twin lead feeder on the ground to run to the antenna
>(about 50'). I don't envision that this will have much effect on
>the feeder losses.

I measured some a year or so ago. The soil around the feeder just killed the feedline, making it very high loss. That was true even though I fished the feedline through large plastic (PVC) conduit.

I don't have the numbers now, but it was pretty bad.

73 Tom

3749. 80/40 meter dipole help

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 12:31:43 UTC
From: kg4ggx@aol.com
Message-ID: <20010512083143.11983.00002858@ng-cr1.aol.com>
Source record: 163195

Hi to all
I'm considering home brewing an 80/40 meter dipole. I have info describing one using loading coils on the end of a 40m dipole with an additional 4 feet of wire after the coil. This is appealing because of having only one wire to work both bands. How much will this coil loaded dipole be down in comparison to a full length 80 meter dipole? If it's a significant amount, maybe I should just make it as a parrallel dipole. I have a parrallel dipole up now that is for 80/40/20/10m. It was a little work to tune, but works great. I'm considering the coil loaded one above to make the antenna package a little more compact and neater in appearance. But I would like some opinions as to how much the coil loaded 80m performance would be down.

Thanks for all replys!
73 Rob

3750. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 12:36:25 UTC
From: n2ey@aol.com
Message-ID: <20010512083625.12759.00000927@nso-fz.aol.com>
Source record: 163197

In article <3AF70A84.E0C56387@IEEE.org>, W6RCecilA <Cecil.A.Moore@IEEE.org>
writes:

>I thought WWV had changed its call to WWVB. Is that incorrect?
>--

Yep.

The HF transmissions identify as WWV, and have done so since the station was
built ~40 years ago. The LF transmissions identify as WWVB.

I've been to the transmitter site in Fort Collins. It's unmanned and quite
stark, out there at the edge of the prairie with the Rockies as a backdrop. The
HF antennas are simple vertical dipoles made of tower sections. The LF antenna
is quite large. They are controlled from the NIST site in Boulder.

73 de Jim, N2EY

3751. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 12:45:44 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <GZ0r5qA4BT$6EAIo@ifwtech.com>
Source record: 163198

William E. Sabin wrote:
>
>Fig 24 and text in Chap 26 of the ARRL Antenna Book assert that this
>current over the edge is just simply always there, period.
>
>False.

Bill has inadvertently set up a false straw-man argument, because he misquotes and oversimplifies what the 'ARRL Antenna Book' actually says. It does not say that this current ever the edge is "simply always there". Adding "period" also implies that book is making that statement without any qualification or explanation.

In fact, the Antenna Book says that at the end of the coax, "The current on the inside of the coax shield [I2] splits into two components. One is I4, going directly to arm 2 of the dipole. The other is I3, and this flows down the outer surface of the coax shield. Again, because of skin effect, I3 is separate and distinct from the current I2 on the inner surface. The antenna current on arm 2 is thus equal to the difference between I2 and I3." [They could equally have said that I3 is equal to the difference between the currents in arm 1 and arm 2 of the antenna.]

The explanation immediately continues with:
"The magnitude of I3 is proportional to the relative impedances in each current path beyond the split." It then goes on to explain, at some length, that I3 will therefore depend on the ratio between the impedance of arm 2 of the dipole and the common-mode impedance.

When quoted in full, that explanation still looks good to me.

My interpretation is that I3 *can* flow under all circumstances, but that the *magnitude* of I3 - which is what really matters - depends on normal circuit laws (Ohm's and Kirchhoff's) applied to the three conductors that join at the end of the shield. These are shield inner, shield outer (kept apart by skin effect) and one arm of the antenna.

Like many others, I am not aware of any measurable circuit behavior that cannot be explained by this approach. My understanding was that, after corrections, Roy's recent measurements do support the same explanation (perhaps Roy can re-confirm this explicitly, since the results came out in a number of instalments).

Also it is reassuring to see that Kevin's theoretical approach also predicts the almost complete separation of skin currents on opposite surfaces.

This remains the 'conventional' explanation that most people still agree with. If anyone believes otherwise, the responsibility to prove it has not changed - it's still theirs, not ours.

One final thing to remember is that there are several possible explanations of what's happening, from different viewpoints - but all *correct* explanations are consistent with one another, and also consistent with the measured behavior. In fact, that's precisely how we determine that an explanation *is* correct.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

3752. Re: Last Day: Icom TV R7000 on ebay

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 12:57:03 UTC
From: Glenn <glenn.hansen@usa.net>
Message-ID: <MPG.1566d2e1a3e869b198968c@news>
Source record: 163199
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.cb,rec.radio.scanner,rec.radio.shortwave,rec.radio.swap,sci.electronics.repair

In article <20010511230344.956$Vs@newsreader.com>, moparholic@home.net
says...
> "Headhamster" <headhamster@earthlink.net> wrote:
> > I have the somewhat rare Icom TV R7000 for auction on ebay. This unit
> > lets you receive amateur and broadcast TV with your R7000.
> > http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1235808342
> > Please take a look.
> >
> > Rich
> >
> Why don't you post this piece of shit in more groups ? OIC,can't give it away..

You are right moron, the bid on it is now $102.50, that is more than it
cost new 10 years ago.

Yes, you are a bright one a by golly!

3753. Dayton Room Avail

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 13:35:32 UTC
From: pmalvasi@aol.comnorgnon
Message-ID: <20010512093532.27818.00000011@ng-cc1.aol.com>
Source record: 163200

Have to cancel out of Dayton but have room for 3 nites at Dayton Marriott -
$469.13 includes all taxes.. Pete, W2PM (201) 819-1065
Collector - Wireless and Landline Telegraph

3754. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 13:39:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD3D0C.B45B86E2@IEEE.org>
Source record: 163201

"Peter O. Brackett" wrote:
> I agree that there is a finite amount of energy "stored" on the line in the
> magnetic and electric fields, it's just that it is not directly related to
> that value called by most, the "reflected power".

Let me refresh your memory on the thought experiment that you agreed with.

100w XMTR---51.5ohm coax---X---one second long lossless 300 ohm line---51.5 ohm load

The XMTR outputs 100 joules/sec. During steady-state, the 300 ohm line contains
300 joules of energy. The total amount of energy that has reached the load is
300 joules more than the energy generated by the XMTR. Modulation indicates that
the first ghost arrives at the load two seconds after the primary signal and
contains half the energy. The 2nd ghost arrives at the load four seconds
after the primary signal, two seconds after the arrival of the 1st reflection.

The load accepts half the incident energy and rejects half the incident energy
as reflected energy. There's 200 joules of reflected energy in the 300 ohm
line, 100 joules flowing each direction. Otherwise, the ghosts wouldn't be
located in time where they are.

Since I know that you don't agree that joules/sec equals watts equals power,
I have avoided the use of the word "power" completely. It doesn't seem to
have changed a thing.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3755. Re: FS: HyGAIN Quad Tri BAND Tennessee $300

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 13:40:53 UTC
From: ham_guy@webtv.net
Message-ID: <26196-3AFD3D65-59@storefull-137.iap.bryant.webtv.net>
Source record: 163211

Model is Telex HyGain 244 Hy Quad, all aluminum with new insulators.
Johnny KF4WWF

3756. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 13:42:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9djek8$e7j$1@nntp9.atl.mindspring.net>
Source record: 163202

Ian:

But... some have been arguing about the "degree" of isolation provided by the skin effect, not that it does provide shielding. And having the abiltiy to analyze and quantify the "degree" will cast light upon areas of incomplete understanding.

When I say, degree, I am thinking of such as.... a "thin" shield which is only 2 - 3 skin depths deep, as compared to one which is 500 skin depths deep, or a perforated shield wtih 1/32 inch openings every inch compared with a shield with 1/32 inch openings each mile, etc...

Shielding effectiveness is often "rated" by coaxial cable manufacturers as say 90dB, or 110 dB of "shielding effectiveness", etc.

So, what precisely are they measuring when they quote that "shielding effectiveness" rating.

How is the shielding effectiveness measured?

What instruments do they use to measure this?

What is the "model" for the signal leakage?

Personally I like to think of this "shielding effectiveness" as a "common mode rejection" capability. And so one could come up with a rating in dB for say "common mode rejection ratio" of this cable is x dB, or whatever.

Sort of like how the common mode rejection ratio or common mode response of transformers or of differential amplifiers is rated.

In that kind of parametric characterization of coaxial cable, one could "assume" a model consisting of say three transfer functions.

The differential transfer function, i.e. differential mode input to differential mode out put.

The common mode transfer funcion, i.e. common mode input to common mode output.

And... finally the "essence" of what we have been discussing...

The "cross mode transfer function", i.e. the common mode input to differential mode ouptput. [i.f the system is reciprocal, which it should be, the identical symmetric cross mode transfer function, i.e. the differential mode input to common mode output would also be of interest.]

With that model... one can characterize the magnitude of the value of the cross mode transfer function in dB as a fucntion of frequency. I am sure it

is a function of frequency. What is that function? What is it's slope in dB per decade of frequency, does it have cutoff characteristics, is it low pass, high pass, bandpass, etc...

And like all such characterizations of common to differential mode coupling, i.e.common mode rejection of transformers or of differential amplifiers, making accurate measurements of these phenomena is challenging for even the skilled metrologist, and often outside the scope of what amateurs either care about or are capable of performing. Of course for "precision" systems such characterization is necessary.

I like to view the shielding effectiveness of coaxial cable as a cross mode transfer function rating. And I view leaky cable as having a poor common mode rejection or common mode response capability, whether that poor response results from thin shield or sparse shield braid, or other external effects such as induced signals from a nearby coupled radiating structure.

The electromagnetic security community... i.e. those who try to protect various national secret communications from e-m snooping activities of potential "enemies" must have a very elaborate system for "rating" such cross mode phenomena... Would your MI5 use Radio Shack coaxial cable to shield and protect secrets of the British Admiralty, or... whatever.... I am sure that they must have way's of rating the sheilding effectiveness of cables. Most of that kind of know how and data is likely highly classified and available only to those with high level clearances and a "need to know". Some of this kind of material is in the "open" and readily available, run a "Google" or "Yahoo" search on NACSIM, for instance.

But for those of us mere hams who need to "snoop" low level DX signals travelling all round the world on the long path, way down in the noise on 160m, in the presence of local noise near our transmission lines, well... we might like to have highly effective shielding as well.

-Peter K1PO

"Ian White, G3SEK" <G3SEK@ifwtech.com> wrote in message news:GZ0r5qA4BT$6EAIo@ifwtech.com...
> William E. Sabin wrote:
> >
> >Fig 24 and text in Chap 26 of the ARRL Antenna Book assert that this
> >current over the edge is just simply always there, period.
> >
> >False.
>
> Bill has inadvertently set up a false straw-man argument, because he
> misquotes and oversimplifies what the 'ARRL Antenna Book' actually says.
> It does not say that this current ever the edge is "simply always
> there". Adding "period" also implies that book is making that statement
> without any qualification or explanation.
>
> In fact, the Antenna Book says that at the end of the coax, "The current
> on the inside of the coax shield [I2] splits into two components. One is

> I4, going directly to arm 2 of the dipole. The other is I3, and this
> flows down the outer surface of the coax shield. Again, because of skin
> effect, I3 is separate and distinct from the current I2 on the inner
> surface. The antenna current on arm 2 is thus equal to the difference
> between I2 and I3." [They could equally have said that I3 is equal to
> the difference between the currents in arm 1 and arm 2 of the antenna.]
>
> The explanation immediately continues with:
> "The magnitude of I3 is proportional to the relative impedances in each
> current path beyond the split." It then goes on to explain, at some
> length, that I3 will therefore depend on the ratio between the impedance
> of arm 2 of the dipole and the common-mode impedance.
>
> When quoted in full, that explanation still looks good to me.
>
> My interpretation is that I3 *can* flow under all circumstances, but
> that the *magnitude* of I3 - which is what really matters - depends on
> normal circuit laws (Ohm's and Kirchhoff's) applied to the three
> conductors that join at the end of the shield. These are shield inner,
> shield outer (kept apart by skin effect) and one arm of the antenna.
>
> Like many others, I am not aware of any measurable circuit behavior that
> cannot be explained by this approach. My understanding was that, after
> corrections, Roy's recent measurements do support the same explanation
> (perhaps Roy can re-confirm this explicitly, since the results came out
> in a number of instalments).
>
> Also it is reassuring to see that Kevin's theoretical approach also
> predicts the almost complete separation of skin currents on opposite
> surfaces.
>
> This remains the 'conventional' explanation that most people still agree
> with. If anyone believes otherwise, the responsibility to prove it has
> not changed - it's still theirs, not ours.
>
> One final thing to remember is that there are several possible
> explanations of what's happening, from different viewpoints - but all
> *correct* explanations are consistent with one another, and also
> consistent with the measured behavior. In fact, that's precisely how we
> determine that an explanation *is* correct.
>
>
> 73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
> 'In Practice' columnist for RadCom (RSGB)
> http://www.ifwtech.com/g3sek

3757. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 13:51:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD3FD4.E0AFEB72@IEEE.org>
Source record: 163203

Reg Edwards wrote:
> Then there's the case of the meter which responds to both the
> current flowing through any value impedance and the voltage across
> it. But the meter indicates SWR when there may not be a
> transmission line around on which to develop any standing waves.

That's true, Reg. The meter is calibrated for a certain characteristic impedance (Z0). If the meter is located outside of that Z0 environment, the meter is being used in an environment for which it was not intended. Witness an SWR reading equal to 1:1.5 when a 50 ohm SWR meter is used on a flat 75 ohm line where the real SWR is 1:1.

The same holds true for all instruments. It reminds me of the time, long ago, when I thought something was wrong with a tube in my transmitter. I measured the screen voltage with a 20k ohms/volt Simpson meter and it "was" much too low.

The moral is: Let the user beware.

I've got a question for you, Reg. I'm trying to run some of Peter's DC experiments. Where can I find a DC 50 ohm coax and a DC 300 ohm twinlead?
--
http://www.mindspring.com/~w6rca

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3758. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 13:52:19 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD4013.A714B21@IEEE.org>
Source record: 163204

"Peter O. Brackett" wrote:
>
> Cecil:
>
> Techno-babble...
>
> Man look at my simple DC examples of "reflection" and refute them if you
> can.

Peter, please send me some DC 50 ohm coax and some DC 300 ohm twinlead
so I can run some experiments.
--
http://www.mindspring.com/~w6rca

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3759. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 13:53:19 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9djf7m$5ck$1@slb2.atl.mindspring.net>
Source record: 163205

Kevin:

Heh, heh... it's all a matter of degree.

[snip]
> Your last comment is not correct. Since the current is not going into
> the conductor rather is perpendicular to the surface normal, Ohm's law
> says that the electric field also has no component from one side to the
> other (Actually there is a tiny component into the conductor but it is
> down by a factor of 1/sqrt(sigma) so it is negligible). Therefore the
> voltage difference along this path is zero whether there is common mode
> current or not. What's your point? My point is that this line integral
> is completely useless since it is always essentially zero, and talking
> about this voltage difference in this situation is silly.
>
> 73 Kevin w9cf
[snip]

You are talking about "first order" effects. Which of course is all that is of interest to most amateur radio enthusiasts. However, professional have more demanding requirements.

You say that there is a "tiny" component into the conductor that is negligible, and for many purposes I would agree that it is negligible.

But for some purposes it is not.

In fact it is definitely not neglible for the purpose of quantitatively rating the shielding effectiveness of high quality cables.

Say I wanted to compare the shielding effectiveness of two different manufacturers cables...one rated it at 95dB and the other rated it at 115dB. Now would that "tiny" current that is not perpendicular to the normal be important.

How "far down" is "tiny"?

The "intelligence" community who try to protect national secrets from prying em probes, do not consider that to be tiny!

Run a Google search on NACSIM and TEMPEST to get a flavor of what I refer to.

-Peter K1PO

3760. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 13:59:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD41A6.ED1525A@IEEE.org>
Source record: 163206

"Peter O. Brackett" wrote:
> Analyze your favorite /SWR meter circuit and then tell me what the meter is
> indicating!

I've done that, Peter. Assuming *ALL* the boundary conditions for which
the "power" meter was designed are met, the meter is indirectly calculating
and indicating joules/sec. If all the boundary conditions are not met, the
meter is being used improperly.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3761. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:00:29 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9djfl4nig1@slb6.atl.mindspring.net>
Source record: 163207

Richard:

I don't deny the coaxial antenna works, so does a J-Pole fed with twin lead and it works on the same principle... it does not depend upon charge flow around the end to complete the cross mode, differental mode to common mode transfer?

The top half of the coaxial antenna is a radiating element and the "folded back" coax is directly in the "near field".

The "transfer" from differential to common mode does not take place by charge flow around the end, but by "induction" from the near field when the coax is "opened" up to "outer space". Just as with the "balanced" J-Pole.

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:14185-3AFCBC85-168@storefull-115.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "The "end run effect" is a non-starter...".
>
> The "coaxial antenna" with its inside-out !/4-wave skirt works very well
> and it depends completely on current up and over the edge to excite the
> outside antenna skirt.
>
> Best regards, Richard Harrison, KB5WZI
>

3762. Re: QST-QST-QST INVITATION TO 3 ANTENNA REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:03:03 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AFD4297.1EA44790@hiwaay.net>
Source record: 163208

10-9 10-9 10-9 10-9
10-44
10-11
10-19
10-3
Bill W4BSG

Sideband wrote:
>
> 10-9?
>
> -SSB
>
> Fractenna wrote:
> >
> > QST--
> >
>
> > Kindly do not query this e-mail address; the info here is complete for your
> > information pleasure.
> >
> > 73,
> > Phil de
> > N1ZKT

3763. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:09:28 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD4418.38602738@IEEE.org>
Source record: 163209

"Peter O. Brackett" wrote:
> Reflection mechanics either works at both AC and at DC and at all lengths of
> transmission line from 100 miles down to a micron or it doesn't work at
> all!

Your methods fall apart at the quantum level, Peter. Each of our math models require certain boundary conditions. For instance, most of our RF discussions require the actual characteristic impedance of coax to be close to its advertised value. At 10 MHz, the coax effects a ratio of V/I that is equal (plus or minus accuracy) to the characteristic impedance of the line. Does that 50 ohm coax ensure that the ratio of DC voltage to DC current is 50 ohms?
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3764. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:12:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD44D5.70031749@IEEE.org>
Source record: 163210

"Peter O. Brackett" wrote:
> "No shooting" (signs).
> Invariably those signs were full of bullet holes!

What was your emotional response?
--
http://www.mindspring.com/~w6rca

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3765. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:17:00 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD45DC.B68D7B23@IEEE.org>
Source record: 163212

"Peter O. Brackett" wrote:
> Any high school Physics student can analyze this one.
> What is the reflection coefficient?

Shirley, you jest.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3766. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:25:23 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9djh3tivo1@slb3.atl.mindspring.net>
Source record: 163213

Mike:

Hello... by golly I think you are onto something here.

If you spend a little more time along those lines of reasoning, and review carefully the "formal" framework on which all of this reflection mechanics is based, you will end up with a very deep understanding of this subject. You'r not far away.

Here's some refererences, for your interest: Careful cuz they are very "formal" and folks who are not used to "formalisms" tend to grow tired of the formalism quickly and then gloss over and miss some of the details. Heh, heh... This has forever been the technique of "high priests" attempting in their own way, to keep the "rif raf" out of their secret domains. The use of "formalisms" and "jargon" that is often confusing, indirect, and intimidating and disguises simple principles with "pyrotechnical" jingoese.... is not good for anyone. What is needed is some clear plain language explanations and those are hard to come by.

For formal approaches to the "Scattering Formalism", see:

Herbert J. Carlin, "The Scattering Matrix in Network Theory", IRE Trans. PGCT., Vol CT-3, No. 2, June 1956.

Herbert J. Carlin, Anthony B. Giordano, "Network Theory - An Introduction to Reciprocal and NonReciprocal Circuits", Prentice-Hall, Englewood Cliffs, NG, 1964 - LCCN:64-11259 Call No. TK3226.C29

Ernest S. Kuh, and R. A. Rohrer, "Theory of Linear Active Networks", Holden-Day, San Francisco, 1967. LCCN 67-13844, Call No. TK454.2K76

Other less formal and more practical individuals have "picked up" on these formal methods along the way, without fully understanding them and carried this formalism on into labels on instruments, etc...

Consequently we have whole generations of technicians, and engineers who have not had the time to explore or been exposed to the complete formalism, actually taking some of these "words" literally.

Within the formalism, the so called "reflected power" is simply not the "power in the reflections" in the sense that most practical electronic buffs would understand it.

And so we have these endless pseudo intellectual/philosophical discussions about words and prases that most of the protagonists only think they understand, but don't really know.

I am not formal myself, and I usually begin trying to understand things from a practical viewpoint, and so I began my exploration by taking apart power meters drawing out their schematics, analyzing and understanding how they worked. Then, I was confused, because the meters did not seem to be measuring what the labels on the face of the meters said they were, and so I began a long exploration of the "formalism". It was tiring, and boring, but now I understand what it all means and how things work...

Good luck with your explorations...

Go for it.

-Peter K1PO

"Michael Tope" <W4EF@earthlink.net> wrote in message
news:yE3L6.3349$N23.300158@newsread1.prod.itd.earthlink.net...
> Hi Peter,
>
> I think I see where you are going with this Peter. VSWR meters and
> wattmeters are
> bridge circuits which simply measure the imbalance due to impedance
mismatch
> at the
> output. The interesting thing is about this is that there is consistency
> between this
> steady state view of things and the time domain view of things. Think
about
> the
> following thought experiment. Connect your favorite wattmeter (one of
your
> own
> designs if you wish) to a very long transmission line of negligible loss
> terminated
> with a 100 ohm resistor. Next, turn on the your transmitter and quickly
> check the
> wattmeter forward and reflected power before the incident wave has a
chance
> to
> reach the mismatched load and bounce back. I think you will agree that
> reflected
> power reading will be zero. Now if we wait a moment for the reflected wave
> to return
> from the mismatch at the end of our long transmission line, we will see
the
> reading
> change as the standing wave is setup on our line. If we assume a source
> match, the
> reflected wave will be absorbed by the load, and we will reach a steady
> state condition
> in one iteration of the bounce diagram. Of course, we could get the same
> wattmeter
> reading by putting a 100 ohm resistor at the output of the meter. In this

> case though,
> the transient response will be much much shorter. Once things are settled
> in, the
> transmitter doesn't care if its looking into the long coax with the
mismatch
> at the end, or
> a 100 ohm resistor attached to its output terminals. As long as its
pumping
> out a steady
> sine wave it can't tell the difference. In this case, the concept of
> reflected power can indeed
> be thought of a nothing but mere mathematical formalism. Now, if all of a
> sudden I
> start amplitude modulating my sine wave, the concept of reflected power
> becomes
> significant again. When I diddle the amplitude of my sine wave
excitation,
> all
> of sudden it matters whether or not the transmitter is looking across the
50
> ohm
> surge impedance of the long transmission line or the 100 ohm resistive
> termination.
> Your wattmeter will respond differently too (there will be a lag in the
> reflected power
> response equal to the round trip delay of the cable). The two cases are no
> longer
> equivalent.
>
> Now of course I am avoiding your DC circuit example. I am tired and don't
> feel like
> thinking about it tonight. Tomorrow I will take a look at it and see if I
> can figure out
> what you are getting at (that is if I am not chasing DX). Who knows, I
might
> even
> get ambitious and take my Drake W-4 apart and analyze it
>
> 73 de Mike, W4EF.....
>
>
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> news:9di8mr$1s9$1@slb0.atl.mindspring.net...
> > Michael:
> >
> > Wake up man!
> >
> > I did not say that there is no such thing as reflections!
> >
> > I did not say that there is no such thing as reflections!

> >
> > I did not say that there is no such thing as reflelctions!
> >
> > Got it yet?
> >
> > If not then try this...
> >
> > Reflections are real.
> >
> > Reflections are real.
> >
> > Reflections are real.
> >
> > What is a fiction is the value presented by so-called wattmeters and
> called
> > "reflected power". That quantity is not present in the circuit under
> test!
> >
> > Do the calculations yourself and see.
> >
> > Do you know what your danged wattmeter is actually measuring?
> >
> > I think not...
> >
> > Does b = V - IR mean anything to you?
> >
> > What is V? What is I? What is R? Where are they? How does the
> reflected
> > voltage meter work?
> >
> > Get with it man!
> >
> > Wake up and smell the roses!
> >
> > Open up your wattmeter, draw out the schematic diagram, figure out just
> what
> > it is "measuring". Analyze the circuit and calculate what it's meter
face
> > displays when it is operating?
> >
> > Have you ever done this?
> >
> > If not then when will you do it?
> >
> > I, on the other hand have done this, and I have presented the analysis
> here
> > for all to review. And none have refuted my analysis and computations.
> > What?
> >
> > Heck, man, I design these things for a living.

> >
> > What are you trying to tell me?
> >
> > Let's see some circuit analysis of wattmeters and reflected volmeters
and
> > some quantitative calculations with real numbers in evididence.
> >
> > Don't just sit there in the stands drinking beer and eating hot dogs and
> > yelling down at the umpire, come on down and get in the game man. We
need
> a
> > new player at the plate. Take a swing at my real world analysis and
> > examples and refute me with facts and computations.
> >
> > Words on a NG are cheap!
> >
> > The only price that understanding will pay, is the price of thouough
> > analysis and solving problems numerically! Complete all the exercises
at
> > the end of the chapter or... you will fail the test!
> >
> > All the rest is "hot air".
> >
> > As the Nike commercial says...
> >
> > "Just do it!"
> >
> > Analyze your favorite /SWR meter circuit and then tell me what the meter
> is
> > indicating! I have done that and published it here for all to see.
Have
> > you? If not then...
> >
> > Go away and chase DX...
> >
> > Best Regards,
> >
> > -Peter K1PO
> >
> > "Michael Tope" <W4EF@earthlink.net> wrote in message
> > news:K3vK6.3270$8x4.301682@newsread2.prod.itd.earthlink.net...
> > > Hi Peter,
> > >
> > > You might try the following experiment. Get yourself
> > > a gated RF source, a fast RF switch and a long 50 ohm
> > > transmission line. Place a 25 ohm resistive termination
> > > at the end of the transmission line and connect an
> > > oscilloscope across the resistor. Connect the other
> > > channel of the O-scope across the input of the
> > > transmission line. Now setup the gated source so

> > > that is generates a burst of RF which is shorter
> > > than the round trip delay time of the cable. Also setup
> > > the switch so that the generator is removed from
> > > the circuit and replaced with a 50 ohm termination
> > > at the end of the RF burst. Note the amplitude of the
> > > incident RF burst from the oscilloscope, and the
> > > amplitude of the burst when it reaches the termination
> > > at the far end of the transmission line. Then observe
> > > the amplitude of RF burst envelope when it returns to
> > > the 50 ohm source termination. Do this experiment and
> > > then come back and tell us whether or not you still
> > > consider refleted power to be some kind of fictious
> > > mathematical formalism.
> > >
> > > 73 de Mike, W4EF.....................................
> > > "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> > > news:9dd6pplbo1@slb0.atl.mindspring.net...
> > > > Walt:
> > > >
> > > > Your measurement setups use instruments that measure that
"ficticious"
> > > > reflected power and the "formalism" has been set up to make that an
> easy
> > > > thing to do... it does not prove that the "reflected power" exists
or
> > not,
> > > > it's just part of the measurement "formalism".
> > > >
> > > > Measuring one thing, and calling it another, is just playing with
> words.
> > > > You must know quantitatively exactly what you are discussing.
Unless
> > you
> > > > understand the "Internal Operation" of the measuring instruments,
you
> > have
> > > > but a faint understanding of what is happening. When a meter face
> > > displays,
> > > > Watts, you must be sure that the meter is measuring watts, for it
may
> be
> > > > measuring volts or amps or something else and just "calling" them
> watts.
> > > >
> > > > Unfortunately the fictional mathematical "formalism" of the the
> > > "Scattering
> > > > Formalism" is built into the "labels" on most if not all of the
> > > instruments
> > > > that you use in your lab setups.
> > > >

> > > > Walt, don't depend upon others and the makers of instruments to
guide
> > you.
> > > > Understand the instruments themselves, try to design instruments to
> make
> > > > those measurements yourself, if only in sketch form. It will help
you
> > > > immeasureably with understanding.
> > > >
> > > > Walt, I recommed that you either set up a simple DC circuit, or use
> the
> > > one
> > > > that I set up, of a voltage source with an internal resistance and a
> > > > mismatched load resistance, and do the calculations yourself.
> > > >
> > > > It only takes a few minutes... and it will be illuminating, you will
> > then
> > > > understand more about reflections than you ever thought possible.
> > > >
> > > > And you don't have to depend upon what HP or Daiwa or Tektronix, or
> PRD,
> > > or
> > > > whomever puts on the labels of their instruments, or what people
call
> > > > things, you will know in a very simple quantitative way, just what
> > > mismatch,
> > > > reflection coefficient, VSWR, reflected voltage, and reflected power
> > are!
> > > >
> > > > And you will have done it all yourself.
> > > >
> > > > Walt, just do it!
> > > >
> > > > It only takes a few moments, probably less time than it takes to
type
> a
> > > > reply to this posting. Stop, analyze, calculate and think at the
> volts
> > > and
> > > > amps level. Leave the power till later, once you have established
the
> > > volts
> > > > and amps.
> > > >
> > > > Why is it that you seem to refuse to do this simple task? I have
done
> > it
> > > > here on the NG and you refuse to comment or elaborate.
> > > >
> > > > Could it be perhaps that you are incapbable of analyzing a simple DC

> > > circuit
> > > > with only two resistors in series?
> > > >
> > > > Could it be perhaps that you don't really know the equations and
> > formulas
> > > of
> > > > reflection mechanics.
> > > >
> > > > Could it be that you don't know the formula for reflected voltage?
> > > >
> > > > Could it be that.....???? I wonder????
> > > >
> > > > Prove to me that it is not so!
> > > >
> > > > Here's my extremely simple challenge.
> > > >
> > > > Draw a schematic diagram containing only three elements, a 10 volt
> > > battery
> > > > with an internal resistance of 10 Ohms, connected to a 5 Ohm
resistor
> > load
> > > > and then do the following very simple quantitative DC analysis.
> > > >
> > > > 1. Compute the current I through the load and write it down. I = ?
> > > > 2. Compute the voltage across the load and write it down V = ?
> > > > 3. Compte the reflection coefficient at the battery terminals and
> write
> > it
> > > > down, rho = ?
> > > > 4. Compute the VSWR at the load and write it down, VSWR = ?
> > > > 5. Compute the reflected voltage at the load and write it down, b =
?
> > > > 6. Compute the power dissipated in the load and write it down, Pload
=
> ?
> > > > 7. Compute the power dissipated in the internal resistance and write
> it
> > > down
> > > > , Pint = ?
> > > > 8. Compute the incident or forward power, and write it down, Pf = ?
> > > > 9. Compute the reflected power and write it down, Pr = ?
> > > >
> > > > 10. Now ask yourself where that Pr is generated and where it is
> > > dissipated.
> > > >
> > > > A power that has no source and no sink, no generator and no load, is
a
> > > pale
> > > > imitation of a real power!
> > > >

> > > > Walt, until you thoroughly analyze a simple DC mismatched circuit
> setup
> > as
> > > > above, using all the equations of reflections mechanics, which are
> just
> > as
> > > > valid at DC as at AC, and then stare at the results and ask why?...
> > > >
> > > > YOU SIMPLY DO NOT YET UNDERSTAND REFLECTIONS.
> > > >
> > > > Once you understand deeply the DC analysis, then and only then are
you
> > > > qualified to go on to understand reflections in AC, HF, RF and
> > microwaves
> > > > and to discuss the operation of circulators and directional
couplers.
> > > >
> > > > Walt, just do it!
> > > >
> > > > 10 simple answers, 10 simple questions. Anyone who calls himself an
> > > > engineer can do it. Can you do it?
> > > >
> > > > Best,
> > > >
> > > > -Peter K1PO
> > > >
> > > >
> > > >
> > > >
> > > >
> > > > "Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
> > > > news:3af9fc6a.11565940@news.onemain.com...
> > > > > On Thu, 10 May 2001 01:11:52 GMT, nospam_n7ws@arrl.net (Wes
> tewart)
> > > > wrote:
> > > > >
> > > > >
> > > > > >Quote #1.
> > > > > >
> > > > > >Picture this. I have an x-band source that uses a high quality
> > > > > >isolator (terminated circulator) on its output. Any power
returned
> > to
> > > > > >this source is dissipated in the isolator. In addition, there is
a
> > > > > >sampling loop that measures output level and via feedback
> stabilizes
> > > > > >the output power (ALC, if you will) This loop has the effect of
> > > > > >further improving the source match.
> > > > > >

> > > > > >I connect this generator to a waveguide high-directivity dual
> > > > > >directional coupler. We will use waveguide so you can throw away
> > your
> > > > > > >volt and ammeters.
> > > > > > >
> > > > > > >I place two waveguide thermistor power sensors to the two coupled
> > > > > > >ports on the directional coupler. I place a shorting plate on
the
> > > > > > >output of the coupler. If the coupler is a good one, I will
> measure
> > > > > > >the same power on each of the sensors.
> > > > > > >
> > > > > > >The forward power (your Pi) is sampled by the forward-reading
> coupler
> > > > > > >at a level equal to the coupling factor, e.g. -30 dB. The output
> > > > > > >short circuit totally reflects the incident power and returns it
to
> > > > > > >the source. The reverse-reading sensor samples this, also at -30
> dB
> > > > > > >and displays the same value as the forward sensor. Any
differences
> > > > > > >between the two can be normalized out.
> > > > > > >
> > > > > > >Because of the 'perfect' source match, there is no re-reflection
of
> > > > > > >the reflected power; it is totally dissipated by the generator.
> This
> > > > > > >system will now reliably measure the return loss (within the
> > > > > > >directivity uncertainty limits discussed earlier) of a load
placed
> on
> > > > > > >the output. For most purposes, we can ignore the forward sensor
> > > > > > >reading because it remains constant regardless of load impedance.
> > > > > > >
> > > > > > >A few words about the power sensors. Contrary to what you claim
> > > > > > >above, the resistance of the thermistors doesn't have to be
> anywhere
> > > > > > >near the system impedance. The thermistors (today thermocouples
> are
> > > > > > >also used) simply measures temperature rise in a termination.
The
> > > > > > >thermistor is not necessarily the termination. It is usual to
have
> > > > > > >matched thermistors in a self-nulling bridge circuit. The second
> > > > > > >thermistor is heated by applying an easily measured DC or low
> > > > > > >frequency AC signal to it. This applied signal power is adjusted
> to
> > > > > > >null the bridge at which time the applied power equals the r-f
> power.
> > > > > > >This is a substitution method where a difficult to measure

quantity
> > > > > >(microwave power) is determined by measuring the low frequency or
> DC
> > > > > >power. End #1
> > > > >
> > > > > Irrefutable proof the reflected power exists!
> > > > >
> > > > > >Quote #2:
> > > > > >
> > > > > >Let's take two of my waveguide dual-directional couplers
> > > > > >(reflectometers) and connect them thus:
> > > > > >
> > > > > >The input port of coupler #1 attaches directly to the output of a
> > > > > >well-matched source, as before. On the output port of coupler #1
> we
> > > > > >attach a waveguide E- H tuner (the waveguide equivalent of your
> > > > > >antenna tuner). On the output of the tuner we attach the input
> port
> > > > > >of coupler #2.
> > > > > >
> > > > > >On the output of coupler #2 we attach a 3 dB attenuator followed
by
> a
> > > > > >short circuit.
> > > > > >
> > > > > >So, we have a load with a 6 dB return loss or SWR = 3.0:1 or rho
=
> > 0.5
> > > > > >
> > > > > >If I temporarily remove the tuner, as expected, both
reflectometers
> > > > > >measure a 6 dB power ratio between the forward and reflected
> coupled
> > > > > >ports.
> > > > > >
> > > > > >We assume that maximum available power out of the source is 1.0
W.
> > > > > >Because we have a non-reflective source, there is a mismatch loss
> > > > > >given as:
> > > > > >
> > > > > >-10 * log(1 - rho^2) = 1.25 dB
> > > > > >
> > > > > >or leaving off the -10 log, a power ratio of 0.75.
> > > > > >
> > > > > >So of the available power, 0.75 W makes it into the input port of
> > > > > >coupler #1.
> > > > > >
> > > > > >If our couplers are 30 dB, as in my previous example, then we
read
> > the

> > > > > >following: (give or take coupling loss)
> > > > > >
> > > > > >1. Coupler #1 forward port = 0.75 mW.
> > > > > >2. Coupler #1 reflected port = 0.1875 mW.
> > > > > >3. Coupler #2 forward port = 0.75 mW.
> > > > > >4. Coupler #2 reflected port = 0.1875 mW.
> > > > > >
> > > > > >Okay, now we put the tuner back in between the two couplers. If
we
> > > > > >fiddle fart around with the tuner, the power reading at the
> reflected
> > > > > >port of coupler #1 can be reduced to zero, or nearly so. We have
> > > > > >"re-reflected" the nasty reflected (dare I say) power back toward
> the
> > > > > >load.
> > > > > >
> > > > > >The mismatch loss now goes away and the forward port of coupler
#1
> > > > > >reads 1.0 mW.
> > > > > >
> > > > > >Let's examine the readings on the thermistor power sensors on the
> > > > > >coupled ports of coupler #2. Since we tweaked the tuner, we now
> have
> > > > > >1.0 W migrating around in the second coupler so the forward
coupler
> > > > > >reads 1.0 mW. (1.25 dB higher than before and no surprise)
> > > > > >
> > > > > >With 1.0 W incident on a 6 dB return loss load, the reflected
power
> > is
> > > > > >0.25 W. The coupling factor is 30 dB so the power appearing at
the
> > > > > >reflected port of coupler #2 is 0.25 mW. The ratio of the
> reflected
> > > > > >power to the forward power readings is .25 / 1.0 = - 6dB, just as
> > > > > >before and (to me anyway) again no surprise.
> > > > > >
> > > > > >But wait! We just tuned (conjugately matched) this system to
> "remove
> > > > > >the termination" and that pesky reflected power still showing up
on
> > > > > >the coupled port!!!
> > > > > >
> > > > > >No voltmeter, no ammeter, no hanky panky, just real reflected
power
> > > > > >heating up the thermistor. Funny how this works. End #2
> > > > > >
> > > > > >So....now what?
> > > > > >
> > > > > Accurate experimental data proves that a concept or theorem is

> either
> > > true
> > > > or
> > > > > false. Wes' experiments have proved Peter's concept that reflected
> > power
> > > > is
> > > > > fictitous false, which we've known all along.
> > > > >
> > > > > And Wes, I've performed similar experiments in my own lab, but
with
> > > coax,
> > > > using
> > > > > an HP-8405A Vector Voltmeter and an HP-778D Dual Directional
> Coupler,
> > > with
> > > > > similar results. Bravo!
> > > > >
> > > > > >Wes Stewart N7WS
> > > > >
> > > >
> > > >
> > >
> > >
> >
>
>

3767. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:26:43 UTC
From: richardharrison@webtv.net
Message-ID: <10459-3AFD4823-232@storefull-117.iap.bryant.webtv.net>
Source record: 163218

Peter, K1PO wrote:
"The voltage on the outside of the coax equals the voltage on the inside surface and they are separated by an extremely large impedance, of perhaps petaOhms at HF."

If so, so what? You are only misleading those who might infer that this had some significance.

Consider the coax before an energy source imposes on the coax. No excess charge appears on the coax. There is no voltage difference anywhere on the coax. Connect an r-f generator to one end and properly terminate the other end. Ground the generator to coax connection.

The outside of the coax is at ground potential and remains at ground potential until externally excited.

The r-f generator imposes its alternations on the coax center conductor. R-F flow in the center conductor induces current in the opposite direction into the inner surface of the coax shield. The opposing surfaces are tightly coupled.

No practical conduction occurs between the inner and outer surfaces of the coax shield. Conduction between inner and outer shield surfaces directly through the coax is prohibited by skin effect.

A zillion-ohm path directly through the shield is of no practical purpose.

Best regards, Richard Harrison, KB5WZI

3768. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:28:49 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD48A1.2D77DBD@IEEE.org>
Source record: 163215

"Peter O. Brackett" wrote:
> As long as the family Joules are fictional it simply doesn't matter!

I have reposted the earlier example involving a one second long transmission line, Peter. You earlier agreed that the 300 joules were not fictional. Have you changed your mind? Where are those 300 joules that have been generated but not radiated if not in the one second feedline?
--
http://www.mindspring.com/~w6rca

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3769. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:29:56 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AFD48E4.3E2AF1A@mwci.net>
Source record: 163214

Ian White, G3SEK wrote:

> William E. Sabin wrote:
> >
> >Fig 24 and text in Chap 26 of the ARRL Antenna Book assert that this
> >current over the edge is just simply always there, period.
> >
> >False.
>
> Bill has inadvertently set up a false straw-man argument, because he
> misquotes and oversimplifies what the 'ARRL Antenna Book' actually says.
> It does not say that this current ever the edge is "simply always
> there". Adding "period" also implies that book is making that statement
> without any qualification or explanation.

Page 26-16 says exactly what I said that it says (I can read OK), and it is your (and a lot of others') "inadvertent" misunderstanding that is the problem.

In the "hypothetical" ideal example that is presented, there is no common mode current, period. And the reason is that there is no *complete* closed common mode path. I have mentioned this very often, but it went unnoticed (as usual). The two coax braid surfaces themselves are not a valid common mode loop. Your simplistic idea (and the author's) of the current division between I3 and I4 is what is wrong.

Look at I3 where it enters the ground connection. For this current there *must* be a return path back to the dipole. If the dipole is perfectly symmetrical as the text says, there is *no* coupling, in other words a very high common mode impedance, between antenna and ground through the intervening space.

It is, or should be, common knowledge that the hypothetically ideal dipole has *no* common mode current loop. Is it now convenient for you to repudiate that?

A common mode current *must* have a valid closed common mode loop. That path is not, and cannot be (look at the Figure), the braid itself.

As for what you believe and who you believe, that is your business. I don't see any infallibility from anyone around here, even so-called "high status" types who try to project that image. These nice folks are at least as error prone as I am, and that's a proven fact.

One more time: Fig 24, as it is described on page 26-16 is bull shit. Reason: the braid impedance is *not* a complete and valid common mode current path (loop), and that loop does not exist anywhere *in this

example*. That Fig and the text need to be changed to take into account these realities.

And experiments that try to prove that a certain thing happens must show that it **must** happen, and not merely that it **can** happen.

Bill W0IYH

3770. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:30:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD4901.9215FE85@IEEE.org>
Source record: 163216

"Peter O. Brackett" wrote:
> So where do you get off, claiming that a voltage needs an energy to cause
> it? Heh, heh... a voltage is itself an energy...

Where did the energy come from, Peter?
--
http://www.mindspring.com/~w6rca

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3771. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:41:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD4BAA.D147061F@IEEE.org>
Source record: 163217

Walter Maxwell wrote:
> When these
> reflected voltages and currents reach the totally-re-reflecting matching point
> their respective fields are changed abruptly, launching propagation of their
> energy in the forward direction and adding their energies to those of the
> electric and magnetic fields of the forward-traveling source wave.

Walt and I are discussing this over email. I see that "totally-re-reflecting" situation as a two step process at a Z0-match. The two steps happen at the same time.

1. Some of the reflected power is re-reflected according to the reflection rules involving real impedances. This re-reflected power joins the forward wave.

2. Some of the reflected power is engaged in a destructive interference pattern with a complementary set of phasors which are generated looking into the Z0-match point from the generator. This destructive interference energy joins the forward wave as constructive interference.

Both of the above energies are contained in the reflected wave and both of them join the forward wave. But, IMO, the mechanism by which they get there is different.
--
http://www.mindspring.com/~w6rca

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3772. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:46:59 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <D1cL6.6735$la.88313@news1.sttls1.wa.home.com>
Source record: 163119

Good Morning Tom,

Thanks for the hint about McMaster-Carr. They have a very good web site and (surprise) 12 X 12 copper sheets. I will order a couple today.

I took another look at your test. It sounds to me like skin effect was demonstrated here. The current was excited on one side and stayed on one side. I suspect the current on the excited side had a figure 8 pattern around the exciting loop. I also suspect/expect that if the plate were made very thin, the layers of current would be limited so that shielding by cancellation could not fully occur.

I also think that this test is not an appropriate test for the ability of metal to conduct between surfaces because no complete path was present. Recall that the ARRL Antenna Book describes a separate current on the outside of the coax shield which means that voltage must exist across the metallic surfaces.

I reported my experiment under the title "The Double Shield Coax Experiment", reposted last night. It seems to show that current can flow directly across the metal between surfaces without any evidence of skin effect. I am not defending the experiment, just reporting it.

I believe in experimentation to prove our theories, and in theory to understand our observations.

73, Roger, W7WKB

"Tom W8JI" <2w8ji@contesting.com> wrote in message
news:3afc7e23.713946185@news.accessunited.com...
> On Fri, 11 May 2001 23:06:23 GMT, "Roger Sparks" <sparksrc@home.com>
> wrote:
>
> >I guess Bill and I are the only skeptics that think that skin effect just
> >doesn't work quite like has been described in the ARRL Antenna Book and
on
> >this news group. It is usually up to the skeptics to offer evidence to
> >support the new position.
>
> Well, at least you and Bill are consistent!
>
> One person arguing against you here initially claimed skin effect
> wouldn't isolate the inside of a shield from the outside in a loop
> antenna, and that the magnetic field COULD penetrate the shield.
>
> I of course argued that the only way the conductor inside the shield

> could be excited was by current "spilling over the edges" at the
> shield opening.
>
> It is quite easy to see we often have a problem with the concept of
> skin effect. That's unfortunate, because it is a very important
> effect.
>
> >I am trying to get a line on the copper sheets. They are not readily
> >available in a small town like ours. I will find them some place. I
could
> >find aluminum but I don't think I could make a good attachment without
> >drilling a hole, which could compromise the validity of the experiment.
>
> Try industrial roofing supply houses, or if you have a McMaster-Carr
> distributor locally you might contact them. They sell small amounts of
> many thousands of different materials at a reasonable price, including
> coppersheeting of various thickness. The copper I used in my
> experiment was about one or two feet square, and I did my tests at
> mid-HF.
>
> Very clearly, nothing measurable penetrates the conductor. Neither
> magnetic or electric.
>
> I initially did my tests because I also had a problem with this
> concept. Now I am firmly in agreement with Roy, Kevin, and all of the
> textbooks. I initially thought it made little difference how one
> viewed this, but now that I look at problems this way I have zero
> conflicts with how things behave. My RF life is more comfortable
> sticking with the correct way of viewing this problem.
>
> Like a reformed smoker, you won't find me ever going back to my old
> ways!!
>
> 73 Tom

3773. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 14:58:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD4F88.9D31A96C@IEEE.org>
Source record: 163120

Dave wrote:
> So what happens in the event of the 3k+j3k that you mention?

I don't know exactly what happens but the balun ceases to perform
the balun function.

There is an easy solution. Using 450 ohm ladder-line, the SWR for
3k+j3k is about 13:1. From that 3k+j3k point on the ladder-line,
if you back up 0.238WL, the impedance will be 34.6 ohm resistive.
And if you add 0.262WL, the impedance will be 34.6 ohm resistive.
This point is the current maximum point on the transmission line
and it repeats every half wavelength.

A 1:1 choke designed for 50 ohms will work reasonably well looking
into 34.6 ohms. I vary the length of my ladder-line until my choke
is operating at the current maximum point which is purely resistive.

Take a look at my All-HF-Band-Antenna (dipole) on my web page to
see how I do it.
--
http://www.mindspring.com/~w6rca

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3774. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 15:36:08 UTC
From: richardharrison@webtv.net
Message-ID: <10459-3AFD5868-234@storefull-117.iap.bryant.webtv.net>
Source record: 163122

Bill Sabin wrote:
"If the dipole is perfectly symmetrical as the text says, there is "no" coupling, in other words a very high common mode impedance, between antenna and ground through the intervening space."

Transmission line length is unspecified. Let the exterior of the line be a 1/2-wave. That puts the top of the coax at ground potential. The interior of the shield is at a different potential due to velocity factor within the coax.

Current will flow over the edge to equalize potentials between the inside and outside of the shield at the top of the coax.

Best regards, Richard Harrison, KB5WZI

3775. Re: 80/40 meter dipole help

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 15:41:50 UTC
From: j1aguiar@aol.com
Message-ID: <20010512114150.02403.00002673@ng-mc1.aol.com>
Source record: 163121

Not so much the performance, but the band width on 80 will be somewhat lesser because of the higher Q factor involved when using the inductor. Its like mobile antennas if you will, the lower the frequency, or the more of the antenna is consumed with inductance the less band width you will have before retuning.
Ofcourse if your using an antenna tuning network you can re adjust for any frequency change, usually 50 khz on 40 or 80, the higher frequency bands may not require any adjustments. Other than that I would not worry about any signal loss as compared to a straight dipole for that one band. One simple thing I have done in the past is to simply cut a dipole for 80 meters and then place insulators at the 40 meter points. Using jumpers across the insulators will extend the antenna to 80.
Last but not least, why don't you consider using a center fed zepp, 135 feet fed in the center with 450 ohm open wire feeders into a good impedance matching network, " antenna tuner" , that will work all bands with some gain on the higher frequencies. J1

3776. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 16:03:07 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <omnqftssi37s2batcg1je5dcp2uq479nqd@4ax.com>
Source record: 163123

On Fri, 11 May 2001 23:32:16 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>What?
>
>-Peter K1PO
>

Indeed ;-)

73's
Richard Clark, KB7QHC

3777. Re: QST-QST-QST INVITATION TO 3 ANTENNA REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 16:26:09 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AFD6421.2B1468A@spam.me.not>
Source record: 163124

Dangit, Bill! It's too early to laugh this hard. ::grin::

73 de KC8RKQ

Bill Aycock wrote:
>
> 10-9 10-9 10-9 10-9
> 10-44
> 10-11
> 10-19
> 10-3
> Bill W4BSG
>
> Sideband wrote:
> >
> > 10-9?
> >
> > -SSB
> >
> > Fractenna wrote:
> > >
> > > QST--
> > >
> >
> > > Kindly do not query this e-mail address; the info here is complete for your
> > > information pleasure.
> > >
> > > 73,
> > > Phil de
> > > N1ZKT

3778. Re: The Double Shielded Coax Experiment

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 16:27:12 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <floqft0hmdtet7nqim979hdsk5pdljgnre@4ax.com>
Source record: 163125

On Sat, 12 May 2001 05:13:29 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:

>THE DOUBLE SHIELDED COAX EXPERIMENT
>
>Goal
>
>To test how skin effect on a central conductor would affect the capacity
>reading of a short tubular coaxial line.
>
>Description of equipment
>
>37 1/2 inches of #14 stranded antenna wire
>33 1/2 inches of 5/8 O.D. copper water pipe
>33 1/2 inches of 11/16 O.D. iron/zinc conduit
>33 inches of 1 inch I;D. copper pipe
>PVC and PE pipe and tubing for insulation
>Autek VA-1 RX vector analysis testing device
>
>Description of experiment
>
>The #14 wire and 1 inch copper pipe were the inner and outer elements of an
>unterminated coaxial line. The test frequency was 28.0 Mhz.
>An unterminated piece of coax 33 inches long tested at 28 Mhz should show a
>capacitive reactance. If a conductive tube is placed between the inner and
>outer coaxial elements, then currents would flow on the middle tube
>proportional to the currents on the coaxial line. The currents would absorb
>energy, create a skin effect, and should change the capacity reading of the
>experiment.
>
>The thickness of each material was as thick or thicker than the wire making
>up the shield of RG-8 coaxial line.
>
>The test was performed under 3 conditions, no middle tube, a copper middle
>tube, and a iron middle tube. The insulating materials were the same in all
>test.
>
>The results
>
>Conditions Capacity R + J
>
>No middle cond. 46 pf 55 - J122
>Copper middle 47 pf 52 - J117
>Iron/zinc middle 46 pf 52 - J121

>
>Accuracy
>
>The Autek instrument is accurate to about 3-4% typical, with accuracy going
>down to about 8% at 30 Mhz.
>
>The insulating material was material available so the fit was not perfect.
>As a result, the central wire was not located exactly at the center of the
>tubes.
>
>Conclusion
>
>The readings were nearly equal and did not show any clear trend. No
>importance should be attached to the differences in the readings observed
>because they were well within the accuracy range of the measuring device.
>
>A conductive tube placed between two plates of a capacitor appears to be
>transparent to the electrical fields between the two plates.
>
>Final comment
>
>More experiments are needed before most of us can comfortably understand the
>role of skin effect as a shield.
>
>73, Roger, W7WKB
>

Hi Roger,

Fine piece of work here. You have chosen your model well with the dimensions being manageable against probable sources of error, but that scale also imposes smaller variation when you perform your substitutions.

For the purposes of your experiment, accuracy is actually boosted from the manufacturer's specification because you are using your equipment as a transfer, not as an absolute. This means that although the actual measures may have errors, the differences between them are real (+/- least significant digit if digital instrumentation). But, as you already acknowledge, those numbers are not very conclusive.

Try a thick walled aluminum tube or some artifice to exaggerate filling the distance between the plates more.

73's
Richard Clark, KB7QHC

3779. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 16:43:35 UTC
From: atkes@imap1.asu.edu
Message-ID: <9djp7n$106$1@news.asu.edu>
Source record: 163126

Roger Sparks (sparksrc@home.com) wrote:
: Hi Kevin,

: Thanks for taking time to carefully explain a number of different points
: about skin effect. I have viewed your site before and found it very
: helpful.

: I have appreciated you comments from previous postings. I find myself in
: the awkward position of being an amateur in the midst of professionals, an
: amateur who has experimented extensively and carefully condsidered the
: thoughts of others, and unfortunately has come to the conclusion that
: something in theory is wrong in a subtle way. I read each comment carefully
: to integrate it with my results, challenging myself especially hard because
: I recognize I am an amateur.

: I began my interest in skin effect because like others who have written on
: this news group, I thought a coax braid was a complete shield., that skin
: effect was as effective as portraid in the ARRL Antenna book. It was with
: great surprise that I learned that a balun could be made from coax wraped on
: a ferrite core. I thought the shield would prevent any transformer action.
: I was even more surprised to learn that a coax line makes a very good 1:1
: transformer.

: I worked on a very unbalanced antenna and made the thing work just fine.
: The difficulty in making it work evaporated when I changed away from the
: idea of a perfect coax shield in favor of a twin lead model. I know this is
: heresy.

: I ran an experiment I called the Double Shielded Coax Experiment which I
: thought was a reasonable test of skin effect. A reposting of that
: experiment is entitled "The Double Shielded Coax Experiment" and should
: appear at the same time as this reply. I expected a large change in
: capacity due to the skin effect which would force the currents into a
: different path compared to the path that would be followed if skin effect
: did not apply in this experiment. No large change was found.

: I looked carefully at the construction of the braided shield. The layers
: are interwoven so that the tops and bottoms contact and alternate. The
: contacts between wires are points on the overlays. Inside and outside
: currents would have to go through these point contacts and would have to
: mix.

: For these reasons and others, I still have a need to further test and
: experiment to convince myself that skin effect really works as you describe
: in your well written and referenced reply.

: Do you think the dipole/disk test I proposed will be a valid test? If not,
: what changes should I make?

: Thanks for your interest.

: 73, Roger, W7WKB

A problem with using capacitance to measure skin effect is that the charge density on the surface corresponding to the perpendicular electric field that you have in capacitors extends over atomic dimensions. That is most of the charge density will be within half a nanometer or so. Therefore you won't see a difference in the low frequency capacitance when using different materials. You can see a small difference at higher frequencies because of the magnetic field penetration which you can think of as changing the inductance as well as the small change in resistance, but these will be difficult to measure.

Your dipole/disk test will certainly show the skin effect and the resonant length will be lowered. If you measure the current you will find it runs around the disks as Tom has mentioned. However, if you are trying to convince others they will no doubt claim that you are just loading the dipole with "capacitance hats" or something similar and will not be convinced.

73 Kevin w9cf

3780. Re: QST-QST-QST INVITATION TO 3 ANTENNA REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 17:06:37 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AFD6D9D.57A8F491@hiwaay.net>
Source record: 163128

Sideband- It was an opportunity I could NOT pass up. In case the frac
has a problem with the 10code, he can see:
> http://www.copper.com/codes.html

BTW- Warmest congratulations- welcome to the "called"

Sideband wrote:
>
> Dangit, Bill! It's too early to laugh this hard. ::grin::
>
> 73 de KC8RKQ
>
> Bill Aycock wrote:
> >
> > 10-9 10-9 10-9 10-9
> > 10-44
> > 10-11
> > 10-19
> > 10-3
> > Bill W4BSG
> >
> > Sideband wrote:
> > >
> > > 10-9?
> > >
> > > -SSB
> > >
> > > Fractenna wrote:
> > > >
> > > > QST--
> > > >
> > >
> > > > Kindly do not query this e-mail address; the info here is complete for your
> > > > information pleasure.
> > > >
> > > > 73,
> > > > Phil de
> > > > N1ZKT

3781. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 17:09:04 UTC
From: atkes@imap1.asu.edu
Message-ID: <9djqng$14o$1@news.asu.edu>
Source record: 163127

Peter O. Brackett (ab4bc@ix.netcom.com) wrote:
: Kevin:

: Heh, heh... it's all a matter of degree.

snip

: You are talking about "first order" effects. Which of course is all that is
: of interest to most amateur radio enthusiasts. However, professional have
: more demanding requirements.

: You say that there is a "tiny" component into the conductor that is
: negligible, and for many purposes I would agree that it is negligible.

: But for some purposes it is not.

: In fact it is definitely not neglible for the purpose of quantitatively
: rating the shielding effectiveness of high quality cables.

: Say I wanted to compare the shielding effectiveness of two different
: manufacturers cables...one rated it at 95dB and the other rated it at 115dB.
: Now would that "tiny" current that is not perpendicular to the normal be
: important.

: How "far down" is "tiny"?

snip

No it would be completely unimportant. It is down by a factor of about
10^4 (i.e. sqrt(epsilon_0 omega/sigma)) at 14 MHz in copper compared to
component of the current along the wire. So if you leave it out and get
95dB, when you include it you get you get something like 94.9996 dB.

I would prefer to return to talking about measurable things like the
current looping around the end of the coax.

73 Kevin w9cf

3782. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 17:10:02 UTC
From: john griffen <john@griffen.demon.co.uk>
Message-ID: <G$nM8AAq5W$6Ewq3@griffen.demon.co.uk>
Source record: 163129

In article <3afb38ec.34743138@news.compuserve.com>, Dave
<noname@aol.com> writes
>Hi,
>
>Does anyone know where I can find information on the impedance
>transformation that occurs when a balun is operated in the
>presence of high SWR? I note that the ARRL Handbook is silent on
>this point, simply stating that "loads with reactive components
>should use appropriate networks to cancel the reactance." So I
>take it that a 4:1 balun does not just divide the twin lead
>impedances by 4.
>
>I am specifically interested in feeding a non-resonant doublet
>with twin lead, at QRP power, and want to get as much as possible
>out the antenna and not burned up in the feedline or balun.
>
>EZNEC gives a good idea of what the antenna impedance will be,
>and TLW takes that to the output of the transmatch, but I can't
>find any info on transforming that impedance through the balun to
>the actual matching network.
>
>Thanks,
>
>Dave
>AB9CA
>
Hi Dave

I use a 67 ft doublet with 18ft of 600 ohm open wire line. A 1:1 balun
is connected to the QRP rig and a balanced L network matches the
impedance at the Tx end of the feeder to 50 ohms.

Estimate the antenna impedance at the operating freq., calculate the Z
at the input end of the feeder then calculate values of L and C in the
network.

You will need to adjust L & C values a little to optimise, but the
networks I use for 80 and 40 m. give a perfect match for CW operation.
Reckon that the network losses are lower than those for a T network.

It works well - try it!

73s

John G3EGQ Cornwall

--
john griffen

3783. HELP! End Fed Zepp.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 17:20:59 UTC
From: Jack Malone <malonej@c2i2.com>
Message-ID: <tfqs7abr33jafb@corp.supernews.com>
Source record: 163130

Presently using end fed zepp with ladder line for feed to long wire. One side of ladder line connected to long wire, other side not connected at the antenna feed point.

Want to get rid of ladder line due to RF in shack.

Has anybody tried to feed a long wire with coax using a Van Gordon 4:1 Balun at long wire feed point. In other words feed the Balun with coax from the MFJ transmatch and leave the one side of Balun connected to nylon rope support and the other side of Balun to long wire.

Any comments, suggestions or help would be appreciated. Thanks.

Jack, W7EJJ

3784. Going to the Dayton Hamvention ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 17:27:56 UTC
From: arrow146@aol.com
Message-ID: <20010512132756.02275.00003018@ng-da1.aol.com>
Source record: 163131

If so, stop by and say hello.

Arrow Antenna will be outside at spaces #507 & #508

The Arrow Antenna Parts Div. will be set up outside
at spaces #3114, #3115 & #3116.

See you there.

73 Al Lowe N0IMW
<A HREF="http://members.aol.com/_ht_a/Arrow146/index.html">ArrowAntenna.com</A>

3785. SWR Detector Audio Adapter?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 18:11:37 UTC
From: kg7fu <kg7fu@yahoo.com>
Message-ID: <epuqftki6rh7mai870bhivqjegfov15asr@4ax.com>
Source record: 163132
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.antenna

Looking for kits, parts, boards or templates for "An SWR Detector
Audio Adapter" project from the January 1994 issue of QST.

Operative word is "Cheap".

tia de kg7fu

James S. Kaplan KG7FU
Eugene Oregon USA
kg7fu@yahoo.com
http://www.rio.com/~kg7fu
ICQ # 1227639
Have YOU tried Linux today?

3786. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 18:13:20 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <43fL6.7438$la.103440@news1.sttls1.wa.home.com>
Source record: 163133

Kevin, w9cf wrote

start quote

Just to reinforce this a little, insulators have a dielectric constant
which has a small imaginary part. That imaginary part corresponds to
the absorption of electromagnetic energy. So for example my American
Institute of Physics handbook says polyethylene has a dielectric
constant at hf frequencies of roughly K = 2.355 (1 + i 120 10^-6) so
the imaginary part (and therefore the absorption) is quite small. On the
other hand, copper has a dielectric constant at 14 MHz of about
K = i 7.5 10^10. Notice that this is extremely large and purely imaginary
(i.e. enormous absorption) in fact this absorptive imaginary part is so
large that it is quite difficult to measure a real part.

---
end quote

If I understand your quote correctly, the dielectric constant is so large across a copper surface, that voltage between surfaces could pass a large amount of capacitive current in the same fashion that a dielectric will pass current, but with far more coulombs per volt. Could then, a small area surrounding the center of the disk in my proposed experiment have so much capacity that nearly all the current will pass to the other side, literally bypassing the conductive path around the edges?

That was poorly stated. Better to say that my 'Double Shielded Coax Experiment' did not show skin effect because the metal just acted like another dielectric, one with a very high dielectric constant. Actual current did not flow thru the metal walls directly any more than actual current flowed thru the walls of the insulating dielectric. Never-the-less, a current was set up on the surface of the center sleeve which flowed from surface to surface only by exiting at the ends of the sleeve. The energy in the surface current was only a very small fraction of the energy contained in the exciting transverse wave.

Now that idea I can believe. It accomadates skin effect and keeps the voltage difference across the metalic conductor at a very small value.

Does this make sense to you and others? Did I understand your quote correctly?

You are right about alternate explainations of any experiment. A strict application of skin effect would mean that 12 inches would need to be removed from the length of each side of the dipole experiment, sides that would be only about 8 feet long without loading. I think that the same disk

placed on the end of the antenna would only shorten the antenna by about 6 to 8 inches, and because capacity is most effective to shorten the antenna when placed at the end of the antenna, the actual capacity loading in the suggested position will be small.

73, Roger, W7WKB

3787. Re: 80/40 meter dipole help

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 18:15:04 UTC
From: kg4ggx@aol.com
Message-ID: <20010512141504.15989.00002586@ng-ff1.aol.com>
Source record: 163134

Hi
Thanks for the input. The narrower band width isn't a problem as my rig has a ATU. I was wondering if the shortened 80 meter antenna would be down much compared to a full length one. 2,or 3 db isn't a problem. But 5 or 6 db is too much to give up.
I have up 135 wire fed with 450 ohm line to a Radio Works remote balun then a 5 feet run of RG-8 coax to the rig. To my surprise it does not compare well to my parallel dipole on 20 thru 10 meters. I modeled the 135ft ant on my computer and it looked good, but.So I thought I'd make a new parallel dipole and get it up a little higher and oriented in a better direction. The one I'm using now is 122 feet long with elements for 80, 40, 20, and 10 meters. It's up 30 feet and broadside to 82 degrees. It does a surprisingly good job comparing it to , now 3 other antennas I've had up.However it hasn't weathered well. Otherwise I would just move it. Now I'm thinking of making one with better material, and more weather resistant. Try to get it broadside to 51 degrees and up about 50 feet.The location I have to get it pointed that direction, and up that high, will require a shorter length. One of the 80/40 meter antennas described in a book I have gave me the idea of using the loaded 80/40 for the top wire, and add a 20 and a 10 below. A 80/40/20/10 antenna, 80 feet long, built stronger and more weather resistant. I guess I could buy an Alfa Delta DXCC, but wouldn't it be more fun to build my own antenna. About how much would the loaded 80 meter performance be down compared to a full size dipole? Thanks again.
73 Rob

3788. Re: QST-QST-QST INVITATION TO 3 ANTENNA REFLECTORS (LISTS)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 18:44:23 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AFD8487.C3226C00@spam.me.not>
Source record: 163135

Thanks, Bill.

I've been welcomed on (almost) all the repeaters I've attempted to chat on... I'm running a small dipole taped to the blinds in my basement apt, so I don't think I'm hitting them as hard as I could. I'm going to be building a "coathanger" 1/4 wave groundplane to put out on the rail outside the "fire escape" window... I'll try that until I can think about getting a "real" antenna for 2M...

Still working on the Morse Code so I can get on HF. I've already passed the General Theory. Got a little under a year to pass the code... Hopefully in 2 or 3 months, I'll have it down...

73 de KC8RKQ

-SSB

Bill Aycock wrote:
>
> Sideband- It was an opportunity I could NOT pass up. In case the frac
> has a problem with the 10code, he can see:
> > http://www.copper.com/codes.html
>
> BTW- Warmest congratulations- welcome to the "called"
>
> Sideband wrote:
> >
> > Dangit, Bill! It's too early to laugh this hard. ::grin::
> >
> > 73 de KC8RKQ
> >
> > Bill Aycock wrote:
> > >
> > > 10-9 10-9 10-9 10-9
> > > 10-44
> > > 10-11
> > > 10-19
> > > 10-3
> > > Bill W4BSG
> > >
> > > Sideband wrote:
> > > >
> > > > 10-9?
> > > >
> > > > -SSB
> > > >

> > > > Fractenna wrote:
> > > > >
> > > > > QST--
> > > > >
> > > >
> > > > > Kindly do not query this e-mail address; the info here is complete for your
> > > > > information pleasure.
> > > > >
> > > > > 73,
> > > > > Phil de
> > > > > N1ZKT

3789. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 19:09:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD8A5C.8BD583F2@IEEE.org>
Source record: 163136

W6RCecilA wrote:
> The total amount of energy that has reached the load is
> 300 joules more than the energy generated by the XMTR.
^^^^
Obviously, I meant "less" there.
--
http://www.mindspring.com/~w6rca

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3790. Re: 80/40 meter dipole help

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 19:24:06 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dk2km$rn1$1@neptunium.btinternet.com>
Source record: 163137

DESIGN OF TRAPPED DIPOLE AERIALS

For two given resonant frequencies, eg., 3.65 and 7.05 MHz

For given overall dipole length,

Compute -

Location of traps along wire,

Trap capacitance and inductance values,

Trap length and diameter of coil formers,

Coil number of turns,

Radiating efficiency at both frequencies.

Watts dissipated in traps.

Download program TRAPDIP from website below.
Download in a few seconds.
Not zipped up.
Run immediately.
User friendly.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

KG4GGX <kg4ggx@aol.com> wrote in message
news:20010512083143.11983.00002858@ng-cr1.aol.com...
> Hi to all
> I'm considering home brewing an 80/40 meter dipole. I have info
describing one
> using loading coils on the end of a 40m dipole with an
additional 4 feet of
> wire after the coil. This is appealing because of having only one
wire to work
> both bands. How much will this coil loaded dipole be down in
comparison to a
> full length 80 meter dipole? If it's a significant amount, maybe
I should just
> make it as a parrallel dipole. I have a parrallel dipole up now
that is for

> 80/40/20/10m. It was a little work to tune, but works great. I'm considering
> the coil loaded one above to make the antenna package a little more compact and
> neater in appearance. But I would like some opinions as to how much the coil
> loaded 80m performance would be down.
>
> Thanks for all replys!
> 73 Rob

3791. Re: HELP! End Fed Zepp.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 19:31:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD8F9D.9B14A9AC@IEEE.org>
Source record: 163138

Jack Malone wrote:
>
> Presently using end fed zepp with ladder line for feed to long wire. One
> side of ladder line connected to long wire, other side not connected at the
> antenna feed point.
>
> Want to get rid of ladder line due to RF in shack.

The problem is not the ladder-line. The problem is the design that leaves
one side of the ladder-line floating so the current cannot go anywhere and
your feedline becomes just another part of your radiating antenna.

> Has anybody tried to feed a long wire with coax using a Van Gordon 4:1
> Balun at long wire feed point. In other words feed the Balun with coax from
> the MFJ transmatch and leave the one side of Balun connected to nylon rope
> support and the other side of Balun to long wire.

You will have exactly the same problem. You have one side of the balun output
floating and the coax will become just another part of your radiating antenna.

In any feedline, in order to avoid feedline radiation, you need to balance the
currents and, if necessary, choke the common-mode current.

The original end-fed Zepp antenna was trailed from a zeppelin airship.
The open-wire transmission line was at the top of the antenna so feedline
radiation didn't matter.

The solution to your RF in the shack is to put up a balanced antenna (dipole)
or hang a counterpoise of some kind on the unterminated feedline wire. You
still may need to choke the feedline even after that. Is this a single-band
antenna or multi-band? Zepps are technically single-band antennas.
--
http://www.mindspring.com/~w6rca

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3792. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 19:32:06 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dk33roch1@uranium.btinternet.com>
Source record: 163139

W6RCecilA wrote
> Does that 50 ohm coax ensure
> that the ratio of DC voltage to DC current is 50 ohms?
==========
Yes it does, provided, as you have specified, it is lossless.

Sqrt(L/C) is independent of frequency.

Reg

3793. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 19:36:31 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AFD90BE.54D5C666@mwci.net>
Source record: 163140

Richard Harrison wrote:

> Bill Sabin wrote:
> "If the dipole is perfectly symmetrical as the text says, there is "no"
> coupling, in other words a very high common mode impedance, between
> antenna and ground through the intervening space."
>
> Transmission line length is unspecified. Let the exterior of the line be
> a 1/2-wave. That puts the top of the coax at ground potential. The
> interior of the shield is at a different potential due to velocity
> factor within the coax.
>
> Current will flow over the edge to equalize potentials between theinside
> and outside of the shield at the top of the coax.

The common mode impedance to ground at the top of the cable will be zero, as you say. And the inside and outside of the shield will both be zero. But the over-the-edge idea is not at all necessary to explain it. All you have to do is hold that end of the coax in your hand and *look* at it, and it is obvious to anyone (except radio amateurs, apparently) that they really are at the same potential.But the common mode current value depends on the impedance of the *entire* series common mode loop. This includes *every part* of that loop as I described previously. If the dipole is almost perfectly symmetrical there will still be almost zero common mode current, regardless of cable length

The loop consists of the antenna, the feedline, any ground impedance and the free-space impedance between ground and antenna. The free-space impedance depends on the degree of symmetry with respect to ground of the antenna.

If the common mode loop impedance is very high the common mode will be very small, regardless of the length of the coax. Of course, in practice this nearly perfect symmetry is hard to achieve.

What the dipole really cares about is the *differential voltage* at the top of the coax.

A really neat way to see this problem correctly is go around the loop the other way. Start at the dipole, go through space to ground, than up the coax and back to the dipole. This is a valid approach that completely eliminates the over-the-edge crap. In other words the dipole itself provides the excitation for the common mode loop. Replace the dipole with a resistor and common mode current completely disappears.

The way that folks have circled the wagons around over-the-edge idea is interesting.

Bill W0IYH

3794. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 19:40:54 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AFD91C6.D12782CD@hiwaay.net>
Source record: 163143

Peter- Granted, your contributions have been prolific, in the recent past. However, there have been some that have been only so-so. You do tend to ask questions for others to answer, and seem to think the excercise left to the student is of value, and sufficient. I'm still trying to find a battery with 10V that has 10 Ohms internal resistance. On the other hand- Richards input has been outstanding, on the Loooong haul- His output on the subject of Fractal antennas, as given on his web site, is very illuminating. Also, he is a master of wit that is hard to match. If he askes for clarification, it is probably because the source was lacking; if he makes an observation, it is probable that there was something worth seeing.

Bill-W4BSG

Richard Clark wrote:
>
> On Fri, 11 May 2001 23:32:16 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >What?
> >
> >-Peter K1PO
> >
>
> Indeed ;-)
>
> 73's
> Richard Clark, KB7QHC

3795. Test

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 19:44:13 UTC
From: Karas Bob <bobrhplus@poczta.onet.pl>
Message-ID: <1j4rftshnn9scbnhr6i7u17ft26pepq060@4ax.com>
Source record: 163141

Please ignore ...i'its only test...
by SP8RHP

3796. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 19:47:29 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFD9351.B832CD45@IEEE.org>
Source record: 163142

Reg Edwards wrote:
>
> W6RCecilA wrote
> > Does that 50 ohm coax ensure
> > that the ratio of DC voltage to DC current is 50 ohms?
> ==========
> Yes it does, provided, as you have specified, it is lossless.

==========
12volt battery --------50 ohm coax--------------- 100 ohm
========== relay coil

Reg, I run 12vdc up my coax to my antenna to drive a relay. Are you telling me that the ratio of the DC V/I on the coax is 50/1 even though the relay coil is 100 ohms???
--
http://www.mindspring.com/~w6rca

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3797. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 19:52:02 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dk492$3qh$1@neptunium.btinternet.com>
Source record: 163144

RF volts on opposite sides of a copper plate are separated by a transmission line having a very low propagation velocity and a very high attenuation of 8.686 decibels per radian phase shift.

When the plate thickness is about 1 wavelength = 2*Pi radians, and the screening effect is about 55 dB, there will still be current flowing on one side which has arrived from the other side via low-loss surface waves and diffraction over plate edges.

Regards, Reg, G4FGQ

3798. antenna analyzer comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 19:54:11 UTC
From: Tad Danley <taddanley@nospamatatt.net>
Message-ID: <3AFD94F3.9F2A4DE3@att.net>
Source record: 163145

Would appreciate any comments from users of the
MFJ259B and Autek VA1. I am looking for
something to use for experimenting with various
coax fed wire antennas in the 1.8 to 28 MHz
range.

Thank in advance and 73,

--
Tad Danley, K3TD
mailto:taddanley@att.net

Caution!
Anti-SPAM e-mail return address in use.

3799. Re: AM/FM reception in Midtown NYC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 20:02:35 UTC
From: gaffo <gaffo@usenet.net>
Message-ID: <vFgL6.18417$4f7.1462674@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163146

A good external directional antenna with a moterized directional ant. tuning unit is what you need. I had an extenal FM antenna (huge - multi -element) at 60 feet, that I turned my hand (in backyard way back in 1980). I could recieve tow stations on the SAME freq. just by pointing to the one I wanted to hear!. As an example of range - I could recieve KAYE out of nothern oklahoma (100-watts), at 60 miles away in strong stereo. Also by pointing the anttenna South I could recieve Dallas/Ft Worth in stereo and very clear-strong signal too. Dallas was 280 miles away!!. Radio Shack no longer carries the ant. I had, but other more specialized shops do. Cost will be around 100-bucks for the ant. - plus you need a telescoping pole, and a way to turn the antenna. plus guy wires with the ringlets. But really radio today is far worse than even 20-years ago. Personally I find no justification to spend more than 2-bucks for a "T" indoor antenna - when all one hears on radio is the 1,000,001th replaying of Hotel California, or the latest NSYC (or other kid-hop-dance band), or the usual Fossil Rock, Oldies Rehash etc... IF radio even gets better, then a good ant. would be a fine investment. Good luck.

P.S. Magnum Electronics used to make an excellent signal booster (it worked and cost 200-bucks, unlike the cheap crap boosters RadioShack sells (which only add noise to the signal - and don't work)). It was DC-powered, but I used it on my home stereo (using a reg. power supply). i've got it somewhere in a box - still works, just that radio is so bad now, I just don't listen to it anymore. sorry I can't rem. the model name/number now. Magnum (is/was) a Canadian company. Not sure if they still exist though.

"Pat Santucci" <psantucc@dnaco.net> wrote in message
news:3af8a1fa$1_5@127.0.0.1...
> Greetings.
>
> Through an embarassing sequence of contract arrangements, I find myself in
> an awkward spot. I apologise for how far off-topic my question may be, but
> I don't know where else to ask. I hope one or more of you can help - this
> is potentially financially rewarding. Let me explain:
>
> I am a control sytems programmer. Normally, I integrate the media rooms of
> large corporations under one control system, and I work in the OH-IN-KY
> tristate.
>
> Now I am obligated to to a home theatre installation in New York City. One
> of the many things for which I was unprepared was poor radio reception. We
> can recieve clearly maybe 5 FM, no AM, and no WX stations, on two
different
> tuners, even after a panic trip to the Wiz for some little Jensen amped
> antennae. Here's what I'm looking for:

>
> 1. Information - is this kind of reception just normal? The site is right
> on the east river in midtown.
>
> 2. Information - if you live in a similar area, how do you deal with it?
Is
> there a 'sure thing' product for NYC radio reception?
>
> 3. Service - if any of you know of, or work for, a company which offeres
> antenna installation for AM/FM/WX with guaranteed results, I'm sure my
> company can make a deal.
>
> I'm coming back to town on 5/23/2001. Good tips are worth a drink of your
> choice, and of course, a job may be in the offing. Go easy on me - I'm
> pretty damn ignorant of radio.
>
> Thanks in advance-
> Pat Santucci
>
>
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3800. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 20:44:28 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dk7bc$6qq$1@plutonium.btinternet.com>
Source record: 163147

Richard Harrison wrote
> Current will flow over the edge to equalize potentials between
the
> inside and outside of the shield at the top of the coax.
==========

Actually, if the coax is 1/2-wavelength down to ground, the top end of the coax is NOT at ground potential. The 1/2-wave coax is a half-wave vertical antenna which has a radiation resistance. The top end is NOT a short-circuit down to ground.

Connected to the coax inner is a horizontal 1/4-wave antenna. Connected to coax outer is another horizontal 1/4-wave antenna in parallel with a half-wave vertical antenna grounded at the bottom end. The three currents and swr on the coax are easily calculable.

Why not use EZNEC to analyse what happens. Connect the generator immediately in the centre of a horizontal dipole which is half-wave above ground. Connect another thick (braid) wire from one side of generator down to ground. Then switch on.

It would be interesting to see if EZNEC gives the expected answers for the three currents.

Reg.

3801. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 20:51:18 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dk7npej1@slb7.atl.mindspring.net>
Source record: 163148

Cecil:

That fixed quanta of energy is stored there on the line during the startup transient event, when the excitation is first applied. That quanta of energy stays there in the line, stored in the distributed fields of the transmission line until the excitation is removed at which point they will discharge into the resistances on both ends of the line in a final transient event..

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFD48A1.2D77DBD@IEEE.org...
> "Peter O. Brackett" wrote:
> > As long as the family Joules are fictional it simply doesn't matter!
>
> I have reposted the earlier example involving a one second long transmission
> line, Peter. You earlier agreed that the 300 joules were not fictional.
> Have you changed your mind? Where are those 300 joules that have been
> generated but not radiated if not in the one second feedline?
> --
> http://www.mindspring.com/~w6rca
>
>
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3802. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 20:53:00 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dk7qt$id6$1@slb6.atl.mindspring.net>
Source record: 163149

Cecil:

A Volt is a Joule per Coulounb and the Couloumb of charge gets that energy from the "prime mover", be it mechanical, chemical, or radiant sources of energy.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFD4901.9215FE85@IEEE.org...
> "Peter O. Brackett" wrote:
> > So where do you get off, claiming that a voltage needs an energy to cause
> > it? Heh, heh... a voltage is itself an energy...
>
> Where did the energy come from, Peter?
> --
> http://www.mindspring.com/~w6rca
>
>
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3803. Re: yagi plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 20:54:36 UTC
From: Claus Waldraff <DF8GH@t-online.de>
Message-ID: <3AFDA30C.F8F89540@t-online.de>
Source record: 163150

Hi Billy,

> I am trying to find some plans to build a decent yagi for side band on
> 2 meters. Any one have any suggestions or good urls? TIA and 73

Maybe you like some of these:

http://home.t-online.de/home/df8gh

73 de Claus

3804. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 21:02:35 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dk8d7$17t$1@slb3.atl.mindspring.net>
Source record: 163151

Bill:

Heh, heh... the "return path" for the common mode current is simply not shown on the diagrams in question, but of course you know that it is there nonetheless.

As you know that common mode return path is there and its' impedancd forms a part of the differential mode to common mode transfrer function, oh yes... it is there, and commonly called a "parasitic" or "stray" by those who discover it.

Characterizing those stray paths, like the characterization of the stray capacitances that create a common mode response in supposedly differential transformers, is problematic for the uninitiated, and like many parasitics and strays that are not shown explicity on schematics and other drawings, beginners find that absence perplexing.

That's what makes "analog" an "art" and "digital" a "science".

For with analog not all the elements required for the analysis are explicitly shown on the diagrams and schematics.

And some "digital" engineers have not yet learned to "deal with it".

Best,

-Peter K1PO

"William E. Sabin" <sabinw@mwci.net> wrote in message news:3AFD48E4.3E2AF1A@mwci.net...
>
>
> Ian White, G3SEK wrote:
>
> > William E. Sabin wrote:
> > >
> > >Fig 24 and text in Chap 26 of the ARRL Antenna Book assert that this
> > >current over the edge is just simply always there, period.
> > >
> > >False.
> >
> > Bill has inadvertently set up a false straw-man argument, because he
> > misquotes and oversimplifies what the 'ARRL Antenna Book' actually says.
> > It does not say that this current ever the edge is "simply always
> > there". Adding "period" also implies that book is making that statement
> > without any qualification or explanation.
>

> Page 26-16 says exactly what I said that it says (I can read OK), and it
is
> your (and a lot of others') "inadvertent" misunderstanding that is the
> problem.
>
> In the "hypothetical" ideal example that is presented, there is no common
> mode current, period. And the reason is that there is no *complete* closed
> common mode path. I have mentioned this very often, but it went unnoticed
> (as usual). The two coax braid surfaces themselves are not a valid common
> mode loop. Your simplistic idea (and the author's) of the current division
> between I3 and I4 is what is wrong.
>
> Look at I3 where it enters the ground connection. For this current there
> *must* be a return path back to the dipole. If the dipole is perfectly
> symmetrical as the text says, there is *no* coupling, in other words a
very
> high common mode impedance, between antenna and ground through the
> intervening space.
>
> It is, or should be, common knowledge that the hypothetically ideal dipole
> has *no* common mode current loop. Is it now convenient for you to
repudiate
> that?
>
> A common mode current *must* have a valid closed common mode loop. That
path
> is not, and cannot be (look at the Figure), the braid itself.
>
> As for what you believe and who you believe, that is your business. I
don't
> see any infallibility from anyone around here, even so-called "high
status"
> types who try to project that image. These nice folks are at least as
error
> prone as I am, and that's a proven fact.
>
> One more time: Fig 24, as it is described on page 26-16 is bull shit.
> Reason: the braid impedance is *not* a complete and valid common mode
> current path (loop), and that loop does not exist anywhere *in this
> example*. That Fig and the text need to be changed to take into account
> these realities.
>
> And experiments that try to prove that a certain thing happens must show
> that it **must** happen, and not merely that it **can** happen.
>
> Bill W0IYH
>

3805. Re: HELP! End Fed Zepp.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 21:17:10 UTC
From: rc12234@aol.com
Message-ID: <20010512171710.11963.00002692@ng-cc1.aol.com>
Source record: 163152

If the transmission line is an electrical
quarter wavelength it should transform the
high impedance at the antenna feed point to low impedance at the transmitter.
W7ALC

3806. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 21:19:40 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AFDA8EC.DB686CB4@mwci.net>
Source record: 163153

Reg Edwards wrote:

> Actually, if the coax is 1/2-wavelength down to ground, the top end
> of the coax is NOT at ground potential. The 1/2-wave coax is a
> half-wave vertical antenna which has a radiation resistance. The
> top end is NOT a short-circuit down to ground.
>
> Connected to the coax inner is a horizontal 1/4-wave antenna.
> Connected to coax outer is another horizontal 1/4-wave antenna in
> parallel with a half-wave vertical antenna grounded at the bottom
> end. The three currents and swr on the coax are easily calculable.
>
> Why not use EZNEC to analyse what happens. Connect the generator
> immediately in the centre of a horizontal dipole which is half-wave
> above ground. Connect another thick (braid) wire from one side of
> generator down to ground. Then switch on.

The problem with this is the following:

The vertical coax braid is a path *only* for a common mode current. That common mode current *requires* a complete closed loop path, just as any current so requires. The value of that common mode current depends on the total series impedance of that loop. Depending on the degree of symmetry of the dipole with respect to ground via the open space path, that impedance can be extremely high. The common mode current, therefore the radiation, is then very small. The common mode current can be measured at its maximum point with a clamp-on ammeter, and it will be much less than the maximum dipole current.

If the dipole is replaced with a resistor the common mode current and its radiation are both precisely zero.

Bill W0IYH

3807. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 21:22:02 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dk9hdave1@slb0.atl.mindspring.net>
Source record: 163155

Kevin:

I agree that there is an "end effect". And in practice it is quite significant, especially for hams and their antennas.

But the "end effect" is not simple as electrons flowing up and over the thickness of the end of the braid.

There are lots of factors, that in practice are very difficult to specify and quantify. The problem with measuring the "end run path" is that it is difficult to specify the conditions, geometry, and fringe effects explicitly enough to get close agreement between analysis and measurement... it is affected by many things inclucing very detailed physical symmetry, down to the pF level, in the immediate area of the ends... "end effects".

End effects are difficult to quantify, especially analytically, in all but the simplest cases. Even numerical methods of integrating the differential equations fall into "ill-conditioned" situations, and fail to "converge" to the a reasonable answer.

Try modeling those end effects of coax with say EZENEC... and see what happens.

The leading cause of differential mode to common mode coupling in ham installation is not the electrons going around the end of the braid, rather it is the fact that the outside of the braid is in the near field of the radiating elements being fed by the coax and that "induction" of antenna currents onto the outside of the shield braid, is the largest single factor contributing to the low magnitude of the differential mode to common mode coupling transfer function.

Now in the situation where one is not feeding an antenna, but is just seeking "silent" signal transmission from one enclosed site to another, other effects are important. With the feeding of antennas, where the transmission line ends up in the near field of the antenna, the differential mode to common mode coupling is "helped" by the "near field" induction from the antenna.

This is different from the case of feeding signals from place to place with very elaborate treatments of the ends and connectors to preserve e-m "security" a la Tempest or NACSIM, then one is interested in the shielding effectiveness of the cable and not "end run" effects.

-Peter K1PO

<atkes@imap1.asu.edu> wrote in message news:9djqng$14o$1@news.asu.edu...
> Peter O. Brackett (ab4bc@ix.netcom.com) wrote:

> : Kevin:
>
> : Heh, heh... it's all a matter of degree.
>
> snip
>
> : You are talking about "first order" effects. Which of course is all
that is
> : of interest to most amateur radio enthusiasts. However, professional
have
> : more demanding requirements.
>
> : You say that there is a "tiny" component into the conductor that is
> : negligible, and for many purposes I would agree that it is negligible.
>
> : But for some purposes it is not.
>
> : In fact it is definitely not neglible for the purpose of quantitatively
> : rating the shielding effectiveness of high quality cables.
>
> : Say I wanted to compare the shielding effectiveness of two different
> : manufacturers cables...one rated it at 95dB and the other rated it at
115dB.
> : Now would that "tiny" current that is not perpendicular to the normal be
> : important.
>
> : How "far down" is "tiny"?
>
> snip
>
> No it would be completely unimportant. It is down by a factor of about
> 10^4 (i.e. sqrt(epsilon_0 omega/sigma)) at 14 MHz in copper compared to
> component of the current along the wire. So if you leave it out and get
> 95dB, when you include it you get you get something like 94.9996 dB.
>
> I would prefer to return to talking about measurable things like the
> current looping around the end of the coax.
>
> 73 Kevin w9cf

3808. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 21:31:19 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dka2r$6mp$1@slb1.atl.mindspring.net>
Source record: 163157

Bill:

Yeah, I agree Richard has been great in the past...

But what has he done for us today?

He refuses to analyze a simple three element series circuit with a voltage source and two resistors and tell us if he agrees or disagrees that there is "reflected power" at the impedance discontinuity.

Euridition is fine. But ignoring the "elephant" in the living room, just doesn't cut it!

Either reflection mechanics works for DC or it works no where! Period end of story!

Why won't Richard, or for that matter, many others on this NG address that extremely very simple issue.

Why?

Because it simply "rocks" them to the core of their basic fuzzy beliefs, and it causes them great pain.

They do not want to admit that they will have to "re-think" a lot of their fuzzy assumptions about reflection mechanics.

What about it?

Is there a reflected voltage and a reflection coefficient and a reflected power at an impedance discontinuity in a DC circuit or not?

Richard has been studiously avoiding this question... why?

Just because the sensors inBird wattmeters are AC coupled?

What kind of excuse is that?

Richard, "just do it"!

DC reflections, yes or no?

-Peter K1PO

"Bill Aycock" <baycock@hiwaay.net> wrote in message news:3AFD91C6.D12782CD@hiwaay.net...
> Peter- Granted, your contributions have been prolific, in the recent
> past. However, there have been some that have been only so-so. You do
> tend to ask questions for others to answer, and seem to think the
> excercise left to the student is of value, and sufficient. I'm still

> trying to find a battery with 10V that has 10 Ohms internal resistance.
> On the other hand- Richards input has been outstanding, on the Loooong
> haul- His output on the subject of Fractal antennas, as given on his web
> site, is very illuminating. Also, he is a master of wit that is hard to
> match. If he askes for clarification, it is probably because the source
> was lacking; if he makes an observation, it is probable that there was
> something worth seeing.
>
> Bill-W4BSG
>
> Richard Clark wrote:
> >
> > On Fri, 11 May 2001 23:32:16 -0400, "Peter O. Brackett"
> > <ab4bc@ix.netcom.com> wrote:
> >
> > >What?
> > >
> > >-Peter K1PO
> > >
> >
> > Indeed ;-)
> >
> > 73's
> > Richard Clark, KB7QHC

3809. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 21:35:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkabg$8m2$1@slb0.atl.mindspring.net>
Source record: 163159

Cecil:

Come on man.. that question deserves better than that!

I ask a simple question, and you throw back BS....

Just because Bird wattmeters happen to have AC coupled sensors, you refuse
to address the issue of DC reflectometry!

Heh, heh...

Or is it that perhaps you simply cannot bring yourself to face the truth?

At a DC impedance discontinuity there is a reflected voltage, there is a
reflection coefficient, there is a VSWR and there is a "reflected power".

What was it Dostoyovesky said about the elephant in the living room?

Heh, heh... ignore it if you will... it just won't go away.

Cecil man, deal with it...

The reflection formalism is just as valid for DC as it is for AC.

Deal with it!

-Peter K1PO
"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFD4013.A714B21@IEEE.org...
> "Peter O. Brackett" wrote:
> >
> > Cecil:
> >
> > Techno-babble...
> >
> > Man look at my simple DC examples of "reflection" and refute them if you
> > can.
>
> Peter, please send me some DC 50 ohm coax and some DC 300 ohm twinlead
> so I can run some experiments.
> --
> http://www.mindspring.com/~w6rca
>
>
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3810. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 21:36:16 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AFDACD0.A5862115@mwci.net>
Source record: 163158

Peter O. Brackett wrote:

> As you know that common mode return path is there and its' impedancd forms a
> part of the differential mode to common mode transfrer function, oh yes...
> it is there, and commonly called a "parasitic" or "stray" by those who
> discover it.

Thanks, Peter, you are exactly right. The entire concept of the common mode current loop seems to escape nearly everyone. The rule is that the divergence of current, even in free space, is (must be) zero, which means that there must always be a complete and closed path. In the free space between dipole and ground the displacement current takes care of that.

There have been a lot of snide remarks about displacement current. Let's not forget that Maxwell based his theory of EM radiation on it, and Hertz, the experimenter, validated the legitimacy of Maxwell's good friend, displacement current.

Bill W0IYH

Bill W0IYH

3811. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 21:41:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkal3imb1@slb7.atl.mindspring.net>
Source record: 163160

Cecil:

No man.

IMHO... it is my perception, based upon what you are saying, that you've still missed some subtle nuances of the "scattering formalism" along the way.

I suggest going back to "first principles".

I believe that your difficulty in accepting reflections in DC circuits stems from the fact that you "already know the answer"!

Heh, heh... there are none says your heart! But let your brain speak, and you will see the light.

Best,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFD41A6.ED1525A@IEEE.org...
> "Peter O. Brackett" wrote:
> > Analyze your favorite /SWR meter circuit and then tell me what the meter is
> > indicating!
>
> I've done that, Peter. Assuming *ALL* the boundary conditions for which
> the "power" meter was designed are met, the meter is indirectly calculating
> and indicating joules/sec. If all the boundary conditions are not met, the
> meter is being used improperly.
> --
> http://www.mindspring.com/~w6rca
>
>
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3812. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 21:43:14 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkaq0psn1@slb4.atl.mindspring.net>
Source record: 163161

Cecil:

My emotional response?

I laughed out loud and said to myself... heh, heh... those folks up there in NH don't know what "live free or die" means.

I love it.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFD44D5.70031749@IEEE.org...
> "Peter O. Brackett" wrote:
> > "No shooting" (signs).
> > Invariably those signs were full of bullet holes!
>
> What was your emotional response?
> --
> http://www.mindspring.com/~w6rca
>
>
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3813. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 22:27:21 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDB8C9.98DF5768@IEEE.org>
Source record: 163162

"Peter O. Brackett" wrote:
> Or is it that perhaps you simply cannot bring yourself to face the truth?

All of our models of reality are probably flawed.
Quantum physics is blowing most of them out of the water from
a purely technical standpoint. When the reflected cycle is the same cycle
as the generated cycle, there is simply no reason to use the reflection
model. That is always true of steady-state DC and often true of AC, e.g.
most local 60 Hz stuff.

> At a DC impedance discontinuity there is a reflected voltage, there is a
> reflection coefficient, there is a VSWR and there is a "reflected power".

That is a mathematically trivial case. Hang some modulation on the RF
signal, track the reflections marked by the modulation, and get back
to us on there being no flowing reflected energy. Where do those
ghosts hide while they are waiting to hit the load for a second time?
You'll never figure out what is happening if you stick to trivial
DC or same-cycle AC examples.

> The reflection formalism is just as valid for DC as it is for AC.

Maybe, maybe not, but there's no reason to use that model of reality
for DC. However, if you will send me one wavelength of DC coax, I
will be glad to run some experiments with it as long as you tell me
what the DC steady-state characteristic impedance is.
--
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3814. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 22:36:12 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDBADC.BCB538B6@IEEE.org>
Source record: 163163

"Peter O. Brackett" wrote:
> I suggest going back to "first principles".

And I would suggest that all you high-powered RF guys go back
and read your Physics 101 college textbook. Most of you seem
to have adopted some shortcuts that are valid in certain
circumstances, forgotten what the circumstances were, and
now try to twist reality to meet the needs of the model.

Hang some modulation on those RF signals to identify the
unique sets of cycles, track them with an instrument (A
TV receiver will do), and get back to us. You will find
the reflected modulation exactly where and when as predicted
by the reflection model. You will never understand reflections
if you keep using same-cycle reflections.

If you want to understand economics, follow the money.
If you want to understand physics, follow the energy.
Incidentally, my first principal died of old age.
--
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3815. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 22:41:52 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDBC30.4E7445E8@IEEE.org>
Source record: 163164

"Peter O. Brackett" wrote:
> I laughed out loud and said to myself... heh, heh... those folks up there in
> NH don't know what "live free or die" means. I love it.

Then you understand the spirit of The Old West handed down by adventurers,
explorers, cowboys, misfits, criminals, riff-raff, paupers - i.e., everyone
NH kicked out of the state. :-)
--
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3816. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 22:53:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDBEF3.B4760BB9@IEEE.org>
Source record: 163165

"Peter O. Brackett" wrote:
> That fixed quanta of energy is stored there on the line during the startup
> transient event, when the excitation is first applied. That quanta of
> energy stays there in the line, stored in the distributed fields of the
> transmission line until the excitation is removed at which point they will
> discharge into the resistances on both ends of the line in a final transient
> event..

OK, and if those quanta (pl?) of energy do not move up and down the line,
why do the ghosts appear as if those quanta of energy are moving up and
down the line? I have done these experiments with a TV receiver, Peter.
The ghosts are exactly where and when reflection theory predicts.

I cannot prove my assertions with continuous waves because I cannot tell
one cycle from another. But by adding modulation, what is happening becomes
crystal clear. Reflected energy makes a round trip from the mismatched TV
receiver to the Z0-match and back to the TV receiver. Otherwise, why is the
distance/time between ghosts exactly two times the travel time of the
feedline?
--
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3817. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 22:57:12 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDBFC8.ED32EDEB@IEEE.org>
Source record: 163166

"Peter O. Brackett" wrote:
> A Volt is a Joule per Coulounb and the Couloumb of charge gets that energy
> from the "prime mover", be it mechanical, chemical, or radiant sources of
> energy.

Seems a lot of RF guys consider electrical energy to be a radiant source.
Are you one of them? Most 60Hz power engineers consider radiant energy
and electrical energy to be separate things and don't bother with
Maxwell's equations.
--
http://www.mindspring.com/~w6rca

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3818. Re: HELP! End Fed Zepp.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 22:58:26 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDC012.980D5D01@IEEE.org>
Source record: 163167

RC12234 wrote:
> If the transmission line is an electrical
> quarter wavelength it should transform the
> high impedance at the antenna feed point to low impedance at the transmitter.
> W7ALC

It does that but it radiates like heck because the currents are not
balanced in the transmission line.
--
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3819. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 23:08:14 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDC25E.C2919AE4@IEEE.org>
Source record: 163168

Richard Clark wrote:
> There is no need to respond to this however, unless you wish to
> run this through again with a better model.

OK, here's one: Transmission line is matched and lossless.

RF Amp----------50 ohm coax----------50 ohm load

The drive to the Amp is adjusted until 100 volts is read at the output.
How much power is transferred to the load?

Then the drive to the Amp is adjusted until 200 volts is read at the output.
How much power is transferred to the load?
--
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3820. Re: AZ/EL controller circuit for TV rotors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 23:20:46 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3AFDC54E.ACF0B210@dialpoint.net>
Source record: 163077

Have you looked at amsat.org under the files sections for the program called something like FODTRACK ? In it is a diagram to use the paralle port and a Yeasu rotator. You may be able to adapt the design to a pair of tv rotators by adding a couple of relays and indicator pots to the tv system.

Daniel wrote:
>
> Anyone know where I could find an article on how to build an AZ/EL
> controller with two TV rotors for satellite communications? Please email to
> LAVOIEDatISTAR.CA (replace "at" with @)
>
> Thanks
>
> Daniel
> VE3DCL

3821. Re: Trap Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 23:23:06 UTC
From: n2ey@aol.com
Message-ID: <20010512192306.03281.00000310@nso-de.aol.com>
Source record: 163069

In article <3AF4FFA6.145FEEAB@eznec.com>, Roy Lewallen <w7el@eznec.com> writes:

>N2EY wrote:
>> . . .
>> Coax traps have the advantages of being cheap, rugged and made of readily
>> available materials. In side-by-side FD comparisons with G5RVs at the same
>> height, the coax trap dipole beat the G5RV every time, on both 80 and 40.
>>. . .
>
>Let's think about why that might be. The G5RV itself is so close to 100%
>efficient that you wouldn't be able to measure the difference between it
>and a 100% efficient antenna.

Doesn't that depend on things like the band, height above ground and ground loss? Consider a 104 foot long G5RV that is 40 feet up over "average" ground. EZNEC (demo) says the ground/copper loss will be 2 dB. A full size dipole will be a tiny bit better. But the antenna itself will be more like 60% efficient.

>So the trap dipole isn't more efficient.

Agreed! A trap dipole at the same height over the same ground will have similar ground/copper losses.

>(In fact, the traps are likely to noticeably reduce the efficiency.)

Only if trap loss is significant.

>On
>40, the difference might be explained by the G5RV having multiple lobes,
>or a lobe too narrow to cover your target region. But not on 80. On 80,
>the G5RV pattern is essentially identical to a dipole's. So it's as
>efficient as a dipole and has the same pattern as a dipole.

At the relatively low heights used (40-50 feet) over real ground and with various metallic objects in the near field, I doubt the patterns of either antenna would be very clean.

>Why the
>difference? The only possible explanation is that you're not getting as
>much power to the G5RV as to the dipole. And there are two possible
>causes for this. One is the feedline. If you were using open wire or
>ladder line, and it was dry, that's not it. If it was wet, it might be.

The antennas tested all used that brown plastic "window line", which looks like large flat TV Twin-Lead with square holes punched out of it. It was dry (didn't rain on any of those FDs). How much loss does ~30 feet of that stuff have on 80/40 meters when feeding the G5RV? I don't know, but I bet it was significant.

>The other is the tuner. It sounds like your tuner is pretty inefficient
>when matching the G5RV.

It wasn't my tuner - it was the built in autotuner of the rig used (TS-450, as I recall). Again - no way to know. The trap dipole worked without the tuner on most frequencies, and when it was used, the tuner had an easy job. The G5RV made the tuner earn its keep!

But there are two more suspects in the G5RV:

- the balun, located where the Twin-Lead meets the coax. This was a sealed unit of unknown construction, but an uneducated guess says a powdered-iron toroid core balun. How much loss did it have on 80/40? Again, unknown, but probably significant.

- the coax feed from the balun to the tuner. This was RG-8X, same stuff as used on the trap dipole, and about the same length. But it had to stand higher SWR.

My uneducated WAG is that the Twin-Lead and balun are the main villains, and the autotuner simply made the whole mess appear to work. A dB here, a dB there, and pretty soon you've thrown away more than an S-unit.

End result: If the particuar coax traps used were only moderately lossy (say total loss 1 dB) but the particular G5RV used had 1 or 2 dB of loss in the feedline, balun and tuner, the trapper could easily be an S unit or more ahead. Reduce the trap loss by using really good LC construction, and the trapper is only slightly behind a full size dipole. Without a tuner!

Of course the fullsize dipole fed with real open-wire line and matched with a proper balanced tuner (a la AG6K) will do the job even better, because you can adjust for a perfect match.

> This does raise a cautionary note to people
>using these "all band" antennas and readily embracing a tuner as a
>cure-all that they might be paying a pretty big price.

Agreed! But the tuner isn't the only source of loss in the G5RV scenario.

73 de Jim, N2EY

3822. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 23:27:49 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkgtd$j38$1@slb1.atl.mindspring.net>
Source record: 163070

Cecil:

I am really surprised!

What makes you think that the characteristic impedance of coax and/or twin lead is any different at DC than it is at AC?

The characteristic impedance Zo is calculated from the distributed primary parameters of the line, R (Ohms per unit length) L (Henries per unit length), C (Farads per unit length) and G (Siemens per unit length).

In the diffrerential RLCG model of a transmission line, R is in series, L is in series, C is in shunt and G is in shunt in each "infinitesimal, or differential" section of the line.

Now for a lossless line, R is zero, and G is zero, and Zo is determined only by the L/C ratio which is frequency invariant!

Apart from the distrubuted resistance R, that is affected by the frequency dependent skin effect, it goes up roughly as sqrt(f), there is no difference in the primary parameters RLCG of transmission lines with frequency.

RG-8 coax is Zo = 50 Ohms at DC and at 15 MHz, what? And 450 Ohm window line is 450 Ohms Zo at DC and at 15 MHz, what's your problem?

As Reg pointed out up the thread... sqrt(L/C) is frequency invariant!

And for short enough lengths...say a few feet, the series resistance is inconsequential. So...

So go ahead and do the DC experiments with the same old lines that you use for HF!

The fact that you asked that question of Reg, IMHO... tells me that you need a little more in depth study of lines and reflections.

If I were you, the thing that would bother me most about doing the DC reflection experiments that I suggested, would not be finding a line with the right Zo, that's a slam dunk!

My biggest worry would be the little matter of overcoming the fact that the "sensors" in your Bird wattmeter are AC coupled!
And it won't indicate anhthing at DC! Dammed Bird company, the nerve....
making wattmeters that have a low frequency cutoff.

Cecil my friend, where are you going to find a DC coupled reflectometer?

It so happens that I have a couple of reflected voltmeters here in Cary, NC that are DC coupled. I could rent or lend you one if you insist on doing DC

experiments rather than simple CD calculations!

But then, heh, heh... I can tell... you just wouldn't trust Peter's DC reflected voltage meter now would you, heh, heh!

Gotcha thinkin yet?

Best,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFD3FD4.E0AFEB72@IEEE.org...
> Reg Edwards wrote:
> > Then there's the case of the meter which responds to both the
> > current flowing through any value impedance and the voltage across
> > it. But the meter indicates SWR when there may not be a
> > transmission line around on which to develop any standing waves.
>
> That's true, Reg. The meter is calibrated for a certain characteristic
> impedance (Z0). If the meter is located outside of that Z0 environment,
> the meter is being used in an environment for which it was not intended.
> Witness an SWR reading equal to 1:1.5 when a 50 ohm SWR meter is used
> on a flat 75 ohm line where the real SWR is 1:1.
>
> The same holds true for all instruments. It reminds me of the time, long
> ago, when I thought something was wrong with a tube in my transmitter.
> I measured the screen voltage with a 20k ohms/volt Simpson meter and it
> "was" much too low.
>
> The moral is: Let the user beware.
>
> I've got a question for you, Reg. I'm trying to run some of Peter's DC
> experiments. Where can I find a DC 50 ohm coax and a DC 300 ohm twinlead?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3823. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 23:37:31 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkhflnbg1@slb7.atl.mindspring.net>
Source record: 163071

Cecil:

Read my lips.

The "reflected power" is not the "power in the reflections".

The "reflected power" is a fictional part of a mathematical formalism used to describe mismatches.

The power in reflections is something else again.

Thats' where all the problems come in. Very few people really have taken the time to learn and understand the exact definitions of the terms that they bandy around. "Reflected Power" as indicated on most so-called wattmeters does not read out the power in reflections. What they read out is b = V - IR. Plain and simple... it's a difference of two voltages.

Now I ask you, what the heck does (V - IR) have to do with the power in TV ghosts?

I know it sounds kinda goofy, but "reflected power" Pr = (V - IR)*(V - IR)/R watts, is a "made up value", made up to satisfy a mathematical formalism. It is not an accurate measure of the power in reflections.

"Reflected Power" is not "the power in the reflections".

That's why all your appeals to conservation of energy and long convoluted arguments with other "experts" about how various powers combine to cause a "match" are doomed to endless circular arguments.

Learn the basics, from the definitions of the scattering formalism out, learn that lines are the same at DC and at AC, learn how the metrology (Power meters) really works, become enlightened, and then come on over and join me... on the "dark side".

Best,

-Peter K1PO

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFDB8C9.98DF5768@IEEE.org...
> "Peter O. Brackett" wrote:
> > Or is it that perhaps you simply cannot bring yourself to face the truth?
>
> All of our models of reality are probably flawed.
> Quantum physics is blowing most of them out of the water from

> a purely technical standpoint. When the reflected cycle is the same cycle
> as the generated cycle, there is simply no reason to use the reflection
> model. That is always true of steady-state DC and often true of AC, e.g.
> most local 60 Hz stuff.
>
> > At a DC impedance discontinuity there is a reflected voltage, there is a
> > reflection coefficient, there is a VSWR and there is a "reflected
power".
>
> That is a mathematically trivial case. Hang some modulation on the RF
> signal, track the reflections marked by the modulation, and get back
> to us on there being no flowing reflected energy. Where do those
> ghosts hide while they are waiting to hit the load for a second time?
> You'll never figure out what is happening if you stick to trivial
> DC or same-cycle AC examples.
>
> > The reflection formalism is just as valid for DC as it is for AC.
>
> Maybe, maybe not, but there's no reason to use that model of reality
> for DC. However, if you will send me one wavelength of DC coax, I
> will be glad to run some experiments with it as long as you tell me
> what the DC steady-state characteristic impedance is.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3824. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 23:48:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dki3n$1ep$1@slb1.atl.mindspring.net>
Source record: 163072

Cecil:

Economics and economists are like the reflection mechanics... they talk about things in very formal terms... after they happen.

Business runs in real time, and to be successful you have to look out the front windscreen not the rear view mirror.

Physics is fundamental... it doesn't change with your viewpoint sitting on the spinning phasors of AC circuit theory. An impedance discontinuity is an impedance discontinuity, at microHz or at GHz!

Start with DC and go on up to GHz... theory and practice, they've both got to work all the way up from f = 0 to f -> infinity, DC to daylight, it's all the same, for all frequencies.

Don't start with some "assumptions" about RF behavior, and then make Copernican adjustments to your models of reality to make your "vision" of reality fit.

Start with DC and understand that thouroughly and then generalize... if you don't understand reflections at DC then I can almost guarantee you will never fully understand them at RF. You will only have a very clouded understanding.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFDBADC.BCB538B6@IEEE.org...
> "Peter O. Brackett" wrote:
> > I suggest going back to "first principles".
>
> And I would suggest that all you high-powered RF guys go back
> and read your Physics 101 college textbook. Most of you seem
> to have adopted some shortcuts that are valid in certain
> circumstances, forgotten what the circumstances were, and
> now try to twist reality to meet the needs of the model.
>
> Hang some modulation on those RF signals to identify the
> unique sets of cycles, track them with an instrument (A
> TV receiver will do), and get back to us. You will find
> the reflected modulation exactly where and when as predicted
> by the reflection model. You will never understand reflections
> if you keep using same-cycle reflections.
>
> If you want to understand economics, follow the money.
> If you want to understand physics, follow the energy.

> Incidentally, my first principal died of old age.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3825. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 23:49:31 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dki63tgt1@nntp9.atl.mindspring.net>
Source record: 163073

Cecil:

Next time I go to AZ, I'll bring my guns and have at those signs...

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFDBC30.4E7445E8@IEEE.org...
> "Peter O. Brackett" wrote:
> > I laughed out loud and said to myself... heh, heh... those folks up
there in
> > NH don't know what "live free or die" means. I love it.
>
> Then you understand the spirit of The Old West handed down by adventurers,
> explorers, cowboys, misfits, criminals, riff-raff, paupers - i.e.,
everyone
> NH kicked out of the state. :-)
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3826. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 23:55:07 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <3mirft00fskmvspg4iljegpvsrmqibgrer@4ax.com>
Source record: 163074

On Sat, 12 May 2001 19:27:49 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Cecil:
>
>I am really surprised!
>
>What makes you think that the characteristic impedance of coax and/or twin
>lead is any different at DC than it is at AC?
>

Hi Peter,

Surprised indeed.

The full derivation of characteristic Z:

Zo = sqrt((R + j * 2 pi * f * L) / (G + j * 2 * pi * f * C))

There are BOTH AC AND DC characteristics, and it is obvious that when
f drops to 0 the Zo must change (it is a commonplace that you don't
have to wait to go to 0 - and not even close).

73's
Richard Clark, KB7QHC

3827. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-12 23:58:45 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <idjrft4a1rbpmtgvaigcjg2hks2dr00at8@4ax.com>
Source record: 163075

On Sat, 12 May 2001 17:35:56 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>I ask a simple question, and you throw back BS....
>
>Just because Bird wattmeters happen to have AC coupled sensors, you refuse
>to address the issue of DC reflectometry!
>
>Heh, heh...
>

Hi Peter,

It is You who maintained that Your theory was supportable by All
formulae of transmission lines (shown to be in error in another
posting). As you are posed with this obvious sample that confounds
Your statement, it must be Your statement that is unsupportable.

Perhaps you would care to re-think this through again?

73's
Richard Clark, KB7QHC

3828. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:05:01 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <pkjrft8ejibe5nk2uh2kodpj53qunqb7pn@4ax.com>
Source record: 163076

On Sat, 12 May 2001 20:32:06 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>
>W6RCecilA wrote
>> Does that 50 ohm coax ensure
>> that the ratio of DC voltage to DC current is 50 ohms?
>==========================
>Yes it does, provided, as you have specified, it is lossless.
>
>Sqrt(L/C) is independent of frequency.
>
>---
>Reg
>

Ah Punchinello,

Arguing both sides of the fence again?
Sqrt(R/footPounds) is independant of frequency too, but neither are
the full rendering of the characteristic Z of a line across all
frequencies.

Perhaps you should shuffle through your past postings for that
argument back on this side of the fence. It is probably located under
new Old Wive's tales. ;-)

73's
Richard Clark, KB7QHC

3829. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:13:42 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <02krft8ktlm51dq8gu3tm0v9gu79g7kca0@4ax.com>
Source record: 163078

On Sat, 12 May 2001 17:31:19 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>But what has he done for us today?
>

Hi Peter,

You should stick with religion if you expect miracles every day.

As for passing judgement on your fantasy, that has been ongoing in spades - it is simply your disappointment that clouds your observing them.

As for intercession with others to champion your cause - you haven't carried your own burden very well, I'm not about to climb on that cross for you. Seek your redeemer elsewhere. ;-)

73's
Richard Clark, KB7QHC

3830. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:17:07 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <1ikrft8tfuof1kqmmfv907ucnbhu3spgo2@4ax.com>
Source record: 163079

On Sat, 12 May 2001 18:08:14 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> There is no need to respond to this however, unless you wish to
>> run this through again with a better model.
>
>OK, here's one: Transmission line is matched and lossless.
>
>RF Amp-----------50 ohm coax-----------50 ohm load
>
>The drive to the Amp is adjusted until 100 volts is read at the output.
>How much power is transferred to the load?

All of it.

>
>Then the drive to the Amp is adjusted until 200 volts is read at the output.
>How much power is transferred to the load?

All of it.

73's
Richard Clark, KB7QHC

3831. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:19:03 UTC
From: 2w8ji@contesting.com
Message-ID: <3afdcefb.800191023@news.accessunited.com>
Source record: 163080

On Sat, 12 May 2001 17:22:02 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>The leading cause of differential mode to common mode coupling in ham
>installation is not the electrons going around the end of the braid, rather
>it is the fact that the outside of the braid is in the near field of the
>radiating elements being fed by the coax and that "induction" of antenna
>currents onto the outside of the shield braid, is the largest single factor
>contributing to the low magnitude of the differential mode to common mode
>coupling transfer function.

Some people think a perfectly balanced dipole fed with an unbalanced
line will not excite the line if the line leaves vertically from the
center because there isn't a "return path".

That is not true. It is a myth.

By far the largest problems I've commonly seen are caused by the
terminal voltages at the antenna being fed, with reference to the
point in space where the feedline leaves the antenna.

You have two terminals, both with a potential difference to anything
hanging from either terminal. When you hang an unbalanced line there,
the inner conductor is shielded from the "world". The outer conductor
is exposed to the world. The return path is though many routes, all
involving displacement currents to the antenna structure because the
terminal the shield hangs on is not at zero potential compared to the
slice of space the feedline leaves through.

When we hang another conductor vertically a voltage source with finite
common mode impedance, that conductor will have current even though it
has no "path" back to the antenna.

Make no mistake about it, a dipole needs either a balancing device or
choking device on an unbalanced feedline or it will have common mode
currents on the feeder. The exception is if you can establish a high
common-mode impedance on the feedline shield at the antenna terminals
through feedline length and grounding.

Of course the feedline also has the exit the area of the antenna
properly.

73 Tom

3832. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:19:31 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <Kn+IWsATMd$6EAKW@ifwtech.com>
Source record: 163082

William E. Sabin wrote:
>
>
>Ian White, G3SEK wrote:
>
>> William E. Sabin wrote:
>> >
>> >Fig 24 and text in Chap 26 of the ARRL Antenna Book assert that this
>> >current over the edge is just simply always there, period.
>> >
>> >False.
>>
>> Bill has inadvertently set up a false straw-man argument, because he
>> misquotes and oversimplifies what the 'ARRL Antenna Book' actually says.
>> It does not say that this current ever the edge is "simply always
>> there". Adding "period" also implies that book is making that statement
>> without any qualification or explanation.
>
>Page 26-16 says exactly what I said that it says (I can read OK),

I remain deeply uneasy about the way you use "it says". The 'Antenna
Book' says only the words that are printed on its own pages, and in my
18th edition I do not see the words you choose to use.

However, with the help of the diagram and your extended explanation, I
now see your objections, and have to agree with you on many points...
but not all.

> and it is
>your (and a lot of others') "inadvertent" misunderstanding that is the
>problem.
>
>In the "hypothetical" ideal example that is presented, there is no common
>mode current, period. And the reason is that there is no *complete* closed
>common mode path. I have mentioned this very often, but it went unnoticed
>(as usual). The two coax braid surfaces themselves are not a valid common
>mode loop. Your simplistic idea (and the author's) of the current division
>between I3 and I4 is what is wrong.
>
>Look at I3 where it enters the ground connection. For this current there
>*must* be a return path back to the dipole.

Must there? See below.

>If the dipole is perfectly
>symmetrical as the text says, there is *no* coupling, in other words a very

>high common mode impedance, between antenna and ground through the
>intervening space.
>
>It is, or should be, common knowledge that the hypothetically ideal dipole
>has *no* common mode current loop. Is it now convenient for you to repudiate
>that?
>
If convenience were a factor, none of us would be involved in this
discussion, and I wouldn't still be sitting here at 0120 local, still
trying to get my own thinking and writing as clear as possible.

Here goes:

The ARRL explanation does need re-wording, because it is inconsistent to
postulate a "hypothetical balanced dipole... assumed to be perfectly
symmetrical" and then try to talk about I3. In a completely symmetrical
system, I1 = I2 by definition, so I3 has to be zero. That renders the
whole question moot, because they can't logically say anything about I3
when they've already defined it to be zero!

Let's start again with some different assumptions.

There is actually no such thing as a symmetrical antenna fed with coax.
It's a contradiction in terms. Even if the antenna arms are symmetrical
with respect to the feedline and ground (a situation that never exists
in the real world) the feedpoint itself remains stubbornly asymmetrical.
Postulating the coax to be very thin makes no difference; the junction
to the antenna still does not possess left-right symmetry.

Therefore the 'Antenna Book' should have been explaining is that there
always *is* some asymmetry, and therefore two different impedances in
arm 1 and arm 2 of the dipole (call them Z1 and Z2). Then there will be
a split in I2 at the top of the shield, determined by Kirchhoff's law
and by the ratio of Z2 and the common-mode impedance Z3. It then follows
that a conducted current I3 is launched onto the shield from the top.
The text then also needs to say something about the additional component
of the shield current that is induced by the asymmetrical coupling to
the dipole (though that doesn't directly concern our present
discussion).

>A common mode current *must* have a valid closed common mode loop. That path
>is not, and cannot be (look at the Figure), the braid itself.
>
Again I see your point, Bill, but it does not apply to this system,
because the outer of the coax is behaving as an *antenna* - a monopole
connected to ground. It is not necessary to have a complete hard-wired
return path for antenna currents; but they still do return. For example,
a conventional base-fed monopole antenna looks like an open circuit, but
it does create a return current in its ground connection (once again,
the precise mechanism does not directly concern the present discussion).

I agree also that it is incorrect for Figure 24 to show the current flowing in the ground connection as I3, in the same phase as I3 at the top of the coax. In general this is not true; the value of outer-shield current at the bottom of the feedline will depend on the electrical length of the outer-surface path, and on its behavior as an antenna. So let's call it I5 instead.

Then applying Kirchhoff's law at the base of the feeder brings everything out correctly, just as it does at the top. The transmitter supplies current to the center conductor, and an equal current returns to the transmitter via the inside of the shield. One point in the circuit is connected to ground, but Kirchhoff's law determines that none of that circulating current is available to flow into the ground connection. Kirchhoff's law also determines that I5 flows right past that interconnection point and into ground, and does not enter the loop containing the transmitter. No problems there.

>One more time: Fig 24, as it is described on page 26-16 is bull shit.
>Reason: the braid impedance is *not* a complete and valid common mode
>current path (loop), and that loop does not exist anywhere *in this
>example*. That Fig and the text need to be changed to take into account
>these realities.
>
My summary is that Figure 24 and the accompanying text need some editing, to make it deal with the real-world situation where the antenna-coax system is *always* unbalanced (even if only slightly). But the points that I was making are not affected by those errors: current does flow over the outer edge of the coax; and if there are alternative paths it divides according to Kirchhoff's and Ohm's laws. The requirement for a common-mode current path is satisfied by the behavior of the outer shield as a radiating antenna fed against ground.

>And experiments that try to prove that a certain thing happens must show
>that it **must** happen, and not merely that it **can** happen.

I'm very happy with that. Since a symmetrical dipole fed with coax does not exist, there *must* be some I3. It can sometimes have a very low value, and with a common-mode choke we can force it to be low, but there *must* still be some residual I3. It never goes completely to zero (except in certain singular cases).

[Quote re-positioned]
>As for what you believe and who you believe, that is your business. I don't
>see any infallibility from anyone around here, even so-called "high status"
>types who try to project that image. These nice folks are at least as error
>prone as I am, and that's a proven fact.
>

I wish we could move this discussion away from "belief", because that might imply to some readers that we need to operate on faith or trust. We don't. We are dealing here with completely knowable facts... the only problem being that we don't know all of them yet - or at least, we don't yet agree on them.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

3833. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:20:29 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <rnkrft889jos8ghg9545andl6sp9gdv1kf@4ax.com>
Source record: 163081

On Sat, 12 May 2001 17:57:12 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>"Peter O. Brackett" wrote:
>> A Volt is a Joule per Coulounb and the Couloumb of charge gets that energy
>> from the "prime mover", be it mechanical, chemical, or radiant sources of
>> energy.
>
>Seems a lot of RF guys consider electrical energy to be a radiant source.
>Are you one of them? Most 60Hz power engineers consider radiant energy
>and electrical energy to be separate things and don't bother with
>Maxwell's equations.

Hi Cecil,

Most is not All. Most may be very few. ;-)

73's
Richard Clark, KB7QHC

3834. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:22:02 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <N3AJy7AqOd$6EAKC@ifwtech.com>
Source record: 163083

Peter O. Brackett wrote:
>Ian:
>
>But... some have been arguing about the "degree" of isolation provided by
>the skin effect, not that it does provide shielding. And having the abiltiy
>to analyze and quantify the "degree" will cast light upon areas of
>incomplete understanding.
[...]
>The electromagnetic security community... i.e. those who try to protect
>various national secret communications from e-m snooping activities of
>potential "enemies" must have a very elaborate system for "rating" such
>cross mode phenomena... Would your MI5 use Radio Shack coaxial cable to
>shield and protect secrets of the British Admiralty, or... whatever.... I am
>sure that they must have way's of rating the sheilding effectiveness of
>cables. Most of that kind of know how and data is likely highly classified
>and available only to those with high level clearances and a "need to know".
>Some of this kind of material is in the "open" and readily available, run a
>"Google" or "Yahoo" search on NACSIM, for instance.
>
Forgive me, Peter, but I'm trying to clear up the differences between
myself and Bill first. When we can fully understand and agree the
behavior of solid shields, then will be the time to come back to the
problem of 'leaky' shields.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

3835. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:34:55 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkkra$n15$1@nntp9.atl.mindspring.net>
Source record: 163084

Richard:

I am sorry. I must have missed something. To which statement do you refer?

And... BTW... I quite often make mistakes, and I often have flawed
understanding of things, but on this particular subject...

I know I'm right... not only from the logic and reason, which has been
"tested" by better men than me, but...

from the fact that here on this NG no one has yet offered a convincing real
logical answer to my points.

All but a few posters have evaded the issue, changed the subject, cat
called, and... etc....

Until, I see a serious examination of reflection mechanics for the DC case
along with an analysis of where the reflected power is generated and where
it is dissipated, I just will not be dissuaded.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:idjrft4a1rbpmtgvaigcjg2hks2dr00at8@4ax.com...
> On Sat, 12 May 2001 17:35:56 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> >I ask a simple question, and you throw back BS....
> >
> >Just because Bird wattmeters happen to have AC coupled sensors, you
refuse
> >to address the issue of DC reflectometry!
> >
> >Heh, heh...
> >
>
> Hi Peter,
>
> It is You who maintained that Your theory was supportable by All
> formulae of transmission lines (shown to be in error in another
> posting). As you are posed with this obvious sample that confounds
> Your statement, it must be Your statement that is unsupportable.
>
> Perhaps you would care to re-think this through again?
>
> 73's

> Richard Clark, KB7QHC

3836. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:37:05 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkkvd$bk7$1@slb7.atl.mindspring.net>
Source record: 163085

Richard:

For shame!

[snip]
The full derivation of characteristic Z:

Zo = sqrt((R + j * 2 pi * f * L) / (G + j * 2 * pi * f * C))

There are BOTH AC AND DC characteristics, and it is obvious that when
f drops to 0 the Zo must change (it is a commonplace that you don't
have to wait to go to 0 - and not even close).

73's
Richard Clark, KB7QHC
[snip]

Your formula is absolutely correct, but your, clearly too quick,
interpertation of it is seriously flawed.

In your haste to reply to my post, you have made a serious error.

Don't get too emotional on me here... I'm not a heretic....

Let your mind rule your algebraic manipulations and interpertation of
Physical laws, not your emotions.

In your "correct" formula, since we are discussing the lossless case, we can
set R = 0 and G = 0.

Now you have:

Zo = sqrt(j*2*pif*L/j*2*pi*f*C) = sqrt(L/C)

Which is completely independent of frequency!

Period, end of story!

I'm sure that you understood that formula when you first learned it. Now
you need to refresh.
Go back to transmission line textbooks and review again. It's been too long
since you studied that formula. I often need that myself.

For the lossless line...

Zo is completely independent of j, 2, pi, f, or any other of those
"junk"values, multiplying L and C which divide out top to bottom exactly to
unity, i.e. for the ratio j*2*pi*F/j*2*pi*f = 1 is exactly one.

What?

Richard, any other side issues you'd like to discuss on the way to zero frequency?

RG-8 is 50 Ohms at 20 Meters AND AT DC...

450 Ohm ladder line is 450 Ohms at 15 Meters AND AT DC...

Now in your mind's model of reflection mechanics, slowly let go and let frequency f slide slowly down to zero, for there true understanding awaits.

It's no wonder you are confused about reflected power and reflections at impedance discontinuities, you need to review your transmission line basics, before binding yourself to flawed mental models of reality.

As you begin that long slow journey from 20 meters down to zero, I suggest that you throw out everyting you ever learned about reflection mechanics, since some of it is apparently flawed, and prepare yourself for deeper understanding..

Begin your study and learning about reflection mechanics all over again, starting with the simple case of DC.

When you are finished you will be refreshed and a new man with a full and complete understanding of reflection mechanics.

As you refresh your studies of these topics, pay especially close attention to the "exact" definitions of reflected voltage and reflected power.

Best,

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:02krft8ktlm51dq8gu3tm0v9gu79g7kca0@4ax.com...
> On Sat, 12 May 2001 17:31:19 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> >But what has he done for us today?
> >
>
> Hi Peter,
>
> You should stick with religion if you expect miracles every day.
>
> As for passing judgement on your fantasy, that has been ongoing in
> spades - it is simply your disappointment that clouds your observing
> them.
>
> As for intercession with others to champion your cause - you haven't
> carried your own burden very well, I'm not about to climb on that
> cross for you. Seek your redeemer elsewhere. ;-)
>
> 73's
> Richard Clark, KB7QHC

3837. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:37:28 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkl02$j1$1@nntp9.atl.mindspring.net>
Source record: 163086

"Richard Clark" <kb7qhc@home.com> wrote in message
news:02krft8ktlm51dq8gu3tm0v9gu79g7kca0@4ax.com...
> On Sat, 12 May 2001 17:31:19 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> >But what has he done for us today?
> >
>
> Hi Peter,
>
> You should stick with religion if you expect miracles every day.
>
> As for passing judgement on your fantasy, that has been ongoing in
> spades - it is simply your disappointment that clouds your observing
> them.
>
> As for intercession with others to champion your cause - you haven't
> carried your own burden very well, I'm not about to climb on that
> cross for you. Seek your redeemer elsewhere. ;-)
>
> 73's
> Richard Clark, KB7QHC

3838. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:41:46 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <m1mrftosn39av2i2up5flf319dcpplgr0h@4ax.com>
Source record: 163087

On Sat, 12 May 2001 20:34:55 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>Until, I see a serious examination of reflection mechanics for the DC case
>along with an analysis of where the reflected power is generated and where
>it is dissipated, I just will not be dissuaded.
>
>-Peter K1PO

Hi Peter,

That's fine. Did you pack a lunch for your time in the wilderness?

73's
Richard Clark, KB7QHC

3839. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:45:16 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dklem$es6$1@slb6.atl.mindspring.net>
Source record: 163088

Richard:

Religion?

I am sorry if I have offended you...

I didn't mean to. I appologize.

However... on this issue, like Rodney Dangerfield, since "I don't get no respect" I feel that I must play the role of the "joker" in the courts of old.

It seems I have no champions among the citizens, but I am the only one who can now safely tell the Emperor he has not clothes on.

And so I'll continue the "joker" entertainment, and make waves, and poke fun at others, right up until folks stop laughing and start thinking.

Jeesh! Maybe, the joker's right...The emperor really has no clothes on.

Richard I don't want you to be my champion, but if you feel the urge, I'd welcome you to come on over and join me on the "dark side".

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:02krft8ktlm51dq8gu3tm0v9gu79g7kca0@4ax.com...
> On Sat, 12 May 2001 17:31:19 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> > >
> > >But what has he done for us today?
> > >
>
> Hi Peter,
>
> You should stick with religion if you expect miracles every day.
>
> As for passing judgement on your fantasy, that has been ongoing in
> spades - it is simply your disappointment that clouds your observing
> them.
>
> As for intercession with others to champion your cause - you haven't
> carried your own burden very well, I'm not about to climb on that
> cross for you. Seek your redeemer elsewhere. ;-)
>
> 73's

> Richard Clark, KB7QHC

3840. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:47:25 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkliopho1@nntp9.atl.mindspring.net>
Source record: 163089

Richard:

Richard:

For shame!

[snip]
The full derivation of characteristic Z:

Zo = sqrt((R + j * 2 pi * f * L) / (G + j * 2 * pi * f * C))

There are BOTH AC AND DC characteristics, and it is obvious that when
f drops to 0 the Zo must change (it is a commonplace that you don't
have to wait to go to 0 - and not even close).

73's
Richard Clark, KB7QHC
[snip]

Your formula is absolutely correct, but you'r, clearly too quick,
interpertation of it is flawed.

In your haste to reply to my post, you have made a serious error.

Don't get too emotional on me here... I'm not a heretic....

Let your mind rule your algebraic manipulations and interpertation of
Physical laws, not your emotions.

In your "correct" formula, since we are discussing the lossless case, we can
set R = 0 and G = 0.

Now you have:

Zo = sqrt(j*2*pif*L/j*2*pi*f*C) = sqrt(L/C)

Which is completely independent of frequency!

Period, end of story!

I'm sure that you understood that formula when you first learned it. Now
you need to refresh.
Go back to transmission line textbooks and review again. It's been too long
since you studied that formula. I often need that myself.

For the lossless line...

Zo is completely independent of j, 2, pi, f, or any other of those
"junk"values, multiplying L and C which divide out top to bottom exactly to
unity, i.e. for the ratio j*2*pi*F/j*2*pi*f = 1 is exactly one.

What?

Richard, any other side issues you'd like to discuss on the way to zero frequency?

RG-8 is 50 Ohms at 20 Meters AND AT DC...

450 Ohm ladder line is 450 Ohms at 15 Meters AND AT DC...

Now in your mind's model of reflection mechanics, slowly let go and let frequency f slide slowly down to zero, for there true understanding awaits.

It's no wonder you are confused about reflected power and reflections at impedance discontinuities, you need to review your transmission line basics, before binding yourself to flawed mental models of reality.

As you begin that long slow journey from 20 meters down to zero, I suggest that you throw out everyting you ever learned about reflection mechanics, since some of it is apparently flawed, and prepare yourself for deeper understanding..

Begin your study and learning about reflection mechanics all over again, starting with the simple case of DC.

When you are finished you will be refreshed and a new man with a full and complete understanding of reflection mechanics.

As you refresh your studies of these topics, pay especially close attention to the "exact" definitions of reflected voltage and reflected power.

Best,

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:idjrft4a1rbpmtgvaigcjg2hks2dr00at8@4ax.com...
> On Sat, 12 May 2001 17:35:56 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> >I ask a simple question, and you throw back BS....
> >
> >Just because Bird wattmeters happen to have AC coupled sensors, you
refuse
> >to address the issue of DC reflectometry!
> >
> >Heh, heh...
> >
>
> Hi Peter,
>
> It is You who maintained that Your theory was supportable by All
> formulae of transmission lines (shown to be in error in another
> posting). As you are posed with this obvious sample that confounds
> Your statement, it must be Your statement that is unsupportable.

>
> Perhaps you would care to re-think this through again?
>
> 73's
> Richard Clark, KB7QHC

3841. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:50:09 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <97mrfts7r1ka8dkn9kqcrfhufbr7dipof9@4ax.com>
Source record: 163090

On Sat, 12 May 2001 20:37:05 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>>The full derivation of characteristic Z:
>>
>>Zo = sqrt((R + j * 2 pi * f * L) / (G + j * 2 * pi * f * C))
>>
>>There are BOTH AC AND DC characteristics, and it is obvious that when
>>f drops to 0 the Zo must change (it is a commonplace that you don't
>>have to wait to go to 0 - and not even close).
>>
>>73's
>>Richard Clark, KB7QHC
>[snip]
>
>In your "correct" formula, since we are discussing the lossless case, we can
>set R = 0 and G = 0.
>
>Now you have:
>
>Zo = sqrt(j*2*pif*L/j*2*pi*f*C) = sqrt(L/C)
>
>Which is completely independent of frequency!
>

Hi Peter,

I see you are still surprised.

Independant of frequency when you have used frequency in the "correct"
formula? Curiouser and curiouser as Alice would say.

And, as you argument goes with f set to 0 and R set to 0 and G set to
0, it becomes blindingly clear that L and C have nothing to do with
your fanatasy.

In fact it appears that your Zo = sqrt(0).

Is this what you were striving for?

73's
Richard Clark, KB7QHC

3842. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 00:58:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkm7p$qf7$1@slb6.atl.mindspring.net>
Source record: 163091

Cecil:

OK... as you know I am very suspicious of "so-called" wattmeters. Hey... it's my nature.

And as you know another thing I am very suspicious of is the internal resistance/impedance of transmitters.

Why? Well simply because, none of the manufacturers of ham transmitter equipment that I know of today, specifiies the "output" impedance looking back into the transmitter.

And so... answer me this...

What kind of power meter do I have, how does it operate, and where is it connected?

And what is the internal resistance of the transmitter?

Or... perhaps maybe please??? Do I have access to a good RF voltmeter connected across the load and a good RF ammeter in series with the load. Then, I'll find out all...

If you can share those details with me, then I'll answer.

Otherwise, I say... let's just adjust for maximum smoke!~

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFDC25E.C2919AE4@IEEE.org...
> Richard Clark wrote:
> > There is no need to respond to this however, unless you wish to
> > run this through again with a better model.
>
> OK, here's one: Transmission line is matched and lossless.
>
> RF Amp-----------50 ohm coax-----------50 ohm load
>
> The drive to the Amp is adjusted until 100 volts is read at the output.
> How much power is transferred to the load?
>
> Then the drive to the Amp is adjusted until 200 volts is read at the output.
> How much power is transferred to the load?
> --
> http://www.mindspring.com/~w6rca
>

>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3843. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:01:57 UTC
From: k1bqt@aol.com
Message-ID: <20010512210157.03091.00003622@ng-mn1.aol.com>
Source record: 163093

You guys have all gotten too close to your own do-do and gone coo-coo.

Rick K1BQT

3844. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:02:46 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkmfhnot1@slb0.atl.mindspring.net>
Source record: 163092

Cecil:

I agree with everything you say... the only disagreement we have is quantitative and semantic...

I do not agree with you that the so-called "reflected power" as indicated on commonly available instruments indicates the true power in those reflections/ghosts, whatever you want to call them.

It may seem like a small point, but it's not... It gets to the essence of the meaning of "reflected power" which I maintain is a concept and a measure that not more than one engineer or technician in a thousand really understands.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFDBEF3.B4760BB9@IEEE.org...
> "Peter O. Brackett" wrote:
> > That fixed quanta of energy is stored there on the line during the startup
> > transient event, when the excitation is first applied. That quanta of
> > energy stays there in the line, stored in the distributed fields of the
> > transmission line until the excitation is removed at which point they will
> > discharge into the resistances on both ends of the line in a final transient
> > event..
>
> OK, and if those quanta (pl?) of energy do not move up and down the line,
> why do the ghosts appear as if those quanta of energy are moving up and
> down the line? I have done these experiments with a TV receiver, Peter.
> The ghosts are exactly where and when reflection theory predicts.
>
> I cannot prove my assertions with continuous waves because I cannot tell
> one cycle from another. But by adding modulation, what is happening becomes
> crystal clear. Reflected energy makes a round trip from the mismatched TV
> receiver to the Z0-match and back to the TV receiver. Otherwise, why is the
> distance/time between ghosts exactly two times the travel time of the
> feedline?
> --
> http://www.mindspring.com/~w6rca
>
>

> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3845. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:07:57 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3AFDDE6D.CFBFD772@hiwaay.net>
Source record: 163095

Peter- I think you missed a point- he asked for a one-wavelength
piece-can you supply same?

Missing that point makes sevral of your accusations beside the point.

What?

Bill

"Peter O. Brackett" wrote:
>
> Cecil:
>
> I am really surprised!
>
> What makes you think that the characteristic impedance of coax and/or twin
> lead is any different at DC than it is at AC?
>
> The characteristic impedance Zo is calculated from the distributed primary
> parameters of the line, R (Ohms per unit length) L (Henries per unit
> length), C (Farads per unit length) and G (Siemens per unit length).
>
> In the diffrerential RLCG model of a transmission line, R is in series, L is
> in series, C is in shunt and G is in shunt in each "infinitesimal, or
> differential" section of the line.
>
> Now for a lossless line, R is zero, and G is zero, and Zo is determined only
> by the L/C ratio which is frequency invariant!
>
> Apart from the distrubuted resistance R, that is affected by the frequency
> dependent skin effect, it goes up roughly as sqrt(f), there is no difference
> in the primary parameters RLCG of transmission lines with frequency.
>
> RG-8 coax is Zo = 50 Ohms at DC and at 15 MHz, what? And 450 Ohm window
> line is 450 Ohms Zo at DC and at 15 MHz, what's your problem?
>
> As Reg pointed out up the thread... sqrt(L/C) is frequency invariant!
>
> And for short enough lengths...say a few feet, the series resistance is
> inconsequential. So...
>
> So go ahead and do the DC experiments with the same old lines that you use
> for HF!
>
> The fact that you asked that question of Reg, IMHO... tells me that you need

> a little more in depth study of lines and reflections.
>
> If I were you, the thing that would bother me most about doing the DC
> reflection experiments that I suggested, would not be finding a line with
> the right Zo, that's a slam dunk!
>
> My biggest worry would be the little matter of overcoming the fact that the
> "sensors" in your Bird wattmeter are AC coupled!
> And it won't indicate anhthing at DC! Dammed Bird company, the nerve....
> making wattmeters that have a low frequency cutoff.
>
> Cecil my friend, where are you going to find a DC coupled reflectometer?
>
> It so happens that I have a couple of reflected voltmeters here in Cary, NC
> that are DC coupled. I could rent or lend you one if you insist on doing DC
> experiments rather than simple CD calculations!
>
> But then, heh, heh... I can tell... you just wouldn't trust Peter's DC
> reflected voltage meter now would you, heh, heh!
>
> Gotcha thinkin yet?
>
> Best,
>
> -Peter K1PO
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3AFD3FD4.E0AFEB72@IEEE.org...
> > Reg Edwards wrote:
> > > > Then there's the case of the meter which responds to both the
> > > > current flowing through any value impedance and the voltage across
> > > > it. But the meter indicates SWR when there may not be a
> > > > transmission line around on which to develop any standing waves.
> > >
> > > That's true, Reg. The meter is calibrated for a certain characteristic
> > > impedance (Z0). If the meter is located outside of that Z0 environment,
> > > the meter is being used in an environment for which it was not intended.
> > > Witness an SWR reading equal to 1:1.5 when a 50 ohm SWR meter is used
> > > on a flat 75 ohm line where the real SWR is 1:1.
> > >
> > > The same holds true for all instruments. It reminds me of the time, long
> > > ago, when I thought something was wrong with a tube in my transmitter.
> > > I measured the screen voltage with a 20k ohms/volt Simpson meter and it
> > > "was" much too low.
> > >
> > > The moral is: Let the user beware.
> > >
> > > I've got a question for you, Reg. I'm trying to run some of Peter's DC
> > > experiments. Where can I find a DC 50 ohm coax and a DC 300 ohm twinlead?
> > > --

> > http://www.mindspring.com/~w6rca
> >
> >
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3846. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:09:20 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkmrt$kq3$1@slb6.atl.mindspring.net>
Source record: 163094

Cecil:

Do I detect that you are trying to pigeon hole me?

What?

I wanted to remain mysterious.

I didn't want to be an RF guy. I didn't want to be a power guy. I didnt' want to be a digital guy. I didn't want to be an analog guy. I didn't want to be a computer guy. I didn't want to be a software guy. I didn't want....

I became a ham so that I could be like Leonardo da Vinci... a man for all seasons.

Heh, heh...

But if like Galileo when he spotted those spots on the sun, the Pope plants me at the stake and torch in hand, asks me to swear allegiance to "reflected power", why then...

I'll say I do...but I don't... heh, heh...

Meanwhile, I'll keep pointing out that the earth is really flat all the way down to DC.

-Peter K1PO [Is he a power guy?]

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFDBFC8.ED32EDEB@IEEE.org...
> "Peter O. Brackett" wrote:
> > A Volt is a Joule per Coulounb and the Couloumb of charge gets that energy
> > from the "prime mover", be it mechanical, chemical, or radiant sources of
> > energy.
>
> Seems a lot of RF guys consider electrical energy to be a radiant source.
> Are you one of them? Most 60Hz power engineers consider radiant energy
> and electrical energy to be separate things and don't bother with
> Maxwell's equations.
> --
> http://www.mindspring.com/~w6rca
>
>
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3847. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:15:13 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkn6t$h17$1@slb2.atl.mindspring.net>
Source record: 163096

Richard:

Thanks for your participation and for keeping up with the "banter" on the way to the Guiness Book of Records record for the longest USENET thread topic.

Hey, I wonder why, neither of Steve or Walt has "responded" to any of my DC reflections postings? Surely they could help us to win the Guiness record.

Clearly you, Cecil and others are very interested in this subject, and have opinions, and wish to be heard, and ask useful and insightful questions, and keep on posting to keep the discussion going, but... all we hear from the guys slinging around equations is silence.

I'd like to hear an "expert" opinion or two on DC reflections and mismatches.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:rnkrft889jos8ghg9545andl6sp9gdv1kf@4ax.com...
> On Sat, 12 May 2001 17:57:12 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >"Peter O. Brackett" wrote:
> >> A Volt is a Joule per Coulounb and the Couloumb of charge gets that energy
> >> from the "prime mover", be it mechanical, chemical, or radiant sources of
> >> energy.
> >
> >Seems a lot of RF guys consider electrical energy to be a radiant source.
> >Are you one of them? Most 60Hz power engineers consider radiant energy
> >and electrical energy to be separate things and don't bother with
> >Maxwell's equations.
>
> Hi Cecil,
>
> Most is not All. Most may be very few. ;-)
>
> 73's
> Richard Clark, KB7QHC

3848. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:17:47 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dknbo$bt3$1@slb7.atl.mindspring.net>
Source record: 163097

Ian:

Solid shields, still to be resolved, heck... no problem I can help you to
end it quickly, just make the conductor resistance absolutely zero and so
the skin depth becomes zero and all current is on the surface... done!

Thanks, I'll look for a posting later.

-Peter K1PO

"Ian White, G3SEK" <G3SEK@ifwtech.com> wrote in message
news:N3AJy7AqOd$6EAKC@ifwtech.com...
> Peter O. Brackett wrote:
> >Ian:
> >
> >But... some have been arguing about the "degree" of isolation provided by
> >the skin effect, not that it does provide shielding. And having the
abiltiy
> >to analyze and quantify the "degree" will cast light upon areas of
> >incomplete understanding.
> [...]
> >The electromagnetic security community... i.e. those who try to protect
> >various national secret communications from e-m snooping activities of
> >potential "enemies" must have a very elaborate system for "rating" such
> >cross mode phenomena... Would your MI5 use Radio Shack coaxial cable to
> >shield and protect secrets of the British Admiralty, or... whatever.... I
am
> >sure that they must have way's of rating the sheilding effectiveness of
> >cables. Most of that kind of know how and data is likely highly
classified
> >and available only to those with high level clearances and a "need to
know".
> >Some of this kind of material is in the "open" and readily available, run
a
> >"Google" or "Yahoo" search on NACSIM, for instance.
> >
> Forgive me, Peter, but I'm trying to clear up the differences between
> myself and Bill first. When we can fully understand and agree the
> behavior of solid shields, then will be the time to come back to the
> problem of 'leaky' shields.
>
> 73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
> 'In Practice' columnist for RadCom (RSGB)
> http://www.ifwtech.com/g3sek

3849. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:21:58 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dknjiggg1@nntp9.atl.mindspring.net>
Source record: 163098

Tom:

Well said.

-Peter K1PO

"Tom W8JI" <2w8ji@contesting.com> wrote in message
news:3afdcefb.800191023@news.accessunited.com...
> On Sat, 12 May 2001 17:22:02 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >The leading cause of differential mode to common mode coupling in ham
> >installation is not the electrons going around the end of the braid,
rather
> >it is the fact that the outside of the braid is in the near field of the
> >radiating elements being fed by the coax and that "induction" of antenna
> >currents onto the outside of the shield braid, is the largest single
factor
> >contributing to the low magnitude of the differential mode to common mode
> >coupling transfer function.
>
> Some people think a perfectly balanced dipole fed with an unbalanced
> line will not excite the line if the line leaves vertically from the
> center because there isn't a "return path".
>
> That is not true. It is a myth.
>
> By far the largest problems I've commonly seen are caused by the
> terminal voltages at the antenna being fed, with reference to the
> point in space where the feedline leaves the antenna.
>
> You have two terminals, both with a potential difference to anything
> hanging from either terminal. When you hang an unbalanced line there,
> the inner conductor is shielded from the "world". The outer conductor
> is exposed to the world. The return path is though many routes, all
> involving displacement currents to the antenna structure because the
> terminal the shield hangs on is not at zero potential compared to the
> slice of space the feedline leaves through.
>
> When we hang another conductor vertically a voltage source with finite
> common mode impedance, that conductor will have current even though it
> has no "path" back to the antenna.
>
> Make no mistake about it, a dipole needs either a balancing device or
> choking device on an unbalanced feedline or it will have common mode

> currents on the feeder. The exception is if you can establish a high
> common-mode impedance on the feedline shield at the antenna terminals
> through feedline length and grounding.
>
> Of course the feedline also has the exit the area of the antenna
> properly.
>
> 73 Tom

3850. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:27:56 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDE31C.C4566DE1@IEEE.org>
Source record: 163099

"Peter O. Brackett" wrote:
> Now I ask you, what the heck does (V - IR) have to do with the power in TV
> ghosts?

Nothing, Peter, absolutely nothing at all. In fact, there is not a wattmeter in sight. Just an experiment, Peter, and you don't need any instruments to see the energy in the TV ghosts right there on your TV screen. Funny, all these years, I thought TV ghosting was real and not a fiction.
--
http://www.mindspring.com/~w6rca

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3851. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:33:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dko95$1d6$1@slb4.atl.mindspring.net>
Source record: 163100

Richard:

Heh, heh... You caught me trying to do things too quickly that last time...

Clearly when you went to transmission line school, they didn't teach you that

sqrt(0) = Zo

Now that we have that cleared up...

Oh... your not convinced, that sqrt(0) - Zo.... well the development starts with this little theorm from spectral trigonometry....

x = (Pi+3)/2
2x = Pi+3
2x(Pi-3) = (Pi+3)(Pi-3)
2Pix-6x = Pi^2-9
9-6x = Pi^2-2Pix
9-6x+x^2 = Pi^2-2Pix+x^2
(3-x)^2 = (Pi-x)^2
3-x = Pi-x
Pi = 3

Then we need the following lemma from number theory...

-1 = -1
-1/1 = -1/1
-1/1 = 1/-1
sqrt(-1/1) = sqrt(1/-1)
i/1 = 1/i
i = 1/i
i * i = 1
-1 = 1

And clearly....

Since exp(j*pi) = -1... and E = Mc*c...

we have

sqrt(0) = Zo

As they taught me in high school geometry...

QED...

or is that Quantum ElectroDynamics?

Obfuscate, plagairize, shade your eyes...

Enjoy!

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:97mrfts7r1ka8dkn9kqcrfhufbr7dipof9@4ax.com...
> On Sat, 12 May 2001 20:37:05 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >>The full derivation of characteristic Z:
> >>
> >>Zo = sqrt((R + j * 2 pi * f * L) / (G + j * 2 * pi * f * C))
> >>
> >>There are BOTH AC AND DC characteristics, and it is obvious that when
> >>f drops to 0 the Zo must change (it is a commonplace that you don't
> >>have to wait to go to 0 - and not even close).
> >>
> >>73's
> >>Richard Clark, KB7QHC
> >[snip]
> >
> >In your "correct" formula, since we are discussing the lossless case, we
can
> >set R = 0 and G = 0.
> >
> >Now you have:
> >
> >Zo = sqrt(j*2*pif*L/j*2*pi*f*C) = sqrt(L/C)
> >
> >Which is completely independent of frequency!
> >
>
> Hi Peter,
>
> I see you are still surprised.
>
> Independant of frequency when you have used frequency in the "correct"
> formula? Curiouser and curiouser as Alice would say.
>
> And, as you argument goes with f set to 0 and R set to 0 and G set to
> 0, it becomes blindingly clear that L and C have nothing to do with
> your fanatasy.
>
> In fact it appears that your Zo = sqrt(0).
>
> Is this what you were striving for?
>
> 73's
> Richard Clark, KB7QHC

3852. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:37:35 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <g5prft08svj7odv2b806ev7ssav8ks9e6c@4ax.com>
Source record: 163113

On Sun, 13 May 2001 00:19:03 GMT, 2w8ji@contesting.com (Tom W8JI)
wrote:

>On Sat, 12 May 2001 17:22:02 -0400, "Peter O. Brackett"
><ab4bc@ix.netcom.com> wrote:
>
>>The leading cause of differential mode to common mode coupling in ham
>>installation is not the electrons going around the end of the braid, rather
>>it is the fact that the outside of the braid is in the near field of the
>>radiating elements being fed by the coax and that "induction" of antenna
>>currents onto the outside of the shield braid, is the largest single factor
>>contributing to the low magnitude of the differential mode to common mode
>>coupling transfer function.
>
>Some people think a perfectly balanced dipole fed with an unbalanced
>line will not excite the line if the line leaves vertically from the
>center because there isn't a "return path".
>
>That is not true. It is a myth.
>
>By far the largest problems I've commonly seen are caused by the
>terminal voltages at the antenna being fed, with reference to the
>point in space where the feedline leaves the antenna.
>
>You have two terminals, both with a potential difference to anything
>hanging from either terminal. When you hang an unbalanced line there,
>the inner conductor is shielded from the "world". The outer conductor
>is exposed to the world. The return path is though many routes, all
>involving displacement currents to the antenna structure because the
>terminal the shield hangs on is not at zero potential compared to the
>slice of space the feedline leaves through.
>
>When we hang another conductor vertically a voltage source with finite
>common mode impedance, that conductor will have current even though it
>has no "path" back to the antenna.
>
>Make no mistake about it, a dipole needs either a balancing device or
>choking device on an unbalanced feedline or it will have common mode
>currents on the feeder. The exception is if you can establish a high
>common-mode impedance on the feedline shield at the antenna terminals
>through feedline length and grounding.
>
>Of course the feedline also has the exit the area of the antenna
>properly.

>
>73 Tom

Tom,

An exception, I feel, is although even with a high common-mode impedance there still is something being sent down the line to be reflected back up. Hence, some common-mode is there although is less.

Danny, K6MHE

3853. Re: SWR won;t work on antenna tuner; works in shop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:37:42 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3AFDE566.BADB2C54@dialpoint.net>
Source record: 163115

Are you sure the rig is putting out any power ? YOu may have it in the ssb position or could be in the cw position and the power (drive) turned all the way back. Not sure about that particular rig, but maybe it has a switch for the filiments and it is not turned on. Also the coax between the swr bridge and rig may be bad.

Ken Jacobs wrote:
>
> Hi all,
> I recently put up a G5RV dipole hooked to an MFJ-949C tuner. The rig is a
> Kenwood TS-520S.
>
> The rig seems to be working okay; I can pick up Europe and S. America on 20
> meters today. But I want to check my SWR before I transmit anything. I tuned
> the rig per the oper manual. I cannot make the SWR meter budge on either the
> dummy load or live coax. Maybe I am missing something simple? I took it to
> the local ham store and it worked fine there. The ALC meter on the rig seems
> to work okay.
>
> Appreciate any help.
>
> Ken

3854. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:38:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDE57B.DD93A7EA@IEEE.org>
Source record: 163101

"Peter O. Brackett" wrote:
> Start with DC and understand that thouroughly and then generalize... if you
> don't understand reflections at DC then I can almost guarantee you will
> never fully understand them at RF. You will only have a very clouded
> understanding.

I've been through it all before, Peter, at DC and low AC frequencies. It
all works but is near meaningless when applied to same-cycle waves. There
is simply no reason to use reflection models on same-cycle waves.

Where the heck is that one wavelength of DC coax that you promised me?
--
http://www.mindspring.com/~w6rca

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3855. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:40:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDE5F2.9FD4CC9@IEEE.org>
Source record: 163102

Richard Clark wrote:
>
> "Reg Edwards <g4fgq.regp@btinternet.com> wrote:
>
> >W6RCecilA wrote
> >> Does that 50 ohm coax ensure
> >> that the ratio of DC voltage to DC current is 50 ohms?
> >>==========
> >Yes it does, provided, as you have specified, it is lossless.

That's funny, my 50 ohm coax and my 450 ohm ladder-line show
nearly identical DC voltages and currents when connected to
the same load (at different times).
--
http://www.mindspring.com/~w6rca

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3856. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:41:38 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkoofopc1@slb1.atl.mindspring.net>
Source record: 163103

Bill:

Naw, I am not going to fall for that... so he's come down to only one wavelength... well I'm not going to help him put more granularity in his "tunerless" antenna tuning system.

A few threads ago Cecil tried to bankrupt me...

He asked me to supply a lossless transmission line for one of his experiments that had a full transit delay of one second.

Heh, heh... he said all he wanted was to store one seconds worth of Joules...

Hows the wx in Huntsville?

-Peter K1PO

"Bill Aycock" <baycock@hiwaay.net> wrote in message news:3AFDDE6D.CFBFD772@hiwaay.net...
> Peter- I think you missed a point- he asked for a one-wavelength
> piece-can you supply same?
>
> Missing that point makes sevral of your accusations beside the point.
>
> What?
>
> Bill
>
>
> "Peter O. Brackett" wrote:
> >
> > Cecil:
> >
> > I am really surprised!
> >
> > What makes you think that the characteristic impedance of coax and/or twin
> > lead is any different at DC than it is at AC?
> >
> > The characteristic impedance Zo is calculated from the distributed primary
> > parameters of the line, R (Ohms per unit length) L (Henries per unit
> > length), C (Farads per unit length) and G (Siemens per unit length).
> >
> > In the diffrerential RLCG model of a transmission line, R is in series,

L is
> > in series, C is in shunt and G is in shunt in each "infinitesimal, or
> > differential" section of the line.
> >
> > Now for a lossless line, R is zero, and G is zero, and Zo is determined
only
> > by the L/C ratio which is frequency invariant!
> >
> > Apart from the distrubuted resistance R, that is affected by the
frequency
> > dependent skin effect, it goes up roughly as sqrt(f), there is no
difference
> > in the primary parameters RLCG of transmission lines with frequency.
> >
> > RG-8 coax is Zo = 50 Ohms at DC and at 15 MHz, what? And 450 Ohm window
> > line is 450 Ohms Zo at DC and at 15 MHz, what's your problem?
> >
> > As Reg pointed out up the thread... sqrt(L/C) is frequency invariant!
> >
> > And for short enough lengths...say a few feet, the series resistance is
> > inconsequential. So...
> >
> > So go ahead and do the DC experiments with the same old lines that you
use
> > for HF!
> >
> > The fact that you asked that question of Reg, IMHO... tells me that you
need
> > a little more in depth study of lines and reflections.
> >
> > If I were you, the thing that would bother me most about doing the DC
> > reflection experiments that I suggested, would not be finding a line
with
> > the right Zo, that's a slam dunk!
> >
> > My biggest worry would be the little matter of overcoming the fact that
the
> > "sensors" in your Bird wattmeter are AC coupled!
> > And it won't indicate anhthing at DC! Dammed Bird company, the
nerve....
> > making wattmeters that have a low frequency cutoff.
> >
> > Cecil my friend, where are you going to find a DC coupled
reflectometer?
> >
> > It so happens that I have a couple of reflected voltmeters here in
Cary, NC
> > that are DC coupled. I could rent or lend you one if you insist on
doing DC
> > experiments rather than simple CD calculations!

> >
> > But then, heh, heh... I can tell... you just wouldn't trust Peter's DC
> > reflected voltage meter now would you, heh, heh!
> >
> > Gotcha thinkin yet?
> >
> > Best,
> >
> > -Peter K1PO
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > news:3AFD3FD4.E0AFEB72@IEEE.org...
> > > Reg Edwards wrote:
> > > > Then there's the case of the meter which responds to both the
> > > > current flowing through any value impedance and the voltage across
> > > > it. But the meter indicates SWR when there may not be a
> > > > transmission line around on which to develop any standing waves.
> > > >
> > > That's true, Reg. The meter is calibrated for a certain characteristic
> > > impedance (Z0). If the meter is located outside of that Z0
environment,
> > > the meter is being used in an environment for which it was not
intended.
> > > Witness an SWR reading equal to 1:1.5 when a 50 ohm SWR meter is used
> > > on a flat 75 ohm line where the real SWR is 1:1.
> > >
> > > The same holds true for all instruments. It reminds me of the time,
long
> > > ago, when I thought something was wrong with a tube in my transmitter.
> > > I measured the screen voltage with a 20k ohms/volt Simpson meter and
it
> > > "was" much too low.
> > >
> > > The moral is: Let the user beware.
> > >
> > > I've got a question for you, Reg. I'm trying to run some of Peter's DC
> > > experiments. Where can I find a DC 50 ohm coax and a DC 300 ohm
twinlead?
> > > --
> > > http://www.mindspring.com/~w6rca
> > >
> > >
> > > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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3857. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:43:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dkorg$98g$1@slb2.atl.mindspring.net>
Source record: 163104

Cecil:

Yep they are real...

Ever seen an "echo canceller" in action?

Those ghosts can be "removed" by an echo canceller, then where does the energy in the reflections go?

Thoughts, comments,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFDE31C.C4566DE1@IEEE.org...
> "Peter O. Brackett" wrote:
> > Now I ask you, what the heck does (V - IR) have to do with the power in TV
> > ghosts?
>
> Nothing, Peter, absolutely nothing at all. In fact, there is not a wattmeter
> in sight. Just an experiment, Peter, and you don't need any instruments to
> see the energy in the TV ghosts right there on your TV screen. Funny, all
> these years, I thought TV ghosting was real and not a fiction.
> --
> http://www.mindspring.com/~w6rca
>
>
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3858. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:44:34 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDE701.215DD9E8@IEEE.org>
Source record: 163105

"Peter O. Brackett" wrote:
> Next time I go to AZ, I'll bring my guns and have at those signs...

I've never done that, by the way, but I understand the urge to do so.
My story akin to that one is when I told the lady at the CA DMV that
I had transferred my ham call plates from my camper to my pickup.
She said, "You can't do that!" I replied, "Sure I can. I've already
done it. Want to see?" :-)
--
http://www.mindspring.com/~w6rca

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3859. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:49:01 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDE80D.A1727623@IEEE.org>
Source record: 163106

"Peter O. Brackett" wrote:
> Now you have:
>
> Zo = sqrt(j*2*pif*L/j*2*pi*f*C) = sqrt(L/C)
>
> Which is completely independent of frequency!
>
> Period, end of story!

OK Peter, you talked me into running the experiments. Please send me one wavelength of that DC lossless coax.

Since we know there is no such thing as lossless coax, seems at DC the Z0 would be sqrt(R/G). But not to worry, send me one DC wavelength of the lossy coax.
--
http://www.mindspring.com/~w6rca

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3860. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:50:20 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDE85C.9D8EAB2D@IEEE.org>
Source record: 163107

Richard Clark wrote:
> In fact it appears that your Zo = sqrt(0).

Isn't it sqrt(zero/zero)?
--
http://www.mindspring.com/~w6rca

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3861. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 01:59:56 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDEA9C.AC5F6FED@IEEE.org>
Source record: 163108

"Peter O. Brackett" wrote:
> What kind of power meter do I have, how does it operate, and where is it
> connected?

Actually, all you have is a voltmeter. You know the Z0 of the T-line,
the resistance of the load, and hopefully Ohm's law.

> And what is the internal resistance of the transmitter?

You are adjusting for a voltage output but if it makes you feel
better, make it 50 ohms.
--
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3862. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 02:05:15 UTC
From: noname@aol.com
Message-ID: <3afdd10d.30521348@news.compuserve.com>
Source record: 163109

Hi again Jerry,

>Once you get to 3-4X the normal output Z, the input seems to go
>down to 5-6 ohms and losses zoom up.

I have a follow up question on this. When you mention 3-4X the normal Z, do you mean the magnitude of the line input impedance or is this the value of R only? In other words if the input impedance was, say 8-j198, the R would be only 8, but the magnitude of the impedance would be about 198@-88deg, although it is almost totally reactive impedance.

Would this example be about = to Z or would it be 1/40 of Z (assuming a 4:1 balun fed by 50 ohms so Z=200)?

73,
Dave
AB9CA

On Fri, 11 May 2001 17:25:10 GMT, jerry@no.node.net (JR) wrote:

>I have found that the balun impedance will go real low and the
>ferrite will absorb all the rf. My first person experience of
>flaming baluns I found it out the hard way. I did some
>measurements afterwards as well with the burned up and
>new baluns from various sources.
>
>Once you get to 3-4X the normal output Z, the input seems to go
>down to 5-6 ohms and losses zoom up.
>
>fyi
>Jerry AA2T
>

3863. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 02:09:15 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDECCB.68753780@IEEE.org>
Source record: 163110

"Peter O. Brackett" wrote:
> I do not agree with you that the so-called "reflected power" as indicated on
> commonly available instruments indicates the true power in those
> reflections/ghosts, whatever you want to call them.

Since you don't accept the IEEE definition of power, why not reject the
definition of reflections and ghosts also? If you reject enough definitions,
absolutely nothing happens ever, by definition.

> It may seem like a small point, but it's not... It gets to the essence of
> the meaning of "reflected power" which I maintain is a concept and a measure
> that not more than one engineer or technician in a thousand really
> understands.

I understand you think if it was power it would get hot. That's just not
in line with the IEEE definition of power which is simply energy passing
a point. I have switched to joules/sec for your benefit and even switched
to a one second long transmission line to get rid of the "sec" term. Are
you still unsatisfied?
--
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3864. SWR won;t work on antenna tuner; works in shop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 02:10:49 UTC
From: Ken Jacobs <tekwrite@mindspring.com>
Message-ID: <J2mL6.253$vp6.26881@newsread2.prod.itd.earthlink.net>
Source record: 163111

Hi all,
I recently put up a G5RV dipole hooked to an MFJ-949C tuner. The rig is a Kenwood TS-520S.

The rig seems to be working okay; I can pick up Europe and S. America on 20 meters today. But I want to check my SWR before I transmit anything. I tuned the rig per the oper manual. I cannot make the SWR meter budge on either the dummy load or live coax. Maybe I am missing something simple? I took it to the local ham store and it worked fine there. The ALC meter on the rig seems to work okay.

Appreciate any help.

Ken

3865. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 02:15:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDEE4D.833EE7B9@IEEE.org>
Source record: 163112

"Peter O. Brackett" wrote:
> Those ghosts can be "removed" by an echo canceller, then where does the
> energy in the reflections go?

Somewhere - Physics 101
--
http://www.mindspring.com/~w6rca

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3866. Re: SWR won;t work on antenna tuner; works in shop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 02:21:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFDEFB5.4DE4539A@IEEE.org>
Source record: 163114

Ken Jacobs wrote:
>
> Hi all,
> I recently put up a G5RV dipole hooked to an MFJ-949C tuner. The rig is a
> Kenwood TS-520S.
>
> The rig seems to be working okay; I can pick up Europe and S. America on 20
> meters today. But I want to check my SWR before I transmit anything. I tuned
> the rig per the oper manual. I cannot make the SWR meter budge on either the
> dummy load or live coax.

Does the dummy load get hot?
--
http://www.mindspring.com/~w6rca

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3867. Re: SWR won;t work on antenna tuner; works in shop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 04:27:10 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AFE0D1E.BA4@wt.net>
Source record: 163116

Ken Jacobs wrote:
>
> Hi all,
> I recently put up a G5RV dipole hooked to an MFJ-949C tuner. The rig is a
> Kenwood TS-520S.
>
> The rig seems to be working okay; I can pick up Europe and S. America on 20
> meters today. But I want to check my SWR before I transmit anything. I tuned
> the rig per the oper manual. I cannot make the SWR meter budge on either the
> dummy load or live coax. Maybe I am missing something simple? I took it to
> the local ham store and it worked fine there. The ALC meter on the rig seems
> to work okay.
>
> Appreciate any help.
>
> Ken

This is kinda confusing...You say you tuned to manual...Were you showing the normal plate currents? 60ma keyed with no signal and appx 200ma +- with a full cw carrier? If you were, and no output on the wattmeters, pretty strange..Would normally be a bad jumper connection, but that should throw your load all out of whack and make tuning strange. If you don't show current on tune, make sure the heater switch is on, and make sure the "SG" slide switch in the back of the rig is on. You might have bumped the SG switch or something. That will kill your screen to the finals. The heater is for filamant voltage. BTW, to properly tune a 520, you need to finish in CW mode at full power. If you tune up in "tune" mode only, you will be underloaded. This can cause splatter and distortion. The screen is reduced to about 1/2 or so in tune mode. MK
--
http://web.wt.net/~nm5k

3868. Re: HELP! End Fed Zepp.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 04:31:23 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AFE0E1B.237E@wt.net>
Source record: 163118

W6RCecilA wrote:
>
> Jack Malone wrote:
> >
> > Presently using end fed zepp with ladder line for feed to long wire. One
> > side of ladder line connected to long wire, other side not connected at the
> > antenna feed point.
> >
> > Want to get rid of ladder line due to RF in shack.
>
> The problem is not the ladder-line. The problem is the design that leaves
> one side of the ladder-line floating so the current cannot go anywhere and
> your feedline becomes just another part of your radiating antenna.

Amen. Poor old ladder line is getting a bum rap. Best way to reduce the
rf is center feed the wire. MK
--
http://web.wt.net/~nm5k

3869. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 04:33:23 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3AFE0E93.B19FA959@mwci.net>
Source record: 163117

Ian White, G3SEK wrote:

> I remain deeply uneasy about the way you use "it says". The 'Antenna
> Book' says only the words that are printed on its own pages, and in my
> 18th edition I do not see the words you choose to use.

I have the 19th edition. I don't know if there is any difference with 18th edition.

> However, with the help of the diagram and your extended explanation, I
> now see your objections, and have to agree with you on many points...
> but not all.

OK.

> >Look at I3 where it enters the ground connection. For this current there
> >*must* be a return path back to the dipole.
>
> Must there? See below.

I understand your comments and my replies are as follows:

1) The text and Fig are making the erroneous conclusion that I3 is due to the "spillover" effect at the top of the braid (that crazy U-turn), despite the claim that the "hypothetical" (sic) dipole is "perfectly symmetrical" (sic). At this point the coax asymmetry is specifically ignored. In other words the over-the-edge effect is responsible for I3 and not any kind of asymmetry. The text says specifically that the braid impedance from the U-turn to ground is *the* common mode impedance and that I3, due specifically to spillover, is *the* common mode current. This summarizes where all of the errors are.

2) A hard and fast rule of E.M. is that the divergence of current is zero. That applies to common mode current I3. Whatever its measured value is, it must return back to the dipole, by any means necessary, and regardless of any common mode radiation or the cause of I3. The value of I3 is completely determined by a) asymmetry and b) the total loop impedance, including any common mode radiation resistance. And whatever I3 is, that same value *must* also be returning to the dipole. The return path is via near-field displacement current in the free space between ground and dipole (or better yet, via any kind of complicated E.M. coupling between dipole and ground surface).

3) What is the common mode voltage w.r.t. ground at the center of the dipole? It is I3 times the common mode impedance of the coax braid w.r.t. ground at that point. We get I3 by multiplying the differential dipole drive current by an "asymmetry factor". That is, a certain fraction of the normal differential drive current is "converted" to common mode by the various asymmetries, whatever they are. Another way to say it: I3 is the final result of asymmetry, regardless of

its causes, and the loop impedance which is the vector sum of all of its contributors.

4) What really pisses me off is that U-turn. It does nothing useful and leads to wrong conclusions. What we need to do is show the dipole being driven in the normal differential manner (that's one loop, and show the E.M. coupling between the two halves that completes that loop) and the I3 common mode loop, split between the two halves of the dipole to ground and combined on the coax braid (that is the second loop, and indicate in a general way phase differences around the loop). If the symmetry is almost perfect the loop impedance is very high and I3, therefore CM radiation from the coax braid, is very small (we all resonate with that idea, I'm sure).

We now better understand what is going on with that antenna.

(It's late here also).

Bill W0IYH

3870. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 04:42:10 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AFE10A2.5734@wt.net>
Source record: 163019

Harold wrote:
>
> Keith,
>
> Thanks for the comments.
>
> I did some tests with reduced power and found that the TVI went away at
> about 40 watts. That is about what I expected, at some point the
> interference would be negligible
>
> In my first message I mentioned that 20 and 10 meters were clean, even with
> the amplifier.
>
> I had never run the amplifier on 15 meters until today because I knew I had
> a problem. It loaded up fine into the dummy load. After switching to the
> antenna, bang, instantaneous with key down on the mic (ssb) the exciter
> tripped out.
>
> This makes me think that the problem is in the feedline or antenna. I hope
> it isn't just another problem.
>
> -Harold
> wd5kca

Sounds that way. Your feedline must be real hot to cause rig problems. I think a big portion of the problem is using the multiband antenna and trying to have good decoupling on all bands. It's not easy on an antenna like that fed with coax. You might be better off with a center fed wire and ladder line. That way if you had a feeder length problem on a certain band, it's easy to add another section to cure the problem. Does that antenna have a good balun at the feed? MK
--
http://web.wt.net/~nm5k

3871. Re: help fo butternut

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 04:52:31 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AFE130F.5CF3@wt.net>
Source record: 163020

iz1dxg wrote:
>
> i just bought a butternut hfv6 x but i'm disappointed because it is ground
> monted and receive quite well, but on trasmission is not very good at all.
> i explain better:
> the antenna is ground mounted it has only 6 radials of variuos lenght (the
> longer is 30 feet)and it is mounted in a corner of my little garden.
> Can somebody tell me why it doesn't work on trasmission ??

> Do i have to increase the number of radials???

Apparently so if it seems to be inefficient. What bands? Are you using
the antenna for paths not suitable for a vertical? IE: 80m regional
work? You seem to have one radial per band down to 40m. A few more would
help quite a bit. 1/4 wave radials for the lowest band would be nice,
but for a given amount of wire, many short radials are better than a few
long ones. The most earth loss is at the base of the antenna. MK

--
http://web.wt.net/~nm5k

3872. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 04:57:58 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <qvoL6.10115$la.142999@news1.sttls1.wa.home.com>
Source record: 163021

Our thinking might be helped by considering where electrical neutral is located in relation to the voltages driving the two antenna sides.

The electrical neutral voltage center point would be located at the center of a resistor connected between shield and coax center. Better, use two equal resistors in series and reference voltages to the common connection.

You can easily see that the outside of the shield will have a large driving voltage applied in respect to neutral if it is truely a separate circuit as a result of skin effect.

73, Roger, W7WKB

3873. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 05:23:14 UTC
From: atkes@imap1.asu.edu
Message-ID: <9dl5o2$4s1$1@news.asu.edu>
Source record: 163022

Peter O. Brackett (ab4bc@ix.netcom.com) wrote:
: Kevin:

: I agree that there is an "end effect". And in practice it is quite
: significant, especially for hams and their antennas.

: But the "end effect" is not simple as electrons flowing up and over the
: thickness of the end of the braid.

: There are lots of factors, that in practice are very difficult to specify
: and quantify. The problem with measuring the "end run path" is that it is
: difficult to specify the conditions, geometry, and fringe effects explicitly
: enough to get close agreement between analysis and measurement... it is
: affected by many things inclucing very detailed physical symmetry, down to
: the pF level, in the immediate area of the ends... "end effects".

: End effects are difficult to quantify, especially analytically, in all but
: the simplest cases. Even numerical methods of integrating the differential
: equations fall into "ill-conditioned" situations, and fail to "converge" to
: the a reasonable answer.

: Try modeling those end effects of coax with say EZENEC... and see what
: happens.

: The leading cause of differential mode to common mode coupling in ham
: installation is not the electrons going around the end of the braid, rather
: it is the fact that the outside of the braid is in the near field of the
: radiating elements being fed by the coax and that "induction" of antenna
: currents onto the outside of the shield braid, is the largest single factor
: contributing to the low magnitude of the differential mode to common mode
: coupling transfer function.

: Now in the situation where one is not feeding an antenna, but is just
: seeking "silent" signal transmission from one enclosed site to another,
: other effects are important. With the feeding of antennas, where the
: transmission line ends up in the near field of the antenna, the differential
: mode to common mode coupling is "helped" by the "near field" induction from
: the antenna.

: This is different from the case of feeding signals from place to place with
: very elaborate treatments of the ends and connectors to preserve e-m
: "security" a la Tempest or NACSIM, then one is interested in the shielding
: effectiveness of the cable and not "end run" effects.

: -Peter K1PO

Peter,

I was trying to explain how charge can flow from the inside to the
outside of the shield. If you are claiming this cannot happen, you are
wrong. If you are simply claiming that detailed calculations of messy
geometries are hard, I agree. Suggesting that I try to use a thin wire
moment method code to model this just seems silly.

All of what I wrote has been well understood for at least 50 to 100
years. It doesn't really require a computer solution.

73 Kevin w9cf

: <atkes@imap1.asu.edu> wrote in message news:9djqng$14o$1@news.asu.edu...
: > Peter O. Brackett (ab4bc@ix.netcom.com) wrote:
: > : Kevin:
: >
: > : Heh, heh... it's all a matter of degree.
: >
: > snip
: >
: > : You are talking about "first order" effects. Which of course is all
: that is
: > : of interest to most amateur radio enthusiasts. However, professional
: have
: > : more demanding requirements.
: >
: > : You say that there is a "tiny" component into the conductor that is
: > : negligible, and for many purposes I would agree that it is negligible.
: >
: > : But for some purposes it is not.
: >
: > : In fact it is definitely not neglible for the purpose of quantitatively
: > : rating the shielding effectiveness of high quality cables.
: >
: > : Say I wanted to compare the shielding effectiveness of two different
: > : manufacturers cables...one rated it at 95dB and the other rated it at
: 115dB.
: > : Now would that "tiny" current that is not perpendicular to the normal be
: > : important.
: >
: > : How "far down" is "tiny"?
: >
: > snip
: >
: > No it would be completely unimportant. It is down by a factor of about
: > 10^4 (i.e. sqrt(epsilon_0 omega/sigma)) at 14 MHz in copper compared to
: > component of the current along the wire. So if you leave it out and get
: > 95dB, when you include it you get you get something like 94.9996 dB.
: >
: > I would prefer to return to talking about measurable things like the
: > current looping around the end of the coax.
: >
: > 73 Kevin w9cf

3874. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 05:35:49 UTC
From: atkes@imap1.asu.edu
Message-ID: <9dl6fl$51r$1@news.asu.edu>
Source record: 163023

Roger Sparks (sparksrc@home.com) wrote:
: Kevin, w9cf wrote

: start quote
: ----------
: Just to reinforce this a little, insulators have a dielectric constant
: which has a small imaginary part. That imaginary part corresponds to
: the absorption of electromagnetic energy. So for example my American
: Institute of Physics handbook says polyethylene has a dielectric
: constant at hf frequencies of roughly K = 2.355 (1 + i 120 10^-6) so
: the imaginary part (and therefore the absorption) is quite small. On the
: other hand, copper has a dielectric constant at 14 MHz of about
: K = i 7.5 10^10. Notice that this is extremely large and purely imaginary
: (i.e. enormous absorption) in fact this absorptive imaginary part is so
: large that it is quite difficult to measure a real part.

: ----------
: end quote

: If I understand your quote correctly, the dielectric constant is so large
: across a copper surface, that voltage between surfaces could pass a large
: amount of capacitive current in the same fashion that a dielectric will pass
: current, but with far more coulombs per volt. Could then, a small area
: surrounding the center of the disk in my proposed experiment have so much
: capacity that nearly all the current will pass to the other side, literally
: bypassing the conductive path around the edges?

The point I was trying to make is that a conductor is the limit of
a lossy dielectric when the loss is large. The skin effect comes about
because the energy that enters the metal is absorbed. If the real part of
the dielectric constant were large, and the imaginary part small, you
would have what is generally thought of as a large dielectric constant.
In this case there is not large absorption and there is no skin effect.
The waves that enter will continue to propagate into the dielectric.

: That was poorly stated. Better to say that my 'Double Shielded Coax
: Experiment' did not show skin effect because the metal just acted like
: another dielectric, one with a very high dielectric constant. Actual
: current did not flow thru the metal walls directly any more than actual
: current flowed thru the walls of the insulating dielectric. Never-the-less,
: a current was set up on the surface of the center sleeve which flowed from
: surface to surface only by exiting at the ends of the sleeve. The energy in
: the surface current was only a very small fraction of the energy contained
: in the exciting transverse wave.

If you calculate the fields in a coaxial cable
the only input you need are Maxwell's equations
and the Ohm's law relationship that J = sigma E in the conductor. You
do not need to put in anything about the capacitance, inductance, or
resistance. Those are results of the calculation. You find that the
radial electric field is discontinuous as you go from air to copper.
It drops essentially to zero inside the conductor.
This corresponds to a surface charge density. Microscopic quantum mechanical
calculations show that this is really about a half nanometer thick layer.
If you calculate the capacitance per unit length
that you measure, it is dominated by
this field, so you get almost no change in the capacitance with a change
in skin depth. The magnetic field is continuous and drops off in the
conductor smoothly with skin depth. If you calculate the inductance per
unit length you would measure, it is dominated by this field and
you find there is a change in the inductance with skin depth. The
resistive losses can be calculated from the current density squared
and the conductivity, and give the usual form of the skin depth resistance.

My point here is that you don't need any of the concepts of capacitance,
inductance, or reactance to correctly calculate the field solutions from
Maxwell's equations. They don't come in to Maxwell's equations. They are
results of the field calculation, and are convenient ways to characterize
the system. However, they are completely unnecessary in order to calculate
what is going on.

: Now that idea I can believe. It accomadates skin effect and keeps the
: voltage difference across the metalic conductor at a very small value.

: Does this make sense to you and others? Did I understand your quote
: correctly?

: You are right about alternate explainations of any experiment. A strict
: application of skin effect would mean that 12 inches would need to be
: removed from the length of each side of the dipole experiment, sides that
: would be only about 8 feet long without loading. I think that the same disk
: placed on the end of the antenna would only shorten the antenna by about 6
: to 8 inches, and because capacity is most effective to shorten the antenna
: when placed at the end of the antenna, the actual capacity loading in the
: suggested position will be small.

I was simply trying to warn you that when people have a religious
conviction about how things work, they will try to complicate the
solution in as many ways as possible to keep from facing reality. I
think it is admirable of you to try to come up with a measurement that
is convincing. However, I believe that some people are unconvincible no
matter what the evidence.

73 Kevin w9cf

3875. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 06:12:33 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <na8sftckler74hq86kd21410rsk9bdr4r1@4ax.com>
Source record: 163024

On Sat, 12 May 2001 21:15:13 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>Thanks for your participation and for keeping up with the "banter" on the
>way to the Guiness Book of Records record for the longest USENET thread
>topic.
>
Longest? You haven't been paying attention.

>Hey, I wonder why, neither of Steve or Walt has "responded" to any of my DC
>reflections postings? Surely they could help us to win the Guiness record.
>
If they were after a Guiness, I suppose so.

>Clearly you, Cecil and others are very interested in this subject, and have
>opinions,

Obvious

>and wish to be heard,

wishing is unnecessary in a newsgroup,

>and ask useful and insightful questions, and

don't forget the aggravating nit-picking ones too,

>keep on posting to keep the discussion going, but... all we hear from the
>guys slinging around equations is silence.

there is virtue in the appreciation of an empty space - aummm
>
>I'd like to hear an "expert" opinion or two on DC reflections and
>mismatches.
>
>-Peter K1PO

No doubt. But, if I were you, I would settle for a cold Guiness. Or
in the vernacular "Lighten Up Dude!" After all, the ultimate question
of Life, the Universe and Everything was discovered by a guy that
banged rocks together.

73's
Richard Clark, KB7QHC

73's
Richard Clark, KB7QHC

3876. Experience magnetic loop antenna (MFJ)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 06:37:19 UTC
From: Pluijgers <pluijgers@zeelandnet.nl>
Message-ID: <3afe2b51$0$50720@news2.zeelandnet.nl>
Source record: 163025
Cross-posted to: alt.ham-radio.hf,rec.radio.amateur.antenna,rec.radio.amateur.dx

Hello OM ,

Can anyone tell me how the magnetic loop of MFJ (the MFJ 1786) works on
the HF bands ? How is the contruction ?
Is there possebility to build a magnetic loop (for working between 20 and 10
mtrs) for yourself ?

73 , Hans , PA3HGT

3877. "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 07:19:57 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3afe359a.11938644@news.aepnet.com>
Source record: 163026

My ISP is having so many troubles that they are giving me three months of free "service." Consequently, I haven't been able to read the group for a few days.

I have tired to follow along via dejanews but they seem to lag a bit. Maybe I can post form there, but I haven't figured out how yet. But in response to:

Begin quote.

"Wes:

I love that dry heat.

Back when I worked for Motorola, I spent a month in Phoenix in August, at MICARL... I grew to love it there, especially in August.

One of my favorite things to do after work was to go up to Pinacle Peak, in the foothills behind Scottsdale, overlooking the desert floor of the Valley of the Sun, and eat one of those famous cowboy steak dinners grilled over a mesquite fire, and watch the sun go down.

However there is one thing I am curious about my travels in AZ... as I drove along the the "open range" on the way up to Pinacle Peak, I would come upon several roadside signs asserting,

"No shooting".

Invariably those signs were full of bullet holes!

What?

Is there no respect for "law" in AZ?"

End quote.

Let me say that even as a Goldwater Republican and law-abiding, upstanding citizen, I am getting more than a little pissed off at "law enforcement."

For instance. You may have seen on your local news the aftermath of the robbing of the NCAA national basketball championship from the U of A by Duke and the referees. Following the theft, a few tipsy revelers took to the street outside a group of college hangout bars for a bit of fun, and overturned a car and set a small blaze.

The response of Tucson's "finest" was to stand aside until things were going full-bore and then, suited up with shields, clubs, face masks and jack boots, they marched down the street arm-in-arm, rapping on their shields with their clubs, like a pack of childish storm troopers. (And if you think that only the bad guys wear masks, you're correct)

After supposedly telling the crowd to disperse, which no one heard because of the din of the police helicopter overhead or the fact that most people were still inside the bars having one more, the cops proceeded to start firing "less-than-lethal" ordinance. Supposedly, these cops had been well trained to fire only at the feet and legs of the crowd, but lots of folks were hit well above the knees. Like the one innocent student who was leaving the scene and heard an explosion (grenade), turned around to see what happened, and had his eye shot out by a "harmless" rubber bullet. Or the off duty fireman that had a piece of his ear shot off. (An ongoing investigation by an "impartial" panel, that is predominately made up of cops, and had hoped to meet in secret, but failed, has determined that over 400 rounds were fired)

Today's newspaper revealed that the cops had snipers on rooftops with lethal weapons ready to shoot a bunch of drunken college kids. The story also revealed that these "well-trained" cops had to borrow their less than lethal weapons from other police agencies, so one must question how they were "well-trained" with weapons that they don't own.

But maybe, just maybe, they got their excellent training from the FBI. That would be the organization that screwed up the Los Alamos investigation, had a Russian spy in their midst for years, "lost" thousands of documents pertaining to the Oklahoma City bombing and whose director is stepping down two years early. (I won't mention Waco or Ruby Ridge because you might think that I'm a right-wing wacko nut, which I am not. They all live in Phoenix and work at Motorola))

Or maybe they get their training by watching Fox's "Cops." You know the show, the one where "taking down" some poor slob who wants a policewoman, posing as a 'working girl', to spank him, is making us all safer. (I'm not making this up) The fact that I think this is assinine also proves that I'm *not* a right-wing wacko nut; they think that the guy should get busted.

Respect for the law? Yeah we're probably giving it way more than it deserves.

Wes Stewart N7WS

ps. It rained today while I was outside grilling my own steak. Nothing like the desert after a rain.

3878. Re: SWR won;t work on antenna tuner; works in shop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 09:13:51 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dlj8dibu1@plutonium.btinternet.com>
Source record: 163027

Ken Jacobs <tekwrite@mindspring.com> wrote in message
news:J2mL6.253$vp6.26881@newsread2.prod.itd.earthlink.net...
> Hi all,
> I recently put up a G5RV dipole hooked to an MFJ-949C tuner. The
rig is a
> Kenwood TS-520S.
>
> The rig seems to be working okay; I can pick up Europe and S.
America on 20
> meters today. But I want to check my SWR before I transmit
anything. I tuned
> the rig per the oper manual. I cannot make the SWR meter budge on
either the
> dummy load or live coax. Maybe I am missing something simple? I
took it to
> the local ham store and it worked fine there. The ALC meter on
the rig seems
> to work okay.
>
==========
I once had a TS-520. My memory is not too good. Is there a switch
at the rear which disables the PA by doing something like removing
the screen grid volts ?

Only used when neutralising plate-to-grid capacitance.

Reg

3879. KODEN KS-510

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 09:45:15 UTC
From: Jean-Pierre <F1HFW@wanadoo.fr>
Message-ID: <9dll40gor3@wanadoo.fr>
Source record: 163028

je cherche de la documentation sur un recepteur
gonio KODEN KS-510, c'est un cadeau mais sans la doc, je suis curieux de savoir s'il y a des utilisateurs de ce vieux mat�riel marine.

3880. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 09:56:42 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <3gmsftctvkmh0ks68mc60vg75vldkpo7bk@4ax.com>
Source record: 163029

My "find" function must be broken. Can't find the word "antenna" anywhere in this post...??

73, Bill W7TI

3881. Re: SWR won;t work on antenna tuner; works in shop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 11:01:40 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AFE6994.D3E18588@oio.net>
Source record: 163030

Ken,
If the radio is tuned correctly, and you get the same
SWR reading on the dummy load ~and~ the tuner/G5RV, then
the quick and dirty answer is that the antenna is tuned
correctly and has a 1.0:1 SWR. Your watt meter chould
show full power output. Does it? If so, nothing's wrong.
Sounds like it's tuned correctly....?
'Doc

3882. what to attach co-ax braid to in shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 11:05:39 UTC
From: Dan Jacobson <jidanni@kimo.FiXcomTHiS.tw>
Message-ID: <m2d79dbjb0.fsf@dan.jacobson.tw>
Source record: 163031

Assuming everything on the antenna tower is attached correctly,
regarding the transmitter end of the co-ax cable, there is just one
basic question that I can't seem to find a web page for:

I have unscrewed the original antenna to my 49 mhz cordless phone, and
attached instead the co-ax's center wire, but what to attach the braid
sheath to? The phone itself seems to not provide a 'ground' contact.
--
http://www.geocities.com/jidanni Tel886-4-25854780 e-mail:restore .com.

3883. Re: antenna analyzer comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 11:09:12 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AFE6B58.18A64AE1@oio.net>
Source record: 163032

Tad,
I've used an MFJ 259 for a few years. It does what
it's supposed to do, but that also means that you have
to keep thinking about what your doing. You have to
understand what the thing is telling you.
I haven't used a VA-1, but have heard lots of nice
things about it. You still have to understand what the
information presented to you means. Sometimes that's
the 'problem' area...
'Doc

3884. Re: Experience magnetic loop antenna (MFJ)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 11:40:27 UTC
From: helmsman <>
Message-ID: <o3ssftcck38j0qbj8mb5f9plms0b22dd6l@4ax.com>
Source record: 163033
Cross-posted to: alt.ham-radio.hf,rec.radio.amateur.antenna,rec.radio.amateur.dx

On Sun, 13 May 2001 08:37:19 +0200, "Pluijgers"
<pluijgers@zeelandnet.nl> wrote:
>Hello OM ,
>Can anyone tell me how the magnetic loop of MFJ (the MFJ 1786) works on
>the HF bands ? How is the contruction ?
>Is there possebility to build a magnetic loop (for working between 20 and 10
>mtrs) for yourself ?
>73 , Hans , PA3HGT
>
Had one and didn't like it "personal preference".
Ended up using a SPIDER with GREAT results from a 2nd floor apartment.
2 of these hooked together makes a solid dipole and if you
put a pipe in the middle it's directional. 8 years later I still use
them for outdoor stuff and as a mobile a single is great.
Check it out you have nothing to loose and it's just a click away :')
http://www.spiderantenna.com/index.html

.
Help cure Cancer via Distributed Computing.
It costs you nothing.
http://www.ud.com/home.htm
==========
http://www.mindspring.com/~helmsman

3885. Re: 80/40 meter dipole help/swallow tail ant tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 12:40:59 UTC
From: earlve3ab@igs.net
Message-ID: <3afe7f8f.387527@news.igs.net>
Source record: 163034

Ive seen this design in various ham mags/pubs over the last several
years..but i never used it myself..NOTE: I just bought a johnson
matchbox and im going the open wire route myself!>> BUT there was
an interesting article in the ARRL ANTENNA COMPENDUM vol 2..
called the "Swallow Tail Ant Tuner"..if i were limited for space..this
is the route i would go. One end of the shortened antenna is
mechanically tuned by a pull line from the shack to tune the antenna
on 80/75 mtrs. A neat little scheme. As for efficiency ..i dont
know..but..i lhave heard some real good signals from 80/40 mtr
trapped dipoles and i think the scheme should work pretty good.
>>>>>>>>>>.73 Earl VE3AB

On 12 May 2001 12:31:43 GMT, kg4ggx@aol.com (KG4GGX) wrote:

>Hi to all
> I'm considering home brewing an 80/40 meter dipole. I have info describing one
>using loading coils on the end of a 40m dipole with an additional 4 feet of
>wire after the coil. This is appealing because of having only one wire to work
>both bands. How much will this coil loaded dipole be down in comparison to a
>full length 80 meter dipole? If it's a significant amount, maybe I should just
>make it as a parrallel dipole. I have a parrallel dipole up now that is for
>80/40/20/10m. It was a little work to tune, but works great. I'm considering
>the coil loaded one above to make the antenna package a little more compact and
>neater in appearance. But I would like some opinions as to how much the coil
>loaded 80m performance would be down.
>
>Thanks for all replys!
>73 Rob

3886. Re: Experience magnetic loop antenna (MFJ)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 13:56:41 UTC
From: Gary Danaher <gdanaher@home.com>
Message-ID: <3AFE927E.37AA722@home.com>
Source record: 163035
Cross-posted to: alt.ham-radio.hf,rec.radio.amateur.antenna,rec.radio.amateur.dx

a) It's not a magnet.
b) It uses capacitive tuning which for the most part is pretty useless. A loop is better than nothing at all, but barely better than a dummy load.

helmsman wrote:

> On Sun, 13 May 2001 08:37:19 +0200, "Pluijgers"
> <pluijgers@zeelandnet.nl> wrote:
> >Hello OM ,
> >Can anyone tell me how the magnetic loop of MFJ (the MFJ 1786) works on
> >the HF bands ? How is the contruction ?
> >Is there possebility to build a magnetic loop (for working between 20 and 10
> >mtrs) for yourself ?
> >73 , Hans , PA3HGT
> >
> Had one and didn't like it "personal preference".
> Ended up using a SPIDER with GREAT results from a 2nd floor apartment.
> 2 of these hooked together makes a solid dipole and if you
> put a pipe in the middle it's directional. 8 years later I still use
> them for outdoor stuff and as a mobile a single is great.
> Check it out you have nothing to loose and it's just a click away :')
> http://www.spiderantenna.com/index.html
>
> .
> Help cure Cancer via Distributed Computing.
> It costs you nothing.
> http://www.ud.com/home.htm
> ==========
> http://www.mindspring.com/~helmsman

3887. My First 2M Antenna..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 14:14:53 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AFE96DD.2057E470@spam.me.not>
Source record: 163036

Someone mentioned a setup similar to this to me about 2 days ago, so I had to try it.

Details at http :// www . csotbs . org / kc8rkq / coathanger.html

Remove the spaces to get there... Sorry about that annoyance, but the webserver that's on is in my apartment, and all I have is an ISDN line. It's up 24/7, but if I put the URL up without spacing it out or otherwise mangling it, inktomi and other search engines eat up almost all of my bandwidth for about an hour every day...

Let me know what you think..

-SSB

3888. WTB: Hygain 105, 155 Manuals

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 14:21:28 UTC
From: "Bob Brehm (AK6R)" <callbob@home.com>
Message-ID: <ILwL6.10542$vf6.1106895@news1.rdc1.sdca.home.com>
Source record: 163037

Anybody can copy manuals for Hygain 105bas and 155bas antennas. I think they are only 8 pages each. Would appreciate a fax or will pay postage and expenses for copy. Thanks.

--
Bob Brehm, AK6R
Carlsbad, CA 92009
ARRL Life Member
www.qsl.net/ak6r
Life is a Contest - Are You Ready?

3889. Re: Experience magnetic loop antenna (MFJ)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 14:23:25 UTC
From: 2w8ji@contesting.com
Message-ID: <3afe96df.851370339@news.accessunited.com>
Source record: 163038
Cross-posted to: alt.ham-radio.hf,rec.radio.amateur.antenna,rec.radio.amateur.dx

On Sun, 13 May 2001 13:56:41 GMT, Gary Danaher <gdanaher@home.com>
wrote:

>a) It's not a magnet.

That's true, it's a small antenna that radiates an electromagnetic
field just like any other antenna.

>b) It uses capacitive tuning which for the most part is pretty useless. A loop is
>better than nothing at all, but barely better than a dummy load.

That isn't true.

The capacitive tuning is the big advantage of using a small loop over
other small antennas....as a matter of fact it is the only advantage.

You have one single component that is very low loss that allows the
antenna to be tuned over a very wide frequency range.

The efficiency of the MFJ loop is from about 20% or so on the lowest
frequency to nearly 90% on the highest band, so loss is from about 6
dB on the lowest band to unnoticable on the highest frequency.

That's hardly a dummy load. It actually is better than some full sized
antennas.

73 Tom

3890. Re: what to attach co-ax braid to in shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 14:24:25 UTC
From: 2w8ji@contesting.com
Message-ID: <3afe989d.851816962@news.accessunited.com>
Source record: 163039

On 13 May 2001 19:05:39 +0800, Dan Jacobson
<jidanni@kimo.FiXcomTHiS.tw> wrote:

>Assuming everything on the antenna tower is attached correctly,
>regarding the transmitter end of the co-ax cable, there is just one
>basic question that I can't seem to find a web page for:
>
>I have unscrewed the original antenna to my 49 mhz cordless phone, and
>attached instead the co-ax's center wire, but what to attach the braid
>sheath to? The phone itself seems to not provide a 'ground' contact.

They do that on purpose, because it is not legal to connect an outside
antenna to the phone.

3891. Re: First Pack of QSL Cards

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 15:46:52 UTC
From: ik7565@erols.com
Message-ID: <3AFEAC6C.1C346B68@erols.com>
Source record: 163040

Not a problem - I'm sure the buro is a pretty thankless job and they
deserve public praise.

73 de N8IK

Les Kramer wrote:
>
> Oops - I miss clicked on this message to my QSL Buro. Please ignore.
>
> Les
> "Les Kramer" <wa3sgz@mindspring.com> wrote in message
> news:9dghnj$pt2$1@slb6.atl.mindspring.net...
> > Koos,
> >
> > I received my first pack of QSL's from you a week or two ago. I just
> wanted
> > to thank you for the great job that you are doing. The QSL bureau system
> > works well because of dedicated volunteers like yourself. I really
> > appreciate your help. Thanks.
> >
> > Regards,
> >
> > Les WA3SGZ
> >
> >

3892. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 15:57:46 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dmat0$4t3$1@slb3.atl.mindspring.net>
Source record: 163041

Wes:

Heh, heh...

Now we've got "topic control policing" on RRAA...

Hey maybe wer'e within our constitutional rights here... didn't some of those AZ cops have 2 way radios with rubber duckie antennas?

Did you grill the steak over mesquite? How long did the rain last?

Wes... I finally dug out your long winded post on the reflected power set up with circulators, directional couplers, and such...

And I must admit that, after struggling for about an hour with several blank sheets and pencil, hooo... I had started with pen, I couldn't even reconstruct a schematic or "hook up" diagram from your elaborate and rambling posting.

Clearly USENET NG postings are not a suitable media for commumicating complex circuit and network hookups.

And so... now I must ask you to either draw out that diagram and email or hard mail it to me, or perhaps construct a simpler example for my critique.

Say, why don't you contribute something no more complicated than my simple 3 component (1 voltage source, 2 resistor) series DC circuit to illustrate the points you wish to make about "reflected power".

OTOH.... perhaps you would like to critique or comment on my simple examples...

Here it is again....

A 10 Volt pure DC voltage source, with internal resistance of 50 Ohms, is connected to a load resistance of 25 Ohms through a few feet of lossless 50 Ohm transmission line.

At the connection point with the load, a.k.a impedance discontinuity", in this simple 3 component DC series network, answer the following, Ive set them up in FCC VE multiple choice style for you:

1.) What is the current I through the load? (a) 10 Amps, (b) 1-1/3 Amps, (c) sqrt(2) Amps, (d) 133-1/3 mA.
2.) What is the voltage V across the load? (a) 110 VAC, (b) 1/3 Volt, (c) 10/3 Volt, (d) None of the above.
3.) Whose law would you use to compute I and V? (a) Kirchoff, (b) Judge Roy Bean's, (c) Ohms's, (d) Tellegen's Theorem.
3.) What is the power dissipated in the load? (a) 4/9 Watt, (b) 100 Watts,

(c) 0.444 Joules, (d) ...
4.) What is the "reflected voltage"? And ... what is the equation or formula used to compute it?
4.) What is the "front end reflection coefficient" i.e. the reflection coefficient looking towards the load?
5.) What is the reflected voltage looking towards the source?
6.) What is the VSWR?
7.) What is the "Reflected Power"?
8.) Oh, heck... this circuit is just too simple, what's the wx like in Tucson?

Wes... what think?

Are DC refelections real?

Heh, heh... Cec wanted to set up an experiment to get those answers rather than just "compute" them...

He wanted me to send him a "hank" of lossless line with a Zo = 50 Ohms at DC!!!

I've got a 10 foot hank of "special DC rated" RG-8 here in Cary that I could send you if you want to set up the experiment to make measurements, but it's awfully expensive... You know once RG-8 has been exposed to AC it can never be used for DC... and so you must use "virgin" RG-8 to do the experiment.

Have fun...

Best regards,

-Peter K1PO

"Bill Turner" <w7ti@jps.net> wrote in message news:3gmsftctvkmh0ks68mc60vg75vldkpo7bk@4ax.com...
> My "find" function must be broken. Can't find the word "antenna" anywhere in
> this post...??
>
> 73, Bill W7TI

3893. Re: HELP! End Fed Zepp.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 15:59:32 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dmb0q$5ms$1@slb5.atl.mindspring.net>
Source record: 163042

Mark:

Center feed it eh?

Well how about adding a 1/4 wave counterpoise to the unconnected end of the ladder line, would that do?

;-).

-Peter K1PO

"Mark Keith" <nm5k@wt.net> wrote in message news:3AFE0E1B.237E@wt.net...
> W6RCecilA wrote:
> >
> > Jack Malone wrote:
> > >
> > > Presently using end fed zepp with ladder line for feed to long wire. One
> > > side of ladder line connected to long wire, other side not connected at the
> > > antenna feed point.
> > >
> > > Want to get rid of ladder line due to RF in shack.
> >
> > The problem is not the ladder-line. The problem is the design that leaves
> > one side of the ladder-line floating so the current cannot go anywhere and
> > your feedline becomes just another part of your radiating antenna.
>
> Amen. Poor old ladder line is getting a bum rap. Best way to reduce the
> rf is center feed the wire. MK
> --
> http://web.wt.net/~nm5k

3894. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 16:08:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dmbh4$k3v$1@slb5.atl.mindspring.net>
Source record: 163043

Richard:

Hey, waddya mean "lighten up"... now that's unfair.

It could be that I am the only poster here who is "light"... many of the posts on here seem to be far too "heavy".

And, even though many of my posts may seem to be in jest and perhaps even posted to mock, they are usually quantitative, and besides the light side, I do hope that my posts often raise important questions... the kind's of questions that everyone would like to ask, but are perhaps too afraid to.

Every "class" needs a clown, they serve a useful purpose, and I thought I was it!

Now back to DC reflections... what?

Best,

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:na8sftckler74hq86kd21410rsk9bdr4r1@4ax.com...
> On Sat, 12 May 2001 21:15:13 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >Thanks for your participation and for keeping up with the "banter" on the
> >way to the Guiness Book of Records record for the longest USENET thread
> >topic.
> >
> Longest? You haven't been paying attention.
>
> >Hey, I wonder why, neither of Steve or Walt has "responded" to any of my DC
> >reflections postings? Surely they could help us to win the Guiness record.
> >
> If they were after a Guiness, I suppose so.
>
> >Clearly you, Cecil and others are very interested in this subject, and have
> >opinions,
>
> Obvious
>

> >and wish to be heard,
>
> wishing is unnecessary in a newsgroup,
>
> >and ask useful and insightful questions, and
>
> don't forget the aggravating nit-picking ones too,
>
> >keep on posting to keep the discussion going, but... all we hear from the
> >guys slinging around equations is silence.
>
> there is virtue in the appreciation of an empty space - aummm
> >
> >I'd like to hear an "expert" opinion or two on DC reflections and
> >mismatches.
> >
> >-Peter K1PO
>
> No doubt. But, if I were you, I would settle for a cold Guiness. Or
> in the vernacular "Lighten Up Dude!" After all, the ultimate question
> of Life, the Universe and Everything was discovered by a guy that
> banged rocks together.
>
> 73's
> Richard Clark, KB7QHC
>
> 73's
> Richard Clark, KB7QHC

3895. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 16:08:54 UTC
From: Bart Rowlett <bart@wb6hqk.ampr.org>
Message-ID: <3AFEB196.A888953B@wb6hqk.ampr.org>
Source record: 163044

Denver Braughler wrote:
>
> "Peter O. Brackett" wrote:
> > Think of a Thevinin voltage source with 10,000 Volts behind
> > 100,000,000,000,000 Ohms.
> >
> > As you point out that resistance expressed as a ratio to the resistance
> > through your hand and body, and hence the voltage divider ratio for the
> > voltage that you would "feel" may very well be in excess of say, "280dB", a
> > very large ratio as you point out.
> >
> > Would you "feel it"? NO!
> >
> > Is it there? YES!
> Is it where? It's there, I suppose, unless any current actually flows.
> Is this like blowing air through a sixty mile long capillary tube at 76000 torr?
> The pressure is there until someone actually lets a few molecules flow out the far end.

It's more like whistling into the end of a long capillary tube and
asking how much sound makes it out the far end.

bart
wb6hqk

3896. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 16:13:55 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dmbr9$v7i$1@nntp9.atl.mindspring.net>
Source record: 163046

Bill:

Other very lucid stuff deleted....

[snip]
>
> 4) What really pisses me off is that U-turn. It does nothing useful and
leads to
> wrong conclusions. What we need to do is show the dipole being driven in
the
> normal differential manner (that's one loop, and show the E.M. coupling
between
> the two halves that completes that loop) and the I3 common mode loop,
split
> between the two halves of the dipole to ground and combined on the coax
braid
> (that is the second loop, and indicate in a general way phase differences
around
> the loop). If the symmetry is almost perfect the loop impedance is very
high and
> I3, therefore CM radiation from the coax braid, is very small (we all
resonate
> with that idea, I'm sure).
>
> We now better understand what is going on with that antenna.
>
> (It's late here also).
>
> Bill W0IYH
[snip]

Congratulations on the "best ever" articulation of the physical basis for
that phenomena of differential mode to common mode conversion at the
antenna.

Someone, (Perhaps You?) needs to draw such a diagram and send it along with
your lucid description to the editor of those handbooks.

-Peter K1PO

3897. KENWOOD MA-5 ANTENNA? PROS/CONS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 16:15:48 UTC
From: mf <mavericktcf@bellsouth.net>
Message-ID: <3AFEB334.BAF8A229@bellsouth.net>
Source record: 163045

Hi
Anyone tried this antenna by kenwood the all band mobile? pros/cons.
thanks chris

3898. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 16:29:32 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dmcok$2fk$1@slb7.atl.mindspring.net>
Source record: 163047

Kevin:

Sorry, I may have changed subjects on you... I don't believe that we disagree... and I believe that your explanation of current flow through the "thickness" of a coaxial cable outer conductor is correct, if you will allow, as you seem to have done, that it is not simply a step function drop off...

The subject I was alluding to in the posting traffic below was that of the currents on the inside and on the outside "leaking" around the end of the coax and such.

Bill Sabin has made a nice summary of the problems with that phenomena in another related nearby thread on this NG.

My point, which may not have been yours, was that...

In practice, the coupling between the differential mode and the common mode on coaxial cable is not a very "tractable" analytic, numeric, or metrological problem. i.e. with practical installations, the "leaks" or mode couplings, in/on coaxial cable systems and hookups occur in "unexpected" ways, most of these "leaks" are not well predicted by simple analytic, or numerical, analysis performed on "simple to analyze" textbook models.

Best,

Peter K1PO

[snip]
<atkes@imap1.asu.edu> wrote in message news:9dl5o2$4s1$1@news.asu.edu...
> Peter O. Brackett (ab4bc@ix.netcom.com) wrote:
> : Kevin:
>
> : I agree that there is an "end effect". And in practice it is quite
> : significant, especially for hams and their antennas.
>
> : But the "end effect" is not simple as electrons flowing up and over the
> : thickness of the end of the braid.
>
> : There are lots of factors, that in practice are very difficult to
specify
> : and quantify. The problem with measuring the "end run path" is that it
is
> : difficult to specify the conditions, geometry, and fringe effects
explicitly
> : enough to get close agreement between analysis and measurement... it is

> : affected by many things inclucing very detailed physical symmetry, down
to
> : the pF level, in the immediate area of the ends... "end effects".
>
> : End effects are difficult to quantify, especially analytically, in all
but
> : the simplest cases. Even numerical methods of integrating the
differential
> : equations fall into "ill-conditioned" situations, and fail to "converge"
to
> : the a reasonable answer.
>
> : Try modeling those end effects of coax with say EZENEC... and see what
> : happens.
>
> : The leading cause of differential mode to common mode coupling in ham
> : installation is not the electrons going around the end of the braid,
rather
> : it is the fact that the outside of the braid is in the near field of the
> : radiating elements being fed by the coax and that "induction" of antenna
> : currents onto the outside of the shield braid, is the largest single
factor
> : contributing to the low magnitude of the differential mode to common
mode
> : coupling transfer function.
>
> : Now in the situation where one is not feeding an antenna, but is just
> : seeking "silent" signal transmission from one enclosed site to another,
> : other effects are important. With the feeding of antennas, where the
> : transmission line ends up in the near field of the antenna, the
differential
> : mode to common mode coupling is "helped" by the "near field" induction
from
> : the antenna.
>
> : This is different from the case of feeding signals from place to place
with
> : very elaborate treatments of the ends and connectors to preserve e-m
> : "security" a la Tempest or NACSIM, then one is interested in the
shielding
> : effectiveness of the cable and not "end run" effects.
>
> : -Peter K1PO
>
> Peter,
>
> I was trying to explain how charge can flow from the inside to the
> outside of the shield. If you are claiming this cannot happen, you are
> wrong. If you are simply claiming that detailed calculations of messy
> geometries are hard, I agree. Suggesting that I try to use a thin wire

> moment method code to model this just seems silly.
>
> All of what I wrote has been well understood for at least 50 to 100
> years. It doesn't really require a computer solution.
>
> 73 Kevin w9cf
>
>
>
>
>
> : <atkes@imap1.asu.edu> wrote in message news:9djqng$14o$1@news.asu.edu...
> : > Peter O. Brackett (ab4bc@ix.netcom.com) wrote:
> : > : Kevin:
> : >
> : > : Heh, heh... it's all a matter of degree.
> : >
> : > snip
> : >
> : > : You are talking about "first order" effects. Which of course is all
> : that is
> : > : of interest to most amateur radio enthusiasts. However,
professional
> : have
> : > : more demanding requirements.
> : >
> : > : You say that there is a "tiny" component into the conductor that is
> : > : negligible, and for many purposes I would agree that it is
negligible.
> : >
> : > : But for some purposes it is not.
> : >
> : > : In fact it is definitely not neglible for the purpose of
quantitatively
> : > : rating the shielding effectiveness of high quality cables.
> : >
> : > : Say I wanted to compare the shielding effectiveness of two different
> : > : manufacturers cables...one rated it at 95dB and the other rated it
at
> : 115dB.
> : > : Now would that "tiny" current that is not perpendicular to the
normal be
> : > : important.
> : >
> : > : How "far down" is "tiny"?
> : >
> : > snip
> : >
> : > No it would be completely unimportant. It is down by a factor of about
> : > 10^4 (i.e. sqrt(epsilon_0 omega/sigma)) at 14 MHz in copper compared

to
> : > component of the current along the wire. So if you leave it out and
get
> : > 95dB, when you include it you get you get something like 94.9996 dB.
> : >
> : > I would prefer to return to talking about measurable things like the
> : > current looping around the end of the coax.
> : >
> : > 73 Kevin w9cf
>
>

3899. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 16:35:20 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dmd3f$61m$1@slb7.atl.mindspring.net>
Source record: 163048

Cecil et al:

Heh, heh....

Who was that guy who invented the hospital, I think he was a frenchman...

"L'hopital" or something like that, anyway, he had some "Rule" about the limits of ratios of limits...

Anyway, I'm not interested in limits, at my age, "there are no limits..." at least that's true in my mind... Heh, heh... but the body is weak!

If I were to make love to Mae West as I sometimes "visualize" why at her age, and mine, we too would be zero/zero!

Best,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFDE85C.9D8EAB2D@IEEE.org...
> Richard Clark wrote:
> > In fact it appears that your Zo = sqrt(0).
>
> Isn't it sqrt(zero/zero)?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3900. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 16:38:09 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dmd96$a0v$1@slb5.atl.mindspring.net>
Source record: 163049

Cecil:

Oh, you only want one wavelength of the stuff?

Heh, heh... you had me worried there for a while, I thought you'd like
several wavelengths.

I'll put it in FedEx on Monday, COD, I'll send you the waybill number in an
NTS CW traffic net radiogram.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFDE80D.A1727623@IEEE.org...
> "Peter O. Brackett" wrote:
> > Now you have:
> >
> > Zo = sqrt(j*2*pif*L/j*2*pi*f*C) = sqrt(L/C)
> >
> > Which is completely independent of frequency!
> >
> > Period, end of story!
>
> OK Peter, you talked me into running the experiments. Please send me one
> wavelength of that DC lossless coax.
>
> Since we know there is no such thing as lossless coax, seems at DC the
> Z0 would be sqrt(R/G). But not to worry, send me one DC wavelength of
> the lossy coax.
> --
> http://www.mindspring.com/~w6rca
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3901. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 16:39:42 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dmdbksao1@slb6.atl.mindspring.net>
Source record: 163050

Richard:

Yes... I packed "reflection sandwiches"...

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:m1mrftosn39av2i2up5flf319dcpplgr0h@4ax.com...
> On Sat, 12 May 2001 20:34:55 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> >Until, I see a serious examination of reflection mechanics for the DC
case
> >along with an analysis of where the reflected power is generated and
where
> >it is dissipated, I just will not be dissuaded.
> >
> >-Peter K1PO
>
> Hi Peter,
>
> That's fine. Did you pack a lunch for your time in the wilderness?
>
> 73's
> Richard Clark, KB7QHC

3902. Re: Reflections

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 16:42:48 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dmdhf$89o$1@slb7.atl.mindspring.net>
Source record: 163051

Heh, heh... and what did she say?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFDE701.215DD9E8@IEEE.org...
> "Peter O. Brackett" wrote:
> > Next time I go to AZ, I'll bring my guns and have at those signs...
>
> I've never done that, by the way, but I understand the urge to do so.
> My story akin to that one is when I told the lady at the CA DMV that
> I had transferred my ham call plates from my camper to my pickup.
> She said, "You can't do that!" I replied, "Sure I can. I've already
> done it. Want to see?" :-)
> --
> http://www.mindspring.com/~w6rca
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3903. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 16:49:38 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <cmetft8dhl8g993pdf6p1mvh8pv53t26jh@4ax.com>
Source record: 163053

On Sun, 13 May 2001 11:57:46 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>And I must admit that, after struggling for about an hour with several blank
>sheets and pencil, hooo... I had started with pen, I couldn't even
>reconstruct a schematic or "hook up" diagram from your elaborate and
>rambling posting.

Hi Peter,

And this is your clown speaking?

73's
Richard Clark, KB7QHC

3904. Re: antenna analyzer comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 16:51:00 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <3AFEBAEF.15BB@bellsouth.net>
Source record: 163052

Tad,

I have used the MFJ 259 series since their inception. Overall, I would say they are fine instruments, and I have wondered how I got along prior to their introduction. Despite their quirks--and there are a few--I find them indespensible. One of the things I don't like is their tendency to "hunt" or scroll the display while performing antenna tests. Still, it is a minor thing, and they are accurate enough to get one's antenna down to the "nth" degree, as well as perform other tasks. I own two of them. One stays in the mobile where I use it to tune my screw-driver antenna. Using a switch, I couple the 259 to the antenna and set the antenna. Returning to the rig via the switch, I am then ready to talk away without putting an annoying signal on the air or stressing the finals into a bad load.

I hope this may help.

73

Jerry
K4KWH

Tad Danley wrote:
>
> Would appreciate any comments from users of the
> MFJ259B and Autek VA1. I am looking for
> something to use for experimenting with various
> coax fed wire antennas in the 1.8 to 28 MHz
> range.
>
> Thank in advance and 73,
>
> --
> Tad Danley, K3TD
> mailto:taddanley@att.net
>
> Caution!
> Anti-SPAM e-mail return address in use.

3905. ADI AR-146

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 18:06:55 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AFECD3F.7AA143B6@spam.me.not>
Source record: 163054

First off, let me apologize if this is the wrong forum for this...

I just bought one of these, a refurbished unit, and I'm being told that my modulation is weak... I've opened the top of the case, and found four varistors/potentiometers, a few tuning coils, and a varicap. Does anyone know which of these controls the modulation level in this radio?

TIA

73 de KC8RKQ

3906. 3 x 5/8 vertical on vhf

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 18:48:52 UTC
From: Guy <bs245517@skynet.be>
Message-ID: <3afed723$0$43052$456d72a3@news.skynet.be>
Source record: 163055

Hello and many thanks to read me.

I should be very interested to build my own 3 x 5/8 vertical antenna for vhf. I would like to scale it for another frequency than the usual 144 Mhz band. Its purpose is the aviation band reception. So, could you help me about the dimensions of such antenna and I am especially looking for the way I must feed it (loading coil dimensions or some other way to feed a 3 x 5/8 vhf vertical).

Many thanks beforehand for any help. Best wishes . Guy.

3907. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 18:50:09 UTC
From: w2du@iag.net
Message-ID: <3afec0bc.2648718@news.journey.com>
Source record: 163056

On Fri, 11 May 2001 18:12:38 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message

>You and Walter are to much.
>
>Does anybody else on this newsgroup think that when you put two 1.5 V AA
>batteries in series the total voltage will be equal to 2.12 V (Sqrt (V1^2 +
>V1^2) instead of 3 V?
>
>In the transmission line, forward voltages add as Vtotal = V1 + V2.
>
>Steve

Now readers of this NG please see below a copy of the email I just received from Steve, which he obviously didn't want you to see::

"Walt:
If you're correct on the addition of power, why then does Johnson, Terman, Slater, Skilling, Chu, Chipman, etc add voltage the way I do? No one of these people add power the way you do.

Your basic problem is the misconception that the steady state delivered power is a forward power in the line. It is not.

I really believe that you know you're wrong but your ego won't allow you to publicly admit it.

Unless you want to deal honestly with me and stop the ego BS, I will be forwarding copiesof the appropriate Chapters of "Reflections" to be peer reviewed by the IEEE and some respected experts on the subject. If you won't deal honestly with me, we'll see how that goes.

Steve"

Well, people on the NG, Steve's private memo to me above makes it eminently appropriate to make some remarks that I would otherwise have kept to myself, and to repeat some others that are pertinent.

First, I have told Steve many times that he just doesn't 'get it'. I have also told him that with with respect to the noted authors he quoted above, he has continually misinterpreted what they say concerning the addition of voltages on a transmission line. He still doesn't get it, as evidenced by his continuing insistence that 8.33 watts + 100 watts = 133.33 watts.

It's incredible that a person of Steve's intelligence has missed such a simple explanation of the voltage-power problem to the point where he believes that the

above-mentioned authors are saying that addition of voltages on the line yield the forward power, when what they are saying, especially Johnson, in his expression on Page 100, is that the addition of voltages is simply determining the voltage of the standing wave at any point on the line. It does not yield the forward power in the line as Steve insists. I pointed this out to Steve, but he paid no attention. So please let me explain what Steve has been missing all along.

We know that the voltage at any point along the voltage standing wave results from the phasor addition of the forward and reflected voltages. Why am I going back to such a simple and obvious statement? Because this is the point that Steve is missing.

Let's return to the example that Steve and I sparred over months ago. In this example a 50-ohm lossless line is terminated in a pure resistance of 150 ohms for a reflection coefficient rho of 0.5 and an SWR of 3:1. The source is delivering 100 watts to the line, which, at a matching point all reflected power is re-reflected. Steve has finally agreed that the total forward power is determined by the expression 1/(1 - rho^2), which for a rho of 0.5 the result is 1/0.75 = 1.33333. Based on this he also agrees that the total forward power for 100 watts delivered is 133.33 watts, and that the reflected power is 33.333 watts. Take note that the voltage associated with 33.333 watts in 50 ohms is 40.8248 v. Thus 40.8248 volts is the reflected voltage during the steady state.

The initial line voltage for 100 watts is 70.71 v. In his penchant for adding voltages (not power) Steve adds the reflected voltage to the forward voltage to get 70.71 + 40.8248 = 111.53 volts. Big mistake. First, 70.71 volts is an INITIAL voltage and 40.8248 volts is a STEADY-STATE voltage. Mixing apples and oranges.

Because the power increase factor is 1.3333, the voltage increase factor is the sqr root of 1.3333, which is 1.1547, which, when multipled by the initial line voltage of 70.71 we get 81.65 volts for the steady-state forward voltage.

As stated above, the line voltage for the 33.333 watts re-reflected is 40.8248 v. Now comes the simple part that Steve overlooks. Since the steady-state forward voltage is 81.65 v, when we add the re-reflected 40.8248 v we get 122.475 v for the PEAK of the voltage STANDING wave. Now when we subtract the re-reflected 40.8248 from the forward voltage we get 40.8248 v for TROUGH of the voltage standing wave. Now guess what?? Dividing 122.475 by 40.8248 = 3.0, the SWR!

So to conclude the example, the voltages that Steve and the above mentioned authors are adding relate to the voltage of the standing wave, which the Johnson equation Steve uses specifies--the VOLTAGE ON THE STANDING WAVE at any point along the line. My example above, which is the same as Steve and I quarreled about over during the past year, proves that the addition of voltages yields only the standing wave, and not the forward power that Steve proclaims.

Now to his plan to forward chapters of 'Reflections' to the IEEE for their review, I welcome it. Many have already reviewed it with commendation.

Ironically, in his article on conjugate matching that appeared in the final issue of Communications Quarterly, Steve trashed my explanation of reflection mechanics as I presented them in QST, 'Reflections', and QEX, saying they are erroneous and misleading, based on his own misconceptions of reflection mechanics.

So yes Steve, please do send my material in 'Reflections' to the IEEE, and have them copy me on their report of the review.

Walt, W2DU

3908. Re: HELP! End Fed Zepp.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 18:53:52 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFED840.7086BE38@IEEE.org>
Source record: 163057

"Peter O. Brackett" wrote:
>
> Mark:
>
> Center feed it eh?
>
> Well how about adding a 1/4 wave counterpoise to the unconnected end of the
> ladder line, would that do?

Turn it into an off-center-fed dipole which would probably still have
unbalanced currents?
--
http://www.mindspring.com/~w6rca

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3909. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 18:58:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFED93E.3D5BA3D1@IEEE.org>
Source record: 163058

Wes Stewart wrote:
> My ISP is having so many troubles that they are giving me three months of free
> "service." Consequently, I haven't been able to read the group for a few days.

Oh, Goodie! Three free months of trouble. :-)
--
http://www.mindspring.com/~w6rca

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3910. Re: ADI AR-146

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 18:59:46 UTC
From: Tad Danley <taddanley@nospamatatt.net>
Message-ID: <3AFED9A2.1D7E38EA@att.net>
Source record: 163059

Sideband wrote:

> First off, let me apologize if this is the wrong forum for this...
>
> I just bought one of these, a refurbished unit, and I'm being told that
> my modulation is weak... I've opened the top of the case, and found four
> varistors/potentiometers, a few tuning coils, and a varicap. Does anyone
> know which of these controls the modulation level in this radio?

Can't help you with that rig, but you might want to try the manufacturer's
web page at http://www.pryme.com or the rec.radio.amateur.equipment or
alt.ham-radio.vhf-uhf news groups.

Good luck and 73,

--
Tad Danley, K3TD
mailto:taddanley@att.net

Caution!
Anti-SPAM e-mail return address in use.

3911. Re: what to attach co-ax braid to in shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 19:01:05 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFED9F1.C15689D8@IEEE.org>
Source record: 163060

Dan Jacobson wrote:
> I have unscrewed the original antenna to my 49 mhz cordless phone, and
> attached instead the co-ax's center wire, but what to attach the braid
> sheath to? The phone itself seems to not provide a 'ground' contact.

They do that on purpose so it won't be easy for people like you to
break the FCC rules.
--
http://www.mindspring.com/~w6rca

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3912. Re: ADI AR-146

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 19:34:53 UTC
From: Tom Wagner - N1MM <tomwagner@mindspring.com>
Message-ID: <9dmnl3$k97$1@slb1.atl.mindspring.net>
Source record: 163061

Sorry to ask the obvious, but are you
holding the mic close to your lips (1/2") and
speaking in a normal voice?

Tom Wagner - N1MM
Check out the N1MM Free Contest Logger at
http://tomwagner.home.mindspring.com/n1mm.htm
http://groups.yahoo.com/group/N1MMLogger
to join: http://groups.yahoo.com/group/N1MMLogger/join
After you join, you'll find the download link in the "Bookmarks" section.

Tad Danley <taddanley@nospamatatt.net> wrote in message
news:3AFED9A2.1D7E38EA@att.net...
> Sideband wrote:
>
> > First off, let me apologize if this is the wrong forum for this...
> >
> > I just bought one of these, a refurbished unit, and I'm being told that
> > my modulation is weak... I've opened the top of the case, and found four
> > varistors/potentiometers, a few tuning coils, and a varicap. Does anyone
> > know which of these controls the modulation level in this radio?
>
> Can't help you with that rig, but you might want to try the manufacturer's
> web page at http://www.pryme.com or the rec.radio.amateur.equipment or
> alt.ham-radio.vhf-uhf news groups.
>
> Good luck and 73,
>
> --
> Tad Danley, K3TD
> mailto:taddanley@att.net
>
>
> Caution!
> Anti-SPAM e-mail return address in use.

3913. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 19:36:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dmno1$vj4$1@slb3.atl.mindspring.net>
Source record: 163062

Richard:

Bring on the clowns....

Heh, heh...

Richard, it seems that Wes likes to mess with circulators... not many hams get a chance to do that...

Especially circulators that operate all the way down to DC!

I've got a couple of DC circulators here, I can send you the schematic diagrams if you wish.

I've got a beautiful 3 port circulator, uses only three op-amps, and 9 resistors, works from DC to nearly a megaHertz.

But as I mentioned before it's hard to find directional couplers with response all the way down to DC.

You seem to be familiar with Bird instruments.

Richard, do you know? What is the lowest frequency at which Bird wattmeters operate accurately?

From the Breune patent, and the schematic diagrams available for other directional wattmeters, for instance.... from QST articles or the DWM-4 at http://www.ldgelectronics.com, it's possible to calculate or estimate the low frequency cutoff for HF style directional couplers, but no one seems to make much of the low frequency end.

Apparently Warren Breune W5OLY, then of Collins, came up with the first HF directional wattmeter circuits of this class.

Richard, from my examination of the schematics of that class of HF directional coupling instrument, they all seem to measure the reflected voltage b = V - IR by using a high impedance capacitive divider, and a low impedance current transformer.

This is usually in the form of two single digit pF caps in series to measure or tap off a portion of V, and a current transformer, usually a small torroid with the center conductor of the coax passing through as one winding and a few turns on the other side to pull off a small fraction of I and pass it through a resistor proportional to R to develop the voltage IR. Then the rest of the circuitry has some small Ge diodes and caps to do the AC to DC conversion and then they are set up either with switches or two separate meter movements to be able to read either of a = V + IR or b = V - IR as incident/forward and reflected.

The low frequency response of these sensors is thus limited by the AC coupling to the metering. i.e. the capacitive voltage divider sampling V and the current transformer sampling I will only couple signals accurately down to about 1 MHz or so... if you want to maintain high accuracy on the high end with the same sensor. I believe that's why Bird uses removable sensor plugs, so that they can optimize the circuitry for the various frequency ranges.

Well I had a (professional) interest/need for directional couplers which would work all the way from VHF right down to DC in one instrument... of course most hams would have no interest in such an instrument. And so I explored numerous circuits for doing that...

That work led not only to circuits for DC directional couplers, but also to low frequency and DC versions of circulators and magic Tee's, etc...

I found that problem and those developments to be a most interesting pursuit...

That's what led me to start asking questions about DC reflections.

Perhaps, if the FCC opens up the 136kHz band for hams in this country as the RA has in Britain, then we might get some hams interested in low frequency directional couplers.

Keep the reflection threads going... without Dr. Frectal it gets boring on here.... heh, heh.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:cmetft8dhl8g993pdf6p1mvh8pv53t26jh@4ax.com...
> On Sun, 13 May 2001 11:57:46 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> > >And I must admit that, after struggling for about an hour with several
blank
> > >sheets and pencil, hooo... I had started with pen, I couldn't even
> > >reconstruct a schematic or "hook up" diagram from your elaborate and
> > >rambling posting.
>
> Hi Peter,
>
> And this is your clown speaking?
>
> 73's
> Richard Clark, KB7QHC

3914. Re: what to attach co-ax braid to in shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 19:51:10 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <OABL6.903$mk6.159747@paloalto-snr1.gtei.net>
Source record: 163063

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFED9F1.C15689D8@IEEE.org...
> Dan Jacobson wrote:
> > I have unscrewed the original antenna to my 49 mhz cordless phone, and
> > attached instead the co-ax's center wire, but what to attach the braid
> > sheath to? The phone itself seems to not provide a 'ground' contact.
>
> They do that on purpose so it won't be easy for people like you to
> break the FCC rules.
> --

Maybe the guy wants everyone with a scanner for miles around to listen to
his calls, or maybe he just likes letting everybody in the neighborhood
make calls on his phone using their handsets. After a few 2-3 hour calls to
Columbia or Japan he will probably re-think his "set up"...

73 de W6DKN

3915. Ham International Big Mac 7/8 wave base CB antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 19:51:14 UTC
From: dave@thebeachagain.freeserve.co.uk
Message-ID: <000001c0dbe4$bbc8cf60$0bfd883e@default>
Source record: 163064

Does anyone still have one of these base antennas from the early / mid 1980's. I have been looking for several years now, and have virtually given up hope of finding one dead or alive. If you have one or know anyone who can help me with specs and dimensions I would be very grateful. I am willing to pay a good price for a complete antenna in any condition.
Thanks, 26 OP 172
E-MAIL qrz@supanet.com

3916. Re: HELP! End Fed Zepp.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 19:52:32 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dmom4$q7k$1@slb4.atl.mindspring.net>
Source record: 163065

Cecil:

Oops seems I fogot my emoticon... ;-) or should it have been ;-[...

That's what "they" seem to do with those "on glass" 1/2 wave end fed
antennas, and those HF 1/2 wave verticals, i.e. "complete" path on the
unterminated side with some kind of counterpoise...

Using some kind of counterpoise, even with "loading" could restore some of
the balance required to keep antenna currents on the line and in the shack
at a lower level.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFED840.7086BE38@IEEE.org...
> "Peter O. Brackett" wrote:
> >
> > Mark:
> >
> > Center feed it eh?
> >
> > Well how about adding a 1/4 wave counterpoise to the unconnected end of
the
> > ladder line, would that do?
>
> Turn it into an off-center-fed dipole which would probably still have
> unbalanced currents?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3917. Re: ADI AR-146

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 19:57:17 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AFEE71D.6B91924F@spam.me.not>
Source record: 163066

Tom:

Yes, and Yes. I think the radio was de-tuned when they refurbished it, and perhaps a bit too much. I do know that the "jumper" wire that's supposed to be in the bottom of the radio, which you cut to open it to transmit from 130-180Mhz isn't even in there, so apparently they didn't bring it to 100% brand new specs.

Besides, it would just be nice to know what the controls in the radio actually do...

73 de KC8RKQ

Tom Wagner - N1MM wrote:
>
> Sorry to ask the obvious, but are you
> holding the mic close to your lips (1/2") and
> speaking in a normal voice?
>
> Tom Wagner - N1MM

3918. Re: ADI AR-146

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 20:05:51 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <zOBL6.987$mk6.172404@paloalto-snr1.gtei.net>
Source record: 163067

"Tad Danley" <taddanley@nospamatatt.net> wrote in message
news:3AFED9A2.1D7E38EA@att.net...
> Sideband wrote:
>
> > First off, let me apologize if this is the wrong forum for this...
> >
> > I just bought one of these, a refurbished unit, and I'm being told that
> > my modulation is weak... I've opened the top of the case, and found
four
> > varistors/potentiometers, a few tuning coils, and a varicap. Does
anyone
> > know which of these controls the modulation level in this radio?
>
> Can't help you with that rig, but you might want to try the
manufacturer's
> web page at http://www.pryme.com or the rec.radio.amateur.equipment or
> alt.ham-radio.vhf-uhf news groups.
>
> Good luck and 73,
>

With FM, the perceived loudness of a received signal is affected by the deviation of the transmitted signal, there is no "modulation pot". The four pots in this rig are S-meter sensitivity, hi power setting, low power setting, and signal deviation.

To correctly set the deviation requires a proper test bench setup to measure the transmitted output to make sure that the transmitted signal does not over-deviate and cause adjacent channel interferrence.

"Sideband" is new to this type of gear, and is probably better off having it serviced by a properly equipped shop. The cost for this type of work is minimal.

73 de W6DKN

3919. Re: ADI AR-146

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 20:49:03 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AFEF33F.C8AF9C6D@spam.me.not>
Source record: 163068

You're 100% correct... I am new to this kind of gear. I haven't even had
my ticket a week yet.

Is there such a thing as a deviation meter? Could I adjust this radio
with someone nearby listening for bleedover on an adjacent channel?
Which potentiometer is which? I'm assuming, since you named four
controls, that you were describing the four pots, but which one's which?

TIA

73 de KC8RKQ

W6DKN wrote:
> With FM, the perceived loudness of a received signal is affected by the
> deviation of the transmitted signal, there is no "modulation pot". The four
> pots in this rig are S-meter sensitivity, hi power setting, low power
> setting, and signal deviation.
>
> To correctly set the deviation requires a proper test bench setup to
> measure the transmitted output to make sure that the transmitted signal
> does not over-deviate and cause adjacent channel interferrence.
>
> "Sideband" is new to this type of gear, and is probably better off having
> it serviced by a properly equipped shop. The cost for this type of work is
> minimal.
>
> 73 de W6DKN

3920. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 21:03:52 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFEF6B8.2CEF4423@IEEE.org>
Source record: 162969

Richard Clark wrote:
> You have yet to answer how these two sources of your model manage to
> both feed 1A of current through the common Load that is strapped in
> parallel to the two parallel sources.

I have obviously taken the wrong approach. I should have instead issued
a challenge.

So to all you RF guys, please demonstrate how two EM waves, each consisting
of 50v and one amp in phase in 50 ohm coax, can be merged/added/combined
to yield 100v and two amps in phase in a 50 ohm line.

Why didn't I think of this before?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3921. Re: QRP enthusiasts out there ???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 21:20:47 UTC
From: test <swish@123.net>
Message-ID: <ENhL6.272$Z95.62659@news03.micron.net>
Source record: 163154

There are literally 1000's of QRP sites on the net. Go to a search engine like www.hotbot.com, type in QRP ham radio or some such thing and you will get back enough links to keep you busy for a year.

Good luck

73

--
Kelly
K7SU

3922. Re: Test

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 21:24:43 UTC
From: test <swish@123.net>
Message-ID: <kRhL6.277$Z95.62723@news03.micron.net>
Source record: 163156

you passed :=)

--
Kelly Klaas
Karas Bob <bobrhplus@poczta.onet.pl> wrote in message
news:1j4rftshnn9scbnhr6i7u17ft26pepq060@4ax.com...
> Please ignore ...i'its only test...
> by SP8RHP

3923. Re: HELP! End Fed Zepp.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 21:25:11 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AFEFBB7.6E24@wt.net>
Source record: 162970

Peter O. Brackett wrote:
>
> Mark:
>
> Center feed it eh?
>
> Well how about adding a 1/4 wave counterpoise to the unconnected end of the
> ladder line, would that do?
>
> ;-).
>
> -Peter K1PO

Make an antenna that is still likely a poorer performer than a center
fed wire. Besides...A 1/4 wave on what band? If he works all bands, the
counterpoise will be fairly useless on most others. MK
--
http://web.wt.net/~nm5k

3924. Re: ADI AR-146

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 21:33:03 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <j4DL6.1279$mk6.236079@paloalto-snr1.gtei.net>
Source record: 162971

Congratulations on your new call. I'm sure you'll get a ton more enjoyment out of the radio hobby now that you have "graduated". Now all you have to do is get the 5 WPM piece and you can really start having fun...

As for your questions, there are such things as FM deviation meters, but the good ones cost a lot of money. I'm not too sure how worthwhile the sub $500.00 units are - I have a lot more faith in a scope and a spectrum analyzer to get it right. That's why I suggested a quick trip to a shop or if your lucky, a local "Elmer") that has this type of gear. Perhaps somebody more knowledgeable than I may have some additional insight in this area ?

It's been a long time since I was inside one of these rigs, and to be honest, I don't remember which pot is which. I originally determined their functions by trial and error (noting the position of each pot before I turned it) while I monitored the rig on a test bench.

My objective at the time was to detune the S meter - it was way too "hot" on the rig I was working on - practically every signal was a +10 or +20. It made it real hard to use the S meter as an aid in pointing a directional antenna for weak signal simplex work...

73 de W6DKN

"Sideband" <sideband@spam.me.not> wrote in message
news:3AFEF33F.C8AF9C6D@spam.me.not...
> You're 100% correct... I am new to this kind of gear. I haven't even had
> my ticket a week yet.
>
> Is there such a thing as a deviation meter? Could I adjust this radio
> with someone nearby listening for bleedover on an adjacent channel?
> Which potentiometer is which? I'm assuming, since you named four
> controls, that you were describing the four pots, but which one's which?
>
> TIA
>
> 73 de KC8RKQ
>
> W6DKN wrote:
> > With FM, the perceived loudness of a received signal is affected by the
> > deviation of the transmitted signal, there is no "modulation pot". The
four
> > pots in this rig are S-meter sensitivity, hi power setting, low power
> > setting, and signal deviation.
> >
> > To correctly set the deviation requires a proper test bench setup to

> > measure the transmitted output to make sure that the transmitted signal
> > does not over-deviate and cause adjacent channel interferrence.
> >
> > "Sideband" is new to this type of gear, and is probably better off
having
> > it serviced by a properly equipped shop. The cost for this type of work
is
> > minimal.
> >
> > 73 de W6DKN

3925. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 21:36:57 UTC
From: w2du@iag.net
Message-ID: <3afefb01.17565347@news.journey.com>
Source record: 162972

On Sun, 13 May 2001 18:50:09 GMT, w2du@iag.net (Walt Maxwell, W2DU) wrote:

>
>Now to his plan to forward chapters of 'Reflections' to the IEEE for their
>review, I welcome it. Many have already reviewed it with commendation.
>
>Ironically, in his article on conjugate matching that appeared in the final
>issue of Communications Quarterly, Steve trashed my explanation of reflection
>mechanics as I presented them in QST, 'Reflections', and QEX, saying they are
>erroneous and misleading, based on his own misconceptions of reflection
>mechanics.
>
>So yes Steve, please do send my material in 'Reflections' to the IEEE, and have
>them copy me on their report of the review.
>
>Walt, W2DU

This is a postscript to my earlier post. I have hard copies of Steve's email to to me during correspondence on this subject, plus some dialog between him and me on the "Tower Talk" net, which is quite illuminating concerning Steve's misconception on how powers add, as if the source power was unlimited.

I would be happy to submit his statements to the IEEE for their review, but I wouldn't consider it seriously, because even though he embarassed the hell out of me in his Communications Quarterly article, I don't care to embarass him any more than what he receives from this group. But believe me, he would be embarassed by an IEEE review of his statements that say 248.8 watts would be the answer if the corresponding voltages were added in the case of adding 100 watts to 33.333 watts to obtain 133.33 watts.

Walt

Walt

3926. Re: Find your sole mate here!! Post your FREE personal ADs here!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 22:46:11 UTC
From: Roger Leone <arleone@inreach.com>
Message-ID: <MaEL6.7015$ca.21987@news.inreach.com>
Source record: 162973

Do sole mates have shoes in common?

3927. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 22:50:10 UTC
From: w2du@iag.net
Message-ID: <3aff0ea3.22591534@news.journey.com>
Source record: 162974

On Sun, 13 May 2001 21:36:57 GMT, w2du@iag.net (Walter Maxwell) wrote:

>On Sun, 13 May 2001 18:50:09 GMT, w2du@iag.net (Walt Maxwell, W2DU) wrote:

>I would be happy to submit his statements to the IEEE for their review, but I
>wouldn't consider it seriously, because even though he embarassed the hell out
>of me in his Communications Quarterly article, I don't care to embarass him any
>more than what he receives from this group. But believe me, he would be
>embarassed by an IEEE review of his statements that say 248.8 watts would be the
>answer if the corresponding voltages were added in the case of adding 100 watts
>to 33.333 watts to obtain 133.33 watts.
>
>Walt
Embarass was a poor choice of word above. I was not embarassed, because to have
been embarassed Steve's accusations would have had to be true.

Walt

3928. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 23:10:02 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <1r4uft02l5q8jc2eg1pd9e5a94a1l5jsvf@4ax.com>
Source record: 162975

On Sun, 13 May 2001 15:36:56 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>Richard, do you know? What is the lowest frequency at which Bird wattmeters
>operate accurately?
>

Hi Peter,

All depends on the slug. Not much market for a directional DC slug;
except perhaps aboard the Heart of Gold to calibrate its Infinite
Improbability Drive. (RIP Douglas Adams).

73's
Richard Clark, KB7QHC

3929. Re: SWR won;t work on antenna tuner; works in shop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 23:39:17 UTC
From: Ken Jacobs <tekwrite@mindspring.com>
Message-ID: <FWEL6.776$gc1.70090@newsread1.prod.itd.earthlink.net>
Source record: 162976

Mark said: "BTW, to properly tune a 520, you need to finish in CW mode at full power. If you tune up in "tune" mode only, you will be underloaded. "

I think that was part of the problem...I tuned everything again and it seems to work now.

Thanks SO much for all of the assists. Just had a contact on 20m with Nova Scotia so at least I know I am getting out. (I'm near Atlanta)

Ken

3930. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-13 23:48:52 UTC
From: Harold <hsnyder@houston.flightlessbird.com>
Message-ID: <E3FL6.59231$hu.10956348@typhoon.austin.rr.com>
Source record: 162977

Well, right about now is where I start feeling pretty stupid.

I assumed that the center insulator of the Alpha Delta antenna had a balun.
That is not correct.

Now my first project will be to replace it with a good balun and see what
that does. I guess I am just lucky that 20/10 work ok.

Thanks to you and the others who have offered suggestions.

Harold
WD5KCA

"Mark Keith" <nm5k@wt.net> wrote in message news:3AFE10A2.5734@wt.net...
> Harold wrote:
> >
> > Keith,
> >
> > Thanks for the comments.
> >
> > I did some tests with reduced power and found that the TVI went away at
> > about 40 watts. That is about what I expected, at some point the
> > interference would be negligible
> >
> > In my first message I mentioned that 20 and 10 meters were clean, even
with
> > the amplifier.
> >
> > I had never run the amplifier on 15 meters until today because I knew I
had
> > a problem. It loaded up fine into the dummy load. After switching to
the
> > antenna, bang, instantaneous with key down on the mic (ssb) the exciter
> > tripped out.
> >
> > This makes me think that the problem is in the feedline or antenna. I
hope
> > it isn't just another problem.
> >
> > -Harold
> > wd5kca
>
> Sounds that way. Your feedline must be real hot to cause rig problems. I
> think a big portion of the problem is using the multiband antenna and
> trying to have good decoupling on all bands. It's not easy on an antenna
> like that fed with coax. You might be better off with a center fed wire

> and ladder line. That way if you had a feeder length problem on a
> certain band, it's easy to add another section to cure the problem. Does
> that antenna have a good balun at the feed? MK
> --
> http://web.wt.net/~nm5k

3931. Re: HELP! End Fed Zepp.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 01:19:36 UTC
From: Steve Ellington <N4LQ@igLou.com>
Message-ID: <3aff31c3$1_2@news.iglou.com>
Source record: 162978

There is no easy cure for feeding an end fed, random length, multiband antenna. You will have RF problems somewhere....period

One thing you might consider if possible it to form it into a loop. Run your wire out to a tree, run it down the tree then back to the shack. It won't be perfectly balanced but it should be much tamer and easier to match with your tuner. Using coax to feed this isn't a good idea. Just bring both ends into the shack and connect to the balanced output on your tuner. Depending on length and frequency, you may be able to use your balun outside and coax to the rig.

--
Steve
N4LQ

"

3932. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 01:24:53 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dnc4c$7no$1@slb3.atl.mindspring.net>
Source record: 162979

Richard:

Long time since I've seen one of those Infinite Improbability Drives.

Gotta go, wer'e taking Mom to the "Restaurant at the End of the Universe"
for Mother's Day dinner.

See ya...

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:1r4uft02l5q8jc2eg1pd9e5a94a1l5jsvf@4ax.com...
> On Sun, 13 May 2001 15:36:56 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> > >Richard, do you know? What is the lowest frequency at which Bird
wattmeters
> > >operate accurately?
> > >
>
> Hi Peter,
>
> All depends on the slug. Not much market for a directional DC slug;
> except perhaps aboard the Heart of Gold to calibrate its Infinite
> Improbability Drive. (RIP Douglas Adams).
>
> 73's
> Richard Clark, KB7QHC

3933. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 01:29:42 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dncddsbm1@slb6.atl.mindspring.net>
Source record: 162980

Cecil:

Simple, at extremely low frequencies, e.g. DC, you can simply hook two 50 volt batteries in series to get 100 volts. (Hook em up series aiding if you want them to be in phase, series opposing if you want them to be 180 degrees out of phase, other angles will require the use of imaginary resistors.)

But unless we know the load, we cannot tell what the combined current will be... it will be whatever it needs to be.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3AFEF6B8.2CEF4423@IEEE.org...
> Richard Clark wrote:
> > You have yet to answer how these two sources of your model manage to
> > both feed 1A of current through the common Load that is strapped in
> > parallel to the two parallel sources.
>
> I have obviously taken the wrong approach. I should have instead issued
> a challenge.
>
> So to all you RF guys, please demonstrate how two EM waves, each consisting
> of 50v and one amp in phase in 50 ohm coax, can be merged/added/combined
> to yield 100v and two amps in phase in a 50 ohm line.
>
> Why didn't I think of this before?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3934. AEA Isopole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 01:42:32 UTC
From: Frizz <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com>
Message-ID: <9dnd5cqkn1@bob.news.rcn.net>
Source record: 162981

I have heard good things about this antenna. Can anyone give me some info on it and whether or not it can still be purchased? If not, what are the normal used prices for one? Thanks!!!

73

3935. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 01:44:27 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <vsduft483f22a9u1dcf4k0i5c6fad2do72@4ax.com>
Source record: 162982

On Sun, 13 May 2001 16:03:52 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> You have yet to answer how these two sources of your model manage to
>> both feed 1A of current through the common Load that is strapped in
>> parallel to the two parallel sources.
>
>I have obviously taken the wrong approach. I should have instead issued
>a challenge.
>
>So to all you RF guys, please demonstrate how two EM waves, each consisting
>of 50v and one amp in phase in 50 ohm coax, can be merged/added/combined
>to yield 100v and two amps in phase in a 50 ohm line.
>
>Why didn't I think of this before?

Hi Cecil,

That simplifies your latest models one step more.

Simply remove the load (or short it) to observe waves being
merged/added/combined at the discontinuity.

73's
Richard Clark, KB7QHC

3936. J-pole measurements and formulas?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 01:46:21 UTC
From: Frizz <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com>
Message-ID: <9dndch$ro6$1@bob.news.rcn.net>
Source record: 162983

I am looking for information on how to build a 6m j-pole as well as ones for other bands that use tv twin lead. I just pulled out an old attic mounted tv antenna and have loads of this stuff. Thanks!!!

3937. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 02:15:15 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFF3FB3.9609C49A@IEEE.org>
Source record: 162984

"Peter O. Brackett" wrote:
> But unless we know the load, we cannot tell what the combined current will
> be... it will be whatever it needs to be.

The line is perfectly matched to a 50 ohm load, Peter. I thought that was
obvious.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3938. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 02:16:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFF400C.4049CF2C@IEEE.org>
Source record: 162985

Richard Clark wrote:
> Simply remove the load (or short it) to observe waves being
> merged/added/combined at the discontinuity.

You didn't answer the question, Richard. How do you hook it up to
get double the voltage AND double the current?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3939. Re: ADI AR-146

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 02:22:26 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3AFF4162.FE1CD400@spam.me.not>
Source record: 162986

Morse is coming... It has to... RKQ = Really Keys Quick. ::Grin::

Well, I guess if the four pots labeled VR1-VR4 in the radio won't drastically detune it, I can give it a shot, one way or another. If I make it "too loud" I can always turn it back to where I'll have it marked.

Thanks for the advice.

73 de KC8RKQ

W6DKN wrote:
>
> Congratulations on your new call. I'm sure you'll get a ton more enjoyment
> out of the radio hobby now that you have "graduated". Now all you have to
> do is get the 5 WPM piece and you can really start having fun...
>
> As for your questions, there are such things as FM deviation meters, but
> the good ones cost a lot of money. I'm not too sure how worthwhile the sub
> $500.00 units are - I have a lot more faith in a scope and a spectrum
> analyzer to get it right. That's why I suggested a quick trip to a shop
> or if your lucky, a local "Elmer") that has this type of gear. Perhaps
> somebody more knowledgeable than I may have some additional insight in this
> area ?
>
> It's been a long time since I was inside one of these rigs, and to be
> honest, I don't remember which pot is which. I originally determined their
> functions by trial and error (noting the position of each pot before I
> turned it) while I monitored the rig on a test bench.
>
> My objective at the time was to detune the S meter - it was way too "hot"
> on the rig I was working on - practically every signal was a +10 or +20.
> It made it real hard to use the S meter as an aid in pointing a directional
> antenna for weak signal simplex work...
>
> 73 de W6DKN
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AFEF33F.C8AF9C6D@spam.me.not...
> > You're 100% correct... I am new to this kind of gear. I haven't even had
> > my ticket a week yet.
> >
> > Is there such a thing as a deviation meter? Could I adjust this radio
> > with someone nearby listening for bleedover on an adjacent channel?
> > Which potentiometer is which? I'm assuming, since you named four

> > controls, that you were describing the four pots, but which one's which?
> >
> > TIA
> >
> > 73 de KC8RKQ
> >
> > W6DKN wrote:
> > > With FM, the perceived loudness of a received signal is affected by the
> > > deviation of the transmitted signal, there is no "modulation pot". The
> four
> > > pots in this rig are S-meter sensitivity, hi power setting, low power
> > > setting, and signal deviation.
> > >
> > > To correctly set the deviation requires a proper test bench setup to
> > > measure the transmitted output to make sure that the transmitted signal
> > > does not over-deviate and cause adjacent channel interferrence.
> > >
> > > "Sideband" is new to this type of gear, and is probably better off
> having
> > > it serviced by a properly equipped shop. The cost for this type of work
> is
> > > minimal.
> > >
> > > 73 de W6DKN

3940. Re: what to attach co-ax braid to in shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 02:59:39 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9dnhmr$oq7$0@208.206.142.96>
Source record: 162987

W6DKN wrote:
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3AFED9F1.C15689D8@IEEE.org...
> > Dan Jacobson wrote:
> > > I have unscrewed the original antenna to my 49 mhz cordless phone, and
> > > attached instead the co-ax's center wire, but what to attach the braid
> > > sheath to? The phone itself seems to not provide a 'ground' contact.
> >
> > They do that on purpose so it won't be easy for people like you to
> > break the FCC rules.
> > --
>
> Maybe the guy wants everyone with a scanner for miles around to listen to
> his calls, or maybe he just likes letting everybody in the neighborhood
> make calls on his phone using their handsets. After a few 2-3 hour calls to
> Columbia or Japan he will probably re-think his "set up"...

Or maybe he has a Spread Spectrum cordless phone....

3941. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 03:39:23 UTC
From: richardharrison@webtv.net
Message-ID: <1663-3AFF536B-17@storefull-116.iap.bryant.webtv.net>
Source record: 162989

Bill Sabin wrote:
'And if there is anything in this world that is obvious to me, it is that the braid thickness is a very low impedance for a transverse voltage."

At frequencies where where skin effect prevails the braid thickness is adequate. That`s where and why coax is used.

Horowitz & Hill in "The Art of Electronics" say on page 879: "Compared with parallel conductor line, a properly matched coax line has the advantage of being totally shielded, i.e., there is no radiation or pickup of external signals."

For isolation, on page 456 H&H say: "The best things to do are to reduce the capacitance between the offending points (move them apart), add shielding (a complete metal enclosure or even close knit metal screening. eliminates this form of coupling altogether), move the wires close to a ground plane (which "swallows" the electrostatic fringing fields, reducing coupling enormously), and lower the impedance levels at susceptible points. Op-amp outputs don`t pick up interference easily, whereas inputs do."

"Unfortunately, low-frequency magnetic fields are not significantly reduced by metal enclosures."..."Mu-metal shielding is available...."

Once again I`ll briefly quote Terman on skin effect which causes current to concentrate on the outside of a conductor at r-f. This prevents complete penetration at h-f. The current must instead travel around the edges of a conducting shield.

On page 36 of the 1937 edition of "Radio Engineering" Terman says: "At radio frequencies the reactance of this extra inductance (deep within) is sufficiently great to affect seriously the flow of current, most of which flows along the surface of the conductor where the impedance is low rather than near the center (of the conductor) where the impedance is high."

On page 46 Terman says: "When perfect electrostatic and magnetic shielding is required, it is necessary to employ several concentric shields separated by appreciable air gaps."

I think coax braid leaks a little r-f, but in most cases the leak is negligible.

Best regards, Richard Harrison, KB5WZI

3942. Design of ground independant 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 03:55:27 UTC
From: Mike Allan <"mike.allan<nospamm>"@rmit.edu.au>
Message-ID: <3AFF572F.F6FA76BB@rmit.edu.au>
Source record: 162990

Thanks for reading this post.
I have a number od radomes (hollow fiberglass poles) about 2 meters long from which I want to make some ground independant vertical antennas for portable use. I want to get the most gain I can from the length of pole that I have. Does anyone have a design that they think will work in this situation. I have considered a J pole but that would be only about 1/2 of the avaiable length... any ideas will be considered.
Many thanks
Mike VK3XL

3943. Question on egg-beater

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 04:08:24 UTC
From: KA3MTT <nani@fuse.net>
Message-ID: <tfumn47ogio57d@corp.supernews.com>
Source record: 162991

I was wondering if anyone has had any experience using the eggbeater style antenna for satellite work on VHF/UHF? They claim to work well for them, and was wondering if anyone had any suggestions? Thanks, Nathan KA3MTT

3944. Re: QRP enthusiasts out there ???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 04:43:32 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9dnnpk$dm8$0@208.206.142.96>
Source record: 162992

test wrote:
>
> There are literally 1000's of QRP sites on the net. Go to a search engine
> like www.hotbot.com, type in QRP ham radio or some such thing and you will
> get back enough links to keep you busy for a year.

And-- with few exceptions the QRPers are running CW.

3945. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 04:49:30 UTC
From: w2du@iag.net
Message-ID: <3aff5af5.262337@news.journey.com>
Source record: 162993

On Sun, 13 May 2001 18:50:09 GMT, w2du@iag.net (Walt Maxwell, W2DU) wrote:

>Let's return to the example that Steve and I sparred over months ago. In this
>example a 50-ohm lossless line is terminated in a pure resistance of 150 ohms
>for a reflection coefficient rho of 0.5 and an SWR of 3:1. The source is
>delivering 100 watts to the line, which, at a matching point all reflected power
>is re-reflected. Steve has finally agreed that the total forward power is
>determined by the expression 1/(1 - rho^2), which for a rho of 0.5 the result is
>1/0.75 = 1.33333. Based on this he also agrees that the total forward power for
>100 watts delivered is 133.33 watts, and that the reflected power is 33.333
>watts. Take note that the voltage associated with 33.333 watts in 50 ohms is
>40.8248 v. Thus 40.8248 volts is the reflected voltage during the steady state.
>
>The initial line voltage for 100 watts is 70.71 v.
>
>Because the power increase factor is 1.3333, the voltage increase factor is the
>sqr root of 1.3333, which is 1.1547, which, when multipled by the initial line
>voltage of 70.71 we get 81.65 volts for the steady-state forward voltage.
>
>As stated above, the line voltage for the 33.333 watts re-reflected is 40.8248
>v. Now comes the simple part that Steve overlooks. Since the steady-state
>forward voltage is 81.65 v, when we add the re-reflected 40.8248 v we get
>122.475 v for the PEAK of the voltage STANDING wave. Now when we subtract the
>re-reflected 40.8248 from the forward voltage we get 40.8248 v for TROUGH of the
>voltage standing wave. Now guess what?? Dividing 122.475 by 40.8248 = 3.0, the
>SWR!
>
>Walt, W2DU

Steve, here is some additional info for further proof that forward and reflected voltages are not added to determine total forward power.

Note from above that the forward voltage increase factor is1.1547, the square root of the power increase factor 1.3333. It then follows that the forward current increase factor is also 1.1547.

The source current at 100 watts in 50 ohms is 1.4142 a. Then multiplied by the current increase factor the total forward current is 1.63299 a. Consequently, the product of forward voltage and current is 1.63299 a. x 81.6496 v . = 133.33 watts.

The point here is that the 33.333 watts of reflected power raised both the initial source voltage and current, each raised by the factor 1.1547, which raises the 100 watts of source power to 133.33 watts of forward power.

Now to repeat what I've already told you repeatedly. When using forward and reflected voltages to determine total forward power you must use the square root of the sum of the squares of the voltages NOT THE SUM OF THE VOLTAGES SQUARED. Using the sum of the voltages squared requires a greater increase of reflected current than can be obtained by the reflected power available on re-reflection. This is the reason 248.8 watts of total forward power is the wrong answer.

One last point. The only way all of the source power can be absorbed in the load through a mismatched lossless line is for all of the reflected power to be re-reflected. Therefore, if the absorbed power is equal to the forward power minus the reflected power, the only way for the forward power to contain the reflected power is for all of it to be re-reflected. Consequently, while you agree that the power delivered is equal to the forward power minus the reflected power, the total forward power must equal the source power plus the reflected power. Your belief that the source power and the reflected power don't add in the same manner as they are subtracted is a misconception.

Steve, if you fail to see that what I've said here is correct, then you've got a serious stumbling block somewhere in your brain that you've got to eliminate. I've gone as far as I can to help you eliminate it.

Walt, W2DU

3946. Re: QRP enthusiasts out there ???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 05:08:25 UTC
From: John Moriarity <k6qq@hdo.net>
Message-ID: <tfupvlb0b2io39@corp.supernews.com>
Source record: 162994

> > There are literally 1000's of QRP sites on the net. Go to a search
engine
> > like www.hotbot.com, type in QRP ham radio or some such thing and
you will
> > get back enough links to keep you busy for a year.
>
>
> And-- with few exceptions the QRPers are running CW.

Actually, a *lot* of them are running PSK-31, now. And
quite a few are running SSB at 10 watts PEP.

73,

John, K6QQ

3947. Re: AEA Isopole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 05:09:03 UTC
From: rb <rbigg@seii.net>
Message-ID: <9dni5t$6dt$1@news.chatlink.com>
Source record: 162988

I had one some years back, and used it for about 4yrs. Mine was absolutely great for 2m work. I could hit repeaters from 50-75mi away with reliability, and, when skip was in, I could get stuff from all over the country. The Isopole is omini-directional, if I remember correctly. If you get it any semblance of being in the clear, physically, it will get out fb.

Frizz <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com> wrote in message news:9dnd5cqkn1@bob.news.rcn.net...
> I have heard good things about this antenna. Can anyone give me some info
> on it and whether or not it can still be purchased? If not, what are the
> normal used prices for one? Thanks!!!
>
> 73
>
>

3948. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 05:18:39 UTC
From: richardharrison@webtv.net
Message-ID: <5429-3AFF6AAF-46@storefull-118.iap.bryant.webtv.net>
Source record: 162995

Richard Clark wrote:
"Simply remove the load (or short it) to observe waves being merged/added/combined at the discontinuities."

That will double the voltage or current, but doesn`t quadruple the power. It will cause power delivered by the transmitter to ideally drop to zero because no power will be accepted by the load.

Removing the load removes the power taken by the load. Shorting the load also removes power taken by the load. With no voltage dropped across the load it accepts no power at any current level.

The open-circuit doubles the voltage at the break. There is zero net current at this point so there is no power consumeed. The break does generate a reflected wave, but the incident and reflected currents are out-of-phase at the break, The incident and reflected powers cancel. A Bird wattmeter will show equal incident and reflected powers, so their difference equals zero net power accepted.

A short on the transmission line will produce zoro voltage across the short and double the current at the short. Again, the net power will be zero.

Whenever line conditions produce doubled voltage or current from a transmitter on a line you can expect to find an open or a short.

Placing two transmitters of a power limited to 50 watts each in combination on a line can only give a power of 100 watts. That can`t double the voltage on the line because the voltage can`t rise from 50 to 100 volts. It can only rise to 70.7 volts which is the 50-ohm line voltage for 100 watts.

Best regards, Richard Harrison, KB5WZI

3949. Re: KENWOOD MA-5 ANTENNA? PROS/CONS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 06:42:50 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3AFF7E6A.A534B9EE@oio.net>
Source record: 162996

Chris,
I used a MA-5 for a couple of years, till I finally broke
the base section of the antenna. It is a helically wound,
multi-section antenna. Works well, but has all the disadvantages
of a fairly narrow banded helical antenna. It also has the
disadvantage of being a fibreglass antenna. That in it's self
isn't ~that~ bad, but it will only withstand some limited
number of 'hits' from limbs, etc. It does well on the higher
bands, but 80 and 40 meters are not it's best bands.
I work the lower bands primarily, so wouldn't buy another
MA-5. Also, don't buy the Kenwood bumper mount, you will NOT
like it. If you can't use a 'ball' mount, one of Radio Shack's
chain-bumper mount is better! Kenwood's spring is the one thing
I used long after the antenna was history. This spring is strong!
It will keep a mobile antenna straighter than the usual heavy
duty springs. You still need to 'guy' the MA-5 to keep it up
straight, but the Kenwood spring is worth the cost.
Hope this helps...
'Doc

3950. Re: AEA Isopole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 06:52:03 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AFF8093.23EB@wt.net>
Source record: 162997

Frizz wrote:
>
> I have heard good things about this antenna. Can anyone give me some info
> on it and whether or not it can still be purchased? If not, what are the
> normal used prices for one? Thanks!!!
>
> 73

They don't make those any more. Company folded I think. I think hy-gain
may still make a radial version. It would probably be the next best
thing. MK
--
http://web.wt.net/~nm5k

3951. Re: 3 x 5/8 vertical on vhf

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 06:59:46 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3AFF8262.3F4C@wt.net>
Source record: 162998

Guy wrote:
>
> Hello and many thanks to read me.
>
> I should be very interested to build my own 3 x 5/8 vertical antenna for
> vhf. I would like to scale it for another frequency than the usual 144 Mhz
> band. Its purpose is the aviation band reception. So, could you help me
> about the dimensions of such antenna and I am especially looking for the way
> I must feed it (loading coil dimensions or some other way to feed a 3 x 5/8
> vhf vertical).
>
> Many thanks beforehand for any help. Best wishes . Guy.

Probably the easiest way would be to copy the cushcraft ringo ranger 2.
They have pdf files on their website. But I really don't think the
advantage of that antenna over a high 1/4 wl ground plane would be worth
the trouble. The increase would likely be fairly small if the tops of
the antennas were equal height. If you are listening to planes in the
air, and towers also, the 1/4 gp would be pretty good. If you are
listening mainly to distant towers, a small vertical yagi would be much
better than either vertical. MK
--
http://web.wt.net/~nm5k

3952. Re: what to attach co-ax braid to in shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 07:54:12 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <EaML6.1974$mk6.896463@paloalto-snr1.gtei.net>
Source record: 162999

```
"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9dnhmr$oq7$0@208.206.142.96...
>
>
> W6DKN wrote:
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > news:3AFED9F1.C15689D8@IEEE.org...
> > > Dan Jacobson wrote:
> > > > I have unscrewed the original antenna to my 49 mhz cordless phone,
and
> > > > attached instead the co-ax's center wire, but what to attach the
braid
> > > > sheath to? The phone itself seems to not provide a 'ground'
contact.
> > >
> > > They do that on purpose so it won't be easy for people like you to
> > > break the FCC rules.
> > > --
> >
> > Maybe the guy wants everyone with a scanner for miles around to listen
to
> > his calls, or maybe he just likes letting everybody in the neighborhood
> > make calls on his phone using their handsets. After a few 2-3 hour
calls to
> > Columbia or Japan he will probably re-think his "set up"...
>
>
> Or maybe he has a Spread Spectrum cordless phone....

Not likely at 49 mhz. These are usually the typical Walmart 19.99 cheapo's
that cause all the 6 meter operators neighbor trouble :>) . Most of the
better phones with any type of security at all are 800 mhz and up.
```

3953. Re: Question on egg-beater

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 09:53:05 UTC
From: kg4fet@aol.combadspam
Message-ID: <20010514055305.09513.00002551@ng-mk1.aol.com>
Source record: 163000

>I was wondering if anyone has had any experience using the eggbeater style
>antenna for satellite work on VHF/UHF? They claim to work well for them,
>and was wondering if anyone had any suggestions? Thanks, Nathan KA3MTT
>
>
>
Nathan,
I have used the K5OE designs for 440 and 144 on the LEO'swith good sucess. The
antenns preformed welland do make fair to midland SSB omni antennas as well
when set up verticle rather then at a 30 deg angle. Site can be found at
www.members.aol.com/K5oe Click on the Texas Potato Masher II links for
improved eggbeater antennas.
Good Luck and 73 de KG4FET Sandor

3954. What's Happened?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 10:12:28 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3affaf8e_1@news.cybertours.com>
Source record: 163002

I've received no new list postings since May 10th.. tried everything but still nothing new. anying hints please email me direct elbc@pivot.net. thanks Dave KC1DI

3955. Re: Design of ground independant 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 12:26:44 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3affceda_3@news3.prserv.net>
Source record: 163003

Look up Harold Wheeler's papers in IRE back in the 50s and 60s. He
discusses what configuration to use to get the most gain out of a given
aperture. My archives are all gone now, or I would look it up for you.
--
Crazy George

Mike Allan @rmit.edu.au> <"mike.allan<nospamm> wrote in message
news:3AFF572F.F6FA76BB@rmit.edu.au...
> Thanks for reading this post.
> I have a number od radomes (hollow fiberglass poles) about 2 meters long
> from which I want to make some ground independant vertical antennas for
> portable use. I want to get the most gain I can from the length of pole
> that I have. Does anyone have a design that they think will work in this
> situation. I have considered a J pole but that would be only about 1/2
> of the avaiable length... any ideas will be considered.
> Many thanks
> Mike VK3XL
>

3956. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 13:27:31 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFFDD42.138B2FF4@IEEE.org>
Source record: 163004

Richard Harrison wrote:
> Placing two transmitters of a power limited to 50 watts each in
> combination on a line can only give a power of 100 watts. That can`t
> double the voltage on the line because the voltage can`t rise from 50 to
> 100 volts. It can only rise to 70.7 volts which is the 50-ohm line
> voltage for 100 watts.

According to some, adding 50v to 50v in a Z0 environment will result in
100v in that Z0 environment. I have challenged someone to come up with
a configuration that will do that. I've been told to ignore the interim
energy because everything comes out right for the net end results.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3957. S Meter Accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 13:34:18 UTC
From: Greg Ordy <gregordy@ameritech.net>
Message-ID: <G8RL6.152$yU4.79502@nntp0.chicago.il.ameritech.net>
Source record: 163005

From time to time on this group, mention is made of receiver S Meters
and using them to make measurements of differences in signal strength.

Last year, I had the opportunity to examine the S Meter accuracy
of several radios. The results are on the following web page.

www.seed-solutions.com/gregordy/Amateur%20Radio/Experimentation/SMeterBlues.htm

Generally, S Meters are very nonlinear, in terms of the relationship
between S Units and dB. No radio (that I measured) comes even remotely
close to the often quoted 6 dB/S Unit, across its entire range.

Greg Ordy, W8WWV

3958. Re: Portable Antenna Ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 13:42:04 UTC
From: Rudy Marcelletti <rudym@net-link.net>
Message-ID: <3affe19e$0$88181$bbae4d71@news.net-link.net>
Source record: 163006

Get an automatic antenna coupler, such as SGC-230 (160 through 10 meters, 200 watts PEP) SGC-231 (160 through 6 meters, 100w) or Icom AH-4 (80 through 6 meters, 120w) or SGC-237 (160-6, 100w SSB/40w CW?). The all you need is a few pieces of wire, one of which must be at least 23 feet long, but 40 or 60 feet would work a lot better. Toss the 23 foot piece of wire into a tree, out an upper floor window, and the other wires on the ground for the counterpoise or use nearby metal (fence, railings, guy wire on phone pole). You can use a collapsible fishing pole for your antenna wire support. Packs nicely. Light weight. Fully automatic tuning and all band/mode coverage. Installs quickly. Dismantles quickly. Practically invisible and basically wx proof.
Richard <2e0avf@talk21.com> wrote in message
<9dfagsakg1@plutonium.btinternet.com>...
>Hi
>
>I am looking for portable antenna ideas, I will be travelling around in the
>summer and will want to take my HF radio with me. I will be looking to use
>10 - 20 meters and 100 Watts or less. It will be from a house and not a car
>so I will need an antenna that can be put up without having to climb trees
>or anything like that, just to be able to mount it some way and then tune
it
>up and use it.
>
>I have thought about using some form a base and then just use mobile whips
>but I would prefer to just take one antenna. I will be looking to make
>something more than buy it but if there is any portable antennas out there
>that are a reasonable price let me know. Something that can be made up on
>the spot so that it is small to carry but then extends when in use might be
>an idea because I don't want to carry some huge long antenna somewhere so
>perhaps something that is telescopic might be good to use.
>
>If you need any more details let me know
>
>Richard
>
>

3959. Re: My RFI Problem- 15 Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 13:43:03 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3AFFE2D6.9050604@aol.com>
Source record: 163007

The balun(or lack thereof) on the transmitting antenna may not be the problem. It could well be that 15 meter RF is getting into the TV because it is resonant with the TV feedline, or maybe your dish likes 21 MHZ. Try choking at the dish in combination with at the TV.

Do you have a high SWR on 15 meters? Sounds like the exciter is folding back.

40 watts should be enough to make contacts, even with a compromise antenna. Don't miss out while you are debugging the RFI problem.

KAZ
W4KAZ

3960. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 14:11:32 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <oIRL6.21760$4f7.1738075@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163008

"Walt Maxwell, W2DU" <w2du@iag.net> wrote in message
news:3afec0bc.2648718@news.journey.com...
> On Fri, 11 May 2001 18:12:38 GMT, "VE9SRB" <srbest@att.net> wrote:

> Now readers of this NG please see below a copy of the email I just
received from
> Steve, which he obviously didn't want you to see::
>
> "Walt:
> If you're correct on the addition of power, why then does Johnson, Terman,
> Slater, Skilling, Chu, Chipman, etc add voltage the way I do? No one of
these
> people add power the way you do.
>
> Your basic problem is the misconception that the steady state delivered
power is
> a forward power in the line. It is not.
>
> I really believe that you know you're wrong but your ego won't allow you
to
> publicly admit it.
>
> Unless you want to deal honestly with me and stop the ego BS, I will be
> forwarding copiesof the appropriate Chapters of "Reflections" to be peer
> reviewed by the IEEE and some respected experts on the subject. If you
won't
> deal honestly with me, we'll see how that goes.
>
> Steve"
>
> Well, people on the NG, Steve's private memo to me above makes it
eminently
> appropriate to make some remarks that I would otherwise have kept to
myself, and
> to repeat some others that are pertinent.
>

Walter:

I had actually unsubscribed from the newsgroup as I felt that the public discussion on this subject was becoming a waste of time. Thanks for letting me know that you responded to my private e-mail on the public newsgroup. I am frankly shocked that you would post a private e-mail. You're correct that I did not want the readers of the newsgroups to see it. That's why I sent it as a private e-mail.

> First, I have told Steve many times that he just doesn't 'get it'. I have
also
> told him that with with respect to the noted authors he quoted above, he
has
> continually misinterpreted what they say concerning the addition of
voltages on
> a transmission line. He still doesn't get it, as evidenced by his
continuing
> insistence that 8.33 watts + 100 watts = 133.33 watts.
>

If you're going to quote my technical position, at least quote it correctly.

I never said that 8.33 W + 100 W = 133.33 W. In the examples that we have been discussing, I have said that 75 W + 8.33 W = 133.33 W. From this statement I have been implying that the voltage and current associated with the 75 W forward traveling wave add with the voltage and current associated with the 8.33 W forward traveling wave, resulting in a total forward traveling wave with a power of 133.33 W. The 75 W forward traveling wave is the forward source wave and the 8.33 W wave is the re-reflected wave.

> It's incredible that a person of Steve's intelligence has missed such a
simple
> explanation of the voltage-power problem to the point where he believes
that the
> above-mentioned authors are saying that addition of voltages on the line
yield
> the forward power, when what they are saying, especially Johnson, in his
> expression on Page 100, is that the addition of voltages is simply
determining
> the voltage of the standing wave at any point on the line. It does not
yield the
> forward power in the line as Steve insists. I pointed this out to Steve,
but he
> paid no attention. So please let me explain what Steve has been missing
all
> along.
>
> We know that the voltage at any point along the voltage standing wave
results
> from the phasor addition of the forward and reflected voltages. Why am I
going
> back to such a simple and obvious statement? Because this is the point
that
> Steve is missing.
>

Walter, anyone that has read my newsgroup posts, knows that I have consistently stated that the total steady state voltage at any point on transmission line is determined from the vector addition of the forward and rearward voltages.

Lets take a close look at Johnson's formula and how we can correctly use it to determine the total forward power. I'm doing this from memory as I do not have the text with me. The analysis is on pages 98 - 101.

In his discussion of vector voltage addition, Johnson first determines the *initial* forward voltage applied to the line by the source. In this specific case, the initial forward voltage is Eg (Zo/ Zg + Zo). Note that Eg is the source voltage, Zg is the source impedance. Lets define this initial forward source voltage as Vi. Johnson specifically states that this initial source voltage "flows forevermore out of the source". Note also that Johnson specifically *adds* all of the voltages re-reflected at the source to this initial forward voltage to determine the total forward voltage.

Johnson describes how the forward source voltage arrives at the load as Vi e^-gL (g = gamma, L = line length). It is reflected there as kr Vi e^-gL (kr = load reflection coefficient). This reflected voltage travels rearward towards the source and arrivies there as kr Vi e^-2gL. Lets define this reflected voltage as Vref. A reflection (re-reflection) occurs at the source, specifically as a function of kg, the source reflection coefficient. The re-reflected voltage at the source is kg kr Vi e^-2gL. Lets define this re-reflected voltage as Vrer.

Now at this point, the total line voltage at the source is equal to the sum of the forward and rearward traveling voltages: Vtotal = Vi + Vref + Vrer. The total forward voltage at the source is equal to Vi + Vrer.

Contiuning with Johnson's analysis, he describes how the reflections and re-reflections continue until the steady state is reached. Johnson always discusses the total voltage on the line, knowing that the total voltage is derived from the sum of the forward and rearward voltages. His final formula for total voltage at any point "x" on the line looks as follows (from memory):

E = Eg (Zo/Zg + Zo) [1 / (1 - kg kr e^-2gL)] { e^-gx + V2 e^+gx}

(I need to check the accuracy of this representation)

In any event, the total voltage anywhere on the line is the vector sum of the forward and rearwards components. E can be written as E = E+ + E-, where E+ is the vector sum of the initial forward source voltage and the re-reflected voltages. The total forward steady state power is simply determined from |E+|^2 / Zo.

> Let's return to the example that Steve and I sparred over months ago. In this
> example a 50-ohm lossless line is terminated in a pure resistance of 150 ohms
> for a reflection coefficient rho of 0.5 and an SWR of 3:1. The source is
> delivering 100 watts to the line, which, at a matching point all reflected power
> is re-reflected.

I love this. You always *start* with the assumption that all reflected power is re-reflected. You never try to prove it through a wave reflection analysis, a voltage analysis, nothing. You always start with this *assumption*. Anyone that starts with an assumption can always work the numbers to "prove themselves correct". No competent engineer ever starts an analysis knowing the steady state solution and then works it backwards using the assumption to prove the assumption. The analysis should start at the beginning of the problem and then either prove or disprove the assumption. As an engineer, you can't use the assumption as part of the proof.

>Steve has finally agreed that the total forward power is
> determined by the expression 1/(1 - rho^2), which for a rho of 0.5 the result is
> 1/0.75 = 1.33333. Based on this he also agrees that the total forward power for
> 100 watts delivered is 133.33 watts, and that the reflected power is 33.333
> watts.

I have always agreed with the relationship that Pforward = Pdelivered / (1 + |rhoA|^2). This relationship has nothing to do with impedance matching, nor does it have anything to do with the concept of total power re-reflection. This relationship is derived from the steady state relationship that Pdelivered = Pforward - Preflected, which is valid in all transmission line systems, independent of an impedance match or an impedance mismatch. Lets look at this relationship.

Lets assume that we know Pforward and Preflected at the input to the transmission line. Lets assume a lossless line. The forward power arriving at the antenna is Pforward. The power reflected at the antenna is |rhoA|^2 Pforward. This reflected power travels towards the input of the line such that Preflected = |rhoA|^2 Pforward. Now, we also know that Pdelivered = Pforward - Preflected. From this we know Pdelivered = Pforward - |rhoA|^2 Pforward = Pforward (1 - |rhoA|^2). So, we can rewrite this equation as Pforward = Pdelivered / (1 - |rhoA|^2). It does not take much of a genius to work this relationship out. This relationship has nothing to do with the concept of total power re-reflection at a match point.

>Take note that the voltage associated with 33.333 watts in 50 ohms is
> 40.8248 v. Thus 40.8248 volts is the reflected voltage during the steady state.
>

This is a correct statement.

> The initial line voltage for 100 watts is 70.71 v. In his penchant for adding
> voltages (not power) Steve adds the reflected voltage to the forward voltage to
> get 70.71 + 40.8248 = 111.53 volts. Big mistake. First, 70.71 volts is an
> INITIAL voltage and 40.8248 volts is a STEADY-STATE voltage. Mixing apples and
> oranges.

>

This is where you get confused Walter. First, you incorrectly represent my technical position in the way you add the voltages above. Second, you incorrectly *assume* a level of re-reflected voltage (note that you just *assume* that a total re-reflection of voltage occurrs). Walter, this discussion is not even close to the way I add voltage.

I am not going to go into the example that we had discussed in the past as it includes a tuner and is more complicted than you indictae. If we stick with Cecil's example, the forward source voltage in the 150 ohm line is 106.07 V (75 W forward source wave) and the reflected voltage is 70.71 V (33.33 W reflected wave). The re-reflected voltage is equal to 35.35 V. The re-reflected voltage adds to the forward source wave (just like Johnson says it does) such that the total forward voltage is equal to 141.42 V. This is equivalent to a forward power of 133.33 W in the 150 ohm line. If you're going to try to describe my technical position, please describe it correctly.

> Because the power increase factor is 1.3333, the voltage increase factor is the
> sqr root of 1.3333, which is 1.1547, which, when multipled by the initial line
> voltage of 70.71 we get 81.65 volts for the steady-state forward voltage.
>

Guess what Walter, you're working the relationship Pdelivered = Pforward - Preflected with voltages.

> As stated above, the line voltage for the 33.333 watts re-reflected is 40.8248
> v. Now comes the simple part that Steve overlooks. Since the steady-state
> forward voltage is 81.65 v, when we add the re-reflected 40.8248 v we get
> 122.475 v for the PEAK of the voltage STANDING wave. Now when we subtract the
> re-reflected 40.8248 from the forward voltage we get 40.8248 v for TROUGH of the
> voltage standing wave. Now guess what?? Dividing 122.475 by 40.8248 = 3.0, the
> SWR!
>

Very good Walter.

You just added the forward (81.65 V) and reflected voltage (40.824) to get |Vmax|. Then you subtracted the forward (81.65 V) and reflected voltage (40.824) to get |Vmin|. The ratio of Vmax / Vmin = SWR.

What's does this have to do anything that we have been discussing?

> So to conclude the example, the voltages that Steve and the above mentioned
> authors are adding relate to the voltage of the standing wave, which the

Johnson
> equation Steve uses specifies--the VOLTAGE ON THE STANDING WAVE at any
point
> along the line. My example above, which is the same as Steve and I
quarreled
> about over during the past year, proves that the addition of voltages
yields
> only the standing wave, and not the forward power that Steve proclaims.
>

What example?

You gave no example conditions. You just specified some voltages, made some assumptions and the added the numbers anyway you wanted to.

> Now to his plan to forward chapters of 'Reflections' to the IEEE for their
> review, I welcome it. Many have already reviewed it with commendation.
>
> Ironically, in his article on conjugate matching that appeared in the
final
> issue of Communications Quarterly, Steve trashed my explanation of
reflection
> mechanics as I presented them in QST, 'Reflections', and QEX, saying they
are
> erroneous and misleading, based on his own misconceptions of reflection
> mechanics.
>
> So yes Steve, please do send my material in 'Reflections' to the IEEE, and
have
> them copy me on their report of the review.
>
> Walt, W2DU
>

Walter:

This entire e-mail was just a bunch of numbers thrown around. No example was discussed or analyzed. This was just more of the "I'm Walter, I'm right. When I first assume that a total re-reflection of occurs, watch how I can manipulate the numbers to prove it."

Want to get serious?

Answer these questions:

1) If the forward source voltage arriving at the junction of a 50/150 ohm transition is 70.711 V, what is the magnitude of the forward source voltage in the 150 ohm line? What is the magnitude of the reflected voltage in the 50 ohm line?

2) If the magnitude of the steady state reflected voltage in the 150 ohm line is 63.402 V, what is the magnitude of the re-reflected voltage? What is the magnitude of the rearward voltage created in the 50 ohm line?

3) Since you don't need voltage phase for your calculations and you state that Vforward = Sqrt(Vfwd1^2 + Vfwd2^2), what is the total forward voltage and power in the 150 ohm line?

Steve VE9SRB

3961. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 14:14:28 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <8LRL6.21769$4f7.1740035@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163009

"Walter Maxwell" <w2du@iag.net> wrote in message
news:3afefb01.17565347@news.journey.com...
> On Sun, 13 May 2001 18:50:09 GMT, w2du@iag.net (Walt Maxwell, W2DU) wrote:
>
> >
> >Now to his plan to forward chapters of 'Reflections' to the IEEE for
their
> >review, I welcome it. Many have already reviewed it with commendation.
> >
> >Ironically, in his article on conjugate matching that appeared in the
final
> >issue of Communications Quarterly, Steve trashed my explanation of
reflection
> >mechanics as I presented them in QST, 'Reflections', and QEX, saying they
are
> >erroneous and misleading, based on his own misconceptions of reflection
> >mechanics.
> >
> >So yes Steve, please do send my material in 'Reflections' to the IEEE,
and have
> >them copy me on their report of the review.
> >
> >Walt, W2DU
>
> This is a postscript to my earlier post. I have hard copies of Steve's
email to
> to me during correspondence on this subject, plus some dialog between him
and me
> on the "Tower Talk" net, which is quite illuminating concerning Steve's
> misconception on how powers add, as if the source power was unlimited.
>
> I would be happy to submit his statements to the IEEE for their review,
but I
> wouldn't consider it seriously, because even though he embarassed the hell
out
> of me in his Communications Quarterly article, I don't care to embarass
him any
> more than what he receives from this group. But believe me, he would be
> embarassed by an IEEE review of his statements that say 248.8 watts would
be the
> answer if the corresponding voltages were added in the case of adding 100
watts
> to 33.333 watts to obtain 133.33 watts.
>

> Walt
>

Walter:

If you have a forward traveling power of 100 W in a 50 ohm line what is the forward voltage magnitude and phase?

If you have a forward traveling power of 33.33 W in a 50 ohm line what is the forward voltage magnitude and phase?

Add these two forward complex voltages.

Steve

3962. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 14:21:34 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <ORRL6.21788$4f7.1741471@bgtnsc06-news.ops.worldnet.att.net>
Source record: 163010

"Walter Maxwell" <w2du@iag.net> wrote in message
news:3aff5af5.262337@news.journey.com...
> On Sun, 13 May 2001 18:50:09 GMT, w2du@iag.net (Walt Maxwell, W2DU) wrote:
>
> <snip>
>
> Walt, W2DU
>

Walter:

When you stop *assuming* that a total re-reflection of power occurs and understand that the total forward voltage is simply equal to the forward source voltage (which by the way is not the total steady state voltage at the line input) plus the re-reflected voltage, you will get it.

Steve VE9SRB

Oh yes .. If you're right about voltage and power addition, then answer the questions in my previous post so that we can discuss publicly. I wanted to discuss privately, but since you prefer the public discussion ......

3963. Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 14:33:50 UTC
From: w2du@iag.net
Message-ID: <3affea2f.1049038@news.journey.com>
Source record: 163011

Hi gang, here is the latest email I received from Steve. I want him to know that I'm not going to discuss technical issues with him in private because to do so is unproductive. Here it is:

"I unsuscribed from the newsgroup on Friday because trying to have a discussion with you there is as big waste of time. You avoid direct technical issues.

Given the nature of some of your posts towards me, I would not be surprised if you posted my private e-mail and then answered me in public.

I'll take a look."

End of Steve's msg.

Is Steve right? Do I avoid direct technical issues? IMO, the waste of time is in trying to have a meaningful technical discussion with him.

Walt, W2DU

3964. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 14:57:15 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <fnSL6.22118$t12.1750545@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163012

"Walter Maxwell" <w2du@iag.net> wrote in message
news:3affea2f.1049038@news.journey.com...
> Hi gang, here is the latest email I received from Steve. I want him to
know that
> I'm not going to discuss technical issues with him in private because to
do so
> is unproductive. Here it is:
>
> "I unsuscribed from the newsgroup on Friday because trying to have a
discussion
> with you there is as big waste of time. You avoid direct technical issues.
>
> Given the nature of some of your posts towards me, I would not be
surprised if
> you posted my private e-mail and then answered me in public.
>
> I'll take a look."
>
> End of Steve's msg.
>
> Is Steve right? Do I avoid direct technical issues? IMO, the waste of time
is in
> trying to have a meaningful technical discussion with him.
>
> Walt, W2DU

Walter:

No matter what you said to me in private, I would never post one of your private messages to me on this newsgroup. Even if you were to turn 180 degrees and completely agree with me on this subject, I would not post it on this newsgroup.

This is clearly more of a personal issue for you than for than it is for me. My only interest is the technical truth. I think your issue goes much deeper than that. I now understand the nature of your posts and why you do avoid a full discussion of my technical perspective.

If you would like to end this discussion, publicly and privately, this would be acceptable for me. I really don't care that you disagree with me.

If you want to end it, just stop responding, I will do so as well.

I guarantee that you will never receive a private e-mail from me again.

Steve

3965. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 15:06:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFFF486.4F0AE51B@IEEE.org>
Source record: 163013

VE9SRB wrote:
> If you have a forward traveling power of 100 W in a 50 ohm line what is the
> forward voltage magnitude and phase?

Voltage equals 70.7v and current equals 1.414a in phase at zero degrees.
V*I*cos(zero) = 100 watts

> If you have a forward traveling power of 33.33 W in a 50 ohm line what is
> the forward voltage magnitude and phase?

Voltage equals 40.8v and current equals 0.816a in phase at zero degrees.
V*I*cos(zero) = 100 watts

> Add these two forward complex voltages.

Assuming these are the ONLY two energies existing in the 50 ohm environment:

The addition of the two energies will result in 133.33 joules/sec so the
resulting total voltage will be sqrt(133.33 * 50) = 81.65 volts.
The resulting total current will be sqrt(133.33/50) = 1.63a
V*I*cos(zero) = 133.33 watts and energy is conserved.

This is the way I approached your earlier example and got the correct
results.

Now let's see where your approach leads. You would say the total voltage is
70.7 + 40.8 = 111.5v and total current is 1.414 + 0.816 = 2.23a

V*I*cos(zero) = 248.6 watts and the conservation of energy principle is violated.

If you want your voltage to equal 111.5v and your current to equal 2.23a,
you simply must add more energy, i.e., 115.3 joules/sec more energy. Where
are you going to get that extra energy, Steve? It's not there in your
example above so you are going to have to add it.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3966. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 15:32:17 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3AFFFA81.3722E524@IEEE.org>
Source record: 163014

VE9SRB wrote:
> When you stop *assuming* that a total re-reflection of power occurs and
> understand that the total forward voltage is simply equal to the forward
> source voltage (which by the way is not the total steady state voltage at
> the line input) plus the re-reflected voltage, you will get it.

It is true that those voltages and currents add up, Steve, but your energy doesn't add up. There is more energy in your total than there is in the sum of the parts. Where does the extra energy come from? When you figure out that that extra energy comes from the destructive interference pattern, then you will get it. When you figure out that the power in the destructive interference pattern comes from the same source as the re-reflected power and shares the same destination as the re-reflected power, you will realize why it is not such a stretch to call it re-reflected.

I agree with you that the extra power is not technically re-reflected.
I agree with Walt that you cannot add both voltages and currents in phase, to obtain more energy than is available.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3967. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 15:43:24 UTC
From: w2du@iag.net
Message-ID: <3affeef8.2274981@news.journey.com>
Source record: 163015

On Mon, 14 May 2001 14:11:32 GMT, "VE9SRB" <srbest@att.net> wrote:

>Answer these questions:
>
>1) If the forward source voltage arriving at the junction of a 50/150 ohm
>transition is 70.711 V, what is the magnitude of the forward source voltage
>in the 150 ohm line? What is the magnitude of the reflected voltage in the
>50 ohm line?

The forward source voltage in the 150-ohm line is 106.066 v.
The reflected voltage in the 50-ohm line is 35.355 v.

>2) If the magnitude of the steady state reflected voltage in the 150 ohm
>line is 63.402 V, what is the magnitude of the re-reflected voltage? What
>is the magnitude of the rearward voltage created in the 50 ohm line?

The re-reflected voltage is 31.7 v.

The total rearward voltage in the 50 ohm line from the reflection at the
50/150-ohm junction plus the transmission through the 150/50-ohm junction is
47.49 v.

This 47.49 v. is the voltage in the total rearward power of 45.1 w in the 50-ohm
line resulting from 25 watts reflected at the 50/150-ohm junction plus the
20.099 watts transmitted rearward through the 150/50-ohm junction.

This is the correct way to determine the total rearward voltage in the 50-ohm
line.

However, if you add the separate voltages from the reflection and transmission,
respectively (which is incorrect), you will get 35.355 volts from the reflection
and 31.7 volts from the transmission, for a total voltage 67.1 v., an INCORRECT
voltage.

>3) Since you don't need voltage phase for your calculations and you state
>that Vforward = Sqrt(Vfwd1^2 + Vfwd2^2), what is the total forward
>voltage and power in the 150 ohm line?

The total forward voltage in the 150-ohm line is 110.7 v. The total forward
power in the 150-ohm line is 81.7 watts.

Now Steve, please don't tell us that I avoid direct technical issues.

Walt, W2DU

PS--in my previous post I incorrectly said you used 8.33 w. + 100 w = 133.33 w.
You are correct, you said 8.33 w. + 75 w = 133.33 w.

3968. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 15:49:18 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <28TL6.1573$p33.43281@news1.sttls1.wa.home.com>
Source record: 163016

"Walter Maxwell" <w2du@iag.net> wrote in message
news:3affea2f.1049038@news.journey.com...

> Is Steve right? Do I avoid direct technical issues? IMO, the waste of time
is in
> trying to have a meaningful technical discussion with him.
>
> Walt, W2DU

I am not interested in voting about who is right or wrong as if this is a popularity contest. A technical discussion between two outcomes should be decided by physical testing, not by who is the most eloquent, the loudest, or most popular.

73, Roger, W7WKB

3969. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 16:08:28 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <0qTL6.22181$t12.1757792@bgtnsc05-news.ops.worldnet.att.net>
Source record: 163017

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3AFFF486.4F0AE51B@IEEE.org...
> VE9SRB wrote:
> > If you have a forward traveling power of 100 W in a 50 ohm line what is
the
> > forward voltage magnitude and phase?
>
> Voltage equals 70.7v and current equals 1.414a in phase at zero degrees.
> V*I*cos(zero) = 100 watts
>
> > If you have a forward traveling power of 33.33 W in a 50 ohm line what
is
> > the forward voltage magnitude and phase?
>
> Voltage equals 40.8v and current equals 0.816a in phase at zero degrees.
> V*I*cos(zero) = 100 watts
>
>

It is correct that both V and I must be in phase. But they both do not have
to be at zero degrees.

> Assuming these are the ONLY two energies existing in the 50 ohm
environment:
>
> The addition of the two energies will result in 133.33 joules/sec so the
> resulting total voltage will be sqrt(133.33 * 50) = 81.65 volts.
> The resulting total current will be sqrt(133.33/50) = 1.63a
> V*I*cos(zero) = 133.33 watts and energy is conserved.
>
> This is the way I approached your earlier example and got the correct
> results.

You can't correctly answer the example I gave earlier unless you know the
relative phase of the two forward voltages that you need to add. Only
knowing the relative phase can you correctly arrive at the unique solution
for the correct delivered and forward power.

Second, you can stop with the "joules". "Watts" is fine.

Your addition of power here only works if the voltage associated with the
100 W signal is 90 degrees out of phase with the voltage associated with the
33.33 W signal.

Here are several examples of "ONLY" two forward voltages and currents
traveling in the line. In each case P1 = 100 W and P2 = 33.33 W. What is

the correct total steady state forward power in each case?

1) V1 = 70.711 V at 0 degs. I1 = 1.414 A at 0 degs. V2 = 40.823 V at 0 degs I1 = 0.816 A at 0 degs.

2) V1 = 70.711 V at 90 degs. I1 = 1.414 A at 90 degs. V2 = 40.823 V at 90 degs I1 = 0.816 A at 90 degs.

3) V1 = 70.711 V at 40 degs. I1 = 1.414 A at 40 degs. V2 = 40.823 V at 40 degs I1 = 0.816 A at 40 degs.

>
> Now let's see where your approach leads. You would say the total voltage is
> 70.7 + 40.8 = 111.5v and total current is 1.414 + 0.816 = 2.23a
>
> V*I*cos(zero) = 248.6 watts and the conservation of energy principle is violated.
>

I would only add two forward voltages and currents like this if they are in phase.

Assuming that V = 111.5 V and I = 2.23 A, that would be the correct power.

> If you want your voltage to equal 111.5v and your current to equal 2.23a,
> you simply must add more energy, i.e., 115.3 joules/sec more energy. Where
> are you going to get that extra energy, Steve? It's not there in your
> example above so you are going to have to add it.
> --

The "extra" energy comes from the increase in power delivered by the source as the system transitions from the initial state to the steady state. And yes it does come from the destructive interference that occurs at the junction. At the same time, the system must maintain the correct relationships between total voltage and current; forward voltage and current; and rearward voltage and current. To simplify this discussion we could only look at the total voltage and current at the junction and I expect we would agree completely. It is still a requirement however that Vtotal = Vforward + Vrearward. I think that much of our disagreement comes from you thinking in terms of net delivered power and me thinking in terms of the forward and rearward voltage components that result in the steady state conditions.

As I have said many times, the law of conservation of energy only requires that the power "accepted" or "consumed" by the load be equal to the power delivered by the source AND that the net power flowing into the junction be equal to the net power flowing out of the junction. In the initial state (at the junction), the source only sees a 150 ohm load and it delivers 75 W of power to the junction. With each successive reflection and re-reflection at the junction, the load impedance (Vtotal /Itotal) seen at the junction changes and the source delivers more power to the junction. By the time the system reaches the steady state, it will be delivering 100 W of power to the

junction. You ook at the steady state and then try to explain it based on understanding net power delivery. You don't see the entire process. If you have access to a SPICE circuit/transmission line analysis program set up an example of a quarter-wave transformer and watch the voltages transition from the initial state to the steady state. You may have to make the transformer an integral number of quarter wavelengths to see the transitions as a function of time. Its interesting.

Steve

3970. Re: AEA Isopole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 16:20:18 UTC
From: KA9CAR <nospam@nospam.usa>
Message-ID: <9dp0i0pvb1@news.tribune.com>
Source record: 163018

I also used one for several years.

I had a web site reference to it, but that has now gone away.

It was a dipole using 2 decoupling sleeves. The whip was arund 5/8 or maybe more. Both of the sleeves should be 1/4 wave.

The second sleeve was tucked up under the first one just a hair so that the decoupling effect was maximized.

Currently I am using a sleeve dipole with one sleeve, as my mobile antenna. Works GREAT.

KA9CAR

Frizz <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com> wrote in message news:9dnd5cqkn1@bob.news.rcn.net...
> I have heard good things about this antenna. Can anyone give me some info
> on it and whether or not it can still be purchased? If not, what are the
> normal used prices for one? Thanks!!!
>
> 73
>
>

3971. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 16:39:41 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <hTTL6.22141$4f7.1756634@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162919

"Walter Maxwell" <w2du@iag.net> wrote in message
news:3affeef8.2274981@news.journey.com...
> On Mon, 14 May 2001 14:11:32 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>
> >Answer these questions:
> >
> >1) If the forward source voltage arriving at the junction of a 50/150
ohm
> >transition is 70.711 V, what is the magnitude of the forward source
voltage
> >in the 150 ohm line? What is the magnitude of the reflected voltage in
the
> >50 ohm line?
>
> The forward source voltage in the 150-ohm line is 106.066 v.
> The reflected voltage in the 50-ohm line is 35.355 v.
>

Correct. Its good to agree on this. A starting point for constructive
discussion.

> >2) If the magnitude of the steady state reflected voltage in the 150 ohm
> >line is 63.402 V, what is the magnitude of the re-reflected voltage?
What
> >is the magnitude of the rearward voltage created in the 50 ohm line?
>
> The re-reflected voltage is 31.7 v.
>

Correct. Again, a starting point for constructive discussion.

> The total rearward voltage in the 50 ohm line from the reflection at the
> 50/150-ohm junction plus the transmission through the 150/50-ohm junction
is
> 47.49 v.
>

I was asking the question specific to the component of rearward voltage
delivered into the 50 ohm line only from the presence of the reflected
voltage arriving at the junction. This component of rearward voltage would
have a magnitude of 31.7 V.

> This 47.49 v. is the voltage in the total rearward power of 45.1 w in the
50-ohm
> line resulting from 25 watts reflected at the 50/150-ohm junction plus the

> 20.099 watts transmitted rearward through the 150/50-ohm junction.
>
> This is the correct way to determine the total rearward voltage in the
50-ohm
> line.
>
> However, if you add the separate voltages from the reflection and
transmission,
> respectively (which is incorrect), you will get 35.355 volts from the
reflection
> and 31.7 volts from the transmission, for a total voltage 67.1 v., an
INCORRECT
> voltage.
>

I agree with you that 67.1 V would be an incorrect voltage. Your 47.49 V is also an incorrect voltage (for the example I set up).

Adding the two rearward traveling voltages, Vtotal rearward = V1 rearward + V2 rearward. This is an addition of two complex voltages and to perform it correctly you MUST know the relative phase between the two. I purposely did not give you the phase information so that we could have this specific discussion.

In my example, the 35.355 V was at 0 degrees relative phase and the 31.7 V was at -101.967 degrees. The vector sum of these rearward voltages results in a total rearward voltage of 42.311 V at -47.135 degrees.

The total reflected power in the 50 ohm line is 35.804 W.

> >3) Since you don't need voltage phase for your calculations and you state
> >that Vforward = Sqrt(Vfwd1^2 + Vfwd2^2), what is the total forward
> >voltage and power in the 150 ohm line?
>
> The total forward voltage in the 150-ohm line is 110.7 v. The total
forward
> power in the 150-ohm line is 81.7 watts.
>

In the example I set up, the re-reflected voltage of 31.7 V has a relative phase of 78.033 degrees. Adding it to the forward source voltage of 106.067 V at relative 0 degrees, the total forward traveling voltage is 116.831 V at 15.393 degrees. The total forward power in the 150 ohm line is 91 W.

The total steady state power delivered to the junction is 64.2 W.

>
> Now Steve, please don't tell us that I avoid direct technical issues.
>
> Walt, W2DU
>

Good.

The 150 ohm line is 0.663 WL. The impedance terminating the 150 ohm line is 506 Ohms. Check the steady state conditions and see if my forward and reflected power are correct, with 100 W of forward power arriving at the junction. After having done so, lets discuss further.

Steve, VE9SRB

3972. Re: Homemade antenna ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 16:47:16 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B000C14.EBBF8B8B@spam.me.not>
Source record: 162920

try my site... I just built a decent 2M 1/4 wave groundplane (my first project) which turned out rather well, if I do say so myself.

http://www.csotbs.org/kc8rkq/coathanger.html

Enjoy

73 de KC8RKQ

john-eileen@prodigy.net wrote:
>
> I have a handheld HTX-202 Radio Shack 2 Meter radio. I really need some
> type of antenna at home. Please email suggestions and or instruction to
> make a simple antenna. thanks john-eileen@prodigy.net

3973. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 17:14:37 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B00127D.BA40EB4F@IEEE.org>
Source record: 162921

VE9SRB wrote:
> ... I have said that 75 W + 8.33 W = 133.33 W. From this
> statement I have been implying that the voltage and current associated with
> the 75 W forward traveling wave add with the voltage and current associated
> with the 8.33 W forward traveling wave, resulting in a total forward
> traveling wave with a power of 133.33 W.

But you left out some energy, Steve. You left out the energy used in the destructive interference pattern which is 25w from each side of the Z0-match for a total of 50w. That 50w must go somewhere. It joins the electro-magnetic field and provides the energy support necessary for your voltages to add.

> Lets take a close look at Johnson's formula and how we can correctly use it
> to determine the total forward power. I'm doing this from memory as I do
> not have the text with me. The analysis is on pages 98 - 101.

There's no question that your voltages add up, Steve. The question is: Why do your voltages add up? I've asked you before: Please provide a quote where any respected author says that 75w + 8.33w = 133.33w. Your statement simply violates the conservation of energy principle which is the only argument I have with you.

> In his discussion of vector voltage addition, Johnson first determines the
> *initial* forward voltage applied to the line by the source. In this
> specific case, the initial forward voltage is Eg (Zo/ Zg + Zo). Note that
> Eg is the source voltage, Zg is the source impedance. Lets define this
> initial forward source voltage as Vi. Johnson specifically states that this
> initial source voltage "flows forevermore out of the source". Note also
> that Johnson specifically *adds* all of the voltages re-reflected at the
> source to this initial forward voltage to determine the total forward
> voltage.

Yes, it works, Steve. Why does it work? It works BECAUSE
75w + 8.33w + 50w = 133.33w

> In any event, the total voltage anywhere on the line is the vector sum of
> the forward and rearwards components.

Yes, that's true. Nobody ever said that the voltages don't add up if the energy adds up.

> You just added the forward (81.65 V) and reflected voltage (40.824) to get
> |Vmax|. Then you subtracted the forward (81.65 V) and reflected voltage
> (40.824) to get |Vmin|. The ratio of Vmax / Vmin = SWR.

Nobody has said voltages don't add up given enough underlying energy.
You simply have overlooked the underlying energy. That underlying
energy is NOT all contained in only the two waves you are adding.

> 1) If the forward source voltage arriving at the junction of a 50/150 ohm
> transition is 70.711 V, what is the magnitude of the forward source voltage
> in the 150 ohm line? What is the magnitude of the reflected voltage in the
> 50 ohm line?

75w into the 150 ohm line equals 106.1v, 0.707a 106.1*0.707=75w
25w reflected in the 50 ohm line equals 35.4v, 0.707a 35.4*0.707=25w

> 2) If the magnitude of the steady state reflected voltage in the 150 ohm
> line is 63.402 V, what is the magnitude of the re-reflected voltage? What
> is the magnitude of the rearward voltage created in the 50 ohm line?

If the reflected voltage is 63.4v, then this system is not Z0-matched. Is
that a mistake or is that what you intended? Assuming you intended it:

(63.4)^2/150 = 26.8w reflected. 6.7w will be re-reflected. That's 31.7v
and 0.21a 20.1w will try to enter the 50 ohm line. That's 31.7v and
0.63a There is not complete cancellation of the reflected power on
the coax and therefore, not a Z0-match.

> 3) Since you don't need voltage phase for your calculations and you state
> that Vforward = Sqrt(Vfwd1^2 + Vfwd2^2), what is the total forward
> voltage and power in the 150 ohm line?

That equation is only true at a Z0-match, Steve, where there is no reflected
power on the coax. The above example is not Z0-matched. At a Z0-match where
there are no reflections on the coax, one doesn't need to know the phases.
However, since the above example is not Z0-matched, that shortcut will not
work.
--
http://www.mindspring.com/~w6rca

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3974. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 17:22:58 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B001472.55D5A940@IEEE.org>
Source record: 162922

VE9SRB wrote:
> This is clearly more of a personal issue for you than for than it is for me.
> My only interest is the technical truth.

It looks about 50/50 to me. Walt's "virtual short" conceptual shortcut doesn't stand up to a rigorous analysis and your assertion that 75 joules/sec plus 8.33 joules/sec equals 133.33 joules/sec clearly violates the conservation of energy principle. Both of you fail to see the grains of truth in the other's posting. Again, for the Nth time, I'm asking you two guys to list your points of agreement. I think you will find that you agree on more points than you disagree on.
--
http://www.mindspring.com/~w6rca

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3975. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 17:46:57 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <ISUL6.22262$4f7.1764323@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162925

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B00127D.BA40EB4F@IEEE.org...
>
> > 3) Since you don't need voltage phase for your calculations and you
state
> > that Vforward = Sqrt(Vfwd1^2 + Vfwd2^2), what is the total forward
> > voltage and power in the 150 ohm line?
>
> That equation is only true at a Z0-match, Steve, where there is no
reflected
> power on the coax. The above example is not Z0-matched. At a Z0-match
where
> there are no reflections on the coax, one doesn't need to know the phases.
> However, since the above example is not Z0-matched, that shortcut will not
> work.
> --

The vector addition of forward voltages to determine the total forward voltage works in all cases, Zo match or non-Zo match. All that really matters here is that the total forward voltage is equal to the vector sum of the forward source voltage plus the re-reflected voltage as appropriately determined from the reflection coefficient at the junction. Your addition of delivered power and reflected power is only consistent with the relationship Pdelivered = Pforward - Preflected. I can add forward and reflected powers to arrive at the delivered power the way you do independent of whether a Zo match exists or doesn't exist. My discussion of 75 W + 8.33 W was only intended to demonstrate that the total forward power is not correctly derived from the concept that a total re-reflection of power occurs at a Zo match. Summing forward powers (with the appropriate phase relationship) the way I do is consistent with the vector addition of voltage and current. That's all, there is no need to discuss "missing energy". All that matters is that Pdelivered = Pforward - Preflected. Beyond that concept, this discussion of missing energy is useless.

Besides, you can't make any aspect of your "energy math" work unless you know the steady state delivered power and the reflected power. My method of forward power addition works without knowing the steady state delivered power and/or the steady state reflected power. You need the final answer (delivered and reflected power) to make your math work - I don't. When you get over this hurdle, I'll take your energy discussions seriously.

Steve VE9SRB

3976. Re: 2 Meter Links

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 17:55:26 UTC
From: paul g7uib <paul@g7uib.freeserve.co.uk>
Message-ID: <9dp66fot1@news8.svr.pol.co.uk>
Source record: 162926

there are loads of places on the net for ant designs dig in and fish some
out the j-pole is a good ant it is so easy and works a treat can be made of
wire or copper pipe I used one for a few years when I first passed
If no look get in touch and i'll send you some pics

"Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
news:3B00234F.26929034@cticonsulting.net...
> I'd like to build my first simple vertical antenna for 2 meters. Should
> I buy the ARRL antenna book for ideas, or are there some links on the
> web that are just as good for plans, tips, theory, etc?

3977. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 18:10:43 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B001FA3.13B7BED0@IEEE.org>
Source record: 162927

VE9SRB wrote:
> It is correct that both V and I must be in phase. But they both do not have
> to be at zero degrees.

Since the phase was not specified, I assumed zero degrees for all signals.

> You can't correctly answer the example I gave earlier unless you know the
> relative phase of the two forward voltages that you need to add. Only
> knowing the relative phase can you correctly arrive at the unique solution
> for the correct delivered and forward power.

That's true and I assumed you weren't trying to trick us so I assumed zero
degrees phase for all signals.

> Second, you can stop with the "joules". "Watts" is fine.

Not for Peter. :-)

> Your addition of power here only works if the voltage associated with the
> 100 W signal is 90 degrees out of phase with the voltage associated with the
> 33.33 W signal.

Assuming no reflected power and no losses, it works for all phases, Steve.
If any 100w wave is combined with a 33.33w wave and there are no reflections
and no losses, then the magnitude of the electromagnetic energy field will
be the same, equivalent to 133.33 watts. You simply must learn to trust
the conservation of energy principle.

Assuming no reflections and no losses, the electromagnetic field created
by 100w + 33.33w will have the same magnitude no matter what the phase.

If you combine 100w and 33.33w out of phase, is the result a forward wave
of 66.67w with no losses and no reflected energy? Nope, it isn't. The
result is 133.33w and it has to go somewhere. Offhand, I would expect
66.67w of forward power and 33.33w of reflected power, but I might be
wrong about that.

The addition of energy works all the time, Steve. You have just got to get
it through your head that you cannot violate the conservation of energy
principle. Energy always adds up. If you think it doesn't add up, you
missed some.

> Here are several examples of "ONLY" two forward voltages and currents
> traveling in the line. In each case P1 = 100 W and P2 = 33.33 W. What is
> the correct total steady state forward power in each case?

Don't have time to do this right now - will do it later. I suspect you won't
end up with zero losses and zero reflections.

> I would only add two forward voltages and currents like this if they are in
> phase.

Since you didn't specify phase, an ordinary prudent man would assume that
all signals were in phase. However, they may have to be put out of phase
by a matching network in order to avoid reflections.

> *Assuming* that V = 111.5 V and I = 2.23 A, that would be the correct power.

> The "extra" energy comes from the increase in power delivered by the source
> as the system transitions from the initial state to the steady state.

No, no, no, Steve. You are not allowed to willy-nilly add more power than
exists in the two waves we are adding. If the V*I*cos(zero) power in those
two waves doesn't change, how are you going to get the extra needed energy
to the place where it is needed? Do you have a black hole to pipe it through?
We are assuming constant power in those waves. You just cannot pick up energy
at a point as needed to balance your energy equation. You are simply proving
my point. Extra power is needed for what you say to be true. The extra power
follows a known path from the source. Find the path and you will find the
energy.

In a Z0-matched system, the source does NOT supply more power. The power
remains fixed at 100 watts. So where does the extra power come from that
you need to balance your energy equation? It comes from the destructive
interference pattern just like I have been saying all along.

> And yes it does come from the destructive interference that occurs at the
> junction.

Well, Hallelujah!!! That is what I have been saying all the time and you
have been arguing with me. So 75w plus 8.33w doesn't equal 133.33w after all.
75w from the source plus 8.33w re-reflected plus 50w from the destructive
interference equals the total forward power of 133.33 watts. This was our
single point of disagreement and I'm glad it's settled.

> At the same time, the system must maintain the correct
> relationships between total voltage and current; forward voltage and
> current; and rearward voltage and current. To simplify this discussion we
> could only look at the total voltage and current at the junction and I
> expect we would agree completely.

You and I agreed on everything except conservation of energy. With your
admission above, I can't think of any argument I have with you.

> As I have said many times, the law of conservation of energy only requires
> that the power "accepted" or "consumed" by the load be equal to the power
> delivered by the source AND that the net power flowing into the junction be
> equal to the net power flowing out of the junction.

Nope, Steve, you can draw a box anywhere - as large as you want or as small
as you want. Energy in must equal energy out in all cases. We can draw a
microscopic box around the Z0-match point and energy in must equal energy
out. You simply cannot ignore it and it will go away. Since you acknowledge
the 50 watts of destructive interference that is needed to balance the

energy equation at the Z0-match, you and I have no further argument that
I can think of.

> If you
> have access to a SPICE circuit/transmission line analysis program set up an
> example of a quarter-wave transformer and watch the voltages transition from
> the initial state to the steady state. You may have to make the transformer
> an integral number of quarter wavelengths to see the transitions as a
> function of time. Its interesting.

No argument. Our only argument was over conservation of energy, not over
magnitudes and phases of voltages and currents. Whatever electromagnetic
energy exists will determine and effect the values of voltage and current.
--
http://www.mindspring.com/~w6rca

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3978. Re: QRP enthusiasts out there ???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 18:15:02 UTC
From: nielsen@remove_this.oz.net
Message-ID: <9dp7b6$d9t$0@216.39.171.5>
Source record: 162928

On Sun, 13 May 2001 22:08:25 -0700, John Moriarity wrote:
>> > There are literally 1000's of QRP sites on the net. Go to a search
> engine
>> > like www.hotbot.com, type in QRP ham radio or some such thing and
> you will
>> > get back enough links to keep you busy for a year.
>>
>>
>> And-- with few exceptions the QRPers are running CW.
>
> Actually, a *lot* of them are running PSK-31, now. And
> quite a few are running SSB at 10 watts PEP.

And some of us only run 5 watts PEP on SSB. Of course, I have yet to
break a pileup that way....

--
Bob Nielsen, N7XY nielsen@oz.net
Bainbridge Island, WA http://www.oz.net/~nielsen
IOTA NA-065, USI WA-028S

3979. 2 Meter Links

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 18:26:23 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3B00234F.26929034@cticonsulting.net>
Source record: 162923

I'd like to build my first simple vertical antenna for 2 meters. Should I buy the ARRL antenna book for ideas, or are there some links on the web that are just as good for plans, tips, theory, etc?

3980. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 18:26:56 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <QrVL6.22326$4f7.1771346@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162929

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B00127D.BA40EB4F@IEEE.org...
> > 3) Since you don't need voltage phase for your calculations and you
state
> > that Vforward = Sqrt(Vfwd1^2 + Vfwd2^2), what is the total forward
> > voltage and power in the 150 ohm line?
>
> That equation is only true at a Z0-match, Steve, where there is no
reflected
> power on the coax. The above example is not Z0-matched. At a Z0-match
where
> there are no reflections on the coax, one doesn't need to know the phases.
> However, since the above example is not Z0-matched, that shortcut will not
> work.
> --

Just one more point that you're incorrect on. - The "shortcut"

The formula Vforward = Sqrt(Vfwd1^2 + Vfwd2^2) is not correct, even with the Zo match. In your Zo match example, the forward source voltage magnitude in the 150 ohm line is 106.067 V and the re-reflected voltage magnitude in the 150 ohm line is 35.356 V. You have previously agreed to these numbers. Using your forward voltage formula one would calculate a total forward voltage magnitude of 111.8 V not the correct 141.42 V. Using my voltage formula for forward voltage addition (in-phase), I add 106.067 + 35.356 = 142.42 V.

Well. What two *forward* traveling voltages do you add together to make your voltage addition formula work?

Steve

3981. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 18:29:29 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <duVL6.22329$4f7.1770921@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162930

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B001FA3.13B7BED0@IEEE.org...

> Well, Hallelujah!!! That is what I have been saying all the time and you
> have been arguing with me. So 75w plus 8.33w doesn't equal 133.33w after
all.
> 75w from the source plus 8.33w re-reflected plus 50w from the destructive
> interference equals the total forward power of 133.33 watts. This was our
> single point of disagreement and I'm glad it's settled.
>

Not even close.

Steve

3982. Inexpensive SWR meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 18:29:33 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3B00240D.B8CE67AB@cticonsulting.net>
Source record: 162924

I would like to build my own antennas, and think a simple SWR meter
would be invaluable. What are some good sources for inexpensive ones,
and is there any reason to buy an expensive one vs. a cheap one for the
beginner hobbyist?
Thanks

3983. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 18:32:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0024AB.7A77D123@IEEE.org>
Source record: 162931

VE9SRB wrote:
> The vector addition of forward voltages to determine the total forward
> voltage works in all cases, Zo match or non-Zo match.

Agreed. Nobody ever said it didn't. The argument was that you didn't account for enough energy to make it true. Since you have started accounting for the power involved in the destructive interference pattern, you have discovered exactly enough underlying energy for your statements to be true. Congratulations on your discovery.

> All that really
> matters here is that the total forward voltage is equal to the vector sum of
> the forward source voltage plus the re-reflected voltage as appropriately
> determined from the reflection coefficient at the junction.

That's all that matters to you, Steve. Something additional that matters to me is that the energy equation balances. During destructive interference, voltage vectors disappear. When the voltage vectors disappear, does the associated energy disappear? OF COURSE NOT!!! It is ridiculous to assume that energy disappears in a transmission line yet, that was your original assumption when you still believed that 75w + 8.33w = 133.33w.

> Summing forward powers (with the appropriate phase
> relationship) the way I do is consistent with the vector addition of voltage
> and current.

But it is inconsistent with the conservation of energy principle. Now that you have admitted your missing energy comes from destructive interference, you and I have no argument.

> When you
> get over this hurdle, I'll take your energy discussions seriously.

Tsk, Tsk, Steve - condescension? I expected better of you. You have admitted it was you who were wrong about the 75w plus 8.33w equaling 133.33w and that was the only point on which I disagreed with you. I follow and agree with most everything else you have said. Tsk, Tsk!
--
http://www.mindspring.com/~w6rca

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3984. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 18:48:21 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <VLVL6.22370$4f7.1774107@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162932

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0024AB.7A77D123@IEEE.org...
>
> Tsk, Tsk, Steve - condescension? I expected better of you. You have
admitted
> it was you who were wrong about the 75w plus 8.33w equaling 133.33w and
that
> was the only point on which I disagreed with you. I follow and agree with
> most everything else you have said. Tsk, Tsk!
> --

The voltages and currents associated with a 75 W signal add to the voltages and currents associated with an 8.33 W signal and the two combine to a total signal with a power of 133.33 W. That is all I have ever said and my opinion on this has not changed.

The rearward traveling energies contained in the two 25 W signals remain traveling rearward so as to maintain the steady state impedance match. There is no "reversal" of this energy so that it "adds" to the energy in the 75 W and 8.33 W signals.

We can play this semantics game forever.

Take care,

Steve

3985. Re: Inexpensive SWR meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 18:56:46 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <OTVL6.4111$uG1.329903@paloalto-snr1.gtei.net>
Source record: 162933

"Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
news:3B00240D.B8CE67AB@cticonsulting.net...
> I would like to build my own antennas, and think a simple SWR meter
> would be invaluable. What are some good sources for inexpensive ones,
> and is there any reason to buy an expensive one vs. a cheap one for the
> beginner hobbyist?
> Thanks

You can find $10.00 el cheapo CB type meters that will work OK for their intended frequency range - and sometimes a bit more - provided they have a forward power level calibration feature. Many of these are combination Power/SWR meters but you can pretty much forget getting any kind of accurate power measurements with them.

However, if you are interested in a unit that will cover a wider range of frequencies and actually be of use in designing/building an antenna you would be wise to spend a bit more. This tool will be one that you will find yourself (and all of your friends :>) using a lot.

You may want to consider stepping up to an antenna analyzer like the MFJ or the Autek units. They cost more, but they provide a lot more in terms of features, frequency range, ease of use, etc. Personally, I consider them to be one of the "standard tools" in any ham's toolbox. As for power measurements, there are many good deals on used Bird 43 watt meters, which are pretty much the standard in this area. (You can also calculate SWR with a Bird 43 very accurately).

Something I learned the hard way many years ago, you will never regret buying good tools, but you can never forget buying poor ones.

73 de W6DKN

3986. Re: antenna analyzer comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 19:21:52 UTC
From: Jack Malone <malonej@c2i2.com>
Message-ID: <tg0c2jhdgev0e6@corp.supernews.com>
Source record: 162934

Hi Tad:

Every Ham needs or should have a MFJ-259B.

73's
Jack,W7EJJ

"Tad Danley" <taddanley@nospamatatt.net> wrote in message
news:3AFD94F3.9F2A4DE3@att.net...
> Would appreciate any comments from users of the
> MFJ259B and Autek VA1. I am looking for
> something to use for experimenting with various
> coax fed wire antennas in the 1.8 to 28 MHz
> range.
>
> Thank in advance and 73,
>
> --
> Tad Danley, K3TD
> mailto:taddanley@att.net
>
>
> Caution!
> Anti-SPAM e-mail return address in use.

3987. Re: Design of ground independant 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 19:37:34 UTC
From: K7MEM <jda@rupert.tds-az.lmco.com>
Message-ID: <3B0033FE.41C67EA6@rupert.tds-az.lmco.com>
Source record: 162901

Mike Allan wrote:
>
> Thanks for reading this post.
> I have a number od radomes (hollow fiberglass poles) about 2 meters long
> from which I want to make some ground independant vertical antennas for
> portable use. I want to get the most gain I can from the length of pole
> that I have. Does anyone have a design that they think will work in this
> situation. I have considered a J pole but that would be only about 1/2
> of the avaiable length... any ideas will be considered.
> Many thanks
> Mike VK3XL

You may want to take a look at:

KB1DIG's 2 METER ANTENNA DESIGN GALLERY

http://people.ne.mediaone.net/buck0/hampage.htm

There is a colinear design that fits in a PVC pipe. Maybe that's the
kind of thing you are looking for.

--
Martin E. Meserve, K7MEM
martin.e.meserve AT lmco.com

I respond to news groups and E-Mail on my own time and therefore
my responses may not be as timely as you, or I, would like them to
be. If I seem to be ignoring you, send me another E-Mail to jog my
memory. Opinions are my own and do not reflect the opinions of my
employer.

3988. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 19:40:30 UTC
From: Ryan KC8PMX <kc8pmx@tm.net>
Message-ID: <OwWL6.1127$gA.410213@monger.newsread.com>
Source record: 162936

The main reason why I posed this question as to identifying on 11meters with an amateur callsign, (again assuming all other operation in that band is legally done) was from a suggestion I heard someone bring up somewhere. This person suggested that if a whole bunch of us hams got on 11meters and started using it like it is supposed to be (professionally and courteously) that it may have a positive effect on the band. Who knows, this may be a radical idere here? Maybe we could even take back those frequencies???

Just a thought.....

Ryan KC8PMX

3989. Re: Telescoping vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 19:51:03 UTC
From: jimmy john <jj@sandwitch.org>
Message-ID: <4A8A59F2BDCDD311BFC800508BA36AC808A83212@www.premiersi.com>
Source record: 162937

The three main problem will be (1) deterioration of the electrical contact between sections, locking them in-place after tuning and (3) the weakness of the joint when fully extended.

You might try www.onlinemetals.com for a good source of just about any kind of tubing or rod stock you want. Then again, aluminum arrow shafts from Wal-Mart can be used for small projects. They are lightweight and sturdy.

"Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message news:3B003E97.DB3E9A3D@cticonsulting.net...
> I have started to come across some homebrew antenna links, but have
> noticed that none make any mention of the telescoping vertical antennas
> that might come with a boom box, car or other FM radio receiver, or
> bought at cheaply at places like radioshack. It seems to me that for
> home made verticals, like the 1/4 w 2 meters I'm thinking of, these
> would work great because of the ease in adjusting it to the proper
> length for lowest swr, light weight and strength. Why not lay a few on
> their sides for the ground radials as well? Seems to me that tuning the
> length of the driven element or ground radials would be really easy,
> just slide until you get what you want. Yet I don't see any body using
> them, nor do I see commercial products using them either. Should I give
> one a shot, or is there are good reason they are not used for
> transmitters and only for receivers?

3990. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 19:54:09 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0037E1.3EAFD70@IEEE.org>
Source record: 162939

VE9SRB wrote:
> The voltages and currents associated with a 75 W signal add to the voltages
> and currents associated with an 8.33 W signal and the two combine to a total
> signal with a power of 133.33 W. That is all I have ever said and my
> opinion on this has not changed.

In another posting you admitted you forgot to take the power involved in
the destructive interference pattern into account and that's why your
energy equation didn't balance. The actual energy equation is:

75w source not reflected at the Z0-match plus 8.33 watts re-reflected
plus 50w involved in the destructive interference equals 133.33 watts,
the forward power. The energy equation balances. There is no rearward
traveling energy on the coax.

Let's look at it from your point of view. You require magic phantom
waves, which are undetectable and unmeasureable, carrying away the very
50w of power needed to balance the energy equation at the Z0-match. To
avoid a conservation of energy violation, that same 50w must somehow
locate a wormhole through which to return to the system. Give us an
ever-loving break, Steve. That 50w never leaves the Z0-match and is
therefore located exactly where it is needed to balance the energy
equation. Models don't dictate reality, Steve. It works the other way.

> The rearward traveling energies contained in the two 25 W signals remain
> traveling rearward so as to maintain the steady state impedance match.

Absolutely wrong, Steve. If they continued traveling rearward, they could
be measured and would cause additional losses in the coax but we know they
do not do that. You are back to your magic phantom waves of months ago.
The power in those rearward traveling waves is zero times zero equals
zero. The energy went somewhere else. You simply lost track of it.

Those voltages and currents cancel at the Z0-match point and reward
traveling energy ceases to exist. The energy continues to exist and
it has no choice but to go the only other direction possible, back
into the electromagnetic fields that result in the forward power.
I agree with you that it is technically not re-reflected but it joins
the re-reflected power anyway and becomes indistinguishable from the
re-reflected power.

> There is no "reversal" of this energy so that it "adds" to the energy in the
> 75 W and 8.33 W signals.

Something equivalent to a reversal happens through the action of the
electromagnetic fields. The 50w involved in the destructive interference
is dumped into the electromagnetic waves that result in the forward power.

There is simply nowhere else for it to go. We know there is no rearward traveling energy on the coax because reflected energy on the coax is equal to zero and your magic phantom waves result in a power equal to zero times zero. At the destructive interference point, the two voltages go to zero, the two currents go to zero, and the energy associated with those voltages and currents joins the electromagnetic fields that result in the forward power. You simply cannot have energy leaking out of the system to the left only to find a convenient wormhole through which to return to the system. Yet, that is exactly what your explanation requires.
--
http://www.mindspring.com/~w6rca

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3991. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 19:54:39 UTC
From: w2du@iag.net
Message-ID: <3b0028c6.17072559@news.journey.com>
Source record: 162938

On Mon, 14 May 2001 16:39:41 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"Walter Maxwell" <w2du@iag.net> wrote in message
>news:3affeef8.2274981@news.journey.com...
>> On Mon, 14 May 2001 14:11:32 GMT, "VE9SRB" <srbest@att.net> wrote:

>> >2) If the magnitude of the steady state reflected voltage in the 150 ohm
>> >line is 63.402 V, what is the magnitude of the re-reflected voltage?
>What
>> >is the magnitude of the rearward voltage created in the 50 ohm line?
>>
>> The re-reflected voltage is 31.7 v.
>>
>
>Correct. Again, a starting point for constructive discussion.

>> The total rearward voltage in the 50 ohm line from the reflection at the
>> 50/150-ohm junction plus the transmission through the 150/50-ohm junction
>is
>> 47.49 v.
>>
>I was asking the question specific to the component of rearward voltage
>delivered into the 50 ohm line only from the presence of the reflected
>voltage arriving at the junction. This component of rearward voltage would
>have a magnitude of 31.7 V.

This is what you asked for in the second question of 2), which I answered
correctly, 31.7 v
>
>> This 47.49 v. is the voltage in the total rearward power of 45.1 w in the
>50-ohm
>> line resulting from 25 watts reflected at the 50/150-ohm junction plus the
>> 20.099 watts transmitted rearward through the 150/50-ohm junction.
>>
>> This is the correct way to determine the total rearward voltage in the
>50-ohm
>> line.
>>
>> However, if you add the separate voltages from the reflection and
>transmission,
>> respectively (which is incorrect), you will get 35.355 volts from the
>reflection
>> and 31.7 volts from the transmission, for a total voltage 67.1 v., an
>INCORRECT

>> voltage.
>
>I agree with you that 67.1 V would be an incorrect voltage. Your 47.49 V is
>also an incorrect voltage (for the example I set up).

No it is not. You did not indicate a complex condition. My answer is correct for a non-complex condition. If you wanted an answer to agree with a complex condition you keep in your mind you can't expect me to get that answer unless you describe the conditions completely.
>
>Adding the two rearward traveling voltages, Vtotal rearward = V1 rearward +
>V2 rearward. This is an addition of two complex voltages and to perform it
>correctly you MUST know the relative phase between the two. I purposely did
>not give you the phase information so that we could have this specific
>discussion.
>
>In my example, the 35.355 V was at 0 degrees relative phase and the 31.7 V
>was at -101.967 degrees. The vector sum of these rearward voltages results
>in a total rearward voltage of 42.311 V at -47.135 degrees.
>
>The total reflected power in the 50 ohm line is 35.804 W.
>
It may be for your modified conditions, but not for the conditions given in your problem statement.

>> >3) Since you don't need voltage phase for your calculations and you state
>> >that Vforward = Sqrt(Vfwd1^2 + Vfwd2^2), what is the total forward
>> >voltage and power in the 150 ohm line?
>>
>> The total forward voltage in the 150-ohm line is 110.7 v. The total
>forward
>> power in the 150-ohm line is 81.7 watts.

Steve, I confess one misinterpretation of terms--Vfwd and Vref. I have inadvertantly construed them as E+ and E-, where E max = E+ + E- at theta = 0 degrees, and E min = E+ - E- at theta = 180 degrees. E+ and E- are both non-reactive at these points. This is why I inferred that no complex condition was involved. However, this does not mean that I agree that the sum of voltages squared yields the correct forward power.

>In the example I set up, the re-reflected voltage of 31.7 V has a relative
>phase of 78.033 degrees. Adding it to the forward source voltage of 106.067
>V at relative 0 degrees, the total forward traveling voltage is 116.831 V at
>15.393 degrees. The total forward power in the 150 ohm line is 91 W.
>
>The total steady state power delivered to the junction is 64.2 W.

This value of power may well be correct, but I don't have the time right now to recalculate to include the phase relationships.

Walt

3992. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 20:11:38 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <ZZWL6.5205$uG1.376353@paloalto-snr1.gtei.net>
Source record: 162940

"Ryan KC8PMX" <kc8pmx@tm.net> wrote in message
news:OwWL6.1127$gA.410213@monger.newsread.com...
> The main reason why I posed this question as to identifying on 11meters
with
> an amateur callsign, (again assuming all other operation in that band is
> legally done) was from a suggestion I heard someone bring up somewhere.
> This person suggested that if a whole bunch of us hams got on 11meters
and
> started using it like it is supposed to be (professionally and
courteously)
> that it may have a positive effect on the band. Who knows, this may be a
> radical idere here? Maybe we could even take back those frequencies???
>
> Just a thought..............
>
>
> Ryan KC8PMX
>

Interesting concept, however you have to remember the "mindset" of a lot of these "operators". The main reason it would never work is because if you were to operate legally you would't stand a "snowball's chance in he.." of even being heard.

There are a vast many CB'ers who run hundreds and even thousands of watts through big antennas that get their kicks out of being the "big strapper". Their sole purpose in life is to constantly try to prove who has the biggest "one" by keying up or talking over anybody who they don't want to let use the frequency, or who might threaten their "big strapper" status. It's these types of CB'ers who would never let it happen. That's exactly why that band is in the shape it is in today...

73 de W6DKN

3993. Telescoping vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 20:22:47 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3B003E97.DB3E9A3D@cticonsulting.net>
Source record: 162935

I have started to come across some homebrew antenna links, but have noticed that none make any mention of the telescoping vertical antennas that might come with a boom box, car or other FM radio receiver, or bought at cheaply at places like radioshack. It seems to me that for home made verticals, like the 1/4 w 2 meters I'm thinking of, these would work great because of the ease in adjusting it to the proper length for lowest swr, light weight and strength. Why not lay a few on their sides for the ground radials as well? Seems to me that tuning the length of the driven element or ground radials would be really easy, just slide until you get what you want. Yet I don't see any body using them, nor do I see commercial products using them either. Should I give one a shot, or is there are good reason they are not used for transmitters and only for receivers?

3994. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 20:27:01 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B003F95.F1481C98@IEEE.org>
Source record: 162941

VE9SRB wrote:
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > That equation is only true at a Z0-match, Steve, where there is no
> > reflected power on the coax. The above example is not Z0-matched.

> Just one more point that you're incorrect on. - The "shortcut"
>
> The formula Vforward = Sqrt(Vfwd1^2 + Vfwd2^2) is not correct, even with
> the Zo match. In your Zo match example, the forward source voltage
> magnitude in the 150 ohm line is 106.067 V and the re-reflected voltage
> magnitude in the 150 ohm line is 35.356 V. You have previously agreed to
> these numbers. Using your forward voltage formula one would calculate a
> total forward voltage magnitude of 111.8 V not the correct 141.42 V. Using
> my voltage formula for forward voltage addition (in-phase), I add 106.067 +
> 35.356 = 142.42 V.
>
> Well. What two *forward* traveling voltages do you add together to make
> your voltage addition formula work?

I have told you until I am blue in the face, that you cannot willy-nilly
ignore the power involved in the destructive interference. I have, more
than once, calculated that voltage for you. Please pay attention, Steve,
this is the last time I am going to explain it to you. In fact, I am
going to save this posting because we have had this identical argument
at least twice before and you apparently neglected to read it.

There is 75w associated with the source power that didn't get reflected.
That's 106.067 volts.

There is 8.33w associated with the re-reflected power.
That's 35.356 volts.

There is 50w associated with the destructive interference pattern.
That 50w, re-routed (as opposed to re-reflected) back into the 150
ohm environment results in 86.603 volts

SQRT((106.067)^2 + (35.356)^2 + (86.603)^2) = 141.4 volts

Steve, you, once again, didn't listen, and failed to include the 50w of
power involved in the destructive interference. In fact, we have had
this ***IDENTICAL*** argument twice before and you didn't listen then,
so I expect you not to listen yet once again. Do you have the input
portion of your I/O disabled?
--
http://www.mindspring.com/~w6rca

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3995. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 20:28:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B003FEB.F2FB4B12@IEEE.org>
Source record: 162942

VE9SRB wrote:
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3B001FA3.13B7BED0@IEEE.org...
>
> > Well, Hallelujah!!! That is what I have been saying all the time and you
> > have been arguing with me. So 75w plus 8.33w doesn't equal 133.33w after
> all.
> > 75w from the source plus 8.33w re-reflected plus 50w from the destructive
> > interference equals the total forward power of 133.33 watts. This was our
> > single point of disagreement and I'm glad it's settled.
>
> Not even close.

So you still believe in the non-conservation of energy principle?
--
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3996. Re: Telescoping vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 21:20:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B004C20.C30B9B7B@IEEE.org>
Source record: 162944

Randon Loeb wrote:
>
> I have started to come across some homebrew antenna links, but have
> noticed that none make any mention of the telescoping vertical antennas
> that might come with a boom box, car or other FM radio receiver, or
> bought at cheaply at places like radioshack. It seems to me that for
> home made verticals, like the 1/4 w 2 meters I'm thinking of, these
> would work great because of the ease in adjusting it to the proper
> length for lowest swr, light weight and strength. Why not lay a few on
> their sides for the ground radials as well? Seems to me that tuning the
> length of the driven element or ground radials would be really easy,
> just slide until you get what you want. Yet I don't see any body using
> them, nor do I see commercial products using them either. Should I give
> one a shot, or is there are good reason they are not used for
> transmitters and only for receivers?

Try them, you might like them. Known problems are faulty connection
problems and things like a bird trying to sit on your antenna changing
the resonant frequency. My favorite use of these telescoping AM antennas
is using four of them to vary the electrical length of my ladder-line.
Can you visualize that?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3997. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 21:27:32 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <3B004DC4.3E43@bellsouth.net>
Source record: 162945

Ryan,

In addition to things already mentioned, using an amateur call on CB frequencies is illegal. The reason is, your ham call and its attending privileges are "tied" to the bands assigned to the Amateur Service. It is no different than operating on 27.555 because you are out of your assigned band and indicating, by the use of your call, that you are operating a ham station. There was a case last year where a ham WAS cited for using his callsign on CB (however, he was doing some other stuff as well). Nonetheless, his warning notice included restrictions/ warnings against using his ham call outside the ham bands. It is OK to operate on CB with the proper equipment and within the CB regulations-- you just don't associate your ham station with it.

In addition, if you were to go the air and begin using your ham call, *IF* you were heard by the so-called "BIG" boys, they are likely to laugh and ridicule you off the air most asuredly thinking you are "posing", slumming, or trying to appear better than they are. Indeed, you would be a target for one of those mega KW signals to key over you so they could make even more fun.

73

Jerry
K4KWH

Ryan KC8PMX wrote:
>
> The main reason why I posed this question as to identifying on 11meters with
> an amateur callsign, (again assuming all other operation in that band is
> legally done) was from a suggestion I heard someone bring up somewhere.
> This person suggested that if a whole bunch of us hams got on 11meters and
> started using it like it is supposed to be (professionally and courteously)
> that it may have a positive effect on the band. Who knows, this may be a
> radical idere here? Maybe we could even take back those frequencies???
>
> Just a thought.....
>
> Ryan KC8PMX

3998. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 21:41:58 UTC
From: AA1LL <nospam@newsranger.com>
Message-ID: <GiYL6.1290$6j3.132410@www.newsranger.com>
Source record: 162946

In article <C7UK6.16752$4f7.1330304@bgtnsc06-news.ops.worldnet.att.net>, VE9SRB says...
>
>
>"Walter Maxwell, W2DU" <w2du@iag.net> wrote in message
>news:3afc06e9.7759938@news.onemain.com...
>> On Fri, 11 May 2001 15:20:16 GMT, "VE9SRB" <srbest@att.net> wrote:
>>
>> >
>> >"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
>> >news:3AFB2BD8.7B4A65F7@IEEE.org...
>> >> All signals handled by 50 ohm lossless coax with no reflections
>> >> on any coax.
>> >>
>> >> Assume two phase-locked transmitters which must be connected to a
>> >> single antenna. XMTR1 puts out 50v at zero degrees and one amp at
>> >> zero degrees. XMTR2 puts out 50v at zero degrees and one amp at zero
>> >> degrees. A lossless matching network is designed such that the two
>> >> transmitter signals are combined in phase to achieve maximum possible
>> >> output power (100% efficiency) into 50 ohm coax to a 50 ohm antenna.
>> >>
>> >> What is the output voltage? What is the output current? What is the
>> >> output power?
>> >> --
>> >
>> >Cecil:
>> >
>> >This problem is not analogous to adding two forward traveling waves
>> >(voltages) in a transmission line. Its not even close.
>> >
>> >Its also a little more complicated than you let on.
>> >
>> >Correct me if these assum
...
...
...

my 2 cents:

With some assumptions there is enough information to answer the hypothetical problem.
If everything is matched then the ratio of voltage to curent has to be 50 + j0 in a 50 ohm system.
If the matching network is lossless and the sources are indeed coherent the voltages and currents will add in phase.

The output (peak) voltage will be 100 volts and the power will be
Vp^2/2R=100watts. Note this is 4 times the power of either of the sources
(50^2)/100=25watts because the voltages are adding.

A counter-question is, what is the "lossless matching network?" Therein lies
the oxymoron for this one.
People have been trying to find it for years!!

73, Paul, AA1LL
Mason, NH
http://www.qsl.net/aa1ll

3999. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 21:43:46 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B005192.9C7C8E80@IEEE.org>
Source record: 162948

Jerry Oxendine wrote:
> In addition to things already mentioned, using an amateur call on CB
> frequencies is illegal.

Jerry, this just doesn't make sense. I can use any identification in the world, or none at all, on CB but I am prohibited from using my ham call?

I would suggest that using a ham call applies only to ham frequencies, and that anyone, including you, can use your ham call on CB.

Consider the fact that I am allowed to use K4KWH as an identifier on CB, but you are not? That's insanity.
--
http://www.mindspring.com/~w6rca

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4000. Re: Inexpensive SWR meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 21:44:59 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <CE8AOw206NTChss+WvTK3fOizbMa@4ax.com>
Source record: 162947

HRandon Loeb <rloebusenet@cticonsulting.net> wrote:

>I would like to build my own antennas, and think a simple SWR meter
>would be invaluable. What are some good sources for inexpensive ones,
>and is there any reason to buy an expensive one vs. a cheap one for the
>beginner hobbyist?
>Thanks

MFJ makes a good range of swr meters, from $30 or $40 units, up to around $160 or $170 for the deluxe units. I especially like their cross-needle swr meters -- I have one on my MFJ 989 tuner, and it really makes swr measurement easy to see at a glance. The Bird 43 is also a great unit -- I have one and really like it, but the basic meter is $280, plus about $90 for each coil you buy.

The less expensive units perform reasonably well, and if you're on a budget, that would be the way to go... you might try the mfj web site...

Bob
k5qwg

4001. help butternut

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 21:47:51 UTC
From: iz1dxg <iz1dxg@libero.it>
Message-ID: <boYL6.26003$RX4.1886340@news.infostrada.it>
Source record: 162949

thanks for the advice gave me a couple of days ago, but i' ve got anothr question .
Should the radials be of the same lenght?
My garden has an irregular shape.
For thise that don't know my problems, i've got an Hfv6-x ground mounted and it seems not to work so I ask an advice about radials.
Thanks again to everybody
Roberto iz1dxg

4002. Re: Telescoping vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 22:05:07 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3B005693.DA41D68D@cticonsulting.net>
Source record: 162943

jimmy john wrote:
>
> The three main problem will be (1) deterioration of the electrical contact
> between sections, locking them in-place after tuning and (3) the weakness of
> the joint when fully extended.
>

would perhaps some kind of adjustable, circular metalic clamp fastened
at each joint solve this problem? perhaps there is some kind of
conductive adhesive tape on the market that could be used across each
joint, then removed if the antenna is to be adjusted?

4003. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 22:10:38 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B0057DE.5CDD3DC@spam.me.not>
Source record: 162950

Gents:

<FYI>

http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?YEAR=current&TITLE=47&PART=95&SECTION=417&TYPE=TEXT

[Code of Federal Regulations]
[Title 47, Volume 5, Parts 80 to End]
[Revised as of October 1, 2000]
From the U.S. Government Printing Office via GPO Access
[CITE: 47CFR95.417]

[Page 538]

TITLE 47--TELECOMMUNICATION

COMMISSION (CONTINUED)

PART 95--PERSONAL RADIO SERVICES--Table of Contents

Subpart D--Citizens Band (CB) Radio Service

Sec. 95.417 (CB Rule 17) Do I identify my CB communications?

(a) You need not identify your CB communications.
(b) [You are encouraged to identify your CB communications by any of the following means:
(1) Previously assigned CB call sign;
(2) K prefix followed by operator initials and residence zip code;
(3) Name; or
(4) Organizational description including name and any applicable operator unit number.]
(c) [You are encouraged to use your ``handle'' only in conjuction with the methods of identification listed in paragraph (b) of this section.]

</endFYI>

(4) might be construed to mean that you are allowed to use your HAM (Organizational description....) callsign on CB.

I'm not sure if there's anything in part 97 that precludes this (something stating that you may not use your callsign on non-HAM bands which you are still legal to transmit on)...

Is it illegal to use a HAM callsign on a marine-band radio?

Just some food for thought.

73 de KC8RKQ (-SSB)

W6RCecilA wrote:
>
> Jerry Oxendine wrote:
> > In addition to things already mentioned, using an amateur call on CB
> > frequencies is illegal.
>
> Jerry, this just doesn't make sense. I can use any identification in the
> world, or none at all, on CB but I am prohibited from using my ham call?
>
> I would suggest that using a ham call applies only to ham frequencies,
> and that anyone, including you, can use your ham call on CB.
>
> Consider the fact that I am allowed to use K4KWH as an identifier on CB,
> but you are not? That's insanity.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4004. Re: antenna analyzer comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 22:24:08 UTC
From: Larry Gauthier <larryg5099@chartermi.net>
Message-ID: <tg0mogol71etba@corp.supernews.com>
Source record: 162951

Tad,

I just bought a 259b, after borrowing one from a friend and realizing I could not live without it. Just put up a 5 band quad and a pair of full-wave delta loops... and it was great having one - can't imagine doing without.

-larry
K8UT
"Jack Malone" <malonej@c2i2.com> wrote in message
news:tg0c2jhdgev0e6@corp.supernews.com...
> Hi Tad:
>
> Every Ham needs or should have a MFJ-259B.
>
> 73's
> Jack,W7EJJ
>
> "Tad Danley" <taddanley@nospamatatt.net> wrote in message
> news:3AFD94F3.9F2A4DE3@att.net...
> > Would appreciate any comments from users of the
> > MFJ259B and Autek VA1. I am looking for
> > something to use for experimenting with various
> > coax fed wire antennas in the 1.8 to 28 MHz
> > range.
> >
> > Thank in advance and 73,
> >
> > --
> > Tad Danley, K3TD
> > mailto:taddanley@att.net
> >
> >
> > Caution!
> > Anti-SPAM e-mail return address in use.
>
>

4005. Re: Inexpensive SWR meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 22:54:52 UTC
From: Randy <randyap@geocities.delete.com>
Message-ID: <9kZL6.10448$55.4028463@newsrump.sjc.telocity.net>
Source record: 162952

I'm using one from Tower Electronics http://www.pl259.com. It's a $25.00
unit covering 1.3 to 300 mhz at a max of 300 watts. It's a single needle
model. I assume it reasonably accurate since my results seem to make sense.

"Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
news:3B00240D.B8CE67AB@cticonsulting.net...
> I would like to build my own antennas, and think a simple SWR meter
> would be invaluable. What are some good sources for inexpensive ones,
> and is there any reason to buy an expensive one vs. a cheap one for the
> beginner hobbyist?
> Thanks

4006. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 23:07:50 UTC
From: k1bqt@aol.com
Message-ID: <20010514190750.10326.00002243@ng-fy1.aol.com>
Source record: 162953

>"And if there is anything in this world that is obvious to me, it is that the braid thickness is a very low impedance for a transverse voltage."<

I agree, Bill. By the same token, if I put down a 120-wire radial field under my antenna, I presume that also provides a low-impedance path to the lossy ground underneath. RIght?

Rick K!BQT

4007. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 23:30:02 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B006A7A.633F2525@mwci.net>
Source record: 162954

Rick Littlefield wrote:

> >"And if there is anything in this world that is obvious to me, it is that the
> braid thickness is a very low impedance for a transverse voltage."<
>
> I agree, Bill. By the same token, if I put down a 120-wire radial field under
> my antenna, I presume that also provides a low-impedance path to the lossy
> ground underneath. Right?

I am not really well informed about radial systems. I think of those radials (intuitively) as lossy and dispersive transmission lines with lossy shunt capacitance, lossy series inductance, low Z0 and low velocity factor. I don't know if the experts would agree.

Bill W0IYH

4008. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 23:37:08 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <E_ZL6.136$oi1.15158@bgtnsc04-news.ops.worldnet.att.net>
Source record: 162955

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B003F95.F1481C98@IEEE.org...
> VE9SRB wrote:
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > > That equation is only true at a Z0-match, Steve, where there is no
> > > reflected power on the coax. The above example is not Z0-matched.
>
> > Just one more point that you're incorrect on. - The "shortcut"
> >
> > The formula Vforward = Sqrt(Vfwd1^2 + Vfwd2^2) is not correct, even
with
> > the Zo match. In your Zo match example, the forward source voltage
> > magnitude in the 150 ohm line is 106.067 V and the re-reflected voltage
> > magnitude in the 150 ohm line is 35.356 V. You have previously agreed
to
> > these numbers. Using your forward voltage formula one would calculate a
> > total forward voltage magnitude of 111.8 V not the correct 141.42 V.
Using
> > my voltage formula for forward voltage addition (in-phase), I add
106.067 +
> > 35.356 = 142.42 V.
> >
> > Well. What two *forward* traveling voltages do you add together to make
> > your voltage addition formula work?
>
> I have told you until I am blue in the face, that you cannot willy-nilly
> ignore the power involved in the destructive interference. I have, more
> than once, calculated that voltage for you. Please pay attention, Steve,
> this is the last time I am going to explain it to you. In fact, I am
> going to save this posting because we have had this identical argument
> at least twice before and you apparently neglected to read it.
>
> There is 75w associated with the source power that didn't get reflected.
> That's 106.067 volts.
>
> There is 8.33w associated with the re-reflected power.
> That's 35.356 volts.
>
> There is 50w associated with the destructive interference pattern.
> That 50w, re-routed (as opposed to re-reflected) back into the 150
> ohm environment results in 86.603 volts
>
> SQRT((106.067)^2 + (35.356)^2 + (86.603)^2) = 141.4 volts

>

Talk about willy nilly addition. I knew that this would be the answer you would come up with.

You claim that my vector addition of voltage is incorrect, yet you expect me to believe that two rearward traveling voltages in a 50 ohm line, one +35.356 V, the other -35.356 V, reverse direction, and then combine to become a forward voltage of 86.603 V in a 150 ohm line. I don't think so.

> Steve, you, once again, didn't listen, and failed to include the 50w of
> power involved in the destructive interference. In fact, we have had
> this ***IDENTICAL*** argument twice before and you didn't listen then,
> so I expect you not to listen yet once again. Do you have the input
> portion of your I/O disabled?
> --

Yes Cecil, you could not possibly be wrong.

4009. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 23:39:14 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <C0_L6.141$oi1.15632@bgtnsc04-news.ops.worldnet.att.net>
Source record: 162956

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0037E1.3EAFD70@IEEE.org...
> VE9SRB wrote:
> > The voltages and currents associated with a 75 W signal add to the
voltages
> > and currents associated with an 8.33 W signal and the two combine to a
total
> > signal with a power of 133.33 W. That is all I have ever said and my
> > opinion on this has not changed.
>
> In another posting you admitted you forgot to take the power involved in
> the destructive interference pattern into account and that's why your
> energy equation didn't balance. The actual energy equation is:
>

I did not admit forgetting anything.

> 75w source not reflected at the Z0-match plus 8.33 watts re-reflected
> plus 50w involved in the destructive interference equals 133.33 watts,
> the forward power. The energy equation balances. There is no rearward
> traveling energy on the coax.
>
> Let's look at it from your point of view. You require magic phantom
> waves, which are undetectable and unmeasureable, carrying away the very
> 50w of power needed to balance the energy equation at the Z0-match. To
> avoid a conservation of energy violation, that same 50w must somehow
> locate a wormhole through which to return to the system. Give us an
> ever-loving break, Steve. That 50w never leaves the Z0-match and is
> therefore located exactly where it is needed to balance the energy
> equation. Models don't dictate reality, Steve. It works the other way.
>
> > The rearward traveling energies contained in the two 25 W signals remain
> > traveling rearward so as to maintain the steady state impedance match.
>
> Absolutely wrong, Steve. If they continued traveling rearward, they could
> be measured and would cause additional losses in the coax but we know they
> do not do that. You are back to your magic phantom waves of months ago.
> The power in those rearward traveling waves is zero times zero equals
> zero. The energy went somewhere else. You simply lost track of it.
>
> Those voltages and currents cancel at the Z0-match point and reward
> traveling energy ceases to exist. The energy continues to exist and
> it has no choice but to go the only other direction possible, back
> into the electromagnetic fields that result in the forward power.
> I agree with you that it is technically not re-reflected but it joins

> the re-reflected power anyway and becomes indistinguishable from the
> re-reflected power.
>
> > There is no "reversal" of this energy so that it "adds" to the energy in
the
> > 75 W and 8.33 W signals.
>
> Something equivalent to a reversal happens through the action of the
> electromagnetic fields. The 50w involved in the destructive interference
> is dumped into the electromagnetic waves that result in the forward power.
> There is simply nowhere else for it to go. We know there is no rearward
> traveling energy on the coax because reflected energy on the coax is equal
> to zero and your magic phantom waves result in a power equal to zero times
> zero. At the destructive interference point, the two voltages go to zero,
> the two currents go to zero, and the energy associated with those voltages
> and currents joins the electromagnetic fields that result in the forward
> power. You simply cannot have energy leaking out of the system to the
> left only to find a convenient wormhole through which to return to the
> system. Yet, that is exactly what your explanation requires.
> --

Cecil, this is as pointless as it was on Friday. You will not convince me
that you are correct. Let's not waste anymore of each others time.

Steve

4010. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 23:52:44 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <gd_L6.165$oi1.16885@bgtnsc04-news.ops.worldnet.att.net>
Source record: 162957

"Walter Maxwell" <w2du@iag.net> wrote in message
news:3b0028c6.17072559@news.journey.com...
> On Mon, 14 May 2001 16:39:41 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >"Walter Maxwell" <w2du@iag.net> wrote in message
> >news:3affeef8.2274981@news.journey.com...
> >> On Mon, 14 May 2001 14:11:32 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >> >2) If the magnitude of the steady state reflected voltage in the 150
ohm
> >> >line is 63.402 V, what is the magnitude of the re-reflected voltage?
> >What
> >> >is the magnitude of the rearward voltage created in the 50 ohm line?
> >>
> >> The re-reflected voltage is 31.7 v.
> >>
> >
> >Correct. Again, a starting point for constructive discussion.
>
> >> The total rearward voltage in the 50 ohm line from the reflection at
the
> >> 50/150-ohm junction plus the transmission through the 150/50-ohm
junction
> >is
> >> 47.49 v.
> >>
> >I was asking the question specific to the component of rearward voltage
> >delivered into the 50 ohm line only from the presence of the reflected
> >voltage arriving at the junction. This component of rearward voltage
would
> >have a magnitude of 31.7 V.
>
> This is what you asked for in the second question of 2), which I answered
> correctly, 31.7 v
> >

Yes, I agree.

> >> This 47.49 v. is the voltage in the total rearward power of 45.1 w in
the
> >50-ohm
> >> line resulting from 25 watts reflected at the 50/150-ohm junction plus
the
> >> 20.099 watts transmitted rearward through the 150/50-ohm junction.

> >>
> >> This is the correct way to determine the total rearward voltage in the
> >50-ohm
> >> line.
> >>
> >> However, if you add the separate voltages from the reflection and
> >transmission,
> >> respectively (which is incorrect), you will get 35.355 volts from the
> >reflection
> >> and 31.7 volts from the transmission, for a total voltage 67.1 v., an
> >INCORRECT
> >> voltage.
> >
> >I agree with you that 67.1 V would be an incorrect voltage. Your 47.49 V
is
> >also an incorrect voltage (for the example I set up).
>
> No it is not. You did not indicate a complex condition. My answer is
correct for
> a non-complex condition. If you wanted an answer to agree with a complex
> condition you keep in your mind you can't expect me to get that answer
unless
> you describe the conditions completely.
> >

If the two rearward voltages were not complex, ie, they were in-phase, then
the total rearward voltage would have to be 67.1 V. The forward voltage
would have to be 143.167 V.

> >Adding the two rearward traveling voltages, Vtotal rearward = V1 rearward
+
> >V2 rearward. This is an addition of two complex voltages and to perform
it
> >correctly you MUST know the relative phase between the two. I purposely
did
> >not give you the phase information so that we could have this specific
> >discussion.
> >
> >In my example, the 35.355 V was at 0 degrees relative phase and the 31.7
V
> >was at -101.967 degrees. The vector sum of these rearward voltages
results
> >in a total rearward voltage of 42.311 V at -47.135 degrees.
> >
> >The total reflected power in the 50 ohm line is 35.804 W.
> >
> It may be for your modified conditions, but not for the conditions given
in your
> problem statement.
>
>

> >> >3) Since you don't need voltage phase for your calculations and you
state
> >> >that Vforward = Sqrt(Vfwd1^2 + Vfwd2^2), what is the total forward
> >> >voltage and power in the 150 ohm line?
> >>
> >> The total forward voltage in the 150-ohm line is 110.7 v. The total
> >forward
> >> power in the 150-ohm line is 81.7 watts.
>
> Steve, I confess one misinterpretation of terms--Vfwd and Vref. I have
> inadvertantly construed them as E+ and E-, where E max = E+ + E- at theta
= 0
> degrees, and E min = E+ - E- at theta = 180 degrees. E+ and E- are both
> non-reactive at these points. This is why I inferred that no complex
condition
> was involved. However, this does not mean that I agree that the sum of
voltages
> squared yields the correct forward power.
>
> >In the example I set up, the re-reflected voltage of 31.7 V has a
relative
> >phase of 78.033 degrees. Adding it to the forward source voltage of
106.067
> >V at relative 0 degrees, the total forward traveling voltage is 116.831 V
at
> >15.393 degrees. The total forward power in the 150 ohm line is 91 W.
> >
> >The total steady state power delivered to the junction is 64.2 W.
>
> This value of power may well be correct, but I don't have the time right
now to
> recalculate to include the phase relationships.
>
> Walt
>

That's fine.

The point to the discussion is that for fixed *forward source power* in the 150 ohm line (75 W in this case - 106.067^2/150) and any given re-reflected power in the 150 ohm line (6.7 W in this case - 31.7^2/150), there is an infinite number of possible total forward steady state powers that can result because of the phase relationships between the forward source and re-reflected voltages. As I know you are aware, this occurs because of line length, loss and load impedance. The steady state delivered power will change accordingly. That's why I disagree with the Ptotal = Pforward source + Pre-reflected. To me this is a much different concept where you know the total power loss in two impedances and can determine the total loss from P1 + P2.

Even if we disagree at this point, its acceptable to me to end this discussion. It really takes up too much time.

I will probably unsubscribe again, so if i don't respond to anymore posts, that's why.

73
Steve VE9SRB

4011. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-14 23:58:48 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <Yi_L6.175$oi1.17400@bgtnsc04-news.ops.worldnet.att.net>
Source record: 162958

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B003FEB.F2FB4B12@IEEE.org...
> VE9SRB wrote:
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > news:3B001FA3.13B7BED0@IEEE.org...
> >
> > > Well, Hallelujah!!! That is what I have been saying all the time and
you
> > > have been arguing with me. So 75w plus 8.33w doesn't equal 133.33w
after
> > all.
> > > 75w from the source plus 8.33w re-reflected plus 50w from the
destructive
> > > interference equals the total forward power of 133.33 watts. This was
our
> > > single point of disagreement and I'm glad it's settled.
> >
> > Not even close.
>
> So you still believe in the non-conservation of energy principle?
> --

Cecil:

One final post. the conservation of energy requires that the net steady state power delivered to the 50 ohm line (100 W) be equal to the forward power in the 150 ohm line (133.33 W) minus the reflected power in the 150 ohm line (33.33 W).

Your frequent misinterpretation of my statements is why I would prefer to end this discussion here. Oh -BTW - My joules are quite fine thank you.

Take care
73
Steve VE9SRB

4012. Wire gauge/ RF Power rating??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 00:25:42 UTC
From: kg4ggx@aol.com
Message-ID: <20010514202542.08931.00003037@ng-fy1.aol.com>
Source record: 162959

Hi all
I will be winding a pair if loading coils for a 40/80 meter dipole. These will use PVC for a form and be around 100 to 120 uH. What gauge wire magnet wire should be used to be safe running the legal limit? Will 18 gauge do, or 16, or do I need to go with 14 gauge? Will the spacing of the windings have an effect on the power handling ability? At thgis time I'll only be running 100 watts, but some day I may want to use an amplifier. Any other suggestion appreciated. Thanks much.
73 Rob

4013. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 00:35:45 UTC
From: Tad Danley <taddanley@nospamatatt.net>
Message-ID: <3B0079F4.4280D58F@att.net>
Source record: 162960

Jerry Oxendine wrote:

> Ryan,
>
> In addition to things already mentioned, using an amateur call on CB
> frequencies is illegal. The reason is, your ham call and its attending
> privileges are "tied" to the bands assigned to the Amateur Service. It
> is no different than operating on 27.555 because you are out of your
> assigned band and indicating, by the use of your call, that you are
> operating a ham station. There was a case last year where a ham WAS
> cited for using his callsign on CB (however, he was doing some other
> stuff as well). Nonetheless, his warning notice included restrictions/
> warnings against using his ham call outside the ham bands. It is OK to
> operate on CB with the proper equipment and within the CB regulations--
> you just don't associate your ham station with it.
>
> In addition, if you were to go the air and begin using your ham call,
> *IF* you were heard by the so-called "BIG" boys, they are likely to
> laugh and ridicule you off the air most asuredly thinking you are
> "posing", slumming, or trying to appear better than they are. Indeed,
> you would be a target for one of those mega KW signals to key over you
> so they could make even more fun.

Using your ham call on CB frequencies is probably not a good idea for lots of reasons, including several already mentioned, but it is not illegal. On the other hand, using you ham call while freebanding qualifies as stupidity with extreme prejudice.

73,

--
Tad Danley, K3TD
mailto:taddanley@att.net

Caution!
Anti-SPAM e-mail return address in use.

4014. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 00:46:42 UTC
From: richardharrison@webtv.net
Message-ID: <16287-3B007C72-25@storefull-115.iap.bryant.webtv.net>
Source record: 162963

Rick, K1BQT wrote:
"By the same token, if I put down a 120-wire radial field under my antenna, I presume that also provides a low-impedance path to the lossy ground underneath."

Maybe. The usual 120-radial AM broadcast installation provides a low-impedance return for displacement current between the vertical radiator and the ground system. plus a low-impedance path out to a large low resistance ground area.

The resistance of a substance is the product of its resistivity, its resistance per unit volume, or "rho" times the length of the stuff, divided by the cross-sectional area of the stuff.

Copper wire used in a radial is usually a 1/4-wave or more long and has a relatively small cross-sectional area, but copper has a very low resistivity. Hence the radial adjusted for skin effect may only have a resistance of an ohm or so. The system has 120 parallel resistance paths.

The effective cross-section of ground is bounded by its surface, skin depth of the signal in the ground, and the circumference of a circle enclosing the outer ends of the radials. This is a big cross-sectional area. So, rho times a unit length divided by the cross-sectional area of the soil is a very low resistance. The crossectional area grows with distance from the antenna so if the conductivity of the soil remains unchanged, so does the resistance measured to the signal source, if you can get good enough soil connections.

Best regards, Richard Harrison, KB5WZI

4015. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 01:03:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B00805A.DB88BB8A@IEEE.org>
Source record: 162961

VE9SRB wrote:
> Your frequent misinterpretation of my statements is why I would prefer to
> end this discussion here.

Before you go, Steve, I have one last request for you. I know your model predicts that the waves canceled by destructive interference will continue on down the line. What I want from you is a reference that says the energy associated with those canceled waves before the destructive interference took place still continues on down the line after the destructive interference action.

Also, I previously asked for a reference that says, in effect, that your assertion of 75w + 8.33w = 133.33w is true. You seem to have very carefully avoiding giving such a reference. I certainly cannot find anything like it in Johnson.
--
http://www.mindspring.com/~w6rca

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4016. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 01:07:51 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B008167.D13ACBF5@IEEE.org>
Source record: 162962

VE9SRB wrote:
> I did not admit forgetting anything.

You sure are getting forgetful.

> Cecil, this is as pointless as it was on Friday. You will not convince me
> that you are correct. Let's not waste anymore of each others time.

Before you go, Steve, you owe us a reference that supports your assertion
that 75w + 8.33w = 133.33w. I can't find it in Johnson.

And while you're at it, please furnish a reference that states that the
power associated with waves canceled by destructive interference continues
on down the line and are lost from the system.
--
http://www.mindspring.com/~w6rca

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4017. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 01:16:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B00837C.6BBC0379@IEEE.org>
Source record: 162964

VE9SRB wrote:
> I knew that this would be the answer you would come up with.

Well, you should, Steve. This is the third time you've asked for it and
I've given it to you.

> You claim that my vector addition of voltage is incorrect, yet you expect me
> to believe that two rearward traveling voltages in a 50 ohm line, one
> +35.356 V, the other -35.356 V, reverse direction, and then combine to
> become a forward voltage of 86.603 V in a 150 ohm line. I don't think so.

Yes, yes, yes, that's exactly what happens. It does it through the electromagnetic
fields, of course. Those 50w from the destructive interference pattern are
exactly what is needed to balance your energy equation. Seems you should welcome
balancing your energy equation so you wouldn't be in a position of violating
the principle of conservation of energy.

> Yes Cecil, you could not possibly be wrong.

You're right, Steve. I could not possibly be wrong about the conservation of
energy principle. You, OTOH, throw away the 50w watts you need and then pull
an additional 50w out of thin air. Where does that 50w that you throw away
go, Steve, and where does that 50w that you come up with come from?

According to you, 50w is lost in the destructive interference and it continues
down the line to the source. Never mind about losing that 50w, you'll just
make it up with this equation: 75w + 8.33w = 133.33w Talk about willy-nilly.
--
http://www.mindspring.com/~w6rca

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4018. 6 meter j pole length?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 01:47:45 UTC
From: hamkid <cbkid113@hotmail.spamsucks.leaveme.alone.com>
Message-ID: <9dq1r4$k8t$1@bob.news.rcn.net>
Source record: 162965

i thought about making a j-pole for 6 meters with tv twin lead but have not gotten that far along with the project. I wanted to know how long this type of antenna would be. I think I only have about 7 feet of space to put something into and would like to know how long this antenna would be before I make it and end up with something unusable for my situation (attic mount) Thanks and 73.

4019. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 01:56:33 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <3B008CD1.AA8@bellsouth.net>
Source record: 162966

Cecil,

All I can tell ya is that there was a case on Rain Report where a ham got scolded by RH for using his ham call on CB. Yes, there were some *other* offenses as well, but the use of the guy's call was specifically mentioned in the Warning Notice. I have no other info except that, but I will email RH and ask. The rationale for such prohibition is (as it was told to me--not by FCC--), your license is tied to the privileges granted thereto and applies to the bands you are allowed to use. By identifying with your ham call, you are identifying as a ham station operating OUTSIDE the privileges of said license. It would be the same as operating on 27.555--you're operating out of band. That's the info I have, tho not "official". I know *I* will never do it.

73

Jerry
K4KWH

W6RCecilA wrote:
>
> Jerry Oxendine wrote:
> > In addition to things already mentioned, using an amateur call on CB
> > frequencies is illegal.
>
> Jerry, this just doesn't make sense. I can use any identification in the
> world, or none at all, on CB but I am prohibited from using my ham call?
>
> I would suggest that using a ham call applies only to ham frequencies,
> and that anyone, including you, can use your ham call on CB.
>
> Consider the fact that I am allowed to use K4KWH as an identifier on CB,
> but you are not? That's insanity.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4020. Re: QRP enthusiasts out there ???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 02:12:02 UTC
From: "William F. Hagen" <whagen@inreach.com>
Message-ID: <3B009072.D9984129@inreach.com>
Source record: 162967

Ive worked a few 5w qrp stations in the past, ssb, and they were quite copyable, however in all cases none were working a dipole, instead they were on some sort of beam antenna which really helps.

Bob Nielsen wrote:
>
> On Sun, 13 May 2001 22:08:25 -0700, John Moriarity wrote:
> >> > There are literally 1000's of QRP sites on the net. Go to a search
> > engine
> >> > like www.hotbot.com, type in QRP ham radio or some such thing and
> > you will
> >> > get back enough links to keep you busy for a year.
> >>
> >>
> >> And-- with few exceptions the QRPers are running CW.
> >
> > Actually, a *lot* of them are running PSK-31, now. And
> > quite a few are running SSB at 10 watts PEP.
>
> And some of us only run 5 watts PEP on SSB. Of course, I have yet to
> break a pileup that way....
>
> --
> Bob Nielsen, N7XY nielsen@oz.net
> Bainbridge Island, WA http://www.oz.net/~nielsen
> IOTA NA-065, USI WA-028S

4021. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 02:16:56 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3B009198.4CA4ABF7@bwcc.com>
Source record: 162968

Bart Rowlett wrote:
> It's more like whistling
Or even the sound from near a jet engine...

> into the end of a long capillary tube and
> asking how much sound makes it out the far end.
In other words, nothing.

Someone can speak of 280 dB attenuation, but it seems to fall below practical limits of possible effect.
That sort of reminds me of repeated 1:99 dilutions in homeopathic medicine that goes into a range of improbability of any of the original compound still being present in the solution.

4022. Re: License??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 02:27:04 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3B0093F8.5C0D3992@cticonsulting.net>
Source record: 162870

I was persuaded to take the Technician Exam after reading the ARRL Handbook Ch.1, which was originally recommended to me as a resource on electronics. They have a book you can order, "Now You're Talking", which you can also get at some radioshacks. This book covers everything you need to pass the first test, and also contains information about HAM radio. But the ARRL Handbook, which you can also get from their site, talks about all kinds of aspects of the hobby, and got me interested and excited. Just passed the test last week, and waiting on my call-sign!

"Ron P." wrote:
>
> Hey everyone...just been kinda peeking around, and I was wondering...what is
> the easiest way to get talking on HAM, what is the most least expensive unit
> I could use, and what are the benefits of HAM? I am in Mansfield, OH and I
> would also like to know if anyone could give me the freqs so I can pop them
> into my scanner so I can get an idea what all is out there......that and I
> like to listen to my scanner so I can hear whats going on outside my little
> world LOL......ok thanks alot in advance, and feel free to drop me an
> email with the freqs.
>
> Ron

4023. Re: Homemade antenna ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 02:30:16 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3B0094B8.B250B2E7@cticonsulting.net>
Source record: 162876

Sideband wrote:
>
Thanks puting your site up. Yours will be a model for mine to be built
this or next weekend.

> try my site... I just built a decent 2M 1/4 wave groundplane (my first
> project) which turned out rather well, if I do say so myself.
>
> http://www.csotbs.org/kc8rkq/coathanger.html
>
> Enjoy
>
> 73 de KC8RKQ
>
> john-eileen@prodigy.net wrote:
> >
> > I have a handheld HTX-202 Radio Shack 2 Meter radio. I really need some
> > type of antenna at home. Please email suggestions and or instruction to
> > make a simple antenna. thanks john-eileen@prodigy.net

4024. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 02:33:20 UTC
From: k1bqt@aol.com
Message-ID: <20010514223320.12896.00003145@ng-cs1.aol.com>
Source record: 162869

s "transverse voltage" a form of leakage between the inside and outside surface of the shield? If so, a high degree of "leakage" is inconsistent with the work I've done using sensitive current meters and inexpensive coax. I'd be curoius what sort of difference one might anticipate in terms of dB--and under what circumstances. A simple experiment should be easily devised.

73

Rick K1BQT

4025. Re: Design of ground independant 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 03:11:45 UTC
From: Mike Allan <"mike.allan<nospamm>"@rmit.edu.au>
Message-ID: <3B009E71.37D2E444@rmit.edu.au>
Source record: 162871

Thanks for the info George, I will hit the University libary when I get a
chance.
Mike
VK3XL

Crazy George wrote:

> Look up Harold Wheeler's papers in IRE back in the 50s and 60s. He
> discusses what configuration to use to get the most gain out of a given
> aperture. My archives are all gone now, or I would look it up for you.
> --
> Crazy George
>
> Mike Allan @rmit.edu.au> <"mike.allan<nospamm> wrote in message
> news:3AFF572F.F6FA76BB@rmit.edu.au...
> > Thanks for reading this post.
> > I have a number od radomes (hollow fiberglass poles) about 2 meters long
> > from which I want to make some ground independant vertical antennas for
> > portable use. I want to get the most gain I can from the length of pole
> > that I have. Does anyone have a design that they think will work in this
> > situation. I have considered a J pole but that would be only about 1/2
> > of the avaiable length... any ideas will be considered.
> > Many thanks
> > Mike VK3XL
> >

4026. Re: 2 Meter Links

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 03:14:04 UTC
From: Mike Allan <"mike.allan<nospamm>"@rmit.edu.au>
Message-ID: <3B009EFC.A67D7BAB@rmit.edu.au>
Source record: 162872

I recently asked a similar question and a kind soul sent me this address...
Looks just the ticket.
http://people.ne.mediaone.net/buck0/hampage.htm
Mike
VK3XL

paul g7uib wrote:

> there are loads of places on the net for ant designs dig in and fish some
> out the j-pole is a good ant it is so easy and works a treat can be made of
> wire or copper pipe I used one for a few years when I first passed
> If no look get in touch and i'll send you some pics
>
> "Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
> news:3B00234F.26929034@cticonsulting.net...
> > I'd like to build my first simple vertical antenna for 2 meters. Should
> > I buy the ARRL antenna book for ideas, or are there some links on the
> > web that are just as good for plans, tips, theory, etc?

4027. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 03:33:35 UTC
From: richardharrison@webtv.net
Message-ID: <5430-3B00A38F-38@storefull-118.iap.bryant.webtv.net>
Source record: 162873

Rick K1BQT wrote:
"I`d be curious what sort of difference one might anticipate in terms of dB--and under what circumstances."

A shielding characterized by Horowitz & Hill as complete may require high power to force enough leakage through its holes to measure at h-f.

With ample power on the coax and a sensitive detector close to the sample, various grades of coax might be compared if leaks from other sources were controlled.

Best regards, Richard Harrison, KB5WZI

4028. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 03:33:45 UTC
From: dennis@wawa.juniper.net
Message-ID: <9dq82p$2o3d$1@heap.juniper.net>
Source record: 162874

Roy Lewallen <w7el@eznec.com> wrote:
>In a previous life, I worked on heavy ground radar. The particular set I
>spent most of my time with put out about 4 MW peak, through a
>rectangular waveguide that was roughly 2 X 4 inches in cross section.
>This waveguide was operated in the TE(1,0) mode. In this mode, the E
>field extends from one of the long sides directly across to the other.
>(It's maximum at the center of the long sides and sinusoidally drops to
>zero at the short sides.) The waveguide was kept slightly pressurized
>with dried air. When the pressurizing system failed and humidity was
>high, the waveguide would arc internally. I assume this arc took place
>between about the centers of the long walls, where the E field is
>greatest. Inside the waveguide, between the center of one long wall and
>the other, there's a very high potential, tens of kV. Yet on the outside
>of the waveguide, I could put one finger on the center of one long side
>and another finger on the opposite side and feel nothing.
>
>How can this be?

I've found references which describe the E and H field distributions
inside a TE(1,0) mode waveguide, as well as the current distributions
on the waveguide walls, but I've not yet found one with pictures of the
voltage distribution on the walls. You suggest that there is a voltage
difference of tens of kV between the top and bottom walls, but all I'm
sure of is that there is a large E field in the dielectric and I'm not
certain you can deduce the voltage on the walls solely from the E field in
the dielectric.

So I've been trying to figure out what the voltages on the waveguide walls
will be, and since I'm having trouble seeing how to find this from knowledge
of the EM field (conductor voltages are seldom mentioned in texts on
fundamental electromagnetics) I thought I'd try to get at it from
conservation of energy considerations instead. For an antenna used for
transmitting it seems to me we can find the power being radiated from
knowledge of the current and voltage distributions (assuming lossless
conductors to avoid confusion) from integrating P = VI over the antenna.
If the antenna is radiating the current will in general be flowing from
high voltage to low voltage. If we use the same antenna for receiving,
however, then while reciprocity says the voltage and current distributions
won't change, they'll need to shift 180 degrees with respect to each other.
Since the antenna is now drawing energy from the radiation field, the
current will in general need to be flowing in the direction of increasing
voltage. This seems necessary for consistency with fundamental circuit
behaviour; current flows from negative to positive voltage where power
is introduced into a circuit, and positive to negative where power is
removed from a circuit.

With respect to the walls of the waveguide, then, it seems to me we know two things. We know the wall is carrying current since all the textbooks say this, and we know that since the power that goes in one end of the waveguide mostly comes out the other end the walls neither remove nor add power to the system (or, if you prefer, the energy they remove from the system is equal to the energy they add back, so the net power is zero). So the question is, what voltage must exist on the walls for the net power transfered to and from the walls to be zero? If the voltage decreases in the direction of current flow the walls would be losing energy. If the voltage increases in the direction of current flow the walls would be gaining energy. If conservation of energy requires that the walls neither gain or lose net energy, it seems to me that energy is conserved only when the voltage is the same at all points on the walls (the only other alternative is that the walls receive energy some places and reradiate it other places, but the symmetry in this case seems to me to preclude that). I hence think that, in the case of an energy-conserving waveguide, the inside walls of the waveguide will be at the same voltage, just like the outside walls. And note that less-than-infinite conductivity of the walls won't change this much either. The currents are not nearly high enough to produce an IR voltage drop of tens of kV across a few inches of copper, if they were the copper would surely melt. Since my textbook uses the current distribution found in the lossless case to compute I^2 * R losses in real conductors, I'm pretty sure the text also agrees that finite conductivity doesn't change things much.

So there remains the issue of what happens when the waveguide arcs. To initiate the arc would seem to first require dielectric breakdown. The texts I have quote the dielectric breakdown level in terms of the E field strength in the dielectric, and we know there is a large E field in the middle of the waveguide no matter what the voltage is on the walls. It hence seems like we can have a conductive path form through the middle of the waveguide independent of the voltage on the walls.

Once you have a conductive path from the top wall to the bottom, however, everything changes. It has effectively added a conductor from the top of the waveguide to the bottom in the middle of the EM field, where it will have a current induced like any other conductor, and since the conductor is lossy it will burn power so the conservation of energy arguments no longer apply. Since this is no longer energy conserving, I suspect the end result is that a voltage difference will form between the top and bottom walls of the waveguide (i.e. there will be a voltage difference between the waveguide walls because of the arc, rather than the arc occuring because of a voltage difference between the waveguide walls), with the current in the arc flowing in the direction opposite the current on the short walls of the waveguide. That is, the current on the waveguide walls will flow from negative to positive voltage, taking power from the EM field, and then from positive to negative voltage across the arc, removing the power from the system as heat.

So because I still suspect the voltage on the inside and outside of waveguide walls must be the same (I think this is a necessary condition

for the net electric field inside the conductor to remain zero), I think
that while you're safe to touch both sides of a waveguide normally
it might not be such a good idea when it is arcing. I'm not entirely
sure that this is correct, however, so if you have reason to think I'm
incorrect I'd very much like to understand why. I'm trying to learn
something about this stuff, but a lot of the questions which get asked
don't seem to have textbook answers.

Dennis Ferguson

4029. Re: Telescoping vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 04:03:11 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B00AA7F.6528@wt.net>
Source record: 162875

Randon Loeb wrote:
>
> I have started to come across some homebrew antenna links, but have
> noticed that none make any mention of the telescoping vertical antennas
> that might come with a boom box, car or other FM radio receiver, or
> bought at cheaply at places like radioshack. It seems to me that for
> home made verticals, like the 1/4 w 2 meters I'm thinking of, these
> would work great because of the ease in adjusting it to the proper
> length for lowest swr, light weight and strength. Why not lay a few on
> their sides for the ground radials as well? Seems to me that tuning the
> length of the driven element or ground radials would be really easy,
> just slide until you get what you want. Yet I don't see any body using
> them, nor do I see commercial products using them either. Should I give
> one a shot, or is there are good reason they are not used for
> transmitters and only for receivers?

My indoor GP is made from one, but like the others say, if you use one outdoors, it may show bad connections after a few months of wx. Also another drawback is they are brittle. They don't bend well if something hits them. Once they crease, they are pretty much history. But other than that, they will work ok. MK
--
http://web.wt.net/~nm5k

4030. Re: 2 Meter Links

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 04:41:09 UTC
From: N3VST <not@chance.com>
Message-ID: <Pq2M6.11415$55.4406400@newsrump.sjc.telocity.net>
Source record: 162877

The Arrl book is great if you are looking for massive (size) and technical antennas. Not a good book for simple antennas. Good luck building

73

"Mike Allan @rmit.edu.au>" <"mike.allan<nospamm> wrote in message news:3B009EFC.A67D7BAB@rmit.edu.au...
> I recently asked a similar question and a kind soul sent me this address...
> Looks just the ticket.
> http://people.ne.mediaone.net/buck0/hampage.htm
> Mike
> VK3XL
>
>
> paul g7uib wrote:
>
> > there are loads of places on the net for ant designs dig in and fish some
> > out the j-pole is a good ant it is so easy and works a treat can be made of
> > wire or copper pipe I used one for a few years when I first passed
> > If no look get in touch and i'll send you some pics
> >
> > "Randon Loeb" <rloebusenet@cticonsulting.net> wrote in message
> > news:3B00234F.26929034@cticonsulting.net...
> > > I'd like to build my first simple vertical antenna for 2 meters. Should
> > > I buy the ARRL antenna book for ideas, or are there some links on the
> > > web that are just as good for plans, tips, theory, etc?
>

4031. Re: Question on egg-beater

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 04:43:39 UTC
From: nx7u@mindspring.com
Message-ID: <3b00b3aa.14939029@nntp.mindspring.com>
Source record: 162878

I use an EB-432 from M2 antennas (www.m2inc.com) for 70cm downlink on
my truck (!) to work FO-20/FO-29 downlink. They work FB.
One advantage to building them yourself (a la K5OE or
whomever)...polarization switching is a GOOD THING that isn't an
option on the EB-432.

On Mon, 14 May 2001 00:08:24 -0400, "KA3MTT" <nani@fuse.net> wrote:

>I was wondering if anyone has had any experience using the eggbeater style
>antenna for satellite work on VHF/UHF? They claim to work well for them,
>and was wondering if anyone had any suggestions? Thanks, Nathan KA3MTT
>
>

4032. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 04:44:40 UTC
From: N3VST <not@chance.com>
Message-ID: <8u2M6.11449$55.4410669@newsrump.sjc.telocity.net>
Source record: 162879

What in the Sam hell does this have to do with radio, or antenna's. Sounds like more than just his ISP has some problems to work out.

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message news:3afe359a.11938644@news.aepnet.com...
> My ISP is having so many troubles that they are giving me three months of free
> "service." Consequently, I haven't been able to read the group for a few days.
>
> I have tired to follow along via dejanews but they seem to lag a bit. Maybe I
> can post form there, but I haven't figured out how yet. But in response to:
>
> Begin quote.
>
> "Wes:
>
> I love that dry heat.
>
> Back when I worked for Motorola, I spent a month in Phoenix in August, at
> MICARL... I grew to love it there, especially in August.
>
> One of my favorite things to do after work was to go up to Pinacle Peak, in
> the foothills behind Scottsdale, overlooking the desert floor of the Valley
> of the Sun, and eat one of those famous cowboy steak dinners grilled over a
> mesquite fire, and watch the sun go down.
>
> However there is one thing I am curious about my travels in AZ... as I drove
> along the the "open range" on the way up to Pinacle Peak, I would come upon
> several roadside signs asserting,
>
> "No shooting".
>
> Invariably those signs were full of bullet holes!
>
> What?
>

> Is there no respect for "law" in AZ?"
>
> End quote.
>
> Let me say that even as a Goldwater Republican and law-abiding, upstanding
> citizen, I am getting more than a little pissed off at "law enforcement."
>
> For instance. You may have seen on your local news the aftermath of the
robbing
> of the NCAA national basketball championship from the U of A by Duke and
the
> referees. Following the theft, a few tipsy revelers took to the street
outside
> a group of college hangout bars for a bit of fun, and overturned a car and
set a
> small blaze.
>
> The response of Tucson's "finest" was to stand aside until things were
going
> full-bore and then, suited up with shields, clubs, face masks and jack
boots,
> they marched down the street arm-in-arm, rapping on their shields with
their
> clubs, like a pack of childish storm troopers. (And if you think that
only the
> bad guys wear masks, you're correct)
>
> After supposedly telling the crowd to disperse, which no one heard because
of
> the din of the police helicopter overhead or the fact that most people
were
> still inside the bars having one more, the cops proceeded to start firing
> "less-than-lethal" ordinance. Supposedly, these cops had been well
trained to
> fire only at the feet and legs of the crowd, but lots of folks were hit
well
> above the knees. Like the one innocent student who was leaving the scene
and
> heard an explosion (grenade), turned around to see what happened, and had
his
> eye shot out by a "harmless" rubber bullet. Or the off duty fireman that
had a
> piece of his ear shot off. (An ongoing investigation by an "impartial"
panel,
> that is predominately made up of cops, and had hoped to meet in secret,
but
> failed, has determined that over 400 rounds were fired)
>
> Today's newspaper revealed that the cops had snipers on rooftops with
lethal

> weapons ready to shoot a bunch of drunken college kids. The story also
revealed
> that these "well-trained" cops had to borrow their less than lethal
weapons from
> other police agencies, so one must question how they were "well-trained"
with
> weapons that they don't own.
>
> But maybe, just maybe, they got their excellent training from the FBI.
That
> would be the organization that screwed up the Los Alamos investigation,
had a
> Russian spy in their midst for years, "lost" thousands of documents
pertaining
> to the Oklahoma City bombing and whose director is stepping down two years
> early. (I won't mention Waco or Ruby Ridge because you might think that
I'm a
> right-wing wacko nut, which I am not. They all live in Phoenix and work
at
> Motorola))
>
> Or maybe they get their training by watching Fox's "Cops." You know the
show,
> the one where "taking down" some poor slob who wants a policewoman, posing
as a
> 'working girl', to spank him, is making us all safer. (I'm not making
this up)
> The fact that I think this is assinine also proves that I'm *not* a
right-wing
> wacko nut; they think that the guy should get busted.
>
> Respect for the law? Yeah we're probably giving it way more than it
deserves.
>
>
> Wes Stewart N7WS
>
> ps. It rained today while I was outside grilling my own steak. Nothing
like
> the desert after a rain.
>

4033. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 05:28:56 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3B00BE98.4C044DA5@bwcc.com>
Source record: 162880

Dennis Ferguson wrote:
> This seems necessary for consistency with fundamental circuit
> behaviour; current flows from negative to positive voltage where power
> is introduced into a circuit, and positive to negative where power is
> removed from a circuit.
Why did you suddenly substitute "positive" for "higher" and "negative" for "lower"?

> If conservation of energy requires that the walls neither gain or lose
> net energy, it seems to me that energy is conserved only when the voltage
> is the same at all points on the walls
That could be close. They could be dissipating some as heat.

> I hence think that, in the case of an energy-conserving waveguide,
> the inside walls of the waveguide will be at the same voltage,
> just like the outside walls.
By "inside" do you mean the end of the guide that is nearer to the transmitter?

Because if you mean outside of the waveguide where the hands could be placed, you have ignored skin effect.
You seem to be describing a DC circuit.

Once it arcs...
> Since this is no longer energy conserving, I suspect the
> end result is that a voltage difference will form between the top and
> bottom walls of the waveguide (i.e. there will be a voltage difference
> between the waveguide walls because of the arc, rather than the arc
> occuring because of a voltage difference between the waveguide walls),
That sure is unusual.
Arcs normally occur because there is a large potential difference and the current traveling through the arc acts to reduce that difference.

> So because I still suspect the voltage on the inside and outside of
> waveguide walls must be the same (I think this is a necessary condition
> for the net electric field inside the conductor to remain zero), I think
> that while you're safe to touch both sides of a waveguide normally
> it might not be such a good idea when it is arcing.
To me an arc would cause loss of signal (neutralization) inside the waveguide.
I don't see the reason for it to propagate a charge to the outside where one's hands are placed.

4034. Re: what to attach co-ax braid to in shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 06:02:16 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9dqgp8$6vh$1@208.207.71.154>
Source record: 162881

W6DKN wrote:
>
> "Dick Carroll" <dixie@townsqr.com> wrote in message
> news:9dnhmr$oq7$0@208.206.142.96...
> >
> >
> > W6DKN wrote:
> > >
> > > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > > news:3AFED9F1.C15689D8@IEEE.org...
> > > > Dan Jacobson wrote:
> > > > > I have unscrewed the original antenna to my 49 mhz cordless phone,
> and
> > > > > attached instead the co-ax's center wire, but what to attach the
> braid
> > > > > sheath to? The phone itself seems to not provide a 'ground'
> contact.
> > > >
> > > > They do that on purpose so it won't be easy for people like you to
> > > > break the FCC rules.
> > > > --
> > >
> > > Maybe the guy wants everyone with a scanner for miles around to listen
> to
> > > his calls, or maybe he just likes letting everybody in the neighborhood
> > > make calls on his phone using their handsets. After a few 2-3 hour
> calls to
> > > Columbia or Japan he will probably re-think his "set up"...
> >
> >
> > Or maybe he has a Spread Spectrum cordless phone....
>
> Not likely at 49 mhz. These are usually the typical Walmart 19.99 cheapo's
> that cause all the 6 meter operators neighbor trouble :>) . Most of the
> better phones with any type of security at all are 800 mhz and up.

Yes indeed. I read right past the '49 mhz'.

4035. Re: QRP enthusiasts out there ???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 06:19:00 UTC
From: nielsen@remove_this.oz.net
Message-ID: <9dqhok$b32$0@216.39.171.5>
Source record: 162882

Actually, my antenna is almost a joke. I moved here a year ago and wanted to put up something cheap temporarily that would work on several bands until I decide what I really want to install. I studied several possibilities with Eznec and ended up with 100 ft. of wire in an L shape with one leg 34 feet and the other 66 feet, fed at the corner with 15 ft. of RG-8X (I use a tuner). It's about 18 - 20 feet above the ground.

I've worked 65 countries running 5 watts (21 of them on SSB, including all continents) and about 120 countries at 100 watts (on 40, 30, 20, 17, 15, 12 and 10 meters).

Of course, being only a few hundred feet from the water doesn't hurt.

Bob, N7XY

On Mon, 14 May 2001 19:12:02 -0700, William F. Hagen wrote:
> Ive worked a few 5w qrp stations in the past, ssb, and they were quite
> copyable, however in all cases none were working a dipole, instead they
> were on some sort of beam antenna which really helps.
>
> Bob Nielsen wrote:
>>
>> On Sun, 13 May 2001 22:08:25 -0700, John Moriarity wrote:
>> >> > There are literally 1000's of QRP sites on the net. Go to a search
>> > engine
>> >> > like www.hotbot.com, type in QRP ham radio or some such thing and
>> > you will
>> >> > get back enough links to keep you busy for a year.
>> >>
>> >>
>> >> And-- with few exceptions the QRPers are running CW.
>> >
>> > Actually, a *lot* of them are running PSK-31, now. And
>> > quite a few are running SSB at 10 watts PEP.
>>
>> And some of us only run 5 watts PEP on SSB. Of course, I have yet to
>> break a pileup that way....
>>
>> --
>> Bob Nielsen, N7XY nielsen@oz.net
>> Bainbridge Island, WA http://www.oz.net/~nielsen
>> IOTA NA-065, USI WA-028S

4036. Re: My First 2M Antenna..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 06:32:18 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3B00CD72.FC627B13@netdoor.com>
Source record: 162883

I have seen the the thing operate. It is far better than you describe it.
Arre you one of those paid to confuse the populace by giving negative
comments and worse on all MFJs top of the line equipment? This is going
on now!

Butch Magee KF5DE
6462 Kome' Drive
Diamondhead, MS 39525-3816

Sideband wrote:

> Someone mentioned a setup similar to this to me about 2 days ago, so I
> had to try it.
>
> Details at http :// www . csotbs . org / kc8rkq / coathanger.html
>
> Remove the spaces to get there... Sorry about that annoyance, but the
> webserver that's on is in my apartment, and all I have is an ISDN line.
> It's up 24/7, but if I put the URL up without spacing it out or
> otherwise mangling it, inktomi and other search engines eat up almost
> all of my bandwidth for about an hour every day...
>
> Let me know what you think..
>
> -SSB

4037. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 07:42:02 UTC
From: atkes@imap1.asu.edu
Message-ID: <9dqmkaqjj1@news.asu.edu>
Source record: 162884

Dennis Ferguson (dennis@wawa.juniper.net) wrote:

snip

: I've found references which describe the E and H field distributions
: inside a TE(1,0) mode waveguide, as well as the current distributions
: on the waveguide walls, but I've not yet found one with pictures of the
: voltage distribution on the walls. You suggest that there is a voltage
: difference of tens of kV between the top and bottom walls, but all I'm
: sure of is that there is a large E field in the dielectric and I'm not
: certain you can deduce the voltage on the walls solely from the E field in
: the dielectric.

: So I've been trying to figure out what the voltages on the waveguide walls
: will be, and since I'm having trouble seeing how to find this from knowledge
: of the EM field (conductor voltages are seldom mentioned in texts on
: fundamental electromagnetics) I thought I'd try to get at it from
: conservation of energy considerations instead. For an antenna used for
: transmitting it seems to me we can find the power being radiated from
: knowledge of the current and voltage distributions (assuming lossless
: conductors to avoid confusion) from integrating P = VI over the antenna.
: If the antenna is radiating the current will in general be flowing from
: high voltage to low voltage. If we use the same antenna for receiving,
: however, then while reciprocity says the voltage and current distributions
: won't change, they'll need to shift 180 degrees with respect to each other.
: Since the antenna is now drawing energy from the radiation field, the
: current will in general need to be flowing in the direction of increasing
: voltage. This seems necessary for consistency with fundamental circuit
: behaviour; current flows from negative to positive voltage where power
: is introduced into a circuit, and positive to negative where power is
: removed from a circuit.

snip

The usual problem of defining the "voltage" is that it is the line
integral of the electric field and depends on the integration path. Of
course, air molecules which are being ionized when it arcs don't care
about the voltage or the integration path. They respond to the electric
field. Therefore the arcs occur at the places where the electric field
is large. Arcs typically start at sharp edges not because the "voltage"
is higher, but because the electric field is larger there.

One way to define a voltage in a wave guide is to find the integration
path that produces the largest value. For a TE_10 mode waveguide this
is the straight path from the center of the top to the center of the
bottom. For this mode, the electric field has the same value over that

entire path, so the electric field that breaks down the dielectric will be pretty much the same as the DC break down electric field. In terms of a DC voltage across that distance, Roy's estimate is correct.

Sometimes people take the coefficient of the transverse electric field and the coefficient of the transverse magnetic field to be analogous to voltage and current respectively (but they are simply the overall multiplying factors for theses fields). If there is a single mode propagating, Maxwell's equations for these are identical to the usual transmission line equations and you can use all the same tools (like the Smith chart or equivalent computer programs).

You have exactly similar problems for antennas. You can define the voltage across the feedpoint fairly well, but the voltage anywhere else is generally not well defined unless you specify the integration path. For example the voltage difference between any two points on the perfect conducting element via a path through the element is zero. Places that hams traditionally call "high voltage" on an antenna such as the ends of a center fed half wave dipole are, in reality, points where there is a large electric field perpendicular to the conductor.

73 Kevin w9cf

4038. Re: Homemade antenna ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 08:23:33 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B00E785.C6480423@spam.me.not>
Source record: 162885

Randon:

Nae a problem, there. It was my first antenna for 2M, which I built last
Saturday, two days after my callsign showed up on the FCC database.
::grin::

I think it's called a "spider" antenna, but I'm not 100% sure on that.
It works VERY well. I just need to find a way to weatherproof it now.
When I do, I'll post an update.

73 de KC8RKQ, Chris

Randon Loeb wrote:
>
> Sideband wrote:
> >
> Thanks puting your site up. Yours will be a model for mine to be built
> this or next weekend.
>
> > try my site... I just built a decent 2M 1/4 wave groundplane (my first
> > project) which turned out rather well, if I do say so myself.
> >
> > http://www.csotbs.org/kc8rkq/coathanger.html
> >
> > Enjoy
> >
> > 73 de KC8RKQ
> >
> > john-eileen@prodigy.net wrote:
> > >
> > > I have a handheld HTX-202 Radio Shack 2 Meter radio. I really need some
> > > type of antenna at home. Please email suggestions and or instruction to
> > > make a simple antenna. thanks john-eileen@prodigy.net

4039. Re: My First 2M Antenna..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 08:28:44 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B00E8BC.C890910B@spam.me.not>
Source record: 162886

Butch:

Honestly, I don't understand where your comments came from. I don't
believe I disparaged MFJ's name or products in any way. The meter I used
seems to work, and the antenna performs exactly as I described it to.
Note that the antenna presently is only 4 1/2 feet or so above the
ground.

I'm going to put it up another 10 feet to see if I can hit the Fenton
repeater I use occasionally a little better.

I described, on my page, the limitations of the antenna as installed,
and the reasons behind those limitations, as best I could. Again, I
don't believe I said anything untoward about MFJ's equipment.

73 de KC8RKQ

Butch Magee wrote:
>
> I have seen the the thing operate. It is far better than you describe it.
> Arre you one of those paid to confuse the populace by giving negative
> comments and worse on all MFJs top of the line equipment? This is going
> on now!
>
> Butch Magee KF5DE
> 6462 Kome' Drive
> Diamondhead, MS 39525-3816
>
> Sideband wrote:
>
> > Someone mentioned a setup similar to this to me about 2 days ago, so I
> > had to try it.
> >
> > Details at http :// www . csotbs . org / kc8rkq / coathanger.html
> >
> > Remove the spaces to get there... Sorry about that annoyance, but the
> > webserver that's on is in my apartment, and all I have is an ISDN line.
> > It's up 24/7, but if I put the URL up without spacing it out or
> > otherwise mangling it, inktomi and other search engines eat up almost
> > all of my bandwidth for about an hour every day...
> >
> > Let me know what you think..
> >
> > -SSB

4040. Simple SW antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 08:39:04 UTC
From: Ciro Caramiello <caramiel@unina.it>
Message-ID: <9dqppl$dv6$1@news.unina.it>
Source record: 162887

Where can I find the scheme of a very simple electronic circuit to trim a 1.70 m extendible whip antenna to be used in (all or a part of) the band of short waves (1.60-30 MHz) for my sony icf sw55?

Thanks
Ciro Caramiello

4041. Re: My First 2M Antenna..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 08:49:11 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B00ED87.C78C486B@spam.me.not>
Source record: 162888

Actually, I think I just figured out what you were talking about, Butch, but you grossly misinterpreted what I was saying... See the quote below:

"Here's three views of the antenna, with descriptions. I apologize in advance for the poor quality of these. Best I can do with the equipment I have."

Here I was referring to the quality of the pictures, and my digital camera. I have one of the $60.00 Largan digitals, which takes pictures at 640 X 480. It does a halfway decent job at taking pictures, if minute detail isn't necessary. In other words, it's great for snapshots, but not so hot for detail work.

I do believe you owe me an apology for inferring that I was paid to badmouth MFJ's equipment. I resent the implications (1) that I would accept money for counter-advertising products which I have had very little chance to use, and (2) that I would even consider badmouthing the manufacturer of the one SWR meter I had access to (thanks to N8CPO). Accusations of this sort, under these circumstances, could be interpreted as defamation of character. I expect said apology to be posted publicly to this newsgroup, as a response to this post.

73 de KC8RKQ

Sideband wrote:
>
> Butch:
>
> Honestly, I don't understand where your comments came from. I don't
> believe I disparaged MFJ's name or products in any way. The meter I used
> seems to work, and the antenna performs exactly as I described it to.
> Note that the antenna presently is only 4 1/2 feet or so above the
> ground.
>
> I'm going to put it up another 10 feet to see if I can hit the Fenton
> repeater I use occasionally a little better.
>
> I described, on my page, the limitations of the antenna as installed,
> and the reasons behind those limitations, as best I could. Again, I
> don't believe I said anything untoward about MFJ's equipment.
>
> 73 de KC8RKQ
>
> Butch Magee wrote:
> >
> > I have seen the the thing operate. It is far better than you describe it.

> > Arre you one of those paid to confuse the populace by giving negative
> > comments and worse on all MFJs top of the line equipment? This is going
> > on now!
> >
> > Butch Magee KF5DE
> > 6462 Kome' Drive
> > Diamondhead, MS 39525-3816
> >
> > Sideband wrote:
> >
> > > Someone mentioned a setup similar to this to me about 2 days ago, so I
> > > had to try it.
> > >
> > > Details at http :// www . csotbs . org / kc8rkq / coathanger.html
> > >
> > > Remove the spaces to get there... Sorry about that annoyance, but the
> > > webserver that's on is in my apartment, and all I have is an ISDN line.
> > > It's up 24/7, but if I put the URL up without spacing it out or
> > > otherwise mangling it, inktomi and other search engines eat up almost
> > > all of my bandwidth for about an hour every day...
> > >
> > > Let me know what you think..
> > >
> > > -SSB

4042. Re: License??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 10:54:49 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <3B010AF9.D501D48@bloomer.net>
Source record: 162889

Looking at my 1997 repeater directory...try
145.330
146.940
147.360
and of course 146.520 (the U.S. national calling frequency)

Scott
N0EDV

Randon Loeb wrote:
>
> I was persuaded to take the Technician Exam after reading the ARRL
> Handbook Ch.1, which was originally recommended to me as a resource on
> electronics. They have a book you can order, "Now You're Talking",
> which you can also get at some radioshacks. This book covers everything
> you need to pass the first test, and also contains information about HAM
> radio. But the ARRL Handbook, which you can also get from their site,
> talks about all kinds of aspects of the hobby, and got me interested and
> excited. Just passed the test last week, and waiting on my call-sign!
>
> "Ron P." wrote:
> >
> > Hey everyone...just been kinda peeking around, and I was wondering...what is
> > the easiest way to get talking on HAM, what is the most least expensive unit
> > I could use, and what are the benefits of HAM? I am in Mansfield, OH and I
> > would also like to know if anyone could give me the freqs so I can pop them
> > into my scanner so I can get an idea what all is out there......that and I
> > like to listen to my scanner so I can hear whats going on outside my little
> > world LOL......ok thanks alot in advance, and feel free to drop me an
> > email with the freqs.
> >
> > Ron

--
--Scott--
1986 Corben Junior Ace N3642
http://corbenflyer.tripod.com/
RV-4 under construction (tail feathers)

Gotta Fly or Gonna Die!

4043. radials for Butternut H9V vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 14:05:39 UTC
From: Pete <pete@etep.com>
Message-ID: <TIaM6.12753$K5.999546@news1.rdc1.il.home.com>
Source record: 162890

This is similar to a previous question asked. My ant is also ground mounted and I am unable to install radials all around the antenna because of my deck being in the way. I was planning on installing them in a 1/2 pie shape or possibly close to a 3/4 pie shape pattern. Would either or of these patterns work for me? I may be able to put in a couple of radials under the deck if I can squeeze under it. Each radial will be around 20 feet long. I drove a 8 foot ground rod and grounded the vertical to it. Thank you for all your suggestions. 73's
Pete WD9ALM

4044. Re: Simple SW antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 14:25:15 UTC
From: Joe <joe.amp@NOSPAMverizon.com>
Message-ID: <f%aM6.20586$0W5.3666663@typhoon1.ba-dsg.net>
Source record: 162891

Here:
http://www.hard-core-dx.com/nordicdx/antenna/special/tuner.html

Ciro Caramiello wrote in message <9dqppl$dv6$1@news.unina.it>...
>Where can I find the scheme of a very simple electronic circuit to trim a
>1.70 m extendible whip antenna to be used in (all or a part of) the band
of
>short waves (1.60-30 MHz) for my sony icf sw55?
>
>Thanks
>Ciro Caramiello
>
>
>
>

4045. 160 mtr TX-full pwr TS450SAT

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 14:42:01 UTC
From: Pluijgers <pluijgers@zeelandnet.nl>
Message-ID: <3b013fe4$0$64659@news2.zeelandnet.nl>
Source record: 162892
Cross-posted to: alt.ham-radio.hf,rec.radio.amateur.antenna,rec.radio.amateur.dx

Hello OM ,

Can anyone tell me how to convert a "belgium" TS450SAT that transmits 10 watts on 160 mtrs to a 100 watt version ?

73 , Hans , PA3HGT

4046. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 14:53:56 UTC
From: richardharrison@webtv.net
Message-ID: <2940-3B014304-240@storefull-114.iap.bryant.webtv.net>
Source record: 162895

Dennis Ferguson wrote:
You suggest that there is a voltage distribution on the waveguide walls, but I`ve not found one with pictures of voltage distribution on the walls.
You suggest that there is a voltage difference of tens of KV between the top and bottom walls...."

Roy Lewallen described arcing in a 2x4-inch waveguide supporting a TE (1.0) propagation mode of a 4-megawatt radar pulse. Dennis was responding to Roy`s comments.

Most of my waveguide experience has been with 100-milliwatt transmitters with a few 1-watt and 5-watt transmitters thrown in for other requirements. Oh yes, in other lives I too have had radar experiences but all of these were of such low pulse power that waveguide arcing was no problem.

I have toyed at times with microwave communications installations. From experience I can assure that no significant external field escapes the waveguide. With a section of flex waveguide attached, a transmitter signal can be sprayed around and reflected off some surface into a receiver. But, flange up the waveguide, and your external receiver can`t get enough signal to sense under any conditions other than from a reflection of some of the beamed energy from the antenna. That seldom happens by accident or design.

Roy`s peril is zero from shock while grasping the waveguide. It is grounded. It is a short circuit, and the electric fields within do not penetrate to the outside. Skin effect prevents penetration of the r-f.

The arc within makes a lot of heat but copper conducts heat very readily. Even so, the arc might produce hot spots which could burn.

Roy was entirely correct. It does usually take tens of kilovolts to produce an arc across inches of space in ordinary air.

The E-field is measured in volts per meter. In Roy`s example, it could have been measured in kilovolts per centimeter. E-fields terminate on available conductors such as opposite sides of dipoles, transmission lines, or waveguide. Voltage distributes along the inside of a waveguide as it does along a transmission line. If there is an E-field in the dielectric of a transmission line (there is), there is also a voltage difference between the opposite points on the wires. So too with waveguide.

In free-space the voltage to current ratio is 377 ohms. The maximum dimension of waveguide is a little over 1/2-wavelength, so we don`t have

free-space. For grins, if we had 4 megawatts radiated through a square meter, the volts per meter in 377 ohms would be 38.8 KV. It is easy to see how a waveguide might have arcing at times while carrying 4 megawatts.

Best regards, Richard Harrison, KB5WZI

4047. Which screwdriver?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 14:56:01 UTC
From: Eric Ruuska <eruuska@netnitco.net>
Message-ID: <3b01429b@news.netnitco.net>
Source record: 162893

Hey all,

I've about decided to invest in a screwdriver mobile antenna, but I'm in a quandary as to which one to go for. Don Johnson, Mel Woody, High Sierra, which one? I've heard high praise for the design, but little to help me decide which is better.

The High Sierra has the benefit of looking "factory made", and seems to have more and better mounting options, but at a higher cost.

Are they all basically equal, performance-wise? Anyone have experience in using or installing one? It's going on a 1999 Plymouth Voyager. Any help will be appreciated.

Thanks and 73,
Eric Ruuska
KB9ZHN

4048. Re: antenna analyzer comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 15:12:01 UTC
From: DOUG NOBLE <dougnoble@tannoyaudix.com>
Message-ID: <fGbM6.1392$MM3.24303@NewsReader>
Source record: 162894

Just to echo all the other comments the MFJ is indespensible, after tinkering with magloops for several years the MFJ reduced the setup times by hours but 1 word of caution - they eat batteries !

Doug Noble
GM0DJN

4049. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 15:18:49 UTC
From: richardharrison@webtv.net
Message-ID: <16840-3B0148D9-210@storefull-117.iap.bryant.webtv.net>
Source record: 162898

Kevin, W9CF wrote:
"For this mode, the electric field has the same value over that entire path, so the electric field that breaks down the dielectric will pretty much be the same as the DC break down of a DC voltage across that distance. Roy`s estimate is correct."

Yes, but it should be recalled that a-c has a peak value which is 1.414 times its rms value. We have d-c power transmission lines operating with hundreds of KV because there is no d-c peak voltage to contend with and also no reactance.

Best regards, Richard Harrison, KB5WZI

4050. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 15:23:35 UTC
From: Bart Rowlett <bart@wb6hqk.ampr.org>
Message-ID: <3B0149F7.7F7FF0F9@wb6hqk.ampr.org>
Source record: 162896

Dennis Ferguson wrote:
>
>
> I've found references which describe the E and H field distributions
> inside a TE(1,0) mode waveguide, as well as the current distributions
> on the waveguide walls, but I've not yet found one with pictures of the
> voltage distribution on the walls. You suggest that there is a voltage
> difference of tens of kV between the top and bottom walls, but all I'm
> sure of is that there is a large E field in the dielectric and I'm not
> certain you can deduce the voltage on the walls solely from the E field in
> the dielectric.

Before you attempt to deduce the voltage difference between two points
on the waveguide wall, you must first define what you mean by voltage.
Voltage is usually taken to be the difference in electric potential
between two points, which is the work required to move a unit test
charge between the two points. By definition, a potential electric
field is one where the work required to move a charge from point A to B
is independent of the path taken. If the work required depends on the
choice of path between A and B, then the electric field is not a
potential field and the ordinary _definition_ of voltage is meaningless
unless you precisely specify a particular path.

V = - integral[A,B](E dot dL)

The electrostatic field in an isotropic medium is a potential field.

If time varying magnetic fields are present along the possible paths of
integration, the electric field is no longer a potential field and the
concept of voltage must be used with care. Certainly this is the case
inside a waveguide or in the dielectric region of a coaxial transmission
line.

> So I've been trying to figure out what the voltages on the waveguide walls
> will be, and since I'm having trouble seeing how to find this from knowledge
> of the EM field (conductor voltages are seldom mentioned in texts on
> fundamental electromagnetics) I thought I'd try to get at it from
> conservation of energy considerations instead.

Practically speaking, the waveguide walls can be considered to be
perfect conductors. Ohms law as applied to surface currents gives the
voltage drop:

V (volts) = integral[A,B](I (amps/meter) * R (ohms/square) * dL (meter)
)

The sheet resistance in ohms per square is zero for a perfectly conducting wall and the voltage drop is therefore zero between any two points on the waveguide surface, interior or exterior.

The electric field exists in the dielectric between the walls but the voltage drop along the walls is negligible in accordance with the laws of Faraday and Ohm.

> For an antenna used for
> transmitting it seems to me we can find the power being radiated from
> knowledge of the current and voltage distributions (assuming lossless
> conductors to avoid confusion) from integrating P = VI over the antenna.

You can multiply the feedpoint voltage, which is usually well defined, by the feedpoint current and take the real component as the power radiated. The thing you integrate to get the power leaving the system is the so called Poynting vector, P = E cross H. Where P is a power density (watts/m^2) and is integrated over a closed surface, typically containing the antenna, feedline and transmitter. Usually E and H are both determined from the vector magnetic potential, which is determined from the conduction current distribution. Voltage never enters into the process since it is basically a meaningless concept in the vicinity of a radiating structure.

[deleted for brevity]

> With respect to the walls of the waveguide, then, it seems to me we know
> two things. We know the wall is carrying current since all the textbooks
> say this, and we know that since the power that goes in one end of the
> waveguide mostly comes out the other end the walls neither remove nor
> add power to the system (or, if you prefer, the energy they remove from
> the system is equal to the energy they add back, so the net power is zero).

Agreed.

> So the question is, what voltage must exist on the walls for the net power
> transfered to and from the walls to be zero?

In order for power to flow into the walls and be absorbed, there must be a tangential electric and magnetic field inside the conducting wall. Application of Ohms law shows no electric field exists within a perfect conductor, therefore the power density is zero and no absorption occurs.

> If the voltage decreases in the
> direction of current flow the walls would be losing energy. If the voltage
> increases in the direction of current flow the walls would be gaining energy.
> If conservation of energy requires that the walls neither gain or lose
> net energy, it seems to me that energy is conserved only when the voltage
> is the same at all points on the walls (the only other alternative is that
> the walls receive energy some places and reradiate it other places, but
> the symmetry in this case seems to me to preclude that). I hence think
> that, in the case of an energy-conserving waveguide, the inside walls of
> the waveguide will be at the same voltage, just like the outside walls.

The conclusion is correct but your argument is a bit weak since the path
along the wall is a significant fraction of a wavelength and standing
waves are present in the wall current distribution.

> And note that less-than-infinite conductivity of the walls won't change
> this much either. The currents are not nearly high enough to produce an
> IR voltage drop of tens of kV across a few inches of copper, if they
> were the copper would surely melt. Since my textbook uses the current
> distribution found in the lossless case to compute I^2 * R losses in
> real conductors, I'm pretty sure the text also agrees that finite
> conductivity doesn't change things much.

The reason waveguides are used is because they are very low loss
compared to more conventional transmission lines.

> So there remains the issue of what happens when the waveguide arcs.
> To initiate the arc would seem to first require dielectric breakdown.
> The texts I have quote the dielectric breakdown level in terms of
> the E field strength in the dielectric, and we know there is a large
> E field in the middle of the waveguide no matter what the voltage is
> on the walls. It hence seems like we can have a conductive path form
> through the middle of the waveguide independent of the voltage on the
> walls.

Correct. The electric field in the dielectric results from the time
varying magnetic field in the same region, not from an electric field
set up by a voltage difference between the walls.

> Once you have a conductive path from the top wall to the bottom, however,
> everything changes.

> It has effectively added a conductor from the top of
> the waveguide to the bottom in the middle of the EM field, where it will
> have a current induced like any other conductor, and since the conductor
> is lossy it will burn power so the conservation of energy arguments no
> longer apply.

The electric arc will absorb microwave energy and convert it to heat,
noise and light.

> Since this is no longer energy conserving, I suspect the
> end result is that a voltage difference will form between the top and
> bottom walls of the waveguide (i.e. there will be a voltage difference
> between the waveguide walls because of the arc, rather than the arc
> occuring because of a voltage difference between the waveguide walls),
> with the current in the arc flowing in the direction opposite the current
> on the short walls of the waveguide.

The walls still can be considered perfect conductors. In other words,
the voltage drop along the walls is usually negligible compared to the
voltage drop along the arc itself.

bart
wb6hqk

4051. Re: My First 2M Antenna..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 15:35:33 UTC
From: KA6PFE <ka6pfe@pacbell.net>
Message-ID: <gacM6.4$Mq5.8088@news.pacbell.net>
Source record: 162897

Another antenna you might want to tackle is a J-POLE. Look up a version called a 'Copper Cactus', it's a multi-band version that might work well in your environment.

Congrats on your antenna.

73
Brian
KA6PFE

4052. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 15:51:52 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <sgcM6.5769$p33.141334@news1.sttls1.wa.home.com>
Source record: 162899

> Roy Lewallen <w7el@eznec.com> wrote:
> >In a previous life, I worked on heavy ground radar. The particular set I
> >spent most of my time with put out about 4 MW peak, through a
> >rectangular waveguide that was roughly 2 X 4 inches in cross section.
> >This waveguide was operated in the TE(1,0) mode. In this mode, the E
> >field extends from one of the long sides directly across to the other.
> >(It's maximum at the center of the long sides and sinusoidally drops to
> >zero at the short sides.) The waveguide was kept slightly pressurized
> >with dried air. When the pressurizing system failed and humidity was
> >high, the waveguide would arc internally. I assume this arc took place
> >between about the centers of the long walls, where the E field is
> >greatest. Inside the waveguide, between the center of one long wall and
> >the other, there's a very high potential, tens of kV. Yet on the outside
> >of the waveguide, I could put one finger on the center of one long side
> >and another finger on the opposite side and feel nothing.
> >
> >How can this be?
>
I am not that familiar with wave guides, but from the general principals, several things must be at work to make your observations possible.

1. The interior perimeter of the wave guide must have been about 1 wave length
long. The two short sides must be the high current sites of the half waves which flow parallel up the sides to meet at the center.

2. The short sides would be about 1/3 wave length apart, not ideal for external cancellation of parallel currents (1/2 wavelength separation would be better). The short sides would have high current with high magnetic fields, which would cause high currents moving into the metal walls on the short side. The absorption and reflection of the magnetic field, an effect known as skin effect, will further cancel the magnetic field as viewed from an external site. A third effect which reduces external radiation(when viewed from the side) is that any leakage of flux will consist of alternating polarity fields. This makes any wave guide leakage look something like the alternating polarity fields on a long wire antenna, causing a maximum lobe parallel to the conductor.

3. The center of each long side would be the high voltage node. Capacity coupling to external conductors would be possible from this area of the wave guide but the amount of current would be very sensitive to path length. Any possible current path, including through your fingers, would have a longer and higher resistance path than the path provided by the interior of the wave guide, so very little current would flow in any external connection between the two voltage nodes. Good wave guide design would make the guide

of thick metal so that canceling current paths are available within the metallic container around the energy field (skin effect again).

The arcing when the air was moist probably occurred at the feed point, or at tuning structures within the wave guide. The air gap distance is least at these points, so they should be the first to break down under weakened dielectric conditions.

A good exercise Roy. Hope I analysized it correctly

73, Roger, W7WKB

4053. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 16:02:22 UTC
From: dennis@wawa.juniper.net
Message-ID: <9drjue$1krv$1@heap.juniper.net>
Source record: 162900

<w9cf@ptolemy.la.asu.edu> wrote:
>The usual problem of defining the "voltage" is that it is the line
>integral of the electric field and depends on the integration path. Of

But isn't this only true in the absense of free charges? If I take a line integral of the electric field along the surface of a good conductor I'll always get zero, since the electric field component tangential to a good conductor is always zero, but varying charge density on the conductor means I can still measure a voltage between two points on the conductor.

>One way to define a voltage in a wave guide is to find the integration
>path that produces the largest value. For a TE_10 mode waveguide this
>is the straight path from the center of the top to the center of the
>bottom. For this mode, the electric field has the same value over that
>entire path, so the electric field that breaks down the dielectric will
>be pretty much the same as the DC break down electric field. In terms
>of a DC voltage across that distance, Roy's estimate is correct.

Yes, this seems exactly correct if you are trying to define voltage in a dielectric. In a conductor, however, measuring differences in charge density seems to work fine.

>You have exactly similar problems for antennas. You can define the
>voltage across the feedpoint fairly well, but the voltage anywhere else
>is generally not well defined unless you specify the integration path.
>For example the voltage difference between any two points on the
>perfect conducting element via a path through the element is zero.
>Places that hams traditionally call "high voltage" on an antenna such
>as the ends of a center fed half wave dipole are, in reality, points
>where there is a large electric field perpendicular to the conductor.

The line integral of the electric field along a perfect conductor is zero, but this doesn't mean the charge density is uniform. It seems to me that there is a larger electric field perpendicular to the conductor at the end of the antenna than elsewhere because there is a higher charge density on the conductor at the end of the antenna than elsewhere (my books are home, but doesn't [del . D = rho] deal with this?), so if you define voltage on the conductor in terms of charge density doesn't this work out fine? I think that is what my volt meter detects in any case.

Dennis Ferguson

4054. Re: QRP enthusiasts out there ???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 17:21:41 UTC
From: AC6V <ac6v@ix.netcom.com>
Message-ID: <3B0165A4.573EB487@ix.netcom.com>
Source record: 162902

Not meant as a brag tape -- but, I work both SSB and CW QRP. 120 DXCC countries so far -- 2/3 of them SSB -- fun fun. Just wait for propagation peaks. Broke several pileups notably CR9 on 15M SSB -- he was 10dB over S9 -- I just waited till he peaked and beat out the east coast who had much poorer propagation.

But I cheated -- I can only turn down my Kenwood to 6 Watts (antenna is a vertical). I NEVER call QRO, then reduce power and say can you hear me, some QRP ops do this --- not fair!!!

Name of the QRP game
1. Propagation
2. Propagation
3. Propagation
4. Antennas
5. technique
--
73 From Rod AC6V In San Diego
700 Ham Topics & 6,000 Links
http://ac6v.com/
I QRP, Therefore I Might Be!!!

Bob Nielsen wrote:

> On Sun, 13 May 2001 22:08:25 -0700, John Moriarity wrote:
> >> > There are literally 1000's of QRP sites on the net. Go to a search
> > > engine
> >> > like www.hotbot.com, type in QRP ham radio or some such thing and
> > > you will
> >> > get back enough links to keep you busy for a year.
> >>
> >>
> >> And-- with few exceptions the QRPers are running CW.
> > >
> > > Actually, a *lot* of them are running PSK-31, now. And
> > > quite a few are running SSB at 10 watts PEP.
> >
> > And some of us only run 5 watts PEP on SSB. Of course, I have yet to
> > break a pileup that way....
> >
> > --
> > Bob Nielsen, N7XY nielsen@oz.net
> > Bainbridge Island, WA http://www.oz.net/~nielsen
> > IOTA NA-065, USI WA-028S

4055. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 17:26:23 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B0166BF.29D5AF24@mwci.net>
Source record: 162903

Dennis Ferguson wrote:

> <w9cf@ptolemy.la.asu.edu> wrote:
> >The usual problem of defining the "voltage" is that it is the line
> >integral of the electric field and depends on the integration path.
>
> But isn't this only true in the absense of free charges? If I take a
> line integral of the electric field along the surface of a good conductor
> I'll always get zero, since the electric field component tangential to
> a good conductor is always zero, but varying charge density on the
> conductor means I can still measure a voltage between two points on
> the conductor.

Sir, that is exactly and precisely correct. Congratulations. That is what voltmeters do every day of the week.

Bill W0IYH

4056. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 17:33:08 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B016854.6EEA80F2@mwci.net>
Source record: 162904

William E. Sabin wrote:

> Dennis Ferguson wrote:
>
> > <w9cf@ptolemy.la.asu.edu> wrote:
> > >The usual problem of defining the "voltage" is that it is the line
> > >integral of the electric field and depends on the integration path.
> >
> > But isn't this only true in the absense of free charges? If I take a
> > line integral of the electric field along the surface of a good conductor
> > I'll always get zero, since the electric field component tangential to
> > a good conductor is always zero, but varying charge density on the
> > conductor means I can still measure a voltage between two points on
> > the conductor.
>
> Sir, that is exactly and precisely correct. Congratulations. That is what
> voltmeters do every day of the week.
>
> Bill W0IYH

And voltages induced in the voltmeter leads (if any) can be nullified by instrumentation.

Bill W0IYH

4057. FA: Isoloop HF antenna ONLY 22 HRS LEFT!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 17:34:34 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010515133434.12896.00003256@ng-cs1.aol.com>
Source record: 162905

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1237271005
=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com ICQ#13829227
http://egroups.com/group/vhfallmode

4058. Re: Inexpensive SWR meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 17:45:52 UTC
From: KA9CAR <nospam@nospam.usa>
Message-ID: <9drpui$1ff$1@news.tribune.com>
Source record: 162906

On Ebay if you go to the ham radio section and do a search for SWR you will find 50 for sale at any given time. Should be able to find something you like.

Not inexpensive but very useful and easier to read than a cross needle is Autek Research wm-1. It is easiest used on the operating desk and is not covienient to cary out in the yard.
KA9CAR

Randon Loeb <rloebusenet@cticonsulting.net> wrote in message news:3B00240D.B8CE67AB@cticonsulting.net...
> I would like to build my own antennas, and think a simple SWR meter
> would be invaluable. What are some good sources for inexpensive ones,
> and is there any reason to buy an expensive one vs. a cheap one for the
> beginner hobbyist?
> Thanks

4059. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 17:57:58 UTC
From: Bart Rowlett <BHRowlett@west.raytheon.com>
Message-ID: <3B016E26.9317E41D@west.raytheon.com>
Source record: 162907

Dennis Ferguson wrote:
>
> <w9cf@ptolemy.la.asu.edu> wrote:
> >The usual problem of defining the "voltage" is that it is the line
> >integral of the electric field and depends on the integration path. Of
>
> But isn't this only true in the absense of free charges?

No.

> If I take a
> line integral of the electric field along the surface of a good conductor
> I'll always get zero, since the electric field component tangential to
> a good conductor is always zero, but varying charge density on the
> conductor means I can still measure a voltage between two points on
> the conductor.

You may be able to measure a voltage but the value will not
necessarily be unique.

Assuming the voltmeter itself is removed from time
varying magnetic fields, the voltmeter will measure the total emf
around the loop. The emf is equal to the resistive voltage drop,
approximately zero, plus the time rate of change of magnetic flux
enclosed by the loop comprised by the voltmeter leads and the
conductor whose voltage drop you are attempting to measure. In
situations such as inside an active waveguide, it is incorrect to
interpret the voltmeter reading as the potential difference between
the two points on the waveguide that the voltmeter leads are connected
to. The indicated voltage strongly depends on the path taken by the
voltmeter leads which has not been defined.

> The line integral of the electric field along a perfect conductor is
> zero, but this doesn't mean the charge density is uniform. It seems to
> me that there is a larger electric field perpendicular to the conductor
> at the end of the antenna than elsewhere because there is a higher charge
> density on the conductor at the end of the antenna than elsewhere (my
> books are home, but doesn't [del . D = rho] deal with this?), so if you
> define voltage on the conductor in terms of charge density doesn't this
> work out fine?

How would you define the voltage in terms of charge density? The
equation:

del dot D = rho, where D=E / permitivity,

just means that charge is the source is the source of electric flux.
Voltage doesn't show up anywhere.

bart
wb6hqk

4060. Re: radials for Butternut H9V vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 19:13:25 UTC
From: temp1te@aol.com
Message-ID: <20010515151325.24014.00003204@ng-ch1.aol.com>
Source record: 162908

Pete--
I also have a ground mounted Butternut, and in a small area. I use a minimal set of radials, based on a design that was in the manual for an ElectroSpace vertical (which has been off the market for years).

My radial system is five insulated wires, each five feet long, each terminated in a short copper ground rod. I don't claim that it is the best around. But it isn't too bad for the space that I have available.

--Wayne
W5GIE

4061. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 19:19:55 UTC
From: ehsjr@bellatlantic.net
Message-ID: <3B01818C.CAE6A73B@bellatlantic.net>
Source record: 162909

What is a "direct ground", as you use the term?

How is this "direct ground" ten thousand percent better
than relying on the shield of the coax?

"Richard L. Dunklee, Jr." wrote:

> What ground loops??????????????
> A direct ground is 10000% better than relying on the shield of coax for
> a GOOD ground.
>
> Richard L. Dunklee, Jr.
> WA2ONM
>
> Reg Edwards wrote:
>
> > Tom wrote .
> > > Hi OMs
> > > I have a new transceiver (Alinco DX-70),that has a grounding
> > screw.Must I
> > > use it ? I have only a heating tube in my shack.
> > ==========
> > If your transceiver's case is already connected to the station
> > ground via the outer coax cable conductor it won't make any
> > difference to station operation whether you connect it to a ground
> > or not.
> >
> > But for your personal safety, connect it to the 50Hz 240V supply
> > ground. Because when you are messing about in the shack you may
> > disconnect the coax with the transceiver still powered up.
> >
> > If there is any other radio equipment in the shack, connect all the
> > boxes together and also to the 50 Hz supply ground using the
> > grounding screws.

4062. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 19:29:26 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B018396.2294679@berkshire.net>
Source record: 162911

this whole thing is getting bothersome. first of all voltages and currents do add up as long as you take the phases into account as has been pointed out. second, you can NOT!!! look at one point in a circuit and add up POWERS (yes, joules/sec is POWER not ENERGY no matter how you bend the definitions) and say that ENERGY is not conserved. if you want to make an argument that energy is not being conserved you must integrate the power in and out over the whole time period and the whole perimeter of the circuit in question.

personally i don't see the point in continually arguing basic circuit theory and wave mechanics. the formula are well documented and relatively simple to use. they are used every day in design of antenna, feed systems, and transmitters. as far as i know no one has taken exception to them in any of these arguments, you just continually nit pick on which side of the coin you want to look at and keep playing with terminology until you are dizzy. so why not REALLY get "back to basics" and get out your scopes and really measure some voltages AND currents and CALCULATE the powers and see where they really go if you don't believe the formulas.

W6RCecilA wrote:
>
> VE9SRB wrote:
> > This is clearly more of a personal issue for you than for than it is for me.
> > My only interest is the technical truth.
>
> It looks about 50/50 to me. Walt's "virtual short" conceptual shortcut doesn't
> stand up to a rigorous analysis and your assertion that 75 joules/sec plus
> 8.33 joules/sec equals 133.33 joules/sec clearly violates the conservation
> of energy principle. Both of you fail to see the grains of truth in the
> other's posting. Again, for the Nth time, I'm asking you two guys to list
> your points of agreement. I think you will find that you agree on more
> points than you disagree on.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4063. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 20:18:31 UTC
From: atkes@imap1.asu.edu
Message-ID: <9ds2unhn1@news.asu.edu>
Source record: 162910

Dennis Ferguson (dennis@wawa.juniper.net) wrote:

: <w9cf@ptolemy.la.asu.edu> wrote:
: >The usual problem of defining the "voltage" is that it is the line
: >integral of the electric field and depends on the integration path. Of

: But isn't this only true in the absense of free charges? If I take a
: line integral of the electric field along the surface of a good conductor
: I'll always get zero, since the electric field component tangential to
: a good conductor is always zero, but varying charge density on the
: conductor means I can still measure a voltage between two points on
: the conductor.

As Bart has already explained, the usual definition of voltage is what voltmeters measure. That is they measure the work needed to move a unit charge from one lead to the other. This is the line integral of the force per unit charge, or, assuming the voltmeter is at rest, the line integral of the electric field. The charge density on a conductor is simply proportional to the perpendicular component of the electric field just outside the conductor. No one calls that the voltage.

: >One way to define a voltage in a wave guide is to find the integration
: >path that produces the largest value. For a TE_10 mode waveguide this
: >is the straight path from the center of the top to the center of the
: >bottom. For this mode, the electric field has the same value over that
: >entire path, so the electric field that breaks down the dielectric will
: >be pretty much the same as the DC break down electric field. In terms
: >of a DC voltage across that distance, Roy's estimate is correct.

: Yes, this seems exactly correct if you are trying to define voltage
: in a dielectric. In a conductor, however, measuring differences in
: charge density seems to work fine.

A voltmeter does not measure differences in charge density. In any case, you can see that the charge density cannot be what we call voltage by looking at a battery connected by wires to a parallel plate capacitor. Everyone would agree that the voltage difference between points on the wire and the plate connected to the positive terminal is zero. I assume that everyone knows that the charge density is not the same on the wire as on the capacitor plate.

: >You have exactly similar problems for antennas. You can define the
: >voltage across the feedpoint fairly well, but the voltage anywhere else
: >is generally not well defined unless you specify the integration path.
: >For example the voltage difference between any two points on the
: >perfect conducting element via a path through the element is zero.

: >Places that hams traditionally call "high voltage" on an antenna such
: >where there is a large electric field perpendicular to the conductor.

: The line integral of the electric field along a perfect conductor is
: zero, but this doesn't mean the charge density is uniform. It seems to
: me that there is a larger electric field perpendicular to the conductor
: at the end of the antenna than elsewhere because there is a higher charge
: density on the conductor at the end of the antenna than elsewhere (my
: books are home, but doesn't [del . D = rho] deal with this?), so if you
: define voltage on the conductor in terms of charge density doesn't this
: work out fine? I think that is what my volt meter detects in any case.

That is correct; so for a path between two points on a perfect conductor that remains in the conductor, the voltage difference is zero. In the wave guide problem if you choose a path from the top to the bottom of the wave guide that is always inside the perfect conductor the voltage difference is zero. If you choose a path running through the air, it isn't zero. Faraday's law tells you that if you have a time varying magnetic field that this must be true. The sum of the voltage drops around a closed loop is not zero as is often used in the special case of circuit theory. rather it is given by the negative time rate of change of the magnetic flux through the loop. I believe it an unwillingness to realize that the correct concept of voltage requires you to define a path when there are magnetic fields around that makes many hams have difficulties correctly understanding what is going on in antennas and transmission lines.

73 Kevin w9cf

4064. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 20:46:25 UTC
From: noname@aol.com
Message-ID: <3b0194ab.17779996@news.compuserve.com>
Source record: 162912

Hi Tom,

>Why would anyone care if the balun had a transformation ratio? The
>impedance is all over the place!

One of the reasons for posting this question is that I have been
trying to calculate the L and C values needed for an antenna
tuner. To do this the impedance seen by the tuning network must
be known. I can get a rough idea of the impedance at the input
to the feedline through EZNEC and TLW. But the balun is between
the feedline and the network, and the balun is going to do
something to this impedance. If the impedance has little
reactance, the balun will - I presume - just divide it by the
impedance ratio, either 1, 4, or whatever. But if the reactance
is high? Well, that is my question.

>Second point, moving the balun to the input of the tuner does nothing
>to improve balance of the system.

Doesn't this depend on whether or not the transmatch is designed
to accept unbalanced feed? If it is designed to accept only
balanced feed than the unbalanced output of the xmit needs to be
isolated from ground, doesn't it?

>I measured some a year or so ago. The soil around the feeder just
>killed the feedline, making it very high loss. That was true even
>though I fished the feedline through large plastic (PVC) conduit.
>

This is not good news. If the balanced feedline loss goes way up
when lying on the ground, it makes the whole exercise moot.

73
Dave
AB9CA

On Sat, 12 May 2001 09:58:51 GMT, 2w8ji@contesting.com (Tom W8JI)
wrote:

>>That is a comment I have seen other places. Unfortunately the
>>folks who make most of the antenna tuners appear to ignore that
>>advise. I know that the balun in my MFJ 949E is the voltage
>>variety.
>
>Yes, while most tuners have current baluns the 949E has a voltage
>balun.
>

>>Since none of the low-loss parallel-conductor feeder cable
>>happens to be 50 ohms, the only solutions would involve some
>>feeder arrangement the avoids a balun entirely? Either an honest
>>to gosh balanced-line transmatch, with a balun between the xmit
>>and the transmatch; or a length of impedance matching feeder.
>>What other ways are there to eliminate the balun (or high SWR on
>>the balun)? These are the only two I know of.
>
>There is an incorrect but common assumtion the balun ratio has
>something to do with feedline design impedance. The impedance at the
>end of a 450 ohm line feeding a typical multiband dipole is almost
>never 450 ohms. It varies from a few ohms to many thousands of ohms.
>
>Why would anyone care if the balun had a transformation ratio? The
>impedance is all over the place! What you want is a wide-range balun,
>and that is a 1:1 choking-type balun.
>
>Second point, moving the balun to the input of the tuner does nothing
>to improve balance of the system. If the tuner is a grounded center
>true symmetrical tuner it can help balance, but most tuners are not
>built that way. If they are constructed as a symmetrical grounded
>center matching system, they are voltage-type balanced systems...and
>that is undesirable anyway.
>
>I leave my baluns on the output, because it is cheaper and better that
>way.
>
>>>How much power are you going to run, and what type of antenna system?
>>
>>Power level is QRP (I'm trying to conserve milliwatts here!) and
>>the antenna will be something portable. Either a doublet or
>>vertical. They each have their pros and cons.
>
>Ahhh, then you task is more simple. You just need to scale down the
>balun size I use while maintaning a high impedance. The balun in your
>tuner can be rewired as a 1:1 choke balun, but I'd stack a few more
>cores and use a higher voltage wire.
>
>>On a related thought, did I not see a comment on another thread
>>about your having looked into the effects of running parallel
>>conductor cable on or slightly under the ground? My plans are to
>>throw the twin lead feeder on the ground to run to the antenna
>>(about 50'). I don't envision that this will have much effect on
>>the feeder losses.
>
>I measured some a year or so ago. The soil around the feeder just
>killed the feedline, making it very high loss. That was true even
>though I fished the feedline through large plastic (PVC) conduit.
>
>I don't have the numbers now, but it was pretty bad.

>
>73 Tom

4065. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 20:46:27 UTC
From: noname@aol.com
Message-ID: <3b0194da.17827431@news.compuserve.com>
Source record: 162913

Hi Cecil,

>Take a look at my All-HF-Band-Antenna (dipole) on my web page to
>see how I do it.

Without knowing that it was your's, I have already done that.
That is a very interesting antenna arrangement. Looks like it
ought to work fine.

After downloading and studying your page I ran some of the
antennas I am pondering through TLW looking for the low impedance
points. They are there all right. At 7 MHz it was about 58'
out, and at 14 MHz it was 43', and so on. I guess that so long
as the reactance is near zero and the resistance is between 25
and 100, the SWR seen by the coax ought to be less than 2:1.
Most xmiters will work OK with that.

But Tom mentions that lying twin lead on the ground - which is
what I was planning on doing since these are portable antennas -
will make the loss go way up. How much "way up" is, I'm not sure,
but it doesn't sound good. I would have to keep the feedline off
the ground or go to a resonant coax-fed antenna. Running a
portable vert and keeping the feedline off the ground is pretty
tough. Oh, well, something more to ponder. . .

Maybe its back to a long wire slung in the trees.

Thanks for your thoughts and time.

73,
Dave
AB9CA

On Sat, 12 May 2001 09:58:16 -0500, W6RCecilA
<Cecil.A.Moore@IEEE.org> wrote:

>Dave wrote:
>> So what happens in the event of the 3k+j3k that you mention?
>
>I don't know exactly what happens but the balun ceases to perform
>the balun function.
>
>There is an easy solution. Using 450 ohm ladder-line, the SWR for
>3k+j3k is about 13:1. From that 3k+j3k point on the ladder-line,
>if you back up 0.238WL, the impedance will be 34.6 ohm resistive.
>And if you add 0.262WL, the impedance will be 34.6 ohm resistive.
>This point is the current maximum point on the transmission line

>and it repeats every half wavelength.
>
>A 1:1 choke designed for 50 ohms will work reasonably well looking
>into 34.6 ohms. I vary the length of my ladder-line until my choke
>is operating at the current maximum point which is purely resistive.
>
>Take a look at my All-HF-Band-Antenna (dipole) on my web page to
>see how I do it.
>--
>http://www.mindspring.com/~w6rca
>
>
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4066. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 20:46:29 UTC
From: noname@aol.com
Message-ID: <3b0194f9.17858061@news.compuserve.com>
Source record: 162914

Hi John,

Thanks for the input.

Sounds like your arrangement ought to work pretty well. Solves
just about all the problems. And it gets the balun out of any
high SWR. That may be what I end up doing.

I'm surprized that you can get 80M to work with such a short
wire. I get an input Z of 11-j1050 for 3.6 MHz. Looks like the
efficiency is not the best, with the input R so low, but it is
certainly better than no antenna at all.

73,
Dave
AB9CA

On Sat, 12 May 2001 18:10:02 +0100, john griffen
<john@griffen.demon.co.uk> wrote:

>In article <3afb38ec.34743138@news.compuserve.com>, Dave
><noname@aol.com> writes
>>Hi,
>>
>>Does anyone know where I can find information on the impedance
>>transformation that occurs when a balun is operated in the
>>presence of high SWR? I note that the ARRL Handbook is silent on
>>this point, simply stating that "loads with reactive components
>>should use appropriate networks to cancel the reactance." So I
>>take it that a 4:1 balun does not just divide the twin lead
>>impedances by 4.
>>
>>I am specifically interested in feeding a non-resonant doublet
>>with twin lead, at QRP power, and want to get as much as possible
>>out the antenna and not burned up in the feedline or balun.
>>
>>EZNEC gives a good idea of what the antenna impedance will be,
>>and TLW takes that to the output of the transmatch, but I can't
>>find any info on transforming that impedance through the balun to
>>the actual matching network.
>>
>>Thanks,
>>
>>Dave
>>AB9CA
>>

>Hi Dave
>
>I use a 67 ft doublet with 18ft of 600 ohm open wire line. A 1:1 balun
>is connected to the QRP rig and a balanced L network matches the
>impedance at the Tx end of the feeder to 50 ohms.
>
>Estimate the antenna impedance at the operating freq., calculate the Z
>at the input end of the feeder then calculate values of L and C in the
>network.
>
>You will need to adjust L & C values a little to optimise, but the
>networks I use for 80 and 40 m. give a perfect match for CW operation.
>Reckon that the network losses are lower than those for a T network.
>
>It works well - try it!
>
>73s
>
>John G3EGQ Cornwall
>
>--
>john griffen

4067. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 20:49:05 UTC
From: kb7qhc@home.com
Message-ID: <3b0193b6.685900973@news.seanet.com>
Source record: 162915

On Tue, 15 May 2001 20:29:26 +0100, David Robbins
<k1ttt@berkshire.net> wrote:

>
>personally i don't see the point in continually arguing basic circuit theory and
>wave mechanics. the formula are well documented and relatively simple to use.
>they are used every day in design of antenna, feed systems, and transmitters.
>as far as i know no one has taken exception to them in any of these arguments,
>you just continually nit pick on which side of the coin you want to look at and
>keep playing with terminology until you are dizzy. so why not REALLY get "back
>to basics" and get out your scopes and really measure some voltages AND currents
>and CALCULATE the powers and see where they really go if you don't believe the
>formulas.
>

Hi David,

Your criticism is fully revealed by Steve's "Quiz for the day" thread
in that, as he pointed out, not having the answer makes a tremendous
difference in finding the answer when the respondent is left to his
own understanding of these "basic" issues.

The problems have been simple enough to allow for your bench work to
replace rhetoric - but it wouldn't have. And again, Steve's point was
not so much the answer (which got in the way) but how the answer was
found.

This did not satisfy all concerned that all issues had been laid to
rest, but it did reveal that mistakes, misstatements, goofs, lies,
what-have-you aside; that there are some problems that can be
resolved. Cecil took a 40 line posting and answered it in 20.
Steve's approach broke the back of tedious and repetitive 400 line
postings that simply washed over the group without wetting anyone.

73's
Richard Clark, KB7QHC

4068. Re: radials for Butternut H9V vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 20:49:17 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9ds5b2$12o$1@plutonium.btinternet.com>
Source record: 162916

Assuning your radials are shallow buried in good soil, one 8-foot ground rod is hardly any better than one buried, thick, 8-foot radial wire.

Distribute the radials roughly uniformally around all the angular area you have available. If it were possible to do an A-B test between 8 radials spread round 120 degrees and 8 radials spread round 360 degrees it is doubtful if any difference in performance would be detected. Just as doubtful would be any improvement by increasing the number of radials from 16 or 32 to the magic 120.

Its good practice to make transmitting tests or measurements, or just receiving tests, during laying a number of radials. When you get to the stage that no improvement is observed by adding another 2 or 3 radials it is time to stop digging. That stage will be reached with fewer radials when the soil is damp, dark and fertile as distinct from dry, well drained and sandy or rocky.

There's little to be gained with radials longer than antenna height. In good soil there's little to be gained by having radials longer than roughly 1/10th free-space wavelength. Use the shorter of these two criteria.

If you cannot extend the radials in some directions as far as the others, just extend them as far as you can, even if only a few feet long. When there are not many radials, for a given total length of buried wire it is better to have twice the number of radials and half the length.

--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

Pete <pete@etep.com> wrote in message
news:TIaM6.12753$K5.999546@news1.rdc1.il.home.com...
> This is similar to a previous question asked. My ant is also ground mounted
> and I am unable to install radials all around the antenna because of my deck
> being in the way. I was planning on installing them in a 1/2 pie shape or
> possibly close to a 3/4 pie shape pattern. Would either or of

these
> patterns work for me? I may be able to put in a couple of
radials under the
> deck if I can squeeze under it. Each radial will be around 20
feet long. I
> drove a 8 foot ground rod and grounded the vertical to it. Thank
you for all
> your suggestions. 73's
> Pete WD9ALM
>
>
>
>

4069. Help fixing a marine antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 21:36:27 UTC
From: David <painter20012000@yahoo.com>
Message-ID: <bhhM6.534$nj6.295572@news20.bellglobal.com>
Source record: 162917

Hi
I have a marine antenna, (shakespeare) and it broke half way down the fiberglass whip. I cut it right there and noticed it is just the coax running inside the whip and the last 35inches has been stripped and is the center feed. I would like to repair it by making some kind of a top loaded antenna or make the stripped center radiator a little longer to increase its wavelength and or mabey bandwidth (cb use) as well as the marine band if I needed it. Primarily the marine band 156 megs.
Are there any sites that explain formula's to use for cutting the lengths?
Can I do a small top load thing for improved performance?
any ideas is greatly accepted,
thanks
painter20012000@yahoo.com

4070. Re: Wire gauge/ RF Power rating??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 21:44:42 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B01A34A.7B8C@wt.net>
Source record: 162918

KG4GGX wrote:
>
> Hi all
> I will be winding a pair if loading coils for a 40/80 meter dipole. These will
> use PVC for a form and be around 100 to 120 uH. What gauge wire magnet wire
> should be used to be safe running the legal limit? Will 18 gauge do, or 16, or
> do I need to go with 14 gauge? Will the spacing of the windings have an effect
> on the power handling ability? At thgis time I'll only be running 100 watts,
> but some day I may want to use an amplifier. Any other suggestion appreciated.
> Thanks much.
> 73 Rob

14 would probably be ok. On many, I use #12 for a little more efficient
coil, but they can get heavy. The spacing of the windings can effect
power handling, and also the Q of the coil. It's best to seperate by
about a wires width at least. MK
--
http://web.wt.net/~nm5k

4071. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 21:54:35 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B01A59B.7B794991@IEEE.org>
Source record: 162769

David Robbins wrote:
> so why not REALLY get "back
> to basics" and get out your scopes and really measure some voltages AND currents
> and CALCULATE the powers and see where they really go if you don't believe the
> formulas.

My point is that no scope is needed to prove that 2x50 joules/sec cannot
cause 100 volts at two amps in phase in a flat matched system because
V*I*cos(0) is equal to more than the total energy being supplied to the
system. 75 joules + 8.33 joules just cannot equal 133.33 joules. That
obviously violates the conservation of energy principle.

Can you prove that 75 joules plus 8.33 joules equals 133.33 joules? Can
you cite a reference?
--
http://www.mindspring.com/~w6rca

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4072. Re: 6 meter j pole length?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 21:57:30 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B01A64A.1300@wt.net>
Source record: 162770

hamkid wrote:
>
> i thought about making a j-pole for 6 meters with tv twin lead but have not
> gotten that far along with the project. I wanted to know how long this type
> of antenna would be. I think I only have about 7 feet of space to put
> something into and would like to know how long this antenna would be before
> I make it and end up with something unusable for my situation (attic mount)
> Thanks and 73.

Might not fit. 468/freq = 1/2 wl For 52 mhz would be about 9 ft appx
tall. You might have to go with a 1/4 wl ground plane if not enough
height. MK
--
http://web.wt.net/~nm5k

4073. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 22:03:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B01A7BD.50D99011@IEEE.org>
Source record: 162771

Richard Clark wrote:
> Cecil took a 40 line posting and answered it in 20.

Some people seem to think that the greatest number of words carry the most weight. I believe the most weight per word is the way to go but I'm a Texan and everyone knows that Texans don't know many words.

I could possibly be completely wrong but someone needs to prove to me that 75 joules plus 8.33 joules equals 133.33 joules. Nobody has done that yet.

In asserting that equation to be true, Steve has allowed 50 joules/sec to slip away in the direction of the source. Since he needs exactly 50 joules/sec to balance the energy equation, one wonders why he allowed it to slip away. I'm only a lowly Texan but seems to me zero volts times zero amps equals zero joules/sec.
--
http://www.mindspring.com/~w6rca

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4074. Re: Help fixing a marine antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 22:10:51 UTC
From: Joe <joe.amp@NOSPAMverizon.com>
Message-ID: <LPhM6.21263$0W5.3932672@typhoon1.ba-dsg.net>
Source record: 162772

Those antenna's "Big Stick Marine" are just coaxial dipole antenna's in a
fiberglass mast.
Some models are 5/8 wave and have a PC board coil in the lower half base.
(The model# should be on the chrome plated brass base by the connector
If it broke half way down the top section you now have around a 312Mhz
antenna with a radial cut for 156 MHz
From what I understand here the "lower coaxial mast" is intact
Best is to buy a new antenna or replace the top whip they are cheap.
You can get a stock CB whip and screw it on and cut it slightly longer.
Place radio on channel 22 and keep cutting down to get the SWR correct.
"I break them all the time on low bridges"
Make sure you have a good lightning/static arrester and Ground.

The only other way would be a coil (not recommended for a boat)
Best not to fool around, communications wile out at sea is to important to
mess around with.

David wrote in message ...
>Hi
>I have a marine antenna, (shakespeare) and it broke half way down the
>fiberglass whip. I cut it right there and noticed it is just the coax
>running inside the whip and the last 35inches has been stripped and is the
>center feed. I would like to repair it by making some kind of a top loaded
>antenna or make the stripped center radiator a little longer to increase
its
>wavelength and or mabey bandwidth (cb use) as well as the marine band if
I
>needed it. Primarily the marine band 156 megs.
>Are there any sites that explain formula's to use for cutting the lengths?
>Can I do a small top load thing for improved performance?
>any ideas is greatly accepted,
>thanks
>painter20012000@yahoo.com
>
>
>

4075. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 22:12:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B01A9E5.9F922F4E@IEEE.org>
Source record: 162773

Dave wrote:
> This is not good news. If the balanced feedline loss goes way up
> when lying on the ground, it makes the whole exercise moot.

The good news is that it doesn't have to be very far off the ground.
The other night I was running A/B comparisons with my dipole and my
new vertical. The dipole won as expected. The next morning, I discovered
that the wind had blown my ladder-line off the cup hooks I use beneath
the eave of my house, and the ladder-line was laying on the grass. The
grass needed mowing so the ladder-line was a few inches off the ground.

Moral is: The fields around ladder-line are pretty well confined to
the space surrounding the ladder-line. A plastic fork every ten feet,
or something equally inventive, would probably be all that is needed.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4076. Re: antenna analyzer comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 22:17:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B01AB05.BA55D9B5@IEEE.org>
Source record: 162774

DOUG NOBLE wrote:
> Just to echo all the other comments the MFJ is indespensible, after
> tinkering with magloops for several years the MFJ reduced the setup times by
> hours but 1 word of caution - they eat batteries !

Not a problem. Get one of the YUASA 12v batteries, charge it off your 12v supply,
and run the MFJ off the external battery. My YUASA NP2-12 fits perfectly in
my pants pocket while I'm using my MFJ-259B. 12v VCR batteries with an adapter
clip work just as well.
--
http://www.mindspring.com/~w6rca

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-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4077. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 22:19:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B01AB5A.9785CD57@IEEE.org>
Source record: 162775

N3VST wrote:
>
> What in the Sam hell does this have to do with radio, or antenna's.

A meteor hit his ISP's microwave antenna.
--
http://www.mindspring.com/~w6rca

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4078. Re: Which screwdriver?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 22:24:47 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B01ACAF.90637F7D@IEEE.org>
Source record: 162776

Eric Ruuska wrote:
> The High Sierra has the benefit of looking "factory made", and seems to have
> more and better mounting options, but at a higher cost.

I have (accidentally) mistreated my High Sierra something fierce and it is
still perfectly functional. I don't see how you could go wrong with it.
--
http://www.mindspring.com/~w6rca

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4079. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 22:32:39 UTC
From: kb7qhc@home.com
Message-ID: <3b01abfb.692113085@news.seanet.com>
Source record: 162777

On Tue, 15 May 2001 17:03:41 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>I could possibly be completely wrong but someone needs to prove to me that
>75 joules plus 8.33 joules equals 133.33 joules. Nobody has done that yet.

Hi Cecil,

This may well be, but you have definitely slipped a cog insofar as
this demand for balancing energy equations where you artificially
constrained the demand such that it could not be met.

This was also Gary Coffman's frequent failure in the discussion of
power in the line where he would move boundary conditions around
without changing the problem (or so he thought). Steve may not have
satisfied your need for this explanation above (and I must agree I
number among those who wait further treatment), but he has made a
compelling case of the so-called conservation of energy (which is
hugely abused in this group).

Again, I would point out that his answer to the question above is
found in his treatment of the math to render the answer. If you want
something to challenge, challenge the math specifically. I presume
from Steve's commentary it must be found in Johnson. And as you claim
to have Johnson available, it should take far less time to discover
it, or simply challenge that it does not exist in that body of work.

73's
Richard Clark, KB7QHC

4080. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 23:17:22 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3b01b798.79098302@news.aepnet.com>
Source record: 162825

On Tue, 15 May 2001 00:44:40 -0400, "N3VST" <not@chance.com> wrote:

>What in the Sam hell does this have to do with radio, or antenna's.(sic) Sounds
>like more than just his ISP has some problems to work out.

Nothing to do with antennas. Just a test to see how many lurkers would find it
irresistible to post a comment about an off-topic thread. Works every time<g>.

4081. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-15 23:34:51 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B01BD1B.F769A852@IEEE.org>
Source record: 162778

Richard Clark wrote:
> This may well be, but you have definitely slipped a cog insofar as
> this demand for balancing energy equations where you artificially
> constrained the demand such that it could not be met.

The point is that it is not "artifically constrained", Richard. It
is constrained by Mother Nature (or whoever is in charge). Long before
electromagnetic waves were discovered, someone said you "can't get blood
out of a turnip".

> And as you claim
> to have Johnson available, it should take far less time to discover
> it, or simply challenge that it does not exist in that body of work.

It definitely does NOT exist in that body of work, Richard. Bailing out
of discussions is what some "experts" do when they discover their mistakes.
My challenge still stands to quote *any* reference that says, in effect, that
75 joules plus 8.33 joules equals 133.33 joules. Seems to me, that 50 joules/sec
of destructive interference power (energy) that was so easily dismissed as lost
and irrelevant, is desperately needed in that equation. But I'm only a lowly
Texan not much advanced from a grasshopper.
--
http://www.mindspring.com/~w6rca

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4082. Re: Which screwdriver?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 00:02:28 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B01C394.7840@wt.net>
Source record: 162779

Eric Ruuska wrote:
>
> Hey all,
>
> I've about decided to invest in a screwdriver mobile antenna, but I'm in a
> quandary as to which one to go for. Don Johnson, Mel Woody, High Sierra,
> which one? I've heard high praise for the design, but little to help me
> decide which is better.
>
> The High Sierra has the benefit of looking "factory made", and seems to have
> more and better mounting options, but at a higher cost.
>
> Are they all basically equal, performance-wise? Anyone have experience in
> using or installing one? It's going on a 1999 Plymouth Voyager. Any help
> will be appreciated.
>
> Thanks and 73,
> Eric Ruuska
> KB9ZHN

I have no experience with those, but I'd have to say all screwdrivers
are not equal by any stretch evidentally. I've seen one that was pretty
lousy. But not sure what brand it was. It was made by a ham somewhere I
think. It had a coil design problem. Way too much loss for the size coil
used. I don't know what the problem was. Either the dialectric around
the coil, or the motorized stuff interfering with the coil operation, or
too thin of wire wrapped too close, or all of the above. The one I
checked out was pitiful in comparison to my homemade plastic bugcatcher.
I think going to a bigger coil a good investment. The one I tried was
only about 2 inches dia or so, and looked to be close wrapped. I
recommend 3 inches or larger.I'd heard all these good things about
screwdrivers, but the one I looked at mounted on a truck was basically a
dummy load on 75m. Had the goofiest acting coil I'd ever seen. Period.
Had so much loss, a matching device wasn't needed. Also trying to find
a noise peak just tuning across the band was hard. I thought, well,
maybe a matching coil is in the base??? But that still doesn't explain
the excess coil loss . Thats the kiss of death for a mobile antenna. The
antenna was basically junk as far as I was concerned. But I'm sure some
must be better. The high sierra looks pretty good I guess, but I'll
never pay that much for a mobile antenna myself. I just make my own. But
not screwdrivers so far. I don't mind having to change the antenna.
Gives me something to do. I rarely hop bands when I'm driving. I'm on 40
all day, and 75 at night usually. I still think a good old fashioned big
coil bugcatcher is king of the hill until I see otherwise. But a few are

starting to use better and larger coils on the screwdrivers. I know the SD's do well in the shootouts, but they must be optimizing them with better coils, longer stingers etc from the average run of the mill pvc covered things things I usually see. I was not impressed at all with the one I played with. I wish I could tell you the brand so you could steer clear.... MK
--
http://web.wt.net/~nm5k

4083. Re: Design of ground independant 2 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 00:18:14 UTC
From: Mike Allan <"mike.allan<nospamm>"@rmit.edu.au>
Message-ID: <3B01C746.E375CB09@rmit.edu.au>
Source record: 162780

Thanks for the post Martin, It was most usefull.
Mike VK3XL

K7MEM wrote:

> Mike Allan wrote:
> >
> > Thanks for reading this post.
> > I have a number od radomes (hollow fiberglass poles) about 2 meters long
> > from which I want to make some ground independant vertical antennas for
> > portable use. I want to get the most gain I can from the length of pole
> > that I have. Does anyone have a design that they think will work in this
> > situation. I have considered a J pole but that would be only about 1/2
> > of the avaiable length... any ideas will be considered.
> > Many thanks
> > Mike VK3XL
>
> You may want to take a look at:
>
> KB1DIG's 2 METER ANTENNA DESIGN GALLERY
>
> http://people.ne.mediaone.net/buck0/hampage.htm
>
> There is a colinear design that fits in a PVC pipe. Maybe that's the
> kind of thing you are looking for.
>
> --
> Martin E. Meserve, K7MEM
> martin.e.meserve AT lmco.com
>
> I respond to news groups and E-Mail on my own time and therefore
> my responses may not be as timely as you, or I, would like them to
> be. If I seem to be ignoring you, send me another E-Mail to jog my
> memory. Opinions are my own and do not reflect the opinions of my
> employer.

4084. Re: S Meter Accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 00:43:36 UTC
From: "R.P.Haviland" <bobh@iag.net>
Message-ID: <PZCM6.1176$fp1.21223@e420r-atl1.usenetserver.com>
Source record: 162838

The solution is to use a step attenuator box in the input lead. Most meters are reasonably accurate in repeating a value, sdo the error is mainly due to th attenuator. A good one will be +/- 1 DB, and even a poor one can be good to +/- 5 DB
w4mb

4085. Re: radials for Butternut H9V vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 01:13:07 UTC
From: Wayne and Louise Irwin <the-irwins@home.com>
Message-ID: <DukM6.2788$v5.279976@news1.rdc1.ct.home.com>
Source record: 162781

If you have or have access to back issues of QST, check out an excellent article by John Stanley, K4ERO/HC1. It appeared in December, 1976 QST, Page 13. You may be pleasantly surprised by what you read.

73,

Wayne, W1KI

"Pete" <pete@etep.com> wrote in message news:TIaM6.12753$K5.999546@news1.rdc1.il.home.com...
> This is similar to a previous question asked. My ant is also ground mounted
> and I am unable to install radials all around the antenna because of my deck
> being in the way. I was planning on installing them in a 1/2 pie shape or
> possibly close to a 3/4 pie shape pattern. Would either or of these
> patterns work for me? I may be able to put in a couple of radials under the
> deck if I can squeeze under it. Each radial will be around 20 feet long. I
> drove a 8 foot ground rod and grounded the vertical to it. Thank you for all
> your suggestions. 73's
> Pete WD9ALM
>
>
>
>

4086. Re: Which screwdriver?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 01:18:13 UTC
From: Wayne and Louise Irwin <the-irwins@home.com>
Message-ID: <pzkM6.2789$v5.281068@news1.rdc1.ct.home.com>
Source record: 162782

Like some of the other long time mobile ops, I have tried a variety of antennas. In my book, the High Sierra wins hands down. Best darn HFmobile antenna I've used. High quality construction. It will take a licking and keep on ticking as the watch peddler used to say. Performance wise it may be on a par with some of the other screwdrivers, but I have not had first hand experience with the others.

About the only thing that will out perform one is a Texas bugcatcher, but they are no where nearly as versitile.

73,

Wayne, W1LI

"Eric Ruuska" <eruuska@netnitco.net> wrote in message
news:3b01429b@news.netnitco.net...
> Hey all,
>
> I've about decided to invest in a screwdriver mobile antenna, but I'm in a
> quandary as to which one to go for. Don Johnson, Mel Woody, High Sierra,
> which one? I've heard high praise for the design, but little to help me
> decide which is better.
>
> The High Sierra has the benefit of looking "factory made", and seems to
have
> more and better mounting options, but at a higher cost.
>
> Are they all basically equal, performance-wise? Anyone have experience in
> using or installing one? It's going on a 1999 Plymouth Voyager. Any help
> will be appreciated.
>
> Thanks and 73,
> Eric Ruuska
> KB9ZHN
>
>

4087. Re: Which screwdriver?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 02:16:54 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <3B01E316.5B4D@bellsouth.net>
Source record: 162783

Mark,

That's why I make mine with full 2" coils, #14 wire at 8 TPI instead of the skinny #14 @ 10 TPI--too close wound and too little. I use Nylock thruout--no PVC anywhere. They work very well. I also abandoned the toroids in favor of the "old fashioned" tried n true inductor coil at the base. Toroids sometimes get "finicky" at higher freqs and refuse to match unless you fiddle with it. Easier to tap an external coil than to monkey with a toroid.

I've seen the "no match" screwdrivers at hamfests and, believe it or not, the guy brags about not having matching. Obviously, he has no understanding about impedance characteristics on HF. I tried to explain that no-match antennas such as hamsticks and his units were sloppy and very low Q. In one ear and out the other. He liked the broadbandedness of his antennas and was trying to use that as a selling point as well. He didn't sell many if I recall.

I have a 3 incher on my mobile I built 2 years ago. Like the Bug-catchers, it gives just about the ultimate in performance. I've noticed that when you get much larger, the Q is so high that it becomes TOO sensitive to its surroundings. I see these BIG Bugcatchers and I can't understand how they are able to use them. Tune one up in one spot, move a few feet, and you're out of resonance again. A friend and I experimented with an 8" Bugcatcher coil one day, and never could get it to remain reasonably in tune.

That's the biggest "secret" of the screwdriver and part of why they work so well: you resonate the antenna at a given point, and if the resonance changes, you can just jog the switch and be right back on the money. It's happened to me lots--like driving the interstate and have a huge 18 wheeler pull alongside. A tap of the switch sets things right--until the truck pulls away. They really make operating HF mobile convenient and loads of fun--30 seconds or less from 75 meters to 10 meters. You are right about the center-loaded coil antennas--about the best there is. The SD just takes that a step further.

73

Jerry
K4KWH

Mark Keith wrote:
>
> Eric Ruuska wrote:
> >

> > Hey all,
> >
> > I've about decided to invest in a screwdriver mobile antenna, but I'm in a
> > quandary as to which one to go for. Don Johnson, Mel Woody, High Sierra,
> > which one? I've heard high praise for the design, but little to help me
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> > The High Sierra has the benefit of looking "factory made", and seems to have
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> >
> > Thanks and 73,
> > Eric Ruuska
> > KB9ZHN
>
> I have no experience with those, but I'd have to say all screwdrivers
> are not equal by any stretch evidentally. I've seen one that was pretty
> lousy. But not sure what brand it was. It was made by a ham somewhere I
> think. It had a coil design problem. Way too much loss for the size coil
> used. I don't know what the problem was. Either the dialectric around
> the coil, or the motorized stuff interfering with the coil operation, or
> too thin of wire wrapped too close, or all of the above. The one I
> checked out was pitiful in comparison to my homemade plastic bugcatcher.
> I think going to a bigger coil a good investment. The one I tried was
> only about 2 inches dia or so, and looked to be close wrapped. I
> recommend 3 inches or larger.I'd heard all these good things about
> screwdrivers, but the one I looked at mounted on a truck was basically a
> dummy load on 75m. Had the goofiest acting coil I'd ever seen. Period.
> Had so much loss, a matching device wasn't needed. Also trying to find
> a noise peak just tuning across the band was hard. I thought, well,
> maybe a matching coil is in the base??? But that still doesn't explain
> the excess coil loss . Thats the kiss of death for a mobile antenna. The
> antenna was basically junk as far as I was concerned. But I'm sure some
> must be better. The high sierra looks pretty good I guess, but I'll
> never pay that much for a mobile antenna myself. I just make my own. But
> not screwdrivers so far. I don't mind having to change the antenna.
> Gives me something to do. I rarely hop bands when I'm driving. I'm on 40
> all day, and 75 at night usually. I still think a good old fashioned big
> coil bugcatcher is king of the hill until I see otherwise. But a few are
> starting to use better and larger coils on the screwdrivers. I know the
> SD's do well in the shootouts, but they must be optimizing them with
> better coils, longer stingers etc from the average run of the mill pvc
> covered things things I usually see. I was not impressed at all with the
> one I played with. I wish I could tell you the brand so you could steer
> clear.... MK
> --
> http://web.wt.net/~nm5k

4088. Re: Which screwdriver?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 02:30:29 UTC
From: Doug <doug@ycsi.net>
Message-ID: <9dsoo5tvt0@63.90.193.137>
Source record: 162784

Consider the Bandhopper from Clancy, MT. It's made for long haul trucks
and is extremly rugged, tunes easily and seems to outperform most of the
other antennas I've tried. I think you'd enjoy it. Mine has over 100k miles
on it without a hitch. Construction is stainless steel and brass. I use it
most
every day.

Check out: www.bandhopper.com

73

Doug, K7YD
Livingston, MT

Eric Ruuska wrote:

> Hey all,
>
> I've about decided to invest in a screwdriver mobile antenna, but I'm in a
> quandary as to which one to go for. Don Johnson, Mel Woody, High Sierra,
> which one? I've heard high praise for the design, but little to help me
> decide which is better.
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> The High Sierra has the benefit of looking "factory made", and seems to have
> more and better mounting options, but at a higher cost.
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> Are they all basically equal, performance-wise? Anyone have experience in
> using or installing one? It's going on a 1999 Plymouth Voyager. Any help
> will be appreciated.
>
> Thanks and 73,
> Eric Ruuska
> KB9ZHN

4089. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 02:50:22 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dspsn$j0h$1@slb7.atl.mindspring.net>
Source record: 162785

Cecil:

Have you ever used the neat program on Reg Edwards www site called SWRMeter.

It provides a schematic diagram for the reflectometer, and a set of notes describing the operation of a reflectometer and actually helps the user to design the meter.

I noted that in his design he uses a resistive voltage divider to "measure" V instead of the capacitive voltage divider like many others do. Still his sensor for the current I uses a torroid transformer and so is AC coupled.

Thus the reflected voltage b = V - IR that Reg's circuit measures is acutally 1/2 AC coupled and 1/2 DC coupled. V is DC coupled with the resistive divider, but IR is capacitively coupled.

And so... Reg's design is 1/2 way to being able to measure DC reflections.

All you have to do to get reflectometer that works down to DC is to replace the transformer for picking off a sample of I, with a DC coupled differential amplifier, and a couple of tiny resistors and presto... you have a DC to HF reflectometer.

We could all use that kind of DC reflectometer to keep our DC sources matched! Heh, heh.

Anyway, have a look. I hadn't noticed that program on Reg's site before, I presume it has been there all along.

Best,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3B01AB5A.9785CD57@IEEE.org...
> N3VST wrote:
> >
> > What in the Sam hell does this have to do with radio, or antenna's.
>
> A meteor hit his ISP's microwave antenna.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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4090. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 02:55:27 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dsq65scp1@slb6.atl.mindspring.net>
Source record: 162786

Cecil:

Yes, I too have used antennas fed with 450 Ohm ladder line lying on the "dry" ground, and they seemed to work fine.

I wouldn't leave it there for a long time, and I wouldn't do it if it was raining or snowing or.... but on a nice sunny dry day, I didn't notice a thing.

And if there is no danger of folks tripping on it, why then your suggestion of holding it off the ground a few inches with some "plastic" picnic "silverware" should work just fine.

I love messing with 450 Ohm and open wire ladder line, it's soo high tech... and easy to use.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3B01A9E5.9F922F4E@IEEE.org...
> Dave wrote:
> > This is not good news. If the balanced feedline loss goes way up
> > when lying on the ground, it makes the whole exercise moot.
>
> The good news is that it doesn't have to be very far off the ground.
> The other night I was running A/B comparisons with my dipole and my
> new vertical. The dipole won as expected. The next morning, I discovered
> that the wind had blown my ladder-line off the cup hooks I use beneath
> the eave of my house, and the ladder-line was laying on the grass. The
> grass needed mowing so the ladder-line was a few inches off the ground.
>
> Moral is: The fields around ladder-line are pretty well confined to
> the space surrounding the ladder-line. A plastic fork every ten feet,
> or something equally inventive, would probably be all that is needed.
> --
> http://www.mindspring.com/~w6rca
>
>
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4091. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 02:58:10 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dsqb8$jf6$1@slb1.atl.mindspring.net>
Source record: 162787

David:

Yeah, that's what I say... all you really need are volts and amps.

Cecil and Walt, and Steve are all getting a way too fancy! No one needs any of that complicated stuff... to "formal" dealing with all of that "ficticious" power.

-Peter K1PO

"David Robbins" <k1ttt@berkshire.net> wrote in message news:3B018396.2294679@berkshire.net...
> this whole thing is getting bothersome. first of all voltages and currents do
> add up as long as you take the phases into account as has been pointed out.
> second, you can NOT!!! look at one point in a circuit and add up POWERS (yes,
> joules/sec is POWER not ENERGY no matter how you bend the definitions) and say
> that ENERGY is not conserved. if you want to make an argument that energy is
> not being conserved you must integrate the power in and out over the whole time
> period and the whole perimeter of the circuit in question.
>
> personally i don't see the point in continually arguing basic circuit theory and
> wave mechanics. the formula are well documented and relatively simple to use.
> they are used every day in design of antenna, feed systems, and transmitters.
> as far as i know no one has taken exception to them in any of these arguments,
> you just continually nit pick on which side of the coin you want to look at and
> keep playing with terminology until you are dizzy. so why not REALLY get "back
> to basics" and get out your scopes and really measure some voltages AND currents
> and CALCULATE the powers and see where they really go if you don't believe the
> formulas.
>
> W6RCecilA wrote:

> >
> > VE9SRB wrote:
> > > This is clearly more of a personal issue for you than for than it is
for me.
> > > My only interest is the technical truth.
> >
> > It looks about 50/50 to me. Walt's "virtual short" conceptual shortcut
doesn't
> > stand up to a rigorous analysis and your assertion that 75 joules/sec
plus
> > 8.33 joules/sec equals 133.33 joules/sec clearly violates the
conservation
> > of energy principle. Both of you fail to see the grains of truth in the
> > other's posting. Again, for the Nth time, I'm asking you two guys to
list
> > your points of agreement. I think you will find that you agree on more
> > points than you disagree on.
> > --
> > http://www.mindspring.com/~w6rca
> >
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> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----
>
> --
> David Robbins K1TTT
> e-mail: mailto://k1ttt@berkshire.net
> web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
> AR-Cluster node: 145.69MHz or telnet://k1ttt.net
>

4092. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 03:00:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dsqgq$oh2$1@slb4.atl.mindspring.net>
Source record: 162788

Thread:

Who the hell is this Johnson guy?

What qualifies him to write the bible?

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b01abfb.692113085@news.seanet.com...
> On Tue, 15 May 2001 17:03:41 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >
> > >I could possibly be completely wrong but someone needs to prove to me
that
> > >75 joules plus 8.33 joules equals 133.33 joules. Nobody has done that
yet.
>
> Hi Cecil,
>
> This may well be, but you have definitely slipped a cog insofar as
> this demand for balancing energy equations where you artificially
> constrained the demand such that it could not be met.
>
> This was also Gary Coffman's frequent failure in the discussion of
> power in the line where he would move boundary conditions around
> without changing the problem (or so he thought). Steve may not have
> satisfied your need for this explanation above (and I must agree I
> number among those who wait further treatment), but he has made a
> compelling case of the so-called conservation of energy (which is
> hugely abused in this group).
>
> Again, I would point out that his answer to the question above is
> found in his treatment of the math to render the answer. If you want
> something to challenge, challenge the math specifically. I presume
> from Steve's commentary it must be found in Johnson. And as you claim
> to have Johnson available, it should take far less time to discover
> it, or simply challenge that it does not exist in that body of work.
>
> 73's
> Richard Clark, KB7QHC

4093. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 03:03:21 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dsqkvnon1@slb0.atl.mindspring.net>
Source record: 162789

Cecil

What if those Joules are not "real" but are ficticious? Do they then have
to add up?

BTW... now that you've finished off Steve and Walt, how about looking at the
reflected DC power in my mismatched DC circuit and explain where it comes
from and what it has to do with conservation of energy.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B01BD1B.F769A852@IEEE.org...
> Richard Clark wrote:
> > This may well be, but you have definitely slipped a cog insofar as
> > this demand for balancing energy equations where you artificially
> > constrained the demand such that it could not be met.
>
> The point is that it is not "artifically constrained", Richard. It
> is constrained by Mother Nature (or whoever is in charge). Long before
> electromagnetic waves were discovered, someone said you "can't get blood
> out of a turnip".
>
> > And as you claim
> > to have Johnson available, it should take far less time to discover
> > it, or simply challenge that it does not exist in that body of work.
>
> It definitely does NOT exist in that body of work, Richard. Bailing out
> of discussions is what some "experts" do when they discover their
mistakes.
> My challenge still stands to quote *any* reference that says, in effect,
that
> 75 joules plus 8.33 joules equals 133.33 joules. Seems to me, that 50
joules/sec
> of destructive interference power (energy) that was so easily dismissed as
lost
> and irrelevant, is desperately needed in that equation. But I'm only a
lowly
> Texan not much advanced from a grasshopper.
> --
> http://www.mindspring.com/~w6rca
>
>
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4094. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 03:05:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dsqp9upq1@slb6.atl.mindspring.net>
Source record: 162790

Bill:

Voltmeters are "line integrators"!

I love it!

-Peter K1PO

"William E. Sabin" <sabinw@mwci.net> wrote in message
news:3B0166BF.29D5AF24@mwci.net...
>
>
> Dennis Ferguson wrote:
>
> > <w9cf@ptolemy.la.asu.edu> wrote:
> > >The usual problem of defining the "voltage" is that it is the line
> > >integral of the electric field and depends on the integration path.
> >
> > But isn't this only true in the absense of free charges? If I take a
> > line integral of the electric field along the surface of a good
conductor
> > I'll always get zero, since the electric field component tangential to
> > a good conductor is always zero, but varying charge density on the
> > conductor means I can still measure a voltage between two points on
> > the conductor.
>
> Sir, that is exactly and precisely correct. Congratulations. That is what
> voltmeters do every day of the week.
>
> Bill W0IYH
>

4095. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 03:20:10 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dsrkh$28s$1@slb6.atl.mindspring.net>
Source record: 162791

Kevin:

Yes, for the theoretical "evaluation" of a voltage one needs to evaluate a "line integral" along a well defined "path" of integration.

But...

[snip]>
> That is correct; so for a path between two points on a perfect
> conductor that remains in the conductor, the voltage difference is
> zero. In the wave guide problem if you choose a path from the top to
> the bottom of the wave guide that is always inside the perfect
> conductor the voltage difference is zero. If you choose a path running
> through the air, it isn't zero. Faraday's law tells you that if you
> have a time varying magnetic field that this must be true. The sum of
> the voltage drops around a closed loop is not zero as is often used in
> the special case of circuit theory. rather it is given by the negative
> time rate of change of the magnetic flux through the loop. I believe
> it an unwillingness to realize that the correct concept of voltage
> requires you to define a path when there are magnetic fields around
> that makes many hams have difficulties correctly understanding what is
> going on in antennas and transmission lines.
>
> 73 Kevin w9cf
>
[snip]

That's fine for the "theorist" but for the metrologist or experimenter who simply hooks up a voltmeter to a circuit or network and makes observations, the "path" is already defined, simply by the application of the voltmeter probes.

Move the probes on the instrumentation, and the indicated voltage maybe changes, but so what? The metrologist has evaluated the line integral along the path she wanted to. I understand what you are saying, but... I miss your point.

I guess I am asking, why that makes Volts = Joules/Couloumb some kind of a "second class" variable as compared to Amps.

-Peter K1PO

4096. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 04:07:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B01FCEA.7390A5E3@IEEE.org>
Source record: 162792

"Peter O. Brackett" wrote:
> What if those Joules are not "real" but are ficticious? Do they then have
> to add up?

First, please show me some fictitious water.

> BTW... now that you've finished off Steve and Walt, how about looking at the
> reflected DC power in my mismatched DC circuit and explain where it comes
> from and what it has to do with conservation of energy.

No thanks, once is enough.
--
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4097. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 04:11:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B01FE09.B5FAB154@IEEE.org>
Source record: 162793

"Peter O. Brackett" wrote:
> Who the hell is this Johnson guy?

Transmission Lines and Networks, Walter C. Johnson, Chairman,
Dept. of Electrical Engineering, Princeton University, 1950
--
http://www.mindspring.com/~w6rca

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4098. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 04:14:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B01FE98.61BDC54F@IEEE.org>
Source record: 162794

"Peter O. Brackett" wrote:
> Cecil and Walt, and Steve are all getting a way too fancy! No one needs any
> of that complicated stuff... to "formal" dealing with all of that
> "ficticious" power.

Peter, California is having rolling blackouts because of people like you
who believe power companies don't generate power and therefore cannot get
paid for generating power. :-)
--
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4099. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 04:18:21 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B01FF8D.75405052@IEEE.org>
Source record: 162795

"Peter O. Brackett" wrote:
> We could all use that kind of DC reflectometer to keep our DC sources
> matched! Heh, heh.

Actually, a shunt resistor could replace the transformer and could be
fed to a differential amp. Then it would be all DC. But for what Z0
would we calibrate it?
--
http://www.mindspring.com/~w6rca

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4100. sloping dipoles and local 49 Mhz communication on hillsides

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 04:18:28 UTC
From: Dan Jacobson <jidanni@kimo.FiXcomTHiS.tw>
Message-ID: <m27kzij59n.fsf@dan.jacobson.tw>
Source record: 162834

Regarding sloping dipoles, e.g.
http://members.tripod.com/~AT116/projects/sloping_dipole.html
and local [1 km] communication on a hillside, it would seem to make sense to align the antenna perpendicular to the slope.

[Why is the feed line being at 45 deg. important in his diagram?]
[His "maximum radiation" direction I assume is for long distance communication.]

For my goal of ensuring my 46/49 MHz cordless phone will now also cover my new property on the back side of the hill, [note: non USA FCC area, rural, no neighbors phones for km's around] I have chosen the hilltop where I usually put antennas, call it point C. I envision two lines of sight, running to my two houses, A and B. I align my sloping dipole perpendicular to the plane made by these two lines. I believe this is the winning combo. Results seem good, however my Dytcom 121 originally had 3 km line of sight range, so I my 100 m test is non conclusive.

I chose the half wave dipole as that way I can use surplus cable TV thick coax without having to add extra components beyond the pile of coax I have. I'm not sure how to get special parts here anyways. I assume the center wire connects to the upper part of the dipole, the braid the lower.

Back at my cordless phone's base I connected the braid to a grounded girder. [In my article "what to attach coax braid to in shack?" I had asked that but as usual it was too humble a question.]

Interestingly, my two properties form a figure 8, draped over a saddle in the ridge line, forming two 5000 sq. meter [1.5 acre] basins on either side. This would seem to invite a horizontal dipole along the ridge line, with position adjusted to fit the figure 8 familiar on propagation diagrams. However, it seems with my sloping dipole, I can set up on any hill that can see both houses. But with the horizontal dipole, I am restricted to only the junction of the 8. It seems the latter is just a special case of the former.

Anyways, tell me in case I'm off track. My solution was gleaned from a very unorganized net. No FAQ was found, mainly because this is not appropriate for urban and FCC areas.

I assume that I shouldn't bother to look for a propagation diagram for the sloping dipole, as it is certainly only for the horizontal plane, and not my three dimensional situation.
--

http://www.geocities.com/jidanni Tel886-4-25854780 e-mail:restore .com.

4101. Re: Which screwdriver?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 04:22:00 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B020068.B32847CD@IEEE.org>
Source record: 162796

Jerry Oxendine wrote:
> I've seen the "no match" screwdrivers at hamfests and, believe it or
> not, the guy brags about not having matching. Obviously, he has no un-
> derstanding about impedance characteristics on HF.

Next hamfest, show him your all-band no-tune folded monopole with the
series resistor. :-)
--
http://www.mindspring.com/~w6rca

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4102. Re: Which screwdriver?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 05:00:26 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3B02096A.9699EE67@oio.net>
Source record: 162797

Eric,
Among others, look at the ones made by NU4W, Dave...
'Doc

4103. Re: Wire gauge/ RF Power rating??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 05:03:00 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3B020A04.46DE7B4B@oio.net>
Source record: 162798

Rob,
Number 14 wire at about 4-6 turns per inch should handle
almost anything you can put into it. A larger size wire
wouldn't hurt though...
'Doc

4104. Re: What's Happened?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 05:04:20 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3B020A54.61C594A4@oio.net>
Source record: 162799

Dave,
by the time you filter out all the 'garbage', there really
hasn't been all that many posts...
'Doc

4105. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 06:23:25 UTC
From: atkes@imap1.asu.edu
Message-ID: <9dt6ct$6sf$1@news.asu.edu>
Source record: 162800

Peter O. Brackett (ab4bc@ix.netcom.com) wrote:
: Kevin:

: Yes, for the theoretical "evaluation" of a voltage one needs to evaluate a
: "line integral" along a well defined "path" of integration.

: But...

: [snip]>
: > That is correct; so for a path between two points on a perfect
: > conductor that remains in the conductor, the voltage difference is
: > zero. In the wave guide problem if you choose a path from the top to
: > the bottom of the wave guide that is always inside the perfect
: > conductor the voltage difference is zero. If you choose a path running
: > through the air, it isn't zero. Faraday's law tells you that if you
: > have a time varying magnetic field that this must be true. The sum of
: > the voltage drops around a closed loop is not zero as is often used in
: > the special case of circuit theory. rather it is given by the negative
: > time rate of change of the magnetic flux through the loop. I believe
: > it an unwillingness to realize that the correct concept of voltage
: > requires you to define a path when there are magnetic fields around
: > that makes many hams have difficulties correctly understanding what is
: > going on in antennas and transmission lines.
: >
: > 73 Kevin w9cf
: >
: [snip]

: That's fine for the "theorist" but for the metrologist or experimenter who
: simply hooks up a voltmeter to a circuit or network and makes observations,
: the "path" is already defined, simply by the application of the voltmeter
: probes.

: Move the probes on the instrumentation, and the indicated voltage maybe
: changes, but so what? The metrologist has evaluated the line integral along
: the path she wanted to. I understand what you are saying, but... I miss
: your point.

: I guess I am asking, why that makes Volts = Joules/Couloumb some kind of a
: "second class" variable as compared to Amps.

: -Peter K1PO

It doesn't as long as you define the path, which, as you say, you do
when you place the voltmeter leads. I'll assume you meant leads when
you said probes. I previously gave references to a standard physics
demonstration where the probes are across identical points but the

meters read difference voltages because the leads take different paths. However, this thread is full of people talking about the voltage differences without specifying either the integration path or where they have placed their voltmeter leads. If you don't tell us which path, then in cases where there are time varying magnetic fields around, you are talking nonsense. The nice thing about current is that I think everyone agrees on what it is.

73 Kevin w9cf

4106. Re: My First 2M Antenna..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 08:12:35 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B023673.4FD337FC@spam.me.not>
Source record: 162801

Brian:

Thanks. All I have right now is the 2M set. I'm a new HAM. Haven't even
had my callsign a week yet, but I'm working on it.

I'll check that one out for when I have the time/money/space/radio to
hit other bands.

73 de KC8RKQ

KA6PFE wrote:
>
> Another antenna you might want to tackle is a J-POLE. Look up a version
> called a 'Copper Cactus', it's a multi-band version that might work well in
> your environment.
>
> Congrats on your antenna.
>
> 73
> Brian
> KA6PFE

4107. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 08:18:04 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B0237BC.4991FCDA@mwci.net>
Source record: 162802

atkes@imap1.asu.edu wrote:

> However, this thread is full of people talking about the
> voltage differences without specifying either the integration path or
> where they have placed their voltmeter leads. If you don't tell us
> which path, then in cases where there are time varying magnetic
> fields around, you are talking nonsense. The nice thing about current
> is that I think everyone agrees on what it is.

We all know about the textbook puzzle where EMFs are induced into the voltmeter leads, depending on where they are placed. So what? In actual practice this effect, if it really is a problem (which it seldom is, except maybe in very sensitive instrumentation systems) has methods to deal with it.

It is not true that *all* electrical problems must be resolved by *nothing but* direct application of Maxwell's equations.

A voltmeter responds to charges, not EMFs. And those charges, no matter what some seem to think, are distributed along a conductor. And not "lumped" at the ends of the conductor (if there was ever a stupid idea, that is it). The statement that there is no *voltage* distribution along a wire is truly astounding. If E in a conductor is zero, it is only because of the free charge distribution, and not because of some kind of Maxwellian mysticism. Voltmeters measure that charge distribution. Explanations to the contrary are claptrap.

There is one word that describes the idea that *everything* must be understood *purely* on the basis of Maxwell's equations. That word is *myopic*.

The circuit considerations, including reactance (in particular), mutual coupling, resistance, voltage and current generators (all of which seem to be ignored as trivial) are, as a matter of fact, crucial to the understanding of how an actual circuit functions. The better EM texts carefully relate these circut realities to Maxwell's equations, and engineers do understand the connection between electrical systems and Classical Electrodynamics (yes, I do have J.D. Jackson's third edition).

Bill W0IYH

4108. EMF

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 08:51:20 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B023F87.B5BE3A67@mwci.net>
Source record: 162803

This is a repeat of a previous article.

The following discussion is traceable to Kraus "Electromagnetics" 1992 and to Skilling "Fundamentals of Electric Waves" 1948.

An RF electric circuit, in the practical world, is not a short circuit. Even a closed loop has reactance. Assume the loop is not movable. A time-changing H field induces a total EMF in the loop that is defined by Faraday's law. That is, the line integral around a complete closed path is the total EMF. The value of this total EMF is proportional to the rate of change of the flux encircled by the closed loop. This is the 1839 definition of Faraday's law.

Let the term Ee represent an electric field due to EMF.

If the path is not completely closed, but has a gap in which magnetically shielded items such as R, C and L components can be installed, then the induced Ee is determined as the line integral only along that part of the circuit that is coupled to the H field. The complete circuit may also contain other discrete sources of Ee such as generators and batteries. In a circuit it is incorrect to assume that Ee is due only to changing magnetic fields that are completely enclosed by the loop.

The circuit also consists of electric fields Ec due to charge distributions. These distributions reside in the wires and in the RLC components. Within the wires the charges at each point counterbalance induced Ee fields at that point in order to satisfy the requirement that the net E field at that point in a perfect conductor is zero.

It is necessary to understand one thing clearly. The only reason that the net E field at each location in the wire is zero is because of free electrons at that specific location, and not because of "lumps" of charge at some other location, for example at the ends of the conductor, that must "slosh" back and forth from one end to the other (fantastic!). The voltage that we measure with a voltmeter across the gap is due to the summation of all of the small increments of Ec along the length of the conductors. There is no other common sense explanation that can simultaneously satisfy the E = Ee + Ec = 0 requirement at every point on the wires. This sum of increments of Ec is identical to the negative

sum of increments of Ee. This is true along any increment, no matter how small or large. As the H field oscillates, the charges along each increment change magnitude and direction in order to keep E=0.

It is all done incrementally, where each small location draws upon the local pool of available free electrons. The end result is electrically equivalent to a current wave and a voltage wave that oscillate between the ends (assume a perfect open circuit at the gap). It is similar to a water trough, where each bit of water contributes its bit to the splashing of the waves against the end stops.

It is this sum of small Ec's, which is the negative sum of small Ee's (due to induction, generators, batteries, etc) that provides the voltage drop across, and the current through, the LCR components that bridge the gap in the wire path. The Ee's are involved only vicariously.

This circuit description satisfies Kirchhoff's voltage law, Faraday's law and Gauss's law (for electric fields) simultaneously around a "closed loop".

Bill W0IYH

4109. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 10:00:37 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dtkaf$f2f$1@plutonium.btinternet.com>
Source record: 162805

A DC reflectometer, or SWR meter, is the most simple to construct .

In the ordinary SWR meter, the capacitative or resistive divider in combination with the little current transformer exist solely to minimise power lost in the bridge. The pair of resistors or capacitors are merely ratio arms.

By making the ratio arms one-to-one, and setting the standard resistor on the other side of the bridge to 50 ohms, with a voltmeter as a bridge detector you have a DC to VHF reflectometer. More accurate than the ordinary sort.

Unfortunately at least half of the transmitter output power is dissipated in the bridge components.

A very sensitive instrument - fine for QRP transmitters.

Very clever fellow was Wheatstone.

--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

Peter O. Brackett <ab4bc@ix.netcom.com> wrote in message news:9dspsn$j0h$1@slb7.atl.mindspring.net...
> Cecil:
>
> Have you ever used the neat program on Reg Edwards www site called SWRMeter.
>
> It provides a schematic diagram for the reflectometer, and a set of notes
> describing the operation of a reflectometer and actually helps the user to
> design the meter.
>
> I noted that in his design he uses a resistive voltage divider to "measure"
> V instead of the capacitive voltage divider like many others do. Still his
> sensor for the current I uses a torroid transformer and so is AC coupled.
>

> Thus the reflected voltage b = V - IR that Reg's circuit measures
is
> acutally 1/2 AC coupled and 1/2 DC coupled. V is DC coupled with
the
> resistive divider, but IR is capacitively coupled.
>
> And so... Reg's design is 1/2 way to being able to measure DC
reflections.
>
> All you have to do to get reflectometer that works down to DC is
to replace
> the transformer for picking off a sample of I, with a DC coupled
> differential amplifier, and a couple of tiny resistors and
presto... you
> have a DC to HF reflectometer.
>
> We could all use that kind of DC reflectometer to keep our DC
sources
> matched! Heh, heh.
>
> Anyway, have a look. I hadn't noticed that program on Reg's site
before, I
> presume it has been there all along.
>
> Best,
>
> -Peter K1PO
>
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3B01AB5A.9785CD57@IEEE.org...
> > N3VST wrote:
> > >
> > > What in the Sam hell does this have to do with radio, or
antenna's.
> >
> > A meteor hit his ISP's microwave antenna.
> > --
> > http://www.mindspring.com/~w6rca
> >
> >
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the
World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----
>
>

4110. Re: My First 2M Antenna..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 10:20:05 UTC
From: Randy <randyap@geocities.delete.com>
Message-ID: <4usM6.159$i8.412025@newsrump.sjc.telocity.net>
Source record: 162804

For a beginner on 2M only, you can find well written and illustrated plans for a 2M j-pole at the following site: http://www.qsl.net/kg4bin/jpole.html. You can build it for about $0-$20, depending upon how much scrap copper plumbing supplies and/or coax and connectors you have laying around.

If you're using a an HT with a rubber duck, you will be well served with a better outside (or inside, if necessary) antenna. Also, building simple antennas will help build you skills and confidence should you desire to build more complex antennas in the future.

"Sideband" <sideband@spam.me.not> wrote in message news:3B023673.4FD337FC@spam.me.not...
> Brian:
>
> Thanks. All I have right now is the 2M set. I'm a new HAM. Haven't even
> had my callsign a week yet, but I'm working on it.
>
> I'll check that one out for when I have the time/money/space/radio to
> hit other bands.
>
> 73 de KC8RKQ
>
> KA6PFE wrote:
> >
> > Another antenna you might want to tackle is a J-POLE. Look up a version
> > called a 'Copper Cactus', it's a multi-band version that might work well in
> > your environment.
> >
> > Congrats on your antenna.
> >
> > 73
> > Brian
> > KA6PFE

4111. Re: antenna analyzer comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 10:21:09 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9dtkag$f2f$2@plutonium.btinternet.com>
Source record: 162806

I use a miniature mains input, 12 volt DC output, power unit
plugged into the MFJ-259B external battery socket.

The battery lead can be as long as you like. But wind a lot of
turns of the lead on a ferrite rod immediately adjacent to the
meter.

Some people would call this a 1:1 balun but in fact it is just a
bifilar-wound choke. It allows measurements on balanced components,
lines and equipment.

Reg

4112. Re: radials for Butternut H9V vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 11:01:27 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3b025e08_1@news.cybertours.com>
Source record: 162807

Hi Pete,
Given your situation I'd put down as many as possible in whatever direction they will fit. Only adverse effect will be a slightly better signal in the direction of most of the radials. but you want beable to notice that much.
73 Dave KC1DI

"Pete" <pete@etep.com> wrote in message news:TIaM6.12753$K5.999546@news1.rdc1.il.home.com...
> This is similar to a previous question asked. My ant is also ground mounted
> and I am unable to install radials all around the antenna because of my deck
> being in the way. I was planning on installing them in a 1/2 pie shape or
> possibly close to a 3/4 pie shape pattern. Would either or of these
> patterns work for me? I may be able to put in a couple of radials under the
> deck if I can squeeze under it. Each radial will be around 20 feet long. I
> drove a 8 foot ground rod and grounded the vertical to it. Thank you for all
> your suggestions. 73's
> Pete WD9ALM
>
>
>
>

4113. Re: My First 2M Antenna..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 12:19:29 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B027051.BE923E90@spam.me.not>
Source record: 162808

Randy:

Actually, AA5GO just loaned me a 2M J-Pole he'd built way back when.
Seems to be in pretty good shape. I haven't put it up yet because I have
no real way to mount it yet... but I'll come up with something...

73 de KC8RKQ

Randy wrote:
>
> For a beginner on 2M only, you can find well written and illustrated plans
> for a 2M j-pole at the following site: http://www.qsl.net/kg4bin/jpole.html.
> You can build it for about $0-$20, depending upon how much scrap copper
> plumbing supplies and/or coax and connectors you have laying around.
>
> If you're using a an HT with a rubber duck, you will be well served with a
> better outside (or inside, if necessary) antenna. Also, building simple
> antennas will help build you skills and confidence should you desire to
> build more complex antennas in the future.
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3B023673.4FD337FC@spam.me.not...
> > Brian:
> >
> > Thanks. All I have right now is the 2M set. I'm a new HAM. Haven't even
> > had my callsign a week yet, but I'm working on it.
> >
> > I'll check that one out for when I have the time/money/space/radio to
> > hit other bands.
> >
> > 73 de KC8RKQ
> >
> > KA6PFE wrote:
> > >
> > > Another antenna you might want to tackle is a J-POLE. Look up a version
> > > called a 'Copper Cactus', it's a multi-band version that might work well
> in
> > > your environment.
> > >
> > > Congrats on your antenna.
> > >
> > > 73
> > > Brian
> > > KA6PFE

4114. Re: Inexpensive SWR meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 12:23:43 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3B027342.2030908@aol.com>
Source record: 162809

Well, inexpensive is a relative term. If it costs half as much but only lasts one-tenth as long, is it a bargain?.?.?

I have a tentec model 1202. It comes as a kit(which was easy to build) that costs $59. It is good for both the HF bands and 2 meter VHF bands, with each band/power range requiring separate calibration. It also has two power ranges, 0-20 and 0-200. The kit was also a welcomed building project.

see www.tentec.com/Tk1202.htm

To calibrate you need to borrow someone else's ACCURATE power meter. Odds are you can find someone wanting to show off his BIRD......Hmmm, better be careful to specify WATTMETER.

I calibrated mine to match the power meter on my rig (a Yaesu ft-840) so that I am comparing apples to apples (Not necessarily the actual power). It tracks the power meter on my rig from minimum power to 100 watts(or whatever the rig is really putting out). This way, when I am testing an antenna or coax run, I can put the power meter in line at the antenna end to see how much power is making it down the coax. Apples to apples.

I've also heard good things about the Diawa meters, but they didn't fit my idea of inexpensive.

73,
W4KAZ

4115. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 12:47:07 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dtsri$371$1@slb2.atl.mindspring.net>
Source record: 162810

Reg:

I wonder... Did Wheatstone ever use the term "reflected power"?

Oliver Heaviside clearly understood reflections, both from the ionosphere
and on transmission lines.

I wonder... Did Oliver make use of reflected voltage bridges in his
investigations of the deficiencies in the original design and subsequent
perfection of undersea communicaitons cables?

I love his statement, which you qoute on your www site, "does one have to
understand the digestive system to enjoy dinner"... heh, heh, a comment most
applicable to ham radio and it's affectionados.

I believe that Heaviside's original statement was in response to emminent
mathematicians of the time who were "trashing" his use of the "p-transform"
to solve differential equations. Heaviside apparently said that although
his "p-transform" method didn't seem to have a rigorous mathematical basis,
he trusted his self-invented "p-transform" method because, "it gives the
correct answers every time". Later, some "true" mathematicians legitimized
Heavisides p-transform and proved that the great French mathematician
LaPlace had invented it several generations before. Today it's known as the
LaPlace Transform method.

The early trans-atlantic undersea cables, now there was a "real"
transmission line! A few wavelengths at 20 meters, heh, heh.

In the heady days of the world's first Internet, the world wide telegraph
system of the late 1800's, those transmission lines had to work all the way
down to DC!

Thoughts, comments?

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9dtkaf$f2f$1@plutonium.btinternet.com...
> A DC reflectometer, or SWR meter, is the most simple to construct .
>
> In the ordinary SWR meter, the capacitative or resistive divider in
> combination with the little current transformer exist solely to
> minimise power lost in the bridge. The pair of resistors or
> capacitors are merely ratio arms.
>
> By making the ratio arms one-to-one, and setting the standard
> resistor on the other side of the bridge to 50 ohms, with a

> voltmeter as a bridge detector you have a DC to VHF reflectometer.
> More accurate than the ordinary sort.
>
> Unfortunately at least half of the transmitter output power is
> dissipated in the bridge components.
>
> A very sensitive instrument - fine for QRP transmitters.
>
> Very clever fellow was Wheatstone.
>
> --
> **********
> Regards, Reg, G4FGQ
> Free radio design & modelling software
> http://www.btinternet.com/~g4fgq.regp
>
> **********
>
> Peter O. Brackett <ab4bc@ix.netcom.com> wrote in message
> news:9dspsn$j0h$1@slb7.atl.mindspring.net...
> > Cecil:
> >
> > Have you ever used the neat program on Reg Edwards www site
> called SWRMeter.
> >
> > It provides a schematic diagram for the reflectometer, and a set
> of notes
> > describing the operation of a reflectometer and actually helps
> the user to
> > design the meter.
> >
> > I noted that in his design he uses a resistive voltage divider to
> "measure"
> > V instead of the capacitive voltage divider like many others do.
> Still his
> > sensor for the current I uses a torroid transformer and so is AC
> coupled.
> >
> > Thus the reflected voltage b = V - IR that Reg's circuit measures
> is
> > acutally 1/2 AC coupled and 1/2 DC coupled. V is DC coupled with
> the
> > resistive divider, but IR is capacitively coupled.
> >
> > And so... Reg's design is 1/2 way to being able to measure DC
> reflections.
> >
> > All you have to do to get reflectometer that works down to DC is
> to replace
> > the transformer for picking off a sample of I, with a DC coupled

> > differential amplifier, and a couple of tiny resistors and
> presto... you
> > have a DC to HF reflectometer.
> >
> > We could all use that kind of DC reflectometer to keep our DC
> sources
> > matched! Heh, heh.
> >
> > Anyway, have a look. I hadn't noticed that program on Reg's site
> before, I
> > presume it has been there all along.
> >
> > Best,
> >
> > -Peter K1PO
> >
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > news:3B01AB5A.9785CD57@IEEE.org...
> > > N3VST wrote:
> > > >
> > > > What in the Sam hell does this have to do with radio, or
> antenna's.
> > > >
> > > > A meteor hit his ISP's microwave antenna.
> > > > --
> > > > http://www.mindspring.com/~w6rca
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> >

4116. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 13:02:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B027A6F.24CFADA5@IEEE.org>
Source record: 162811

"Peter O. Brackett" wrote:
> Move the probes on the instrumentation, and the indicated voltage maybe
> changes, but so what?

Hey, Peter, if you move the probes and the indicated voltage changes,
is it because that voltage change is fictitious? :-)
--
http://www.mindspring.com/~w6rca

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4117. Re: S Meter Accuracy

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 13:09:32 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3B027E00.7040900@aol.com>
Source record: 162813

Yes, the radio manufacturers would do their customers a favor by publishing similar data for their equipment.

Did you by any chance compare more than one radio of the same model to determine if and how large the variations are between individual units? Seems like the manufacturers would publish these specifications if they were uniform, and not subjective.

I'm not an engineer, just an "amateur", but this seems like a useful study. It certainly confirms conventional wisdom on the non linearity of S-meter readings. Thanks for sharing your results.

W4KAZ

4118. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 13:25:08 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B027FB4.A03F6EB3@mwci.net>
Source record: 162812

W6RCecilA wrote:

> if you move the probes and the indicated voltage changes,
> is it because that voltage change is fictitious? :-)

Don't you know "imaginary" volts when you see them?

Bill W0IYH

4119. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 14:37:49 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0290BD.9B635A02@IEEE.org>
Source record: 162815

"Peter O. Brackett" wrote:
> What if those Joules are not "real" but are ficticious? Do they then have
> to add up?

Peter, when I lived in California, I used to go SCUBA diving a little North of Santa Cruz at Fitzgerald's Marine Reserve. It is an absolutely beautiful place with cliffs overlooking the natural lava formations that form a little harbor. Sometimes, there are lots of waves.

As a SCUBA diver, those waves seemed to be primarily up and down, like the L-C interchange of energy in your model. But from the perspective of the cliffs, one could see the large waves moving in from the ocean and crashing against the shore. Not only that, reflections were occurring from the large waves hitting the shore and forming small waves that moved back out toward the ocean right through the large waves. I know, I've watched it for hours with my own eyes.

What was astounding to me the first time I witnessed it is that those small waves would meet the large waves head on and completely disappear from view - only to reappear, undisturbed, on the ocean side of the large waves still headed out from the beach. There's energy in them thar waves, Peter, that obeys the principle of superposition and whose kinetic energy could be measured and converted to joules/sec.
--
http://www.mindspring.com/~w6rca

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4120. Re: antenna analyzer comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 15:12:53 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3b02983d.2804387@news.aepnet.com>
Source record: 162833

On Wed, 16 May 2001 11:21:09 +0100, "Reg Edwards" <g4fgq.regp@btinternet.com>
wrote:

>I use a miniature mains input, 12 volt DC output, power unit
>plugged into the MFJ-259B external battery socket.
>
>The battery lead can be as long as you like. But wind a lot of
>turns of the lead on a ferrite rod immediately adjacent to the
>meter.
>
>Some people would call this a 1:1 balun but in fact it is just a
>bifilar-wound choke. It allows measurements on balanced components,
>lines and equipment.

I don't think so. How is this any different from an unbalanced tuner driven by
a transmitter + balun on the input. Roy and Kevin have explored this at length.

See: http://fermi.la.asu.edu/w9cf/articles/balun/index.html

Wes Stewart N7WS
>----
>Reg
>
>

4121. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 15:49:55 UTC
From: richardharrison@webtv.net
Message-ID: <6877-3B02A1A3-25@storefull-116.iap.bryant.webtv.net>
Source record: 162817

Cecil, W6RCA wrote:
"_Transmission Lines and Networks_. Walter C. Johnson, Chairman,
Department of Electrical Engineering, Princeton University, 1950."

Does Johnson really say coax is so porous that the same voltage appears
on both sides of the shield?

Best regards, Richard Harrison, KB5WZI

4122. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 15:58:57 UTC
From: kb7qhc@home.com
Message-ID: <3b04a321.755383333@news.seanet.com>
Source record: 162816

On Tue, 15 May 2001 23:14:16 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>"Peter O. Brackett" wrote:
>> Cecil and Walt, and Steve are all getting a way too fancy! No one needs any
>> of that complicated stuff... to "formal" dealing with all of that
>> "ficticious" power.
>
>Peter, California is having rolling blackouts because of people like you
>who believe power companies don't generate power and therefore cannot get
>paid for generating power. :-)

Hi Cecil,

Actually, it's the "White House Effect" where the platitudes and
ignore-the-problem-and-it-will-go-away is the "fiction" of power.

73's
Richard Clark, KB7QHC

4123. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 17:16:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B02B5F0.68465FBB@IEEE.org>
Source record: 162818

Richard Harrison wrote:
>
> Cecil, W6RCA wrote:
> "_Transmission Lines and Networks_. Walter C. Johnson, Chairman,
> Department of Electrical Engineering, Princeton University, 1950."
>
> Does Johnson really say coax is so porous that the same voltage appears
> on both sides of the shield?

He assumes the "wall thickness is equal to the nominal depth of
penetration". He also talks about the admittance of the equivalent
"condenser". :-)
--
http://www.mindspring.com/~w6rca

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4124. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 17:24:04 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B02B7B4.381A8D00@IEEE.org>
Source record: 162819

Richard Clark wrote:
> Actually, it's the "White House Effect" where the platitudes and
> ignore-the-problem-and-it-will-go-away is the "fiction" of power.

It wasn't the White House that put price controls on what consumers pay for electricity while allowing the wholesalers of power to charge anything they choose. And it wasn't the White House that, while CA's population was doubling, refused to allow any new power generating plants to be built in CA while Hanoi Jane shut down SMUD's Rancho Seco.

I apologize to Peter for mentioning "power" generating plants. :-)
--
http://www.mindspring.com/~w6rca

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4125. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 17:27:36 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dud9dgfk1@slb3.atl.mindspring.net>
Source record: 162820

Cecil:

Yep, you'r absolutely right.

I know that area of the CA coast well.

As a matter of fact I was just out there in Palo Alto on business a few weeks ago and I spent the weekend in Monterey, down on Cannery Row, went out whale watching, down to Big Sur, went into the Monterey acquarium again, and all.

Ever been up to where the "mavericks"are... that's just a little North of Half Moon Bay. The "mavericks" are waves that occur because of an offshore "shoal". That location is supposed to have the worst/best breaking waves on the whole West coast, according to my "surfer" son. They are really challenging waves for surfers. Almost as good as the North Coast in the Hawian Islands.

I agree, those ocean waves are an excellent model for visualizing wave mechanics.

The ocean however does not flow in one direction continuously... now what about a running river, is that the DC eqivalent?

Where is the energy transmitted back up the river, on reflections?

Cecil all of the laws, equations, formalism, etc... of wave mechanics applies equally as well to DC circuits as to AC circuits.

Those effects and formulae, do not stop being valid at some lower frequency, they do not stop being valid if a transmission line is only a very small fraction of a wavelength, etc...

And... when viewed from the DC viewpoint, one can get additional insights into all of those wave phenomena, without the complications of those pesky phasors/vectors, etc... it's worth the effort to understand what it all "means" at DC and helps visualizations to become more clear.

Best Regards,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3B0290BD.9B635A02@IEEE.org...
> "Peter O. Brackett" wrote:
> > What if those Joules are not "real" but are ficticious? Do they then have
> > to add up?

>
> Peter, when I lived in California, I used to go SCUBA diving a little
> North of Santa Cruz at Fitzgerald's Marine Reserve. It is an absolutely
> beautiful place with cliffs overlooking the natural lava formations that
> form a little harbor. Sometimes, there are lots of waves.
>
> As a SCUBA diver, those waves seemed to be primarily up and down, like
> the L-C interchange of energy in your model. But from the perspective
> of the cliffs, one could see the large waves moving in from the ocean
> and crashing against the shore. Not only that, reflections were occurring
> from the large waves hitting the shore and forming small waves that
> moved back out toward the ocean right through the large waves. I know,
> I've watched it for hours with my own eyes.
>
> What was astounding to me the first time I witnessed it is that those
> small waves would meet the large waves head on and completely disappear
> from view - only to reappear, undisturbed, on the ocean side of the large
> waves still headed out from the beach. There's energy in them thar waves,
> Peter, that obeys the principle of superposition and whose kinetic energy
> could be measured and converted to joules/sec.
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4126. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 17:28:24 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dudat$3va$1@slb0.atl.mindspring.net>
Source record: 162821

Cecil:

Thanks, I have never read that "tome", nor do I have a copy.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B01FE09.B5FAB154@IEEE.org...
> "Peter O. Brackett" wrote:
> > Who the hell is this Johnson guy?
>
> _Transmission Lines and Networks_, Walter C. Johnson, Chairman,
> Dept. of Electrical Engineering, Princeton University, 1950
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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4127. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 17:35:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B02BA46.A7A70A09@IEEE.org>
Source record: 162822

"Peter O. Brackett" wrote:
> Thanks, I have never read that "tome", nor do I have a copy.

He has a very good and understandable description of how reflections
build up to steady-state through the transient process. It includes
diagrams which are worth a thousand newsgroup words.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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4128. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 17:40:26 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B02BB8A.7D7631A7@IEEE.org>
Source record: 162823

"Peter O. Brackett" wrote:
> Those effects and formulae, do not stop being valid at some lower frequency,
> they do not stop being valid if a transmission line is only a very small
> fraction of a wavelength, etc...

Just be sure to hang some modulation on the signals so you can keep track
of where they go, where they come from, and where they've been. What is
the equivalent of TV ghosting at DC?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4129. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 17:49:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B02BDA2.64CCB25D@IEEE.org>
Source record: 162824

"Peter O. Brackett" wrote:
> Ever been up to where the "mavericks"are... that's just a little North of
> Half Moon Bay. The "mavericks" are waves that occur because of an offshore
> "shoal". That location is supposed to have the worst/best breaking waves on
> the whole West coast, according to my "surfer" son. They are really
> challenging waves for surfers. Almost as good as the North Coast in the
> Hawian Islands.

Yep, I think that's fairly close to the lighthouse on Pillar Pt., if I
remember correctly. Fitzgerald's Marine Reserve is a little North of the
surfers. I think it's around Moss Beach.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4130. SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 18:53:09 UTC
From: aduffy@sprint.ca
Message-ID: <3B02CC95.6CCB224A@sprint.ca>
Source record: 162826

Might sound a little dumb, but I was wondering if a 2m J-Pole antenna was very good at SSB. I have excellent results on FM but but not much luck on SSB (which I know isn't very crowded at best and spuratic).

73,
Tony
VA3ATD

4131. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 19:00:13 UTC
From: kb7qhc@home.com
Message-ID: <3b02cdb7.766285440@news.seanet.com>
Source record: 162827

On Wed, 16 May 2001 12:24:04 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> Actually, it's the "White House Effect" where the platitudes and
>> ignore-the-problem-and-it-will-go-away is the "fiction" of power.
>
>It wasn't the White House

Hmmm,

Sounds like the call of the "White House" press secretary. ;-)

If you aren't part of the solution, you are part of the problem.

73's
Richard Clark, KB7QHC

4132. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 19:51:03 UTC
From: "R. Scott" <kf7qz@yahoo.com>
Message-ID: <3B02DA27.67B5F85D@yahoo.com>
Source record: 162831

One problem I see is that the J-pole is Vertically Polarized and most of the SSB stations run Horizontal Polarization. Although they could hear you if very strong local, weak signals or distance stations might not.

Rick KF7QZ

aduffy@sprint.ca wrote:
>
> Might sound a little dumb, but I was wondering if a 2m J-Pole antenna
> was very good at SSB. I have excellent results on FM but but not much
> luck on SSB (which I know isn't very crowded at best and spuratic).
>
> 73,
> Tony
> VA3ATD

4133. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 19:51:49 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3b02d9a5.19551328@news.aepnet.com>
Source record: 162828

On Wed, 16 May 2001 14:53:09 -0400, aduffy@sprint.ca wrote:

>Might sound a little dumb, but I was wondering if a 2m J-Pole antenna
>was very good at SSB. I have excellent results on FM but but not much
>luck on SSB (which I know isn't very crowded at best and spuratic).

Most weak signal (CW & SSB) operation is done using horizontal antennas.

There is certainly less SSB activity than FM, but it's a whole lot more
interesting. Try monitoring 144.200 MHz.

73,

Wes Stewart N7WS
>
>73,
>Tony
>VA3ATD
>

4134. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 20:06:01 UTC
From: w2du@iag.net
Message-ID: <3b02bfb4.757999@news.journey.com>
Source record: 162829

On Tue, 15 May 2001 23:03:21 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote:

>Cecil

>BTW... now that you've finished off Steve and Walt, how about looking at the
>reflected DC power in my mismatched DC circuit and explain where it comes
>from and what it has to do with conservation of energy.
>
>-Peter K1PO

Finished off Steve and Walt? Steve perhaps, but not me.

During our discussion of how forward power is established we were focusing too narrowly on voltage and not where we should have been focusing, on fields.

On reviewing the section on fields and the Poynting vector in Reflections it suddenly dawned on me that we should have been analyzing the changes in the electromagnetic fields. If we had, the discussion would have ended with the correct answer a lot sooner. So let me give a little background for those who may not be acquainted from the field viewpoint.

First, it is well known that all of the energy propagates through the medium via the electomagnetic field, whether in space or through physical conductors. It is also well known that half the energy is contained in the electric field and half in the magnetic field, with the energies alternating between the two fields during propagation.

The electric and magnetic fields propagating forward are considered to be traveling in the +Z direction. The fields are referred to as Ex and Hy, respectively, with E and H referring to the magnitude of the fields, while x and y are their respective directions, both being mutually perpendicular to the Z direction. As long as the fields propagate through the medium with constant impedance the ratio of the magnitudes is E/H = Zo. In vector notation Ex x Hy = Pz, the watts per unit area of the side of a unit cube whose sides are parallel to the X, Y, and Z axes, and containing the energy as it passes a given point at the rate of Ev joules per second.

When a flow of energy encounters a change of impedance (a mismatch) the magnitude of both E and H fields change, causing a motor-generator effect on the circuit elements. As a result, the mismatch is converted into a virtual source generator of the reflected wave.

According to Lenz's law on counter-electromotive force, for any energy not absorbed (or transmitted through) the mismatch, the vector direction of either the E or H field (x or y) must reverse. Which field reverses depends on the character of the mismatch. When either the x or y field direction reverses, the

Poynting vector of the unabsorbed energy must also reverse---to the -Z direction---launching the reflected wave. The energy flowing in the -Z direction is a portion of that energy flowing earlier in the +Z direction, except its magnitude has changed and its direction reversed. An exact analogy is that of light energy reflected from a mirror.

Let's return now to the example of the 50-ohm line terminated in a 3:1 mismatch, 100 watts of source power, and matched at the line input with a totally re-reflecting mismatch to the rearward-traveling waves. The result is a terminating voltage reflection coefficient rho = 0.5, a power reflection coefficient of 0.25, a total forward power of 133.33 watts, and a reflected power of 33.333 watts.

The question before the house is how does the reflected power add to source power? Let's now focus on the changing electromagnetic fields.

It is well known that when the forward wave encounters a short-circuit termination the voltage goes to zero, causing the electric field to collapse. The changing electric field causes the magnetic field to increase in the amount of energy contained in the electric field, causing the magnetic field to double. The change in the magnetic field establishes a new current, launched rearward and establishing the reflected wave.

Now let's apply this info to the example above. Assume that the match point provides a virtual short to the reflected waves (power if you wish)(The virtual short will be explained later.) The same process occurs as described above. When the reflected waves encounter the short circuit at the matching point the voltage goes to zero and the electric field collapses, transferring its 16.66 watts (half of the 33.33 total reflected power) into the magnetic field, doubling it to 33.33 watts. The Poynting vector reverses direction from -Z to +Z and the reversed 33.33 watts in the magnetic field adds to the electromagnetic field delivered by the source. After several cycles the modified electromagnetic field reorganizes as the separate electric and magnetic fields rearrange their respective energies so that each is now carrying the same amount. However, 16.66 watts has been added to each field, for a total of 33.333 watts added to the source field of 100 watts, deriving the total of 133.33 watts.

It is thus evident that it is power that adds directly, not voltage. It is also evident that both the E and H fields don't go to zero simultaneously. Therefore, voltage and current cannot both go to zero simultaneously. In addition, the energy does not go to zero, it only changes direction. However, the energy does go to zero in the -Z direction when the re-reflection is total.

I know that some don't believe a virtual short circuit can exist, and that the concept I've described above is fallacious. But please hear me out.

The virtual short to reflected waves exists at the matching point because two sets of reflected waves traveling in the same direction where their voltages are of opposite polarity and their currents are in phase at the matching point. Here is what makes the concept valid. The voltage and current in each set of reflected waves arriving at the matching point can be replaced with generators delivering the same energies with the same voltages and currents and phases as

the actual reflected waves.

Two generators connected in a closed series relation with equal voltage and opposite phase constitute a short circuit---voltage goes to zero and current becomes maximum---the same as in a transmission line. In the transmission line example the virtual short appears only to the reflected waves that establish it, while it is transparent to waves traveling in the forward direction. Consequently, a virtual short is a reality.

I hope this helps in understanding the problem before the subject is abandoned without a satisfactory solution.

Walt, W2DU

4135. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 20:18:21 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <hgBM6.1065$AB1.329488@paloalto-snr1.gtei.net>
Source record: 162830

<aduffy@sprint.ca> wrote in message news:3B02CC95.6CCB224A@sprint.ca...
> Might sound a little dumb, but I was wondering if a 2m J-Pole antenna
> was very good at SSB. I have excellent results on FM but but not much
> luck on SSB (which I know isn't very crowded at best and spuratic).
>
> 73,
> Tony
> VA3ATD
>

The vast majority of 2 meter SSB operators are running horizontal polarization. Additionally, a high gain directional antenna works wonders compared to an omni vertical with little or no gain.

I regularly work distances of over 150 miles on 2 meter SSB with 30 watts, using a 13 element horizontal yagi @ 45 feet. If I switch over to a 5/8 wave vertical @65 feet, I cannot work more than about 40 miles with any reliability.

Another thought - make sure that your feedline is as low loss as possible and you have a fairly decent SWR. At higher frequencies, poor feedline will really limit your performance, and losses rise quickly as SWR increases.

73 de W6DKN

73 de W6DKN

4136. TGM comms MQ1 minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 20:33:28 UTC
From: Andy Morgan <andy.m@dial.pipex.com>
Message-ID: <9duo6lcgl1@neptunium.btinternet.com>
Source record: 162832

Has anybody had any experience with the TGM range of minibeams (sold by W&S). I have very limited space, tennamast on the side of terraced house. I currently use a cushcraft R8 vertical which seems to work quite well but is rather susceptible to noise (s3 to s5 and sometimes s7 noise on all bands). Any useful help would be appreciated.

--
Best Regards

Andy Morgan M5ZAP

4137. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 21:42:31 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <bvCM6.14682$p33.255472@news1.sttls1.wa.home.com>
Source record: 162835

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9dsqkvnon1@slb0.atl.mindspring.net...
> Cecil
>
> What if those Joules are not "real" but are ficticious? Do they then have
> to add up?
>
> BTW... now that you've finished off Steve and Walt, how about looking at
the
> reflected DC power in my mismatched DC circuit and explain where it comes
> from and what it has to do with conservation of energy.
>
> -Peter K1PO
>
>
Hello Peter,

I ran across this link http://www.wenzel.com/documents/swr.html
today. Noticed it talked about DC reflections.

It makes an interesting point about the inversion of reflected power related
to ratio of Zo and load.

73, Roger, W7WKB

4138. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 21:48:17 UTC
From: kb7qhc@home.com
Message-ID: <3b02e99c.773426368@news.seanet.com>
Source record: 162836

On Wed, 16 May 2001 20:06:01 GMT, w2du@iag.net (Walter Maxwell) wrote:

>It is thus evident that it is power that adds directly, not voltage.

Hi Walt,

This is entirely the problem. You make a bald statement as though it were fact. I have had correspondence with many who do not wish to participate in these "debates" and one sent me a treatment on Modeling the Quarter Wave Transformer (which I promptly re-distributed). His work reveals the standard solution all the while perfectly in balance with adding voltage AND currents throughout the entire system. Of the 11 pages of hard copy in front of me, he offers the discussion of power late in the paper to occupy only half a page. And guess what, it satisfactorily presents the ever abused conservation of energy in (again) standard form (rather than these absurdities by parts).

Your statement above is not true. Why? For any number of reasons perhaps (like the lack of an authoritative citation much less the exact criteria by which you stand by this statement). Foremost, when I review the standard texts on SWR, ALL of them employ both voltage and current math NOT power math. In fact, power is the least consideration for many of the examples offered; and power is rarely expressed to then be rendered into volts and amps.

One of the most ferocious brain knots I've encountered is this notion of virtual shorts that exist through the combination of waves that finds a solution (the virtual short) at only one point in the continuum. This absurdity is beyond explanation (too often it has been offered and defended as another fact not requiring proof). This may be a problem of your presentation, because I do have experience with real shorts generated by waves (a classical example is the waveguide junction with choke joints). You may, or may not, characterize these as Virtual Shorts, I have experienced them as Real Shorts. Waveguide literature is rich with such examples, and more, and their descriptions encompass far less rhetoric (and are far more approachable).

The long and short of it is that you haven't demonstrated a compelling case, and you have not moved an inch to offer a different perspective. this in its own right suggests your "proofs" as being brittle solutions. That is, they give the appearance of firm support until some modest pressure is brought to bear. Steve may have his faults, but he did expose the weakness of these brittle "theories" that cannot find a solution without knowing the solution. Walt, if your treatment cannot find a solution to one of Steve's quizzes (and simply rejecting

him is NOT satisfactory) I would offer what value does it have even as an informal instruction? There are some here who stand by you in faith, but even so, testimonials are not proof either.

73's
Richard Clark, KB7QHC

4139. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 22:07:04 UTC
From: kb7qhc@home.com
Message-ID: <3b04f9c8.777566191@news.seanet.com>
Source record: 162837

On Wed, 16 May 2001 21:42:31 GMT, "Roger Sparks" <sparksrc@home.com>
wrote:

>
>"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
>news:9dsqkvnon1@slb0.atl.mindspring.net...
>> Cecil
>>
>> What if those Joules are not "real" but are ficticious? Do they then have
>> to add up?
>>
>> BTW... now that you've finished off Steve and Walt, how about looking at
>the
>> reflected DC power in my mismatched DC circuit and explain where it comes
>> from and what it has to do with conservation of energy.
>>
>> -Peter K1PO
>>
>>
>Hello Peter,
>
>I ran across this link http://www.wenzel.com/documents/swr.html
>today. Noticed it talked about DC reflections.
>
>It makes an interesting point about the inversion of reflected power related
>to ratio of Zo and load.
>
>73, Roger, W7WKB
>

Hi Roger,

And it is significantly Time oriented too.

73's
Richard Clark, KB7QHC

4140. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-16 22:38:06 UTC
From: john griffen <john@griffen.demon.co.uk>
Message-ID: <6ZhjVBAOFwA7Ewz$@griffen.demon.co.uk>
Source record: 162839

In article <3b0194f9.17858061@news.compuserve.com>, Dave
<noname@aol.com> writes
>
>Hi John,
>
>Thanks for the input.
>
>Sounds like your arrangement ought to work pretty well. Solves
>just about all the problems. And it gets the balun out of any
>high SWR. That may be what I end up doing.
>
>I'm surprized that you can get 80M to work with such a short
>wire. I get an input Z of 11-j1050 for 3.6 MHz. Looks like the
>efficiency is not the best, with the input R so low, but it is
>certainly better than no antenna at all.
>
>73,
>Dave
>AB9CA
>
>
>
>
>
>On Sat, 12 May 2001 18:10:02 +0100, john griffen
><john@griffen.demon.co.uk> wrote:
>
>>In article <3afb38ec.34743138@news.compuserve.com>, Dave
>><noname@aol.com> writes
>>>Hi,
>>>
>>>Does anyone know where I can find information on the impedance
>>>transformation that occurs when a balun is operated in the
>>>presence of high SWR? I note that the ARRL Handbook is silent on
>>>this point, simply stating that "loads with reactive components
>>>should use appropriate networks to cancel the reactance." So I
>>>take it that a 4:1 balun does not just divide the twin lead
>>>impedances by 4.
>>>
>>>I am specifically interested in feeding a non-resonant doublet
>>>with twin lead, at QRP power, and want to get as much as possible
>>>out the antenna and not burned up in the feedline or balun.
>>>
>>>EZNEC gives a good idea of what the antenna impedance will be,

>>>and TLW takes that to the output of the transmatch, but I can't
>>>find any info on transforming that impedance through the balun to
>>>the actual matching network.
>>>
>>>Thanks,
>>>
>>>Dave
>>>AB9CA
>>>
>>Hi Dave
>>
>>I use a 67 ft doublet with 18ft of 600 ohm open wire line. A 1:1 balun
>>is connected to the QRP rig and a balanced L network matches the
>>impedance at the Tx end of the feeder to 50 ohms.
>>
>>Estimate the antenna impedance at the operating freq., calculate the Z
>>at the input end of the feeder then calculate values of L and C in the
>>network.
>>
>>You will need to adjust L & C values a little to optimise, but the
>>networks I use for 80 and 40 m. give a perfect match for CW operation.
>>Reckon that the network losses are lower than those for a T network.
>>
>>It works well - try it!
>>
>>73s
>>
>>John G3EGQ Cornwall
>>
>>--
>>john griffen
>
Hi again Dave, tks your comments.

Here are the design details that were used......

67 ft doublet, assumed feedpoint Z 20 - j 1200 ohms.

At end of 18 ft of 611 ohm open wire line impedance calculates to 6.7 -
j 492 ohms (freq. 3.560 MHz, QRP CW chan).

One needs to match this Z to 50 + j 0 ohms.

For a bal. L network, series L in each leg needs to cancel the - j 246
ohms then one matches 6.7 + j 0 ohms to 50 + j 0 ohms using extra L and
a shunt C.

A shunt C value of 2250 pF was indicated. made up of a fixed and a large
value preset capacitor.

Adjustment of turns spacing on the coils and of C gave a perfect match.

I had previously found that the MFJ tuner with its 4:1 balun and T match with this antenna was very inefficient at this freq. The L match works well and ant. performance agrees with that expected from a shortened doublet, just a few dB down on a full halfwave.

Hope this helps.

73 s

John Griffen G3EGQ

Cornwall

--
john griffen

4141. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 00:05:42 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0315D6.E7490995@IEEE.org>
Source record: 162840

Walter Maxwell wrote:
> Finished off Steve and Walt? Steve perhaps, but not me.

It was not my intention to finish off anybody. It was my intention to learn something new.

> On reviewing the section on fields and the Poynting vector in Reflections it
> suddenly dawned on me that we should have been analyzing the changes in the
> electromagnetic fields.

That's what I was doing, Walt, and called it electromagnetic energy.

> Let's return now to the example of the 50-ohm line terminated in a 3:1 mismatch,
> 100 watts of source power, and matched at the line input with a totally
> re-reflecting mismatch to the rearward-traveling waves.

This is where I ask you to define "re-reflection". Do you consider destructive interference to be included in "re-reflection"? If so, I agree with you. If not, we can discuss it after you return from Dayton. BTW, have a load of fun while you're at Dayton.

> It is well known that when the forward wave encounters a short-circuit
> termination the voltage goes to zero, causing the electric field to collapse.
> The changing electric field causes the magnetic field to increase in the amount
> of energy contained in the electric field, causing the magnetic field to double.
> The change in the magnetic field establishes a new current, launched rearward
> and establishing the reflected wave.

Yep, that's what happens at a short-circuit. IMO, something additional happens with destructive interference.

> The Poynting vector reverses direction from -Z to +Z
> and the reversed 33.33 watts in the magnetic field adds to the electromagnetic
> field delivered by the source.

This is true, but IMO, it is a two step process. The Poynting vector also reverses when there is destructive interference in a primarily one-dimensional conducting medium, like a wire. I think there's 8.33 watts re-reflected outright and 25+25 watts that reverses direction because of the destructive interference.

> It is thus evident that it is power that adds directly, not voltage. It is also
> evident that both the E and H fields don't go to zero simultaneously. Therefore,
> voltage and current cannot both go to zero simultaneously.

Speaking *ONLY* of the voltages and currents involved in the destructive interference action, those two voltages and those two currents do go to zero simultaneously.

> The virtual short to reflected waves exists at the matching point because two
> sets of reflected waves traveling in the same direction where their voltages
> are of opposite polarity and their currents are in phase at the matching point.

This is where I'll have to disagree. The phasors don't come out correctly
that way. I wanted them to and I beat my head against a brick wall trying
to get them to come out that way, but I failed. Without destructive interference
included in the virtual short, it seems to have an inconsistency.
--
http://www.mindspring.com/~w6rca

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4142. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 00:17:58 UTC
From: w2du@iag.net
Message-ID: <3b03142d.7161057@news.journey.com>
Source record: 162841

On Wed, 16 May 2001 21:48:17 GMT, kb7qhc@home.com (Richard Clark) wrote:

>On Wed, 16 May 2001 20:06:01 GMT, w2du@iag.net (Walter Maxwell) wrote:
>
>>It is thus evident that it is power that adds directly, not voltage.
>
>Hi Walt,
>
>This is entirely the problem. You make a bald statement as though it
>were fact. I have had correspondence with many who do not wish to
>participate in these "debates" and one sent me a treatment on Modeling
>the Quarter Wave Transformer (which I promptly re-distributed). His
>work reveals the standard solution all the while perfectly in balance
>with adding voltage AND currents throughout the entire system. Of the
>11 pages of hard copy in front of me, he offers the discussion of
>power late in the paper to occupy only half a page. And guess what,
>it satisfactorily presents the ever abused conservation of energy in
>(again) standard form (rather than these absurdities by parts).

Richard, where did you distribute it? Was it to a limited list of recipients? I was not aware the treatment, but I would certainly like to have been.

And are you saying my latest post an absurdity?

My treatment of reflections from the viewpoint of fields is not my original work. I took if from several engineering texts on transmission line theory, including Sarbacher and Edson. Please tell me what principle(s) I have stated incorrectly.
>
>Your statement above is not true. Why? For any number of reasons
>perhaps (like the lack of an authoritative citation much less the
>exact criteria by which you stand by this statement).

I don't consider myself Einstein or J.C.Maxwell, but do all concepts require authoritative citation to stand up? Are there no concepts authoritative unless someone else says they are? Who did J.C.Maxwell cite to make his discoveries authoritative, other than Hertz who later proved them empirically? I know Maxwell (JC) was criticized by some of his peers, but not all of them.

> Foremost, when
>I review the standard texts on SWR, ALL of them employ both voltage
>and current math NOT power math. In fact, power is the least
>consideration for many of the examples offered; and power is rarely
>expressed to then be rendered into volts and amps.

Are you discussing SWR measurements or forward power?
>
>One of the most ferocious brain knots I've encountered is this notion
>of virtual shorts that exist through the combination of waves that
>finds a solution (the virtual short) at only one point in the
>continuum. This absurdity is beyond explanation (too often it has
>been offered and defended as another fact not requiring proof). This
>may be a problem of your presentation, because I do have experience
>with real shorts generated by waves (a classical example is the
>waveguide junction with choke joints). You may, or may not,
>characterize these as Virtual Shorts, I have experienced them as Real
>Shorts. Waveguide literature is rich with such examples, and more,
>and their descriptions encompass far less rhetoric (and are far more
>approachable).

OK, are the Virtual shorts you experience as Real physical shorts? Of course not. Then why do you consider my description as absurd? Can you show me mathematically why it's absurd?

> Walt, if your treatment
>cannot find a solution to one of Steve's quizzes (and simply rejecting
>him is NOT satisfactory) I would offer what value does it have even as
>an informal instruction? There are some here who stand by you in
>faith, but even so, testimonials are not proof either.

Richard, if you think I didn't answer any of Steve's quizzes correctly you didn't see them all.

I'm leaving for Dayton in early morning so I won't be able to continue this discussion until Monday. In the meantime, take care

Walt, W2DU

4143. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 00:27:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B031AED.111619FA@IEEE.org>
Source record: 162842

Richard Clark wrote:
> I have had correspondence with many who do not wish to
> participate in these "debates" and one sent me a treatment on Modeling
> the Quarter Wave Transformer (which I promptly re-distributed). His
> work reveals the standard solution all the while perfectly in balance
> with adding voltage AND currents throughout the entire system. Of the
> 11 pages of hard copy in front of me, he offers the discussion of
> power late in the paper to occupy only half a page. And guess what,
> it satisfactorily presents the ever abused conservation of energy in
> (again) standard form (rather than these absurdities by parts).

Richard, it's apparent you have misunderstood the point that Walt and
I are trying to make. (So has almost everyone else.) We are not saying
that the voltages and currents don't add up because it's obvious that
they do add up. What we are saying is that there *MUST* be enough energy
to support those voltages and currents or else they would not have the
values known to exist. The question is: Where exactly is that energy?
Seeking out the underlying energy that makes those voltages and currents
possible is what this discussion is all about. Sorry if that wasn't clear.
Steve's assertion that 75 joules plus 8.33 joules equals 133.33 joules
was the trigger that started the discussion and I haven't noticed you
or anyone besides Steve arguing that 75 joules plus 8.33 joules equals
133.33 joules. He is simply confused on that one issue and that is the
single point of argument that I have with him.

If you add a 100w signal to another 100w signal in the coax, you cannot
get 400w out of the sum of those two signals. You get 200w out of that addition.
If each voltage is 70.71v and each current is 1.414a (in phase) then the sum
of those two 100w signals *CANNOT* be 141.4v and 2.828a (in phase) because
that would be 400 watts. V*V*I*I*cos(zero) doesn't work unless there is
enough underlying energy to support those values. That the underlying energy
is hardly discussed at all is a major part of the problem we are discussing.

None of my textbooks say 75 joules plus 8.33 joules equals 133.33 joules.
When Steve said that, he simply got carried away and I called him on it.
His voltages are correct and his currents are correct but his energy is
not correct. I went hunting for his missing 50 joules and found it exactly
where it needed to be.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4144. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 00:28:23 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B031B27.58AC61BB@IEEE.org>
Source record: 162843

Roger Sparks wrote:
> It makes an interesting point about the inversion of reflected power related
> to ratio of Zo and load.

What's the real-world Z0 for DC?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4145. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 00:32:58 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B031C3A.A6F038F5@IEEE.org>
Source record: 162845

Richard Clark wrote:
> If you aren't part of the solution, you are part of the problem.

Well, following that logic, you are obviously part of my daughter's problem. Please be part of the solution and pay her rent.

Richard, part of state's rights is the right to screw up. California screwed up big time. Wonder how all the environmentalist whackos are going to enjoy burning trees to keep warm? - you know, the ones they have been hugging?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

4146. Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 00:32:59 UTC
From: w2du@iag.net
Message-ID: <3b031bd0.9116879@news.journey.com>
Source record: 162844

Cecil, it was Peter, not you, who finished us off.

See you after Dayton.

Walt

4147. army style 'big-stick' CB Ant available

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 00:45:21 UTC
From: Tacamo <Tacamo110_NOSPAM_@yahoo.com>
Message-ID: <BaFM6.93420$%K2.13465918@typhoon.nyroc.rr.com>
Source record: 162846

I have a Shakespeare army style 'big-stick' antennae for sale. It's still up by the trailer, and I just plugged in the CB and it's works great!

$60 you take it down, I can't get up the ladder.
Southern Tier NY area

4148. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 00:56:30 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3B0321BE.F0EE1EC3@bwcc.com>
Source record: 162847

W6RCecilA wrote:
> Not only that, reflections were occurring
> from the large waves hitting the shore and forming small waves that
> moved back out toward the ocean right through the large waves. I know,
> I've watched it for hours with my own eyes.
>
> What was astounding to me the first time I witnessed it is that those
> small waves would meet the large waves head on and completely disappear
> from view - only to reappear, undisturbed, on the ocean side of the large
> waves still headed out from the beach.
I wouldn't say "undisturbed".
But you are right about the phenomenon.

4149. Re: TGM comms MQ1 minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 01:57:09 UTC
From: k4ia@aol.com
Message-ID: <20010516215709.02981.00000118@ng-fd1.aol.com>
Source record: 162848

Andy

check out the reviews on eham.net

I am very happy with mine and will send you an email with a picture of the installation. It is a very nice antenna for the size.
Radio K4IA
Buck
Fredericksburg, Virginia USA

REAL CHEAP Long Distance 4.9 cents/min Interstate and REAL CHEAP Intrastate, International, Toll Free, Callback, Calling Cards, Pagers and more Tune to http://www.ld.net/?bucksavers

4150. Re: "Reflections" on law enforcement

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 02:15:38 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dvc7f$8hc$1@nntp9.atl.mindspring.net>
Source record: 162849

Wes:

I know! The devil made you do it, heh, heh.

-Peter K1PO

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
news:3b01b798.79098302@news.aepnet.com...
> On Tue, 15 May 2001 00:44:40 -0400, "N3VST" <not@chance.com> wrote:
>
> >What in the Sam hell does this have to do with radio, or antenna's.(sic)
Sounds
> >like more than just his ISP has some problems to work out.
>
> Nothing to do with antennas. Just a test to see how many lurkers would
find it
> irresistible to post a comment about an off-topic thread. Works every
time<g>.
>
>

4151. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 02:26:17 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B0336C9.85349DA4@spam.me.not>
Source record: 162850

Today I got the chance to borrow an analyzer from a friend, and I put it
on the antenna... What a surprise I got!

The way it was set up, the impedance at the best SWR was 75 ohms.... so
I made a couple of changes.

First, I bent the ground planes down to about 40 degrees. This caused
the resonant frequency to go up, but brought the impedance down... So I
trimmed my radiating element to try to bring the SWR down...

According to the analyzer:
at 144.000 the impedance is now 50 ohms, with a 1.2:1 SWR
at 146.000 the impedance is now 40 ohms, with a 1.02:1 SWR
at 148.000 the impedance is now 50 ohms, with a 1.2:1 SWR

Another surprising finding is that the antenna SWR 3:1 or better from
130.000 to 175.000.

I've checked these against the SWR meter, as well, with the same
results. I've also put the antenna up a few more feet on some poles I
have. I can now hit the Fenton repeater without any static on 7 watts.

I've also heard reports that my audio is now much better from the base
station, so I don't have to adjust the deviation or mic gain on the
radio... the problem was the antenna...

I'll be posting new pictures and details of what happened on the webpage
when I get the chance to.

73 de KC8RKQ

Sideband wrote:
>
> Brian:
>
> Thanks. All I have right now is the 2M set. I'm a new HAM. Haven't even
> had my callsign a week yet, but I'm working on it.
>
> I'll check that one out for when I have the time/money/space/radio to
> hit other bands.
>
> 73 de KC8RKQ
>
> KA6PFE wrote:
> >
> > Another antenna you might want to tackle is a J-POLE. Look up a version
> > called a 'Copper Cactus', it's a multi-band version that might work well in

> > your environment.
> >
> > Congrats on your antenna.
> >
> > 73
> > Brian
> > KA6PFE

4152. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 02:29:35 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dvd1l$50r$1@slb7.atl.mindspring.net>
Source record: 162851

Cecil:

Add modulations eh...

That's the way group delay measuring sets work. Not many North American instrument makers got/get it right.

But the Germans were good at it. I especially liked the Wandell and Golterman LD2 sets...

The use a "split" frequency technique, i.e. a DSB SC signal, an amplitude modulation with two tones spaced by an increment of frequency, call it delta f, the "split", then the LD receiver measured the differential phase difference delta phi between the two frequencies delta f apart, and then presented on the meter faces an approximation to the group delay as:

approximate group delay = delta phi/delta f

The theoretical group delay is the negative derivative of the phase shift with respect to frequency. And represents the "average delay" of a small group of frequencies near the frequency in question. This is of course different than the phase delay.

The W&G group delay test sets placed a transmitter on one end of a transmission line and a separate receiver on the other end. The two ends could be hundreds or even thousands of miles apart. Most of the work I did with them, used the TX and RX in the same lab, just a few feet apart, heh, heh.

It's pretty hard to measure absolute phase shift on a transmission line from DFW to LAX... but group delay is a slam dunk.

Such modulation techniques can be used for "determining" echos as you have indicated.

Still and all, the equations of reflection mechanics work perfectly well for DC.

Why do you keep resisting this thought?... i.e. I get the feeling from your responses that you don't think that reflection mathematics works for DC.

Try it, it certainly does. And the calculations are simpler. And you have something to learn by applying them.

A DC VSWR... "no problem, soon come!"

Best,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B02BB8A.7D7631A7@IEEE.org...
> "Peter O. Brackett" wrote:
> > Those effects and formulae, do not stop being valid at some lower
frequency,
> > they do not stop being valid if a transmission line is only a very small
> > fraction of a wavelength, etc...
>
> Just be sure to hang some modulation on the signals so you can keep track
> of where they go, where they come from, and where they've been. What is
> the equivalent of TV ghosting at DC?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4153. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 02:31:58 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dvd62$5u1$1@nntp9.atl.mindspring.net>
Source record: 162852

Cecil:

Half Moon Bay, Pilar Point...

I've seen those dish antennas out there on the point many times. I've often wondered what they are for.

I surmised it was part of the instrumentation for the Pacific missile test range... Vandenberbg to Kwajalein... but I don't know
it could be a deep space station.

Any ideas?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3B02BDA2.64CCB25D@IEEE.org...
> "Peter O. Brackett" wrote:
> > Ever been up to where the "mavericks"are... that's just a little North of
> > Half Moon Bay. The "mavericks" are waves that occur because of an offshore
> > "shoal". That location is supposed to have the worst/best breaking waves on
> > the whole West coast, according to my "surfer" son. They are really
> > challenging waves for surfers. Almost as good as the North Coast in the
> > Hawian Islands.
>
> Yep, I think that's fairly close to the lighthouse on Pillar Pt., if I
> remember correctly. Fitzgerald's Marine Reserve is a little North of the
> surfers. I think it's around Moss Beach.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

4154. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 02:40:17 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dvdlo$v75$1@slb7.atl.mindspring.net>
Source record: 162853

Roger:

I had a look at that WWW site... by golly you are right.

I no longer fell that I am not a lone heretic... others have recognized that all the equations of reflection mechanics also work at DC!

Thanks for that input.

-Peter K1PO

"Roger Sparks" <sparksrc@home.com> wrote in message news:bvCM6.14682$p33.255472@news1.sttls1.wa.home.com...
>
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> news:9dsqkvnon1@slb0.atl.mindspring.net...
> > Cecil
> >
> > What if those Joules are not "real" but are ficticious? Do they then have
> > to add up?
> >
> > BTW... now that you've finished off Steve and Walt, how about looking at
> the
> > reflected DC power in my mismatched DC circuit and explain where it comes
> > from and what it has to do with conservation of energy.
> >
> > -Peter K1PO
> >
> >
> Hello Peter,
>
> I ran across this link http://www.wenzel.com/documents/swr.html
> today. Noticed it talked about DC reflections.
>
> It makes an interesting point about the inversion of reflected power related
> to ratio of Zo and load.
>
> 73, Roger, W7WKB
>
>

4155. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 02:42:28 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dvdpofst1@slb3.atl.mindspring.net>
Source record: 162854

Cecil:

DC Zo is the same as AC Zo, why would it be any different?

Strictly determined by the distributed primary parameters of RLCG per unit length, and the standard formula for Zo.

It can be evaluated at all frequencies except infinity. Zero frequency is a slam dunk.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3B031B27.58AC61BB@IEEE.org...
> Roger Sparks wrote:
> > It makes an interesting point about the inversion of reflected power related
> > to ratio of Zo and load.
>
> What's the real-world Z0 for DC?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4156. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 02:43:44 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dvds4$5do$1@slb0.atl.mindspring.net>
Source record: 162855

Cecil:

Now there's a thought... Pictures on USENET NG's... I wonder when that will happen?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3B02BA46.A7A70A09@IEEE.org...
> "Peter O. Brackett" wrote:
> > Thanks, I have never read that "tome", nor do I have a copy.
>
> He has a very good and understandable description of how reflections
> build up to steady-state through the transient process. It includes
> diagrams which are worth a thousand newsgroup words.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

4157. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 02:46:59 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9dve28qah1@slb6.atl.mindspring.net>
Source record: 162856

Walter:

Heh, heh... I'm too old to be finishing anyone off...

It must have been Cecil.

Cecil is like the referee under Marquis of Queensbury Rules, he tried to keep ringing the bell and bringing Walt and Steve back into the ring, round after round, until someone yelled "I quit".

Fun... but only for the spectators.

-Peter K1PO

.

"Walter Maxwell" <w2du@iag.net> wrote in message news:3b031bd0.9116879@news.journey.com...
> Cecil, it was Peter, not you, who finished us off.
>
> See you after Dayton.
>
> Walt
>

4158. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 02:53:58 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <c7b6gtkifo8gga5sdi9ev7p2amn4ic9b08@4ax.com>
Source record: 162857

On Thu, 17 May 2001 00:17:58 GMT, w2du@iag.net (Walter Maxwell) wrote:

>On Wed, 16 May 2001 21:48:17 GMT, kb7qhc@home.com (Richard Clark) wrote:
>
>>On Wed, 16 May 2001 20:06:01 GMT, w2du@iag.net (Walter Maxwell) wrote:
>>
>>>It is thus evident that it is power that adds directly, not voltage.
>>
>>Hi Walt,
>>
>>This is entirely the problem. You make a bald statement as though it
>>were fact. I have had correspondence with many who do not wish to
>>participate in these "debates" and one sent me a treatment on Modeling
>>the Quarter Wave Transformer (which I promptly re-distributed). His
>>work reveals the standard solution all the while perfectly in balance
>>with adding voltage AND currents throughout the entire system. Of the
>>11 pages of hard copy in front of me, he offers the discussion of
>>power late in the paper to occupy only half a page. And guess what,
>>it satisfactorily presents the ever abused conservation of energy in
>>(again) standard form (rather than these absurdities by parts).
>
>Richard, where did you distribute it? Was it to a limited list of recipients? I
>was not aware the treatment, but I would certainly like to have been.

I will post it to you. I am sure the author would appreciate
comments.
>
snip
>
>Are you discussing SWR measurements or forward power?

I responded to exactly ONE line, repeated here:
>>>It is thus evident that it is power that adds directly, not voltage.
which statement is in direct contradiction of:
"Antenna Impedance Matching," Wilfred Caron, ARRL
"Transmission Lines," Robert Chipman, Schaum's Outline Series
"Waves on Transmission Lines," HP Application Note 16
and I cite these only because they are at hand from reviewing other
correspondence.
>>
>>One of the most ferocious brain knots I've encountered is this notion
>>of virtual shorts that exist through the combination of waves that
>>finds a solution (the virtual short) at only one point in the
>>continuum. This absurdity is beyond explanation (too often it has
>>been offered and defended as another fact not requiring proof). This

>>may be a problem of your presentation, because I do have experience
>>with real shorts generated by waves (a classical example is the
>>waveguide junction with choke joints). You may, or may not,
>>characterize these as Virtual Shorts, I have experienced them as Real
>>Shorts. Waveguide literature is rich with such examples, and more,
>>and their descriptions encompass far less rhetoric (and are far more
>>approachable).
>
>OK, are the Virtual shorts you experience as Real physical shorts? Of course
>not. Then why do you consider my description as absurd? Can you show me
>mathematically why it's absurd?

You've rather got the shoe on the wrong foot. If you cannot describe
the phenomenon better, it remains absurd. I have already offered a
workaday example quoted above of wave interference that does present a
short - virtual or otherwise. It is a staple of the topic. I have
used double-stub tuners to flatten lines and these practical
applications are not academic to me. You have a willing audience in
me, Walt; but my critic says you are playing to the wings.

73's
Richard Clark, KB7QHC

4159. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 02:57:23 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3B033E13.764FF74C@bwcc.com>
Source record: 162858

Richard Clark wrote:
> I will post it to you.
Would you be allowed to publish it on your website?

4160. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 03:13:21 UTC
From: Jeff Hasz <jhasz@home.com>
Message-ID: <990069201.338877252@news.bremtn1.wa.home.com>
Source record: 162859

On Wed, 16 May 2001, Richard Clark wrote:
>On Tue, 15 May 2001 23:14:16 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
>wrote:
>
>>"Peter O. Brackett" wrote:
>>> Cecil and Walt, and Steve are all getting a way too fancy! No one needs any
>>> of that complicated stuff... to "formal" dealing with all of that
>>> "ficticious" power.
>>
>>Peter, California is having rolling blackouts because of people like you
>>who believe power companies don't generate power and therefore cannot get
>>paid for generating power. :-)
>
>Hi Cecil,
>
>Actually, it's the "White House Effect" where the platitudes and
>ignore-the-problem-and-it-will-go-away is the "fiction" of power.
>
>73's
>Richard Clark, KB7QHC

Tsk, tsk, Richard. you know that California's problems began long before the current occupant of the White House, and in reality have very little to do with what goes on on the other side of the country.

California's problems began when the NIMBYs moved there... (which, as you know, is one reason I left!)

But then I also left because it became such a pain to put up an antenna that would accept and radiate *any* power, forward, reverse, up, down, back, left, right, real, imagined, or apparent... at any phase of voltage/current

Jeff
KB9GF/7

4161. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 03:19:51 UTC
From: w2du@iag.net
Message-ID: <3b0340c6.18578614@news.journey.com>
Source record: 162860

On Thu, 17 May 2001 02:53:58 GMT, Richard Clark <kb7qhc@home.com> wrote:

>>
>>Richard, where did you distribute it? Was it to a limited list of recipients? I
>>was not aware the treatment, but I would certainly like to have been.
>
>I will post it to you. I am sure the author would appreciate
>comments.

Fine, but I won't have a chance to see it until I return from Dayton.
>>
>snip
>>
>>Are you discussing SWR measurements or forward power?
>
>I responded to exactly ONE line, repeated here:
>>>>It is thus evident that it is power that adds directly, not voltage.
>which statement is in direct contradiction of:
>"Antenna Impedance Matching," Wilfred Caron, ARRL

I have Caron, but it's still in Florida

>"Transmission Lines," Robert Chipman, Schaum's Outline Series

I have Chipman here in Michigan. What pages are you referring to? I'll review it
when I return.

>"Waves on Transmission Lines," HP Application Note 16

I also have this, but it too is in Florida.

>and I cite these only because they are at hand from reviewing other
>correspondence.

>>
>>OK, are the Virtual shorts you experience as Real physical shorts? Of course
>>not. Then why do you consider my description as absurd? Can you show me
>>mathematically why it's absurd?
>
>You've rather got the shoe on the wrong foot. If you cannot describe
>the phenomenon better, it remains absurd. I have already offered a
>workaday example quoted above of wave interference that does present a
>short - virtual or otherwise. It is a staple of the topic. I have
>used double-stub tuners to flatten lines and these practical
>applications are not academic to me.

I confess to having limited experience with waveguides, my work was all at lower frequencies. However, I have also used double-stub tuners. But are you saying there is no element of wave reflection occurring in these tuners? If you are, then I don't agree.

>You have a willing audience in
>me, Walt; but my critic says you are playing to the wings.

I just got a beep that told me your email with Bill Klocko's paper came in. Bill and I have had discussions on this point, but we did not agree. I'll take a copy of his paper and study it on the plane.

Thanks Richard, I'll C U later.

Walt

4162. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 03:28:03 UTC
From: noname@aol.com
Message-ID: <3b03450b.46036558@news.compuserve.com>
Source record: 162861

I posted this about 3 days ago, but it hasn't shown up yet so
will repost.

Hi Tom,

>Why would anyone care if the balun had a transformation ratio? The
>impedance is all over the place!

One of the reasons for posting this question is that I have been
trying to calculate the L and C values needed for an antenna
tuner. To do this the impedance seen by the tuning network must
be known. I can get a rough idea of the impedance at the input
to the feedline through EZNEC and TLW. But the balun is between
the feedline and the network, and the balun is going to do
something to this impedance. If the impedance has little
reactance, the balun will - I presume - just divide it by the
impedance ratio, either 1, 4, or whatever. But if the reactance
is high? Well, that is my question.

>Second point, moving the balun to the input of the tuner does nothing
>to improve balance of the system.

Doesn't this depend on whether or not the transmatch is designed
to accept unbalanced feed? If it is designed to accept only
balanced feed than the unbalanced output of the xmit needs to be
isolated from ground, doesn't it?

>I measured some a year or so ago. The soil around the feeder just
>killed the feedline, making it very high loss. That was true even
>though I fished the feedline through large plastic (PVC) conduit.
>

This is not good news. If the balanced feedline loss goes way up
when lying on the ground, it makes the whole exercise moot.

73
Dave
AB9CA

On Sat, 12 May 2001 09:58:51 GMT, 2w8ji@contesting.com (Tom W8JI)
wrote:

>>That is a comment I have seen other places. Unfortunately the
>>folks who make most of the antenna tuners appear to ignore that
>>advise. I know that the balun in my MFJ 949E is the voltage
>>variety.

>
>Yes, while most tuners have current baluns the 949E has a voltage
>balun.
>
>>Since none of the low-loss parallel-conductor feeder cable
>>happens to be 50 ohms, the only solutions would involve some
>>feeder arrangement the avoids a balun entirely? Either an honest
>>to gosh balanced-line transmatch, with a balun between the xmit
>>and the transmatch; or a length of impedance matching feeder.
>>What other ways are there to eliminate the balun (or high SWR on
>>the balun)? These are the only two I know of.
>
>There is an incorrect but common assumtion the balun ratio has
>something to do with feedline design impedance. The impedance at the
>end of a 450 ohm line feeding a typical multiband dipole is almost
>never 450 ohms. It varies from a few ohms to many thousands of ohms.
>
>Why would anyone care if the balun had a transformation ratio? The
>impedance is all over the place! What you want is a wide-range balun,
>and that is a 1:1 choking-type balun.
>
>Second point, moving the balun to the input of the tuner does nothing
>to improve balance of the system. If the tuner is a grounded center
>true symmetrical tuner it can help balance, but most tuners are not
>built that way. If they are constructed as a symmetrical grounded
>center matching system, they are voltage-type balanced systems...and
>that is undesirable anyway.
>
>I leave my baluns on the output, because it is cheaper and better that
>way.
>
>>>How much power are you going to run, and what type of antenna system?
>>
>>Power level is QRP (I'm trying to conserve milliwatts here!) and
>>the antenna will be something portable. Either a doublet or
>>vertical. They each have their pros and cons.
>
>Ahhh, then you task is more simple. You just need to scale down the
>balun size I use while maintaning a high impedance. The balun in your
>tuner can be rewired as a 1:1 choke balun, but I'd stack a few more
>cores and use a higher voltage wire.
>
>>On a related thought, did I not see a comment on another thread
>>about your having looked into the effects of running parallel
>>conductor cable on or slightly under the ground? My plans are to
>>throw the twin lead feeder on the ground to run to the antenna
>>(about 50'). I don't envision that this will have much effect on
>>the feeder losses.
>
>I measured some a year or so ago. The soil around the feeder just

>killed the feedline, making it very high loss. That was true even
>though I fished the feedline through large plastic (PVC) conduit.
>
>I don't have the numbers now, but it was pretty bad.
>
>73 Tom

4163. Re: Balun with high SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 03:28:06 UTC
From: noname@aol.com
Message-ID: <3b034531.46075183@news.compuserve.com>
Source record: 162862

I posted this about 3 days ago, but it hasn't shown up yet so
will repost.

Hi Cecil,

>Take a look at my All-HF-Band-Antenna (dipole) on my web page to
>see how I do it.

Without knowing that it was your's, I have already done that.
That is a very interesting antenna arrangement. Looks like it
ought to work fine.

After downloading and studying your page I ran some of the
antennas I am pondering through TLW looking for the low impedance
points. They are there all right. At 7 MHz it was about 58'
out, and at 14 MHz it was 43', and so on. I guess that so long
as the reactance is near zero and the resistance is between 25
and 100, the SWR seen by the coax ought to be less than 2:1.
Most xmiters will work OK with that.

But Tom mentions that lying twin lead on the ground - which is
what I was planning on doing since these are portable antennas -
will make the loss go way up. How much "way up" is, I'm not sure,
but it doesn't sound good. I would have to keep the feedline off
the ground or go to a resonant coax-fed antenna. Running a
portable vert and keeping the feedline off the ground is pretty
tough. Oh, well, something more to ponder. . .

Maybe its back to a long wire slung in the trees.

Thanks for your thoughts and time.

73,
Dave
AB9CA

On Sat, 12 May 2001 09:58:16 -0500, W6RCecilA
<Cecil.A.Moore@IEEE.org> wrote:

>Dave wrote:
>> So what happens in the event of the 3k+j3k that you mention?
>
>I don't know exactly what happens but the balun ceases to perform
>the balun function.
>
>There is an easy solution. Using 450 ohm ladder-line, the SWR for

>3k+j3k is about 13:1. From that 3k+j3k point on the ladder-line,
>if you back up 0.238WL, the impedance will be 34.6 ohm resistive.
>And if you add 0.262WL, the impedance will be 34.6 ohm resistive.
>This point is the current maximum point on the transmission line
>and it repeats every half wavelength.
>
>A 1:1 choke designed for 50 ohms will work reasonably well looking
>into 34.6 ohms. I vary the length of my ladder-line until my choke
>is operating at the current maximum point which is purely resistive.
>
>Take a look at my All-HF-Band-Antenna (dipole) on my web page to
>see how I do it.
>--
>http://www.mindspring.com/~w6rca
>
>
>-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
>http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
>-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4164. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 03:29:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B03459C.A151E669@IEEE.org>
Source record: 162863

"Peter O. Brackett" wrote:
> Why do you keep resisting this thought?...

I don't. Same-cycle reflection is simply not very useful.

> i.e. I get the feeling from your
> responses that you don't think that reflection mathematics works for DC.

Of course it works for DC. I waded through it years ago and don't care
to duplicate that effort.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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4165. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 03:35:54 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B03471A.A6366735@IEEE.org>
Source record: 162864

"Peter O. Brackett" wrote:
> I no longer fell that I am not a lone heretic... others have recognized that
> all the equations of reflection mechanics also work at DC!

Never said it didn't work, Peter. I said it wasn't very useful as a model
of reality.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4166. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 03:40:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B03482B.E98DFD11@IEEE.org>
Source record: 162865

"Peter O. Brackett" wrote:
> Now there's a thought... Pictures on USENET NG's... I wonder when that will
> happen?

Most browsers will display graphics, but embedding graphics in these ASCII postings violates netnews guidlines. What I do is upload the graphic to one of my web pages and post the graphic's URL on the newsgroup. I'm presently working on a phasor diagram graphic.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4167. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 03:41:55 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B034883.200E2DC6@IEEE.org>
Source record: 162866

"Peter O. Brackett" wrote:
> Cecil is like the referee under Marquis of Queensbury Rules, he tried to
> keep ringing the bell and bringing Walt and Steve back into the ring, round
> after round, until someone yelled "I quit". Fun... but only for the spectators.

Should we switch to Marquis de Sade rules? :-)
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4168. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 03:45:28 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B034958.9CF71D73@IEEE.org>
Source record: 162867

"Peter O. Brackett" wrote:
> DC Zo is the same as AC Zo, why would it be any different?

My coax and ladder-line show the same impedance at DC but not the
same impedance at 10 MHz.
--
http://www.mindspring.com/~w6rca

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4169. Re: TGM comms MQ1 minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 03:52:50 UTC
From: Ed Cregger <663jlm@vei.net>
Message-ID: <tg6ijta085baa7@corp.supernews.com>
Source record: 162868

Is this a new version of the Mini Products HQ-1? If so, it
really works.

No front-to-back to speak of, but the nulls on the sides are
useful. I wish I had kept my old HQ-1. Great for 20 meters
and above in a small space. Certainly better than a dipole
and with a smaller footprint.

Ed Cregger, NM2K
nm2k@my-deja.com

"K4IA" <k4ia@aol.com> wrote in message
news:20010516215709.02981.00000118@ng-fd1.aol.com...
> Andy
>
> check out the reviews on eham.net
>
> I am very happy with mine and will send you an email with
a picture of the
> installation. It is a very nice antenna for the size.
> Radio K4IA
> Buck
> Fredericksburg, Virginia USA
> ----------------------
> REAL CHEAP Long Distance 4.9 cents/min Interstate and REAL
CHEAP Intrastate,
> International, Toll Free, Callback, Calling Cards, Pagers
and more Tune to
> http://www.ld.net/?bucksavers

4170. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 05:25:48 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <whJM6.17367$p33.314816@news1.sttls1.wa.home.com>
Source record: 162719

Find it by Zo = 1/cC where Zo is the line impedance, c is the speed of light (meters per second), and C is the capacity in Farads.

73, Roger, W7WKB

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3B031B27.58AC61BB@IEEE.org...
> Roger Sparks wrote:
> > It makes an interesting point about the inversion of reflected power related
> > to ratio of Zo and load.
>
> What's the real-world Z0 for DC?
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4171. Re: Back to Basics (correction)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 05:34:06 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <ipJM6.17408$p33.316109@news1.sttls1.wa.home.com>
Source record: 162720

"Roger Sparks" <sparksrc@home.com> wrote in message
news:whJM6.17367$p33.314816@news1.sttls1.wa.home.com...
> Find it by Zo = 1/cC where Zo is the line impedance, c is the speed of
light
> (meters per second), and C is the capacity in Farads per meter

>
> 73, Roger, W7WKB
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3B031B27.58AC61BB@IEEE.org...
> > Roger Sparks wrote:
> > > It makes an interesting point about the inversion of reflected power
> related
> > > to ratio of Zo and load.
> >
> > What's the real-world Z0 for DC?
> > --
> > http://www.mindspring.com/~w6rca
> >
> >
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----
>
>

4172. 2 meter range???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 06:02:56 UTC
From: Matt <matt_patt123@yahoo.com>
Message-ID: <9dvouq01v7p@enews4.newsguy.com>
Source record: 162721

I know there is really no way of knowing but if I wanted to try to hit a repeater that was a little over 100miles aways from my location.. approx. how much wattage would I need to be pushing out and what kind of directional antenna would I need to be using..this is all on 2 meter of course. Or can it even be done? Thanks for all your replies.

Matt
KC5YTV

4173. Re: antenna analyzer comments

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 09:37:41 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9e064s$7i9$1@plutonium.btinternet.com>
Source record: 162722

Wes Stewart <nospam_n7ws@arrl.net> wrote in message
news:3b02983d.2804387@news.aepnet.com...
> On Wed, 16 May 2001 11:21:09 +0100, "Reg Edwards"
<g4fgq.regp@btinternet.com>
> wrote:
>
> >I use a miniature mains input, 12 volt DC output, power unit
> >plugged into the MFJ-259B external battery socket.
> >
> >The battery lead can be as long as you like. But wind a lot of
> >turns of the lead on a ferrite rod immediately adjacent to the
> >meter.
> >
> >Some people would call this a 1:1 balun but in fact it is just a
> >bifilar-wound choke. It allows measurements on balanced
components,
> >lines and equipment.
>
> I don't think so. How is this any different from an unbalanced
tuner driven by
> a transmitter + balun on the input. Roy and Kevin have explored
this at length.
==========

Wes, you, Roy and Kevin are quite correct. There is not the
slightest difference between them. They serve identical functions
in all applications. They are one and the same thing. But they are
known by different names.

Reg

4174. Re: 2 meter range???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 10:34:42 UTC
From: "M.J.Powell" <mike@pickmere.demon.co.uk>
Message-ID: <b$MkFUACl6A7EwUl@pickmere.demon.co.uk>
Source record: 162734

In article <9dvouq01v7p@enews4.newsguy.com>, Matt
<matt_patt123@yahoo.com> writes
>I know there is really no way of knowing but if I wanted to try to hit a
>repeater that was a little over 100miles aways from my location.. approx.
>how much wattage would I need to be pushing out and what kind of directional
>antenna would I need to be using..this is all on 2 meter of course. Or can
>it even be done? Thanks for all your replies.

What is the terrain in between?

Mike
--
M.J.Powell

4175. Re: 2 meter range???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 10:49:06 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <C0OM6.117453$2_.37516306@news3.rdc1.on.home.com>
Source record: 162723

Depends on conditions, I know in the fall, I can reach the TO repeater from here in Ottawa with 1/2 a watt into a jpole in my room, but other days with my 13.8dBd beam at a mere 25' and 50 out I can't talk simplex with the mobile more than 10km.

--
Rob St.Denis

"Matt" <matt_patt123@yahoo.com> wrote in message
news:9dvouq01v7p@enews4.newsguy.com...
> I know there is really no way of knowing but if I wanted to try to hit a
> repeater that was a little over 100miles aways from my location.. approx.
> how much wattage would I need to be pushing out and what kind of
directional
> antenna would I need to be using..this is all on 2 meter of course. Or
can
> it even be done? Thanks for all your replies.
>
>
> Matt
> KC5YTV
>
>

4176. Re: 2 meter range???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 11:23:11 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3B03B49F.89D54144@hiwaay.net>
Source record: 162724

Like the old story- it's Location-location-location. I have an interference problem with a repeater at about that distance, and have to change to a 1/4 w groundplane, instead of the Cushcraft vertical on the roof, if I want to keep omnidirectional and work the more local repeater (20 miles) in the opposite direction, but on the same frequency. This is with an HT (FT 530) at 5 watts. The two repeaters and I are on mountain tops, clear of major obstructions. It's not line-of-sight, but refraction helps.

With an "Arrow" antenna (Yagi), I have no problem selecting or rejecting either. If you are having a problem I would recommend a simple Yagi, up as high as feasible, to clear obstacles. This rules out Omnidirectional, but it's your choice.

Bill-W4BSG

Matt wrote:
>
> I know there is really no way of knowing but if I wanted to try to hit a
> repeater that was a little over 100miles aways from my location.. approx.
> how much wattage would I need to be pushing out and what kind of directional
> antenna would I need to be using..this is all on 2 meter of course. Or can
> it even be done? Thanks for all your replies.
>
> Matt
> KC5YTV

4177. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 11:26:38 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B03B56E.5B77@wt.net>
Source record: 162725

Sideband wrote:
>
> Today I got the chance to borrow an analyzer from a friend, and I put it
> on the antenna... What a surprise I got!
>
> The way it was set up, the impedance at the best SWR was 75 ohms.... so
> I made a couple of changes.
>
> First, I bent the ground planes down to about 40 degrees. This caused
> the resonant frequency to go up, but brought the impedance down... So I
> trimmed my radiating element to try to bring the SWR down...
>
> According to the analyzer:
> at 144.000 the impedance is now 50 ohms, with a 1.2:1 SWR
> at 146.000 the impedance is now 40 ohms, with a 1.02:1 SWR
> at 148.000 the impedance is now 50 ohms, with a 1.2:1 SWR
>
> Another surprising finding is that the antenna SWR 3:1 or better from
> 130.000 to 175.000.
>
> I've checked these against the SWR meter, as well, with the same
> results. I've also put the antenna up a few more feet on some poles I
> have. I can now hit the Fenton repeater without any static on 7 watts.
>
> I've also heard reports that my audio is now much better from the base
> station, so I don't have to adjust the deviation or mic gain on the
> radio... the problem was the antenna...
>
> I'll be posting new pictures and details of what happened on the webpage
> when I get the chance to.
>
> 73 de KC8RKQ

Thats kinda weird. Usually it works the other way around. In fact, I'm wondering if the instrument you were using was read backwards. You said the impedance was 75 ohms. I bet it was really about 35. That would be the norm. You adjusted the radials downward and said it lowered to 50 ohms. Again, it's usually backwards from that, lowering the radials should "raise" the impedance to about 50 ohms. Anyway, it's working..Thats the main thing. MK
--
http://web.wt.net/~nm5k

4178. Re: 2 meter range???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 12:26:21 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B03C36D.7D119B27@spam.me.not>
Source record: 162726

Speaking of location location location....

My little 1/4 wave 2M spider just surprised the heck out of me....

A gentleman in Petoskey, Michigan keyed up, on his repeater, and showed
full scale on my receive in Brighton. I keyed my repeater, and he was
able to receive me, full scale, up in Petoskey. The two repeaters are on
the same frequency, with different input PL's.

Was VERY neat.... ducting, I guess, is the answer there. But it was
still fun. ::grin::

73 de KC8RKQ

Bill Aycock wrote:
>
> Like the old story- it's Location-location-location. I have an
> interference problem with a repeater at about that distance, and have to
> change to a 1/4 w groundplane, instead of the Cushcraft vertical on the
> roof, if I want to keep omnidirectional and work the more local repeater
> (20 miles) in the opposite direction, but on the same frequency. This is
> with an HT (FT 530) at 5 watts. The two repeaters and I are on mountain
> tops, clear of major obstructions. It's not line-of-sight, but
> refraction helps.
>
> With an "Arrow" antenna (Yagi), I have no problem selecting or rejecting
> either. If you are having a problem I would recommend a simple Yagi, up
> as high as feasible, to clear obstacles. This rules out Omnidirectional,
> but it's your choice.
>
> Bill-W4BSG
>
> Matt wrote:
> >
> > I know there is really no way of knowing but if I wanted to try to hit a
> > repeater that was a little over 100miles aways from my location.. approx.
> > how much wattage would I need to be pushing out and what kind of directional
> > antenna would I need to be using..this is all on 2 meter of course. Or can
> > it even be done? Thanks for all your replies.
> >
> > Matt
> > KC5YTV

4179. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 12:34:48 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B03C568.464C9126@spam.me.not>
Source record: 162727

Mark:

Hrm... The MFJ analyzer I was loaned read rather easily. the needle meter on it is small, but the original reading, with the ground radials perpendicular to the radiator, was around 75 ohms. Bringing them down about 40 degrees brought the impedance down to 40 ohms on 146.0 and 50 on 144.0 and 148.0.

I'd hate to blame the equipment, especially considering Butch's rude, crude, and socially unacceptable comments previously in this thread...

Can you offer another explanation?

73 de KC8RKQ

Mark Keith wrote:
> Thats kinda weird. Usually it works the other way around. In fact, I'm
> wondering if the instrument you were using was read backwards. You said
> the impedance was 75 ohms. I bet it was really about 35. That would be
> the norm. You adjusted the radials downward and said it lowered to 50
> ohms. Again, it's usually backwards from that, lowering the radials
> should "raise" the impedance to about 50 ohms. Anyway, it's
> working..Thats the main thing. MK
> --
> http://web.wt.net/~nm5k

4180. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 12:59:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B03CB24.EEA5AEA4@IEEE.org>
Source record: 162729

Roger Sparks wrote:
> Find it by Zo = 1/cC where Zo is the line impedance, c is the speed of light
> (meters per second), and C is the capacity in Farads.

Speed of light and capacitance don't matter at DC steady-state.
--
http://www.mindspring.com/~w6rca

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4181. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 12:59:28 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B03CB30.EC5@wt.net>
Source record: 162728

Sideband wrote:
>
> Mark:
>
> Hrm... The MFJ analyzer I was loaned read rather easily. the needle
> meter on it is small, but the original reading, with the ground radials
> perpendicular to the radiator, was around 75 ohms. Bringing them down
> about 40 degrees brought the impedance down to 40 ohms on 146.0 and 50
> on 144.0 and 148.0.
>
> I'd hate to blame the equipment, especially considering Butch's rude,
> crude, and socially unacceptable comments previously in this thread...
>
> Can you offer another explanation?
>
> 73 de KC8RKQ
>
> Mark Keith wrote:
> > Thats kinda weird. Usually it works the other way around. In fact, I'm
> > wondering if the instrument you were using was read backwards. You said
> > the impedance was 75 ohms. I bet it was really about 35. That would be
> > the norm. You adjusted the radials downward and said it lowered to 50
> > ohms. Again, it's usually backwards from that, lowering the radials
> > should "raise" the impedance to about 50 ohms. Anyway, it's
> > working..Thats the main thing. MK
> > --
> > http://web.wt.net/~nm5k

Not really, as I've never used one of those things. But, the SWR would
be about the same for both examples. IE: 75 ohms to 50 ohms line/rig
would be 2:1 . Also 25 ohms is 2:1. Dunno, I think it was running
backwards for some reason. I just can't see a 1/4 wl GP with level
radials being 75 ohms. Normally it should be the classic 35 ohms or so.
And lowing the radials increases to 50 ohms or so. I've never seen it
work the other way. Maybe others have some ideas on this. MK
--
http://web.wt.net/~nm5k

4182. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 13:07:10 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e0id2$dh9$1@slb6.atl.mindspring.net>
Source record: 162730

Cecil:

Oh... ok, heh, heh...

I thought you were saying that the equations of reflection mechanics were
not applicable to DC. Instead you were just "messing" with me, eh?

I should have known better.

Well now that we have that out of the way...

Maybe we can see that "some" of the "reflected power" might just be
ficticious.

How about imaginary resistors? You OK with those too?

-Peter K1PO

Now that we have
"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B03459C.A151E669@IEEE.org...
> "Peter O. Brackett" wrote:
> > Why do you keep resisting this thought?...
>
> I don't. Same-cycle reflection is simply not very useful.
>
> > i.e. I get the feeling from your
> > responses that you don't think that reflection mathematics works for DC.
>
> Of course it works for DC. I waded through it years ago and don't care
> to duplicate that effort.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4183. Re: Inexpensive SWR meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 13:12:46 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9e0ioe$p49$0@208.206.142.111>
Source record: 162731

Find and buy a good Drake W4 and you can stop looking. They run around $65. Much better than the Bird 43 I used to own, which was only slightly more disappointing than the intermittant sucker I used at work (I spent about as much time working on it as anything else). Piece of junk, if they are the 'standard'.

Dick

kazering wrote:
>
> Well, inexpensive is a relative term. If it costs half as
> much but only lasts one-tenth as long, is it a bargain?.?.?
>
> I have a tentec model 1202. It comes as a kit(which was
> easy to build) that costs $59. It is good for both the HF
> bands and 2 meter VHF bands, with each band/power range
> requiring separate calibration. It also has two power
> ranges, 0-20 and 0-200. The kit was also a welcomed
> building project.
>
> see www.tentec.com/Tk1202.htm
>
> To calibrate you need to borrow someone else's ACCURATE
> power meter. Odds are you can find someone wanting to show
> off his BIRD......Hmmm, better be careful to specify WATTMETER.
>
> I calibrated mine to match the power meter on my rig (a
> Yaesu ft-840) so that I am comparing apples to apples (Not
> necessarily the actual power). It tracks the power meter on
> my rig from minimum power to 100 watts(or whatever the rig
> is really putting out). This way, when I am testing an
> antenna or coax run, I can put the power meter in line at
> the antenna end to see how much power is making it down the
> coax. Apples to apples.
>
> I've also heard good things about the Diawa meters, but they
> didn't fit my idea of inexpensive.
>
> 73,
> W4KAZ

4184. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 13:13:46 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e0ipf$7ra$1@slb7.atl.mindspring.net>
Source record: 162732

Cecil:

Z(DC) and Zo(10MHz) different? Are you sure? Heh, heh...

How did you measure it?

Apart from the sqrt(f) increase in R with frequency, of the four primary parameters R, L, C & G, on mine L,C & G stay about the same from DC to 10 MHz.

Of course I use DC coupled instrumentation to make the measurements at low frequencies.

What did you use? MFJ-259 or...

With that instrument, "how low can you go"?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3B034958.9CF71D73@IEEE.org...
> "Peter O. Brackett" wrote:
> > DC Zo is the same as AC Zo, why would it be any different?
>
> My coax and ladder-line show the same impedance at DC but not the
> same impedance at 10 MHz.
> --
> http://www.mindspring.com/~w6rca
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4185. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 13:16:06 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e0itq$4ov$1@slb3.atl.mindspring.net>
Source record: 162733

How about... Marquis de "Reflections"

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B034883.200E2DC6@IEEE.org...
> "Peter O. Brackett" wrote:
> > Cecil is like the referee under Marquis of Queensbury Rules, he tried to
> > keep ringing the bell and bringing Walt and Steve back into the ring,
round
> > after round, until someone yelled "I quit". Fun... but only for the
spectators.
>
> Should we switch to Marquis de Sade rules? :-)
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4186. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 13:33:16 UTC
From: Scotty Wright <wb5tla@msy.bellsouth.net>
Message-ID: <jiQM6.8806$3e.6264508@news3.mco>
Source record: 162735

It could be that SSB is usually horizontal polarized and FM is vertical
polarized. this would be especially true if it were a ground wave LOS
signal.
wb5tla k
<aduffy@sprint.ca> wrote in message news:3B02CC95.6CCB224A@sprint.ca...
> Might sound a little dumb, but I was wondering if a 2m J-Pole antenna
> was very good at SSB. I have excellent results on FM but but not much
> luck on SSB (which I know isn't very crowded at best and spuratic).
>
> 73,
> Tony
> VA3ATD
>

4187. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 13:43:28 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B03D580.C3B107AA@spam.me.not>
Source record: 162736

Mark:

Well, it can all be seen (no pics of the analyzer, though) at
http://www.csotbs.org/kc8rkq/coathanger2.html
Check it out, and let me know what you think.

73 de KC8RKQ

Mark Keith wrote:
>
> Sideband wrote:
> >
> > Mark:
> >
> > Hrm... The MFJ analyzer I was loaned read rather easily. the needle
> > meter on it is small, but the original reading, with the ground radials
> > perpendicular to the radiator, was around 75 ohms. Bringing them down
> > about 40 degrees brought the impedance down to 40 ohms on 146.0 and 50
> > on 144.0 and 148.0.
> >
> > I'd hate to blame the equipment, especially considering Butch's rude,
> > crude, and socially unacceptable comments previously in this thread...
> >
> > Can you offer another explanation?
> >
> > 73 de KC8RKQ
> >
> > Mark Keith wrote:
> > > Thats kinda weird. Usually it works the other way around. In fact, I'm
> > > wondering if the instrument you were using was read backwards. You said
> > > the impedance was 75 ohms. I bet it was really about 35. That would be
> > > the norm. You adjusted the radials downward and said it lowered to 50
> > > ohms. Again, it's usually backwards from that, lowering the radials
> > > should "raise" the impedance to about 50 ohms. Anyway, it's
> > > working..Thats the main thing. MK
> > > --
> > > http://web.wt.net/~nm5k
>
> Not really, as I've never used one of those things. But, the SWR would
> be about the same for both examples. IE: 75 ohms to 50 ohms line/rig
> would be 2:1 . Also 25 ohms is 2:1. Dunno, I think it was running
> backwards for some reason. I just can't see a 1/4 wl GP with level
> radials being 75 ohms. Normally it should be the classic 35 ohms or so.
> And lowing the radials increases to 50 ohms or so. I've never seen it
> work the other way. Maybe others have some ideas on this. MK

> --
> http://web.wt.net/~nm5k

4188. Re: 2 meter range???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 13:45:44 UTC
From: Scotty Wright <wb5tla@msy.bellsouth.net>
Message-ID: <_tQM6.8807$3e.6264513@news3.mco>
Source record: 162737

Matt
I was first a ham in New Mexico, there we had mountain top repeaters some over 150 miles away and was able to hit them with a half watt. It was line of sight. I now live in Louisiana, it is flat here and a 2mtr signal only goes about 30 or 40 miles to the horizon. However if there is a lot of humidity or temp inversion the signals may go a bit further. The key is to get the antenna high. Power and a directional antenna will help some, but a antenna in the top of a pine tree will work wonders. WB5TLA K
"Matt" <matt_patt123@yahoo.com> wrote in message news:9dvouq01v7p@enews4.newsguy.com...
> I know there is really no way of knowing but if I wanted to try to hit a
> repeater that was a little over 100miles aways from my location.. approx.
> how much wattage would I need to be pushing out and what kind of directional
> antenna would I need to be using..this is all on 2 meter of course. Or can
> it even be done? Thanks for all your replies.
>
>
> Matt
> KC5YTV
>
>

4189. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 14:02:32 UTC
From: hasan schiers <schiers@netins.net>
Message-ID: <9e0nc1$fl9v$1@ID-52642.news.dfncis.de>
Source record: 162738

Cross polarization loss, even line of sight, is at least 20 dB and could be as much as 40 dB. Vertical polarization for SSB work is a dead end, except for brief experiments. SSB on 2m and above is almost uniformly horizontally polarized, so you will need a different antenna for that mode.

...hasan

4190. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 14:28:27 UTC
From: richardharrison@webtv.net
Message-ID: <7162-3B03E00B-58@storefull-118.iap.bryant.webtv.net>
Source record: 162740

Cecil, W6RCA wrote:
"He (Walter C. Johnson) assumes the wall thikness is equal to the nominal depth of penetration."

Skin depth for a conductor is defined as the thickness in meters where the current has dropped to 1/e or 36.8% of the value on the surface of the conductor.

For copper, skin thickness is about 2.6/square-root of Hz for a result in inches. At one Hz, the skin depth is 2.6 inches. At 10 MHz, the skin thikness is 0.000826 inches, or less than one thousandth of an inch.

If Johnson uses one skin-depth as his shield thickness, that would be 0.826 thousandths of an inch at 10 MHz. An AWG 30 wire is 10 thousandths of an inch in diameter.

In an earlier post Bill sabin wrote: "In a coax, at any location, there is no voltge difference between the inside of the braid and the outside of the braid."

We know that at r-f, a braid performs nearly the same as a solid shield. Wires weaving between sides don`t carry the r-f with them as they weave between sides. Skin effect requires the current to remain on the same side of the braid.

But suppose we had tissue thin shielding on our coax. Say it was one skin depth thick. Only 36.8% of the current on one side would reach the other. If in the unlikely event that impedances were equal on both sides of the shield, 36.8% of the current would not produce 100% of the voltage appearing on the originating side.

Certainly, the statement that "there is no voltage difference between the inside of the braid and the outside of the braid" is very unlikely.

Experience tells us that a coax shield when properly connected is very effective in keeping r-f in or out, where it ought to be.

Best regards, Richard Harrison, KB5WZI

4191. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 14:37:29 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <JmRM6.19296$p33.346229@news1.sttls1.wa.home.com>
Source record: 162739

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B03CB24.EEA5AEA4@IEEE.org...
> Roger Sparks wrote:
> > Find it by Zo = 1/cC where Zo is the line impedance, c is the speed of
light
> > (meters per second), and C is the capacity in Farads.
>
> Speed of light and capacitance don't matter at DC steady-state.

Good Morning Cecil,

Right, of no consequence in the steady state. Matters when you open the
switch!

I have really enjoyed these mind games, problems, theory, and different
perspectives of the same problem. It is very educational and I am learning
a great amount, and getting a much better understanding about
electromagnetics.

The power of the Internet to bring together talented people, experienced
people, practical people, mathematically capable people, dreamers, and
others is very impressive. I can see that weak theory, misconceptions, and
errors will be rapidly discovered and corrected when tested in the Internet
laboratory.

73, Roger, W7WKB

4192. Re: 2 meter range???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 15:07:00 UTC
From: Bart Rowlett <bart@wb6hqk.ampr.org>
Message-ID: <3B03E914.7398DEA1@wb6hqk.ampr.org>
Source record: 162741

Hi Matt,

Matt wrote:
>
> I know there is really no way of knowing but if I wanted to try to hit a
> repeater that was a little over 100miles aways from my location.. approx.

It primarily depends on the terrain between you and the repeater. Many repeaters are intended for wide area coverage and are collocated with commercial installations having high towers and ideal hilltop locations. Better yet, some amateur repeater installations have their own site and enjoy greatly reduced interference.

> how much wattage would I need to be pushing out and what kind of directional
> antenna would I need to be using..this is all on 2 meter of course.

If possible, find out the repeater transmitter output power. Your own receiver is probably more sensitive than the repeater which means you will may need to run significantly more power than the repeater in order to be heard. It is never a good idea (and considered poor operating practice) to run more than a few watts on a repeater input unless you are able to reliably hear the output. The problem is that the repeater may receive you just fine, but you might not hear the repeater output!

Your primary effort should be to come up with an antenna and transmission line system which is reliably able to receive the repeater. Once done, you will probably be able to use the repeater with just a few watts and should almost never require more than 150 watts or so.

As a minimum, get your antenna above nearby clutter such as rooftops, dense foliage and other objects. Assuming flat terrain, effective antenna gain for transmit and receive will then increase six dB for every doubling in antenna height, but transmission line loss will negate some of the gain.

Try to keep the transmission line loss below a couple of dB by selecting an appropriate type for the line length. It is almost never cost effective to have the transmission line loss in excess of eight dB.

You might start with a yagi antenna of four to six elements and see what happens; it may be enough. If you never hear the repeater output with four to six elements at a reasonable height, obtaining reliable operation is likely to require a very much larger, antenna mounted considerably higher. High power and a mast mounted preamplifier may still not provide usable results so it's a good reason to start with something modest before getting too carried away.

> Or can
> it even be done?

Operating through optimally sited repeaters at distances of 100 miles is not unusual when the line of sight path stays well above the intervening terrain. If there is an obstruction midway, which is likely the case, communication may still be possible but the path losses increase considerably and weak signal techniques may be required.

bart
wb6hqk

4193. Re: TGM comms MQ1 minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 15:25:23 UTC
From: Nick G4FAL <ntotterdell@riverauto.co.uk>
Message-ID: <r9SM6.102$qq.4950@wards>
Source record: 162742

Andy

I have an MQ2 (5 band version of MQ1) on top of my house. I put it up a couple of months ago.

Advantages:

1. It works on WARC bands as well as 20-15-10.
2. It is very small - 12' x 4' or so.
3. It does have directional properties and can be 6dB up on a wire antenna.
4. I would guess that it is better that the MA5B as it has only two elements and they are both used on each band.
5. It gets progressively better as the frequency goes up.
6. Although front-to-back is not brilliant, side rejection is pretty good.

Disadvantages:

1. As the spokes are quite prominent, it is probably as much of an eye-sore as a bigger 2 ele minibeam or say a 15m 2 ele full size.
2. It has a very narrow bandwidth on 20m and 17m; although I do tune it up 100kHz from its resonance, it is not very effective there.
3. On 20m and 17m it is pretty much the same front as back - I have lots of contacts off the back.
4. Due to the position - on top of the house - I get excessive field strength in the house and cause lots of breakthrough. Can't really blame the MQ2 for that!

Recommendation:

1. If you can use a full size beam then don't consider a minibeam.
2. It you need a minibeam then this is a damn good contender.

It isn't really a quad - only the reflector has a sort of diamond quad arrangement. I think some people would call it a quagi.

I intend to put something bigger up eventually. Probably a full size two element 15m single bander.
--
Regards

Nick G4FAL
ntotterdell@riverauto.co.uk

4194. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 15:37:57 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B03F055.72F5F70A@IEEE.org>
Source record: 162743

"Peter O. Brackett" wrote:
> I thought you were saying that the equations of reflection mechanics were
> not applicable to DC. Instead you were just "messing" with me, eh?

Never said they didn't work - just said they weren't very useful.

> Maybe we can see that "some" of the "reflected power" might just be
> ficticious.

Seems it's a tempest in a teapot. You say "reflected power" is
fictitious yet you say "energy from reflections" is real and TV
ghosting caused by energy from reflections is real. According
to the IEEE Dictionary, moving energy *IS* power, by definition.
Since what you and I say doesn't change what's happening in reality,
it's just a matter of semantics.

> How about imaginary resistors? You OK with those too?

I'm OK with near lossless resistance, as opposed to lossy resistors.
The real part of the Z0 of a transmission line is an example. If
my *600 OHM* open-wire transmission line was not nearly lossless,
not many joules/sec would make it to my antenna, but they do.
--
http://www.mindspring.com/~w6rca

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4195. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 15:43:35 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B03F1A7.6966A9F0@IEEE.org>
Source record: 162744

"Peter O. Brackett" wrote:
> What did you use? MFJ-259 or...

I used the MFJ-259 for the 10 MHz test and my ohm meter for the DC test.
Inductance and capacitance don't seem to have any effect at DC steady-
state. The DC steady-state values of voltage and current are the same
with my 50 ohm coax or my 600 ohm open-wire line.
--
http://www.mindspring.com/~w6rca

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4196. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 15:46:15 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B03F247.39BF0963@IEEE.org>
Source record: 162745

Roger Sparks wrote:
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3B03CB24.EEA5AEA4@IEEE.org...
> > Roger Sparks wrote:
> > > Find it by Zo = 1/cC where Zo is the line impedance, c is the speed of
> light
> > > (meters per second), and C is the capacity in Farads.
> >
> > Speed of light and capacitance don't matter at DC steady-state.
>
> Right, of no consequence in the steady state. Matters when you open the
> switch!

But then that's not DC steady-state, is it? :-)

> The power of the Internet to bring together talented people, experienced
> people, practical people, mathematically capable people, dreamers, and
> others is very impressive.

You left out devil's advocates and trouble-makers. :-)
--
http://www.mindspring.com/~w6rca

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4197. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 15:46:45 UTC
From: richardharrison@webtv.net
Message-ID: <7163-3B03F265-16@storefull-118.iap.bryant.webtv.net>
Source record: 162755

Peter, K1PO wrote:
"Z(DC) and Zo(10MHz) different?"

Zo = square root of R + j omega L divided by
G + omega C.

For the r-f case, the R and G are usually inconsequential, so Zo =
square root of L/C.

For steady-state d-c, the L and C are inconsequential, so Zo = square
root of R/G.
(R&G are somewhat frequency dependent)

At low frequencies, when R is comparable with inductive reactance and G
is comparable with capacitive reactance, Zo varies with frequency unless
R/omega L = G/omega C. Then, the Zo with the stated equality will be a
pure resistance equal to the square root of L/C. This condition is
called a "distortionless line". Distortionless lines are important for
audio long lines.

So, it`s possible to have a constant Zo down to a very low frequency if
R/L = G/C.

But, steady-state d-c doesn`t make waves!

Best regards, Richard Harrison, KB5WZI

4198. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 15:46:53 UTC
From: kb7qhc@home.com
Message-ID: <3b03f250.841190848@news.seanet.com>
Source record: 162747

On Wed, 16 May 2001 22:57:23 -0400, Denver Braughler
<Braughler@bwcc.com> wrote:

>Richard Clark wrote:
>> I will post it to you.
>Would you be allowed to publish it on your website?

Hi Denver,

I will check with the author, thanx.

73's
Richard Clark, KB7QHC

4199. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 15:48:29 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B03F2CD.2562104A@IEEE.org>
Source record: 162746

```
Richard Harrison wrote:
>
> Cecil, W6RCA wrote:
> "He (Walter C. Johnson) assumes the wall thikness is equal to the
> nominal depth of penetration."
>
> For copper, skin thickness is about 2.6/square-root of Hz for a result
> in inches. At one Hz, the skin depth is 2.6 inches. At 10 MHz, the skin
> thikness is 0.000826 inches, or less than one thousandth of an inch.
^^^^^^^^

Richard, are you making fun of my spelling?
--
http://www.mindspring.com/~w6rca
```

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4200. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 15:53:43 UTC
From: kb7qhc@home.com
Message-ID: <3b04f2a7.841277082@news.seanet.com>
Source record: 162748

On Thu, 17 May 2001 03:19:51 GMT, w2du@iag.net (Walter Maxwell) wrote:

>>You've rather got the shoe on the wrong foot. If you cannot describe
>>the phenomenon better, it remains absurd. I have already offered a
>>workaday example quoted above of wave interference that does present a
>>short - virtual or otherwise. It is a staple of the topic. I have
>>used double-stub tuners to flatten lines and these practical
>>applications are not academic to me.
>
>I confess to having limited experience with waveguides, my work was all at lower
>frequencies. However, I have also used double-stub tuners. But are you saying
>there is no element of wave reflection occurring in these tuners? If you are,
>then I don't agree.
>
>>You have a willing audience in
>>me, Walt; but my critic says you are playing to the wings.
>
>I just got a beep that told me your email with Bill Klocko's paper came in. Bill
>and I have had discussions on this point, but we did not agree. I'll take a copy
>of his paper and study it on the plane.
>
>Thanks Richard, I'll C U later.
>
>Walt

Hi Walt,

I AM saying that single and double-stub tuners DO present wave
reflections for which I have had hands on experience with many, many
power measurements. I AM also saying that a choke joint is a very
common example of wave interference. I AM also saying that you do not
employ their methods, rather you employ their terms (not the same
thing). That, or your descriptions are so problematic as to intrude
into their application.

Enjoy Dayton.

73's
Richard Clark, KB7QHC

4201. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 15:55:26 UTC
From: kb7qhc@home.com
Message-ID: <3b05f42f.841669416@news.seanet.com>
Source record: 162749

On Wed, 16 May 2001 19:27:25 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>None of my textbooks say 75 joules plus 8.33 joules equals 133.33 joules.
>When Steve said that, he simply got carried away and I called him on it.
>His voltages are correct and his currents are correct but his energy is
>not correct. I went hunting for his missing 50 joules and found it exactly
>where it needed to be.

Hi Cecil,

So it would seem - however I have no interest in that ambush.

73's
Richard Clark, KB7QHC

4202. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 15:58:24 UTC
From: kb7qhc@home.com
Message-ID: <3b07f493.841769200@news.seanet.com>
Source record: 162750

On Wed, 16 May 2001 19:32:58 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> If you aren't part of the solution, you are part of the problem.
>
>Well, following that logic, you are obviously part of my daughter's
>problem. Please be part of the solution and pay her rent.
>

Hi Cecil,

Texas must have indeed fallen on hard times. Sorry to hear of your
family troubles, but it still sounds like the call of the White House
press secretary, was she in the car with Jenna? ;-)

73's
Richard Clark, KB7QHC

4203. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 16:00:15 UTC
From: kb7qhc@home.com
Message-ID: <3b08f544.841946925@news.seanet.com>
Source record: 162751

On Thu, 17 May 2001 03:13:21 GMT, Jeff Hasz <jhasz@home.com> wrote:

>On Wed, 16 May 2001, Richard Clark wrote:
>>On Tue, 15 May 2001 23:14:16 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
>>wrote:
>>
>>>"Peter O. Brackett" wrote:
>>>> Cecil and Walt, and Steve are all getting a way too fancy! No one needs any
>>>> of that complicated stuff... to "formal" dealing with all of that
>>>> "ficticious" power.
>>>
>>>Peter, California is having rolling blackouts because of people like you
>>>who believe power companies don't generate power and therefore cannot get
>>>paid for generating power. :-)
>>
>>Hi Cecil,
>>
>>Actually, it's the "White House Effect" where the platitudes and
>>ignore-the-problem-and-it-will-go-away is the "fiction" of power.
>>
>>73's
>>Richard Clark, KB7QHC
>
>Tsk, tsk, Richard. you know that California's problems began long before the
>current occupant of the White House, and in reality have very little to do with
>what goes on on the other side of the country.
>
>California's problems began when the NIMBYs moved there... (which, as you know,
>is one reason I left!)
>
>But then I also left because it became such a pain to put up an antenna that
>would accept and radiate *any* power, forward, reverse, up, down, back, left,
>right, real, imagined, or apparent... at any phase of voltage/current
>
>Jeff
>KB9GF/7

Hi Jeff,

[must resist urge to flame] nice to see you here.

73's
Richard Clark, KB7QHC

4204. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 16:02:58 UTC
From: kb7qhc@home.com
Message-ID: <3b09f5f8.842126543@news.seanet.com>
Source record: 162752

On Wed, 16 May 2001 20:56:30 -0400, Denver Braughler
<Braughler@bwcc.com> wrote:

>W6RCecilA wrote:
>> Not only that, reflections were occurring
>> from the large waves hitting the shore and forming small waves that
>> moved back out toward the ocean right through the large waves. I know,
>> I've watched it for hours with my own eyes.
>>
>> What was astounding to me the first time I witnessed it is that those
>> small waves would meet the large waves head on and completely disappear
>> from view - only to reappear, undisturbed, on the ocean side of the large
>> waves still headed out from the beach.
>I wouldn't say "undisturbed".
>But you are right about the phenomenon.

Hi All,

What about Solitons?

73's
Richard Clark, KB7QHC

4205. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 16:04:28 UTC
From: kb7qhc@home.com
Message-ID: <3b0af659.842223022@news.seanet.com>
Source record: 162753

On Wed, 16 May 2001 22:42:28 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>DC Zo is the same as AC Zo, why would it be any different?

Hi Peter,

I see you are still surprised - forgotten the formula so soon?

73's
Richard Clark, KB7QHC

4206. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 16:06:01 UTC
From: kb7qhc@home.com
Message-ID: <3b0bf6d3.842345669@news.seanet.com>
Source record: 162754

On Wed, 16 May 2001 22:40:17 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Roger:
>
>I had a look at that WWW site... by golly you are right.
>
>I no longer fell that I am not a lone heretic... others have recognized that
>all the equations of reflection mechanics also work at DC!
>
>Thanks for that input.
>
>-Peter K1PO
>

Hi Peter,

Study it carefully.

73's
Richard Clark, KB7QHC

4207. broad band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 16:19:00 UTC
From: Bill Grimwood <bill@grimwood.net>
Message-ID: <sOSM6.32$3f.2676@e420r-atl4.usenetserver.com>
Source record: 162756

I am a new Ham KG4NAC. I have my technician license and am studying for my General license. I want to purchase an antenna that will work on as many bands as possible such as the diamond CP-6.

What antennas do you recommend to me.

Thanks

Bill Grimwood
bill@grimwood.net

4208. skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 16:45:38 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <SeTM6.19733$p33.353932@news1.sttls1.wa.home.com>
Source record: 162757

Richard Harrison, KB5WZI , wrote
(snip some)
We know that at r-f, a braid performs nearly the same as a solid shield. Wires weaving between sides don`t carry the r-f with them as they weave between sides. Skin effect requires the current to remain on the same side of the braid.
(snipe more)
Certainly, the statement that "there is no voltage difference between the inside of the braid and the outside of the braid" is very unlikely.

(snip more)

Good Morning Richard,

I think it is good that you are keeping this question alive. You will notice that I started a new thread, which I did because I think the topic will receive a better review if it becomes the principal subject.

Just to keep the discussion focused, I am thinking about the fold-around current on the braid that is illustrated in the ARRL Antenna Book. This is represented as being a second current path which drains power from the antenna. If it drains power, then it must have measurable voltage and current. The Antenna Book teaches that this current (it does not talk about voltage) is kept separate from the inner side by skin effect.

I think two physical laws actually interplay here. The first is how current would flow in braid considering that the wires are not running parallel to the current, and further, that the wires overlap, one on top of the other, and then reverse.

The second is how current, that is electrical charges, are distributed in a round wire when the distribution is not neutral, or zero energy situation.

To deal with the physical configuration first, we need to carefully look at how the braid is laid together. I notice that the braid on RG-8 is configured so that no wires run parallel to the center wire. In addition, a wire will run on the inside surface for about 1/4 inch, then will rise and run on top of another group of wires for about 1/4 inch thereby becoming the outside wire for about 1/4 inch. Because of this interweave, a current running on the inside would have to change wires every 1/4 inch to remain on the inside. Any outside current would also have to change wires every 1/4 inch to remain of the outside.

The point of contact is on the top and bottom of each wire, and currents on the top or bottom (inside or outside of the coax) would have to go through these contact points (the identical points) in their path to remain on the top or bottom. Separation would be impossible.

The second law of physics to consider is the distribution of charges in a round conductor. A current is defined as a movement of charges and we usually think of this as negative charges moving away from positive charges (which remain fixed). The negative charges are moving as a group which results in a concentration of negative charges in a volume. Because negative charges repel, they will expand in volume to cover the entire surface of the conductor. If a nearby surface (such as the inside conductor in a coax line) has negative charges, then the distribution will shift toward that surface, but will not occupy only the bottom half of the wire for instance, because the concentration of charges in half a wire would be a higher energy situation than would a concentration around the entire wire surface.

This argument disappears for any separate outside current because it would not be balance by inside charges on the center conductor. Instead, a negative charge on the outside surface would (by capacitive action) repel negative charges on the inside conductor, and would therefore induce a current on the inner (center) conductor. In this way, any outer current would influence both the inside of the outer conductor and the center conductor of a coax line.

I understood Kevin, w9cf, to say in an earlier posting that capacitive flux (the voltage field) moves through a conductor at the same speed as through a dielectric and does not diminish with depth. This is contrasted to the magnetic field which does diminish with depth of penetration into the conductor (skin effect).

If you disagree with this analysis, please divide the rebuttal into two parts:
1) how the current can pass through identical points and not mix.
2)how the charge distribution can remain concentrated on only one side of round wires.

73, Roger, W7WKB

4209. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 16:45:38 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <SeTM6.19734$p33.353932@news1.sttls1.wa.home.com>
Source record: 162758

Good Morning Richard,

I have replied by starting a new thread entitled "skin effect and stranded braid". This is a subject that deserves more review.

73, Roger, W7WKB

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:7162-3B03E00B-58@storefull-118.iap.bryant.webtv.net...
> Cecil, W6RCA wrote:
> "He (Walter C. Johnson) assumes the wall thikness is equal to the
> nominal depth of penetration."
>
> Skin depth for a conductor is defined as the thickness in meters where
> the current has dropped to 1/e or 36.8% of the value on the surface of
> the conductor.
>
> For copper, skin thickness is about 2.6/square-root of Hz for a result
> in inches. At one Hz, the skin depth is 2.6 inches. At 10 MHz, the skin
> thikness is 0.000826 inches, or less than one thousandth of an inch.
>
> If Johnson uses one skin-depth as his shield thickness, that would be
> 0.826 thousandths of an inch at 10 MHz. An AWG 30 wire is 10 thousandths
> of an inch in diameter.
>
> In an earlier post Bill sabin wrote: "In a coax, at any location, there
> is no voltge difference between the inside of the braid and the outside
> of the braid."
>
> We know that at r-f, a braid performs nearly the same as a solid shield.
> Wires weaving between sides don`t carry the r-f with them as they weave
> between sides. Skin effect requires the current to remain on the same
> side of the braid.
>
> But suppose we had tissue thin shielding on our coax. Say it was one
> skin depth thick. Only 36.8% of the current on one side would reach the
> other. If in the unlikely event that impedances were equal on both sides
> of the shield, 36.8% of the current would not produce 100% of the
> voltage appearing on the originating side.
>
> Certainly, the statement that "there is no voltage difference between
> the inside of the braid and the outside of the braid" is very unlikely.
>
> Experience tells us that a coax shield when properly connected is very
> effective in keeping r-f in or out, where it ought to be.

>
> Best regards, Richard Harrison, KB5WZI
>

4210. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 17:16:40 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B040778.A2F3D802@IEEE.org>
Source record: 162759

Richard Harrison wrote:
> But, steady-state d-c doesn`t make waves!

It does when Peter talks about it. :-)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4211. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 17:22:23 UTC
From: richardharrison@webtv.net
Message-ID: <6649-3B0408CF-121@storefull-112.iap.bryant.webtv.net>
Source record: 162761

Cecil, W6RCA wrote:
"Richard, are you making fun of my spelling?"

I see my mistake in spelling thickness. I can`t cut and paste very well with WebTV, and it`s abundantly clear that I`m a poor typist.

I left out the "c" in thickness in the referenced posting. I also left out several "j" operators in another recent posting.

It`s really unintended humor, but that`s as good as any, I guess.

Best regards, Richard Harrison, KB5WZI

4212. 1:1 coax balun, rg213 coax

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 17:28:22 UTC
From: mark <mfvernooij@wanadoo.nl>
Message-ID: <3b040a8e$0$28631@reader3>
Source record: 162760

I want to put up a dipole for 160 during the region 1 fieldday weekend. Who can tell me how I can make a 1 to 1 balun from RG-213 coax, how many turns and which diameter for the best results? If I use rg-58 coax does that make any difference to the the amount of turns ?

Thanks, Mark.

4213. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 18:18:13 UTC
From: RanHefner <ranNOSPAMhefner@my-deja.com>
Message-ID: <9e14l5eso1@news.netmar.com>
Source record: 162674

Your J-Pole for FM is vertically polarized. You need horizontal
polarization. You will get as good performance from a dipole and simple to
make. At 2-meter size, a rotatible dipole should work good, but you should
consider a yagi or quad if you are going to put it on a rotor.

In article <3B02CC95.6CCB224A@sprint.ca>, <aduffy@sprint.ca> writes:
>Might sound a little dumb, but I was wondering if a 2m J-Pole antenna
>was very good at SSB. I have excellent results on FM but but not much
>luck on SSB (which I know isn't very crowded at best and spuratic).
>
>73,
>Tony
>VA3ATD
>

----- Posted via NewsOne.Net: Free (anonymous) Usenet News via the Web -----
http://newsone.net/ -- Free reading and anonymous posting to 60,000+ groups
NewsOne.Net prohibits users from posting spam. If this or other posts
made through NewsOne.Net violate posting guidelines, email abuse@newsone.net

4214. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 18:38:46 UTC
From: aduffy@sprint.ca
Message-ID: <3B041AB6.E8CADC1@sprint.ca>
Source record: 162762

Thanks for the replies,

I just wasn't sure how the J-Pole reacts to the different RF patterns between SSB and FM (never heard of using one on SSB). Haven't really spent much time on 2m SSB and was just inquiring. I do have a 5el yagi but antenna restrictions, so I keep it for field day usage. Might look into a loop for the attic for now.

Once again, thanks.

73,

Tony
VA3ATD

4215. Downloadable IOTA List - updated 17-May-01

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 18:47:38 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <e1VM6.11710$Az.1089769@newsread2.prod.itd.earthlink.net>
Source record: 162763
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx

The downloadable IOTA list has been updated as of 17-May-2001 18:46 UTC

Found on The IOTA List page of the site listed below. 15k zip file
(ascii text format readable with Notepad)

* also includes Top 10 Most Wanted IOTA's for each continent.

--

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

4216. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 19:26:49 UTC
From: richardharrison@webtv.net
Message-ID: <6878-3B0425F9-55@storefull-116.iap.bryant.webtv.net>
Source record: 162765

Roger, W7WKB wrote:
"This is contrasted to the magnetic field which does diminish with depth of penetration into the conductors."

I think it is increasing lines of magnetic force in greater penetration depth which causes surfacing of r-f current in conductors due to the magnetic field opposition within.

Some coax shields are made of braided small wires to increase flexibility. Current flows across thousands of contact points in typical braided coax shields. If these contacts are poor, the coax can be lossy. With fair contacts, the shield may have about the same r-f resistance as the inner conductor, though its diameter may be about 4 times that of the inner conductor.

Skin effect normally acts on a braided shield just as if it were a solid conductor. That is why braided shield coax is used and works. The little wires shorted together might just as well be solid shield. Holes in braid coverage make little difference. 100% physical coverage helps but isn`t mandatory. Copper screen wires have plenty of holes between them but still make an effective shield at H-F. Yes, double screening with distance between the screens is more effective, but coax screening in most cases is good enough.

Current along a conductor surface produces wave tilt and penetration which is increasingly opposed by inductive reactance which curtails deeper current.

Skin effect is said to be "complete" on metals carrying r-f.

Best regards, Richard Harrison, KB5WZI

4217. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 19:30:35 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0426DB.5E00CA33@IEEE.org>
Source record: 162764

aduffy@sprint.ca wrote:
>
> Thanks for the replies,
>
> I just wasn't sure how the J-Pole reacts to the different RF patterns
> between SSB and FM (never heard of using one on SSB).

Simply turn your J-Pole horizontal for SSB operation.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4218. Re: AEA Isopole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 20:01:47 UTC
From: donrm@soco.agilent.com
Message-ID: <990138707.144976@cswreg.cos.agilent.com>
Source record: 162671

Frizz <kg4ivt@hotmail.spamsucks.goaway.leavemealone.com> wrote:
> I have heard good things about this antenna. Can anyone give me some info
> on it and whether or not it can still be purchased? If not, what are the
> normal used prices for one? Thanks!!!

I don't know if you can find them any longer. I had one and
it worked absolutely great, and certainly got a lot of comments
from the neighbors about Prince Valiant's lancer. It gets the
signal down on the horizon instead of heating up the local
birds and was a great target for the neighborhood kids' BB
guns.

73 Don K6LTS
donrm@soco.agilent.com

4219. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 20:46:50 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3B0438BA.33A01447@bwcc.com>
Source record: 162766

Richard Clark wrote:
> What about Solitons?
Please tell me about them.

4220. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 21:03:18 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <q0XM6.8077$v5.622760@news1.rdc1.ct.home.com>
Source record: 162767

Was the analyzer at the antenna, or was in line after
some coax?

Pete

"Sideband" <sideband@spam.me.not> wrote in message
news:3B03D580.C3B107AA@spam.me.not...
> Mark:
>
> Well, it can all be seen (no pics of the analyzer, though) at
> http://www.csotbs.org/kc8rkq/coathanger2.html
> Check it out, and let me know what you think.
>
> 73 de KC8RKQ
>
> Mark Keith wrote:
> >
> > Sideband wrote:
> > >
> > > Mark:
> > >
> > > Hrm... The MFJ analyzer I was loaned read rather easily. the needle
> > > meter on it is small, but the original reading, with the ground
radials
> > > perpendicular to the radiator, was around 75 ohms. Bringing them down
> > > about 40 degrees brought the impedance down to 40 ohms on 146.0 and 50
> > > on 144.0 and 148.0.
> > >
> > > I'd hate to blame the equipment, especially considering Butch's rude,
> > > crude, and socially unacceptable comments previously in this thread...
> > >
> > > Can you offer another explanation?
> > >
> > > 73 de KC8RKQ
> > >
> > > Mark Keith wrote:
> > > > Thats kinda weird. Usually it works the other way around. In fact,
I'm
> > > > wondering if the instrument you were using was read backwards. You
said
> > > > the impedance was 75 ohms. I bet it was really about 35. That would
be
> > > > the norm. You adjusted the radials downward and said it lowered to
50
> > > > ohms. Again, it's usually backwards from that, lowering the radials

> > > > should "raise" the impedance to about 50 ohms. Anyway, it's
> > > > working..Thats the main thing. MK
> > > > --
> > > > http://web.wt.net/~nm5k
> >
> > Not really, as I've never used one of those things. But, the SWR would
> > be about the same for both examples. IE: 75 ohms to 50 ohms line/rig
> > would be 2:1 . Also 25 ohms is 2:1. Dunno, I think it was running
> > backwards for some reason. I just can't see a 1/4 wl GP with level
> > radials being 75 ohms. Normally it should be the classic 35 ohms or so.
> > And lowing the radials increases to 50 ohms or so. I've never seen it
> > work the other way. Maybe others have some ideas on this. MK
> > --
> > http://web.wt.net/~nm5k

4221. FREQUENTLY ASKED QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 21:16:04 UTC
From: marvin rosen <n3bqa@starpower.net>
Message-ID: <9e1f37$8ih$1@bob.news.rcn.net>
Source record: 162768

how do i access the "FAQ" on this newsnet?

4222. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 21:31:55 UTC
From: kb7qhc@home.com
Message-ID: <3b04413d.861395601@news.seanet.com>
Source record: 162669

On Thu, 17 May 2001 16:46:50 -0400, Denver Braughler
<Braughler@bwcc.com> wrote:

>Richard Clark wrote:
>> What about Solitons?
>Please tell me about them.

Hi Denver,

They are also known as "solitary" waves.

First recorded about 200 years ago, they then appeared as a wave of water in irrigation or barge canals that traveled independently of any apparent source, and without attenuation.

In the recent past, they have been observed in the free ocean (through satellite photography) traveling thousands of miles, much further than waves driven by what are considered normal processes.

This is a reckless topic, no doubt, in a thread given over to "basics." Imagine the consequence if this were related to RF! ;-)

DC standing waves don't hold a candle to this.

73's
Richard Clark, KB7QHC

4223. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 22:30:24 UTC
From: atkes@imap1.asu.edu
Message-ID: <9e1je0$he5$1@news.asu.edu>
Source record: 162670

Roger Sparks (sparksrc@home.com) wrote:

snip

: I understood Kevin, w9cf, to say in an earlier posting that capacitive flux
: (the voltage field) moves through a conductor at the same speed as through a
: dielectric and does not diminish with depth. This is contrasted to the
: magnetic field which does diminish with depth of penetration into the
: conductor (skin effect).

snip

Roger,

I apologize for the long post. I first wanted to make clear that I said nothing about a voltage field. There is no voltage field. All of these discussions would make more sense if everyone would stop mentioning voltage. The reason, as I have tried to point out several times before, is that in these situations it is often not well defined. To understand what is going on you will need to calculate or measure the electric and magnetic fields. Apparently the circuit theory idea that there is a well defined voltage difference between two points, independent of path, is hard to let go of. However, if you want to understand how antennas and transmission lines work in terms of detailed current and charge distributions, the circuit theory idea of voltage will only hold you back and contribute to misconceptions. This is not to say that you cannot use these concepts if you apply them properly. You must define the path for your voltage difference, and only use it for that path.

In circuit theory, the magnetic fields are localized inside ideal inductors and transformers. All paths are chosen so that they never encircle these fluxes. In this case, the voltage differences are independent of path, and you get the version of Kirchoff's law that the sum of the voltage drops around a loop is zero. You can then pick some point to be ground or zero voltage, and all other points then have a well defined voltage. In coaxial cable or transmission lines, there are magnetic fields around. So for example in a normal coaxial cable, the sum of the voltage drops around a loop is not generally zero.

Perhaps an analogy will help. Imagine you lived in a city where all the streets were aligned along north and south or east and west.
Now imagine that you drive a car that has an odometer that runs forward when you drive north or east and backward when you drive west or south. In that case, you could assign an "odometer difference" between any two points. If you started at any point and drove along any path to another point, the change in your odometer reading when

you arrived would be the same. That is what happens in normal circuit theory. The odometer difference is analogous to the voltage difference. In this case, it is a very useful concept.

Next imagine that someone lives in a city centered on the south pole. This person starts driving east and because he is very near the pole, he circles around it arriving back at his original position. His odometer obviously does not read its original value. In this city, you cannot easily assign an odometer difference between two points. Any two paths that together encircle the pole will give different values. The pole is like a line of changing magnetic flux and the odometer reading is like the voltage. Many of the misconceptions that I see occuring here are because people are calculating voltage differences along one path, and then assuming that that voltage difference applies along a different path.

Now look at the fields in an ideal lossless coaxial cable with inner radius of the outer conductor b and the radius of the inner conductor a. A wave is propagating in the positive z direction and the total current in the conductors has peak value I0.

In SI units, the magnetic induction B circles around the conductors and has the form
B(r,z,t) = [mu_0/4 pi] [2/r] I(z,t)
The electric field E is in the radial direction and has the form
E(r,z,t) = [mu_0/4 pi] [2 c/r] I(z,t)
and the current is
I(z,t) = I0 cos[omega (z-c t)]
where c is the speed of light, omega is 2 pi times the frequency, t is the time and mu_0 is the vacuum permeability. These fields completely describe the problem. If you now want to know what a voltmeter measures in different positions, you can readily calculate it.

If you connect your voltmeter radially across the coax, it measures the voltage drop along the radial path from the inner conductor to the outer conductor. Calculating I get
V(z,t) = [mu_0/4 pi] [2 c ln(b/a)] I(z,t)
Notice, this gives the usual characteristic impedance formula
Z_0 = [mu_0/4 pi] [2 c ln(b/a)]
as the ratio of voltage across the conductors to the current in the conductors for a wave propagating in the z direction. That is you don't have to add any other concepts to this. All of the circuit theory concepts like inductance or capacitance are already built into the expressions for the fields.

Now if I calculate the voltage drop using a path along z, I get identically zero since the electric field has no z component.
A measurement with the voltmeter leads very close and parallel to the inner conductor will give zero volts as the difference between two positions on the inner conductor. So when you talk about the voltage difference between the points z1 and z2 on the inner conductor is that value zero or is that value V(z1,t)-V(z2,t)? The answer is that it depends on how you measure it. The danger is that you measure it one way,

and then use that value to make predictions for a case where the physics requires you to measure it another way. Since understanding the electric and magnetic fields allows you to understand reliably what you mean by the voltage for antennas and transmission lines, it just makes sense to me to try to understand the field configuration first.

A standard circuit theory model of this transmission line is an infinite pi network consisting of a set of series inductors with capacitors to ground. The voltage across the capacitors is the V(z,t). What this circuit theory model has done is to take a point on the outer conductor to be ground. The integration paths for the voltage are then along the outer conductor to the point z (which gives zero) and then radially inward to the point z on the inner conductor (which gives the voltage V(z,t) defined above) . The circuit theory model then says the voltage difference between the points z1 and z2 on the inner conductor is V(z2,t)-V(z1,t). This works perfectly for the usual transmission line problems. However if you try to use this as the line integral of the electric field along the inner conductor it will give wrong answers and you will get nonsense. The electric field in that direction is zero (and for non ideal coax small) and even though the voltage difference given by V(z2,t)-V(z1,t) can be large there is no force on the electrons in that direction (and the force is small for non ideal coax). So a circuit theory model can be extremely useful, but you have to know its limits and when it will give wrong answers. Speaking about the voltage in transmission lines and antennas often implies a circuit theory model. Its limitations have to be understood and kept in mind to keep from going astray.

73 Kevin w9cf

4224. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 23:04:39 UTC
From: Rory Davis <n7cr@bellsouth.net>
Message-ID: <5PYM6.3610$M8.176779@news1.atl>
Source record: 162672

How long was your coax between the antenna and the analyzer?

If it is 50 ohm coax, close to an odd multiple of 1/4 wavelength, your (approx) 30-35 ohm groundplane could easily appear to be 75 ohms at the analyzer input. And, when you bent the radials down, increasing the impedance at the feedpoint, the impedance measurement at the other end of the coax decreased.

A 1/4 wavelength (and odd multiples) transmission line has a impedance inversion effect; if the impedance at the input increases, the impedance measured at the other end will decrease. This can be shown with a Smith Chart calculator or the formula for transmission line transformers found in most handbooks.

Try another length of transmission line. Ideally, it should be a multiple of 1/2 wavelength at the test frequency. Don't forget to include the velocity factor of the coax when you make up your test cable.

73
N7CR

"Sideband" <sideband@spam.me.not> wrote in message
news:3B03C568.464C9126@spam.me.not...
> Mark:
>
> Hrm... The MFJ analyzer I was loaned read rather easily. the needle
> meter on it is small, but the original reading, with the ground radials
> perpendicular to the radiator, was around 75 ohms. Bringing them down
> about 40 degrees brought the impedance down to 40 ohms on 146.0 and 50
> on 144.0 and 148.0.
>
> I'd hate to blame the equipment, especially considering Butch's rude,
> crude, and socially unacceptable comments previously in this thread...
>
> Can you offer another explanation?
>
> 73 de KC8RKQ
>
> Mark Keith wrote:
> > Thats kinda weird. Usually it works the other way around. In fact, I'm
> > wondering if the instrument you were using was read backwards. You said
> > the impedance was 75 ohms. I bet it was really about 35. That would be
> > the norm. You adjusted the radials downward and said it lowered to 50
> > ohms. Again, it's usually backwards from that, lowering the radials
> > should "raise" the impedance to about 50 ohms. Anyway, it's
> > working..Thats the main thing. MK

> > --
> > http://web.wt.net/~nm5k

4225. Re: Which screwdriver?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-17 23:16:17 UTC
From: dinod@deltanet.com
Message-ID: <5ZYM6.94510$2U.43419465@news2.rdc2.tx.home.com>
Source record: 162673

I am going to buy the High Sierra personally, but i wanted to point out one thing about the bandhopper... Its PHYSICAL length does not change when tuning. This is important for trucks who don't want to hit bridges and such,but be able to mount it as high as possible.

So, the bandhopper stays the same height and the High Sierra gets longer and shorter.

The driver I spoke with about the bandhopper LOVED it.

Dino

>Consider the Bandhopper from Clancy, MT. It's made for long haul trucks
>and is extremly rugged, tunes easily and seems to outperform most of the
>other antennas I've tried. I think you'd enjoy it. Mine has over 100k
>miles on it without a hitch. Construction is stainless steel and brass.
>I use it most every day.
>
>Check out: www.bandhopper.com

4226. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 00:42:26 UTC
From: "Richard L. Dunklee, Jr." <rdunklee@att.net>
Message-ID: <3B047028.A96552F2@att.net>
Source record: 162675

A direct ground is a 8 or 10 foot copper clad rod pounded into the earth and each piece of equipment connected directly to it. The same with towers. my tower has 3 legs and 3 ground rods. each joint in the tower is "jumpered" across then at the bottom each leg is tied to it's ground rod. I don't think that is to hard. I used to teach an RFI class for the FAA. One of the greatest problems we have besides intermods is grounding problems, RF and power grounds. WE teach to ground fences around our facilities. Having direct grounds as I call it should 99% of the time eliminate ground loops. Each piece of my equipment here in my shach, HF tranceiver, antenna tuner, 2 scanners, rotor control box, TNC and PC case are tied to a single ground outside my shack window individually. NO GROUND LOOPS!!!!

Richard L. Dunklee, Jr.
WA2ONM

ehsjr@bellatlantic.net wrote:

> What is a "direct ground", as you use the term?
>
> How is this "direct ground" ten thousand percent better
> than relying on the shield of the coax?
>
> "Richard L. Dunklee, Jr." wrote:
>
> > What ground loops??????????????
> > A direct ground is 10000% better than relying on the shield of coax for
> > a GOOD ground.
> >
> > Richard L. Dunklee, Jr.
> > WA2ONM
> >
> > Reg Edwards wrote:
> >
> > > Tom wrote .
> > > > Hi OMs
> > > > I have a new transceiver (Alinco DX-70),that has a grounding
> > > screw.Must I
> > > > use it ? I have only a heating tube in my shack.
> > > ==========
> > > If your transceiver's case is already connected to the station
> > > ground via the outer coax cable conductor it won't make any
> > > difference to station operation whether you connect it to a ground
> > > or not.
> > >
> > > But for your personal safety, connect it to the 50Hz 240V supply

> > > ground. Because when you are messing about in the shack you may
> > > disconnect the coax with the transceiver still powered up.
> > >
> > > If there is any other radio equipment in the shack, connect all the
> > > boxes together and also to the 50 Hz supply ground using the
> > > grounding screws.

4227. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 00:55:32 UTC
From: Jeff Hasz <jhasz@home.com>
Message-ID: <990147331.1866561993@news.bremtn1.wa.home.com>
Source record: 162676

On Thu, 17 May 2001, Richard Clark wrote:
>On Thu, 17 May 2001 03:13:21 GMT, Jeff Hasz <jhasz@home.com> wrote:
>
>>On Wed, 16 May 2001, Richard Clark wrote:
>>>On Tue, 15 May 2001 23:14:16 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
>>>wrote:
>>>
>>>>"Peter O. Brackett" wrote:
>>>>> Cecil and Walt, and Steve are all getting a way too fancy! No one needs any
>>>>> of that complicated stuff... to "formal" dealing with all of that
>>>>> "ficticious" power.
>>>>
>>>>Peter, California is having rolling blackouts because of people like you
>>>>who believe power companies don't generate power and therefore cannot get
>>>>paid for generating power. :-)
>>>
>>>Hi Cecil,
>>>
>>>Actually, it's the "White House Effect" where the platitudes and
>>>ignore-the-problem-and-it-will-go-away is the "fiction" of power.
>>>
>>>73's
>>>Richard Clark, KB7QHC
>>
>>Tsk, tsk, Richard. you know that California's problems began long before the
>>current occupant of the White House, and in reality have very little to do with
>>what goes on on the other side of the country.
>>
>>California's problems began when the NIMBYs moved there... (which, as you know,
>>is one reason I left!)
>>
>>But then I also left because it became such a pain to put up an antenna that
>>would accept and radiate *any* power, forward, reverse, up, down, back, left,
>>right, real, imagined, or apparent... at any phase of voltage/current
>>
>>Jeff
>>KB9GF/7
>
>
>Hi Jeff,
>
>[must resist urge to flame] nice to see you here.
>
>73's

>Richard Clark, KB7QHC

You're sure it's resistance? not impedance? and what's the value of it?

Sorry, I just can't impede it, you left yourself open for that (but that would be an infinite impedance, wouldn't it)...I gotta stop reading this NG...

Jeff

KB9GF/7

4228. 2M SSB Polarization??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 01:23:45 UTC
From: kg4ggx@aol.com
Message-ID: <20010517212345.13401.00000210@ng-mn1.aol.com>
Source record: 162677

Hi all
I heard a discussion on 75m about 2m ssb antenna polarization. As I know, most ops on 2m ssb are horizontal. Why horizontal, and not vertical?What makes one better than the other on VHF? The guy's having this discussion seemed not to agree. As I understand, horizontal antennas are less prone to picking up man made noise. And, it's my understanding that horizontal radio waves have a little less ground loss. Is my understanding wrong. I do know that horizontal is the choice of VHF contesters. But why?
Thanks very much for all replys.
73 Rob

4229. Re: 1:1 coax balun, rg213 coax

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 02:37:17 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B048ADD.3D55@wt.net>
Source record: 162678

mark wrote:
>
> I want to put up a dipole for 160 during the region 1 fieldday weekend. Who
> can tell me how I can make a 1 to 1 balun from RG-213 coax, how many turns
> and which diameter for the best results? If I use rg-58 coax does that make
> any difference to the the amount of turns ?
>
> Thanks, Mark.

Hard to say exactly. In the arrl ant book they say 22 ft,10 turns for
40, and 22 ft,8 turns for 80m. They don't mention 160. So I'll take a
wild guess and say 30-40 ft with 8-10 turns may do ok on 160. Actually,
you might be better off without the balun in some cases on 160m. The
radiation from the feedline can sometimes help on that band. But if rf
concerns to close by rigs is a concern , it may be a good idea. Using
thin coax is not a big change, but they seem to indicate slightly less
coax needed for 58. It's not overly critical on those as long as your in
the ballpark. MK
--
http://web.wt.net/~nm5k

4230. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 02:47:40 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B048D4C.24DA@wt.net>
Source record: 162679

Sideband wrote:
>
> Mark:
>
> Well, it can all be seen (no pics of the analyzer, though) at
> http://www.csotbs.org/kc8rkq/coathanger2.html
> Check it out, and let me know what you think.
>
> 73 de KC8RKQ

Looks fine here. I've got a couple of those I use here. One outdoors, and one in here hanging from the ceiling. I use it to listen the the wx net when it's storming and lightning. One thing though...You might want to keep an eye out for some stainless elements to use. I've used coathanger wire before, and it's works ok at first, but it rusts like crazy once the wx starts hitting it. You might shoot it with some paint to delay the effect. You might could try thin copper tubing, or stiff thick copper wire. Won't rust, and the metal will radiate a bit better than the steel coathanger wire on 2m. Or I would think it would slightly anyway.. MK
--
http://web.wt.net/~nm5k

4231. Whats a ground loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 03:31:30 UTC
From: "." <jkj@der.com>
Message-ID: <3B049792.BB4F5B2A@der.com>
Source record: 162680

[No readable article body recovered]

4232. Two way radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 03:41:04 UTC
From: "Dennis J Little, II" <dennislittle@webgaia.com>
Message-ID: <kR0N6.14212$gc1.1256149@newsread1.prod.itd.earthlink.net>
Source record: 162681

Dear Antenna Enthusiasts,

I am not sure this is the best place to be asking this question... but I figured you all would be the people to ask and would know what I need.

I have a two way radio I recently purchased and a friend and I have been playing around. Basically, I want to be able to broadcast further and would like to build my own antenna. The radios we are using are two-way and can operate on either 462.5625 MHz or 467.5625 MHz frequencies. I live in the country and have a tv antenna tower that is approximately 25 feet tall and will serve as the mounting point for my homemade rig.

Does anyone have any good plans that would fit my application well? Size is not necessarily a problem, but good grounding is as we are atop a hill nonetheless. I want to build a cheap antenna that I can broadcast for longer distances on. How do I know how long to make the antenna, what size piping should I use and what type? Do you think any particular setups would work best (ie: Dipole, whip or J-pole) ? I have also recently acquired two older Primestar satellite dishes; would they be able to be rigged to build a directional antenna?

Any help you all can give would be great. You can reply directly to my email dennislittle@webgaia.com Thanks for your time!

Sincerely,

Dennis Little

4233. Re: FREQUENTLY ASKED QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 03:50:26 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <qs69gt4a03mt87ulr18aitn3bno7reg0rg@4ax.com>
Source record: 162685

You may search the Dejaview newsgroups archives at :
http://groups.google.com/googlegroups/deja_announcement.html

Thu, 17 May 2001 17:16:04 -0400, "marvin rosen" <n3bqa@starpower.net>
wrote:

>how do i access the "FAQ" on this newsnet?
>

4234. Re: Whats a ground loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 04:07:14 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B049FF2.763D2303@IEEE.org>
Source record: 162683

"." wrote:

One example is when you have two grounds at different potentials
you get a ground loop current flowing between grounds.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

4235. Re: Two way radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 04:09:21 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B04A071.38851E0D@IEEE.org>
Source record: 162684

"Dennis J Little, II" wrote:
> I want to build a cheap antenna that I can broadcast for longer
> distances on.

What radio service are you using? Do the FCC rules for that service
allow external antennas?
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

4236. Re: 2M SSB Polarization??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 04:11:09 UTC
From: "John P. Franklin" <jpfrankl@teleport.com>
Message-ID: <Pa1N6.686$t61.450273@nntp2.onemain.com>
Source record: 162682

'Cuz that's the way it's always been done.....

4237. Re: Two way radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 04:54:54 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <hna9gtgjph0siojm3dp1kglujempktgiga@4ax.com>
Source record: 162688

Cecil,

That's GRMS and external antenna are okay.

Danny

On Thu, 17 May 2001 23:09:21 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>"Dennis J Little, II" wrote:
>> I want to build a cheap antenna that I can broadcast for longer
>> distances on.
>
>What radio service are you using? Do the FCC rules for that service
>allow external antennas?

4238. N connector and 9913

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 05:43:20 UTC
From: Dan Yemiola <AGA4FL@Yahoo.com>
Message-ID: <3B04B678.CF5E211A@Yahoo.com>
Source record: 162686

Could anyone direct me to a site that tells, and preferably shows with illustrations, how to properly put an N connector on 9913 cable?

Dan
AI8O

4239. UFO antenna detection plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 05:49:20 UTC
From: Joe <joe.amp@NOSPAMverizon.com>
Message-ID: <AJ2N6.90923$Rg2.5221818@typhoon2.ba-dsg.net>
Source record: 162687

http://www.parascope.com/nb/detector.htm
This was to funny to pass up !
Its real plans !

4240. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 06:04:38 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B04BB76.6B5A9D8A@mwci.net>
Source record: 162689

William E. Sabin wrote:

> The circuit considerations, including reactance (in particular) are, as a matter of
> fact, crucial to the understanding of how an actual
> circuit functions.

A properly terminated lossless coax is an example of a circuit, if the velocity of propagation (time delay) is included in the circuit analysis. The consideration of time delay is very common in many kinds of circuit analysis.

We are considering initially the "differential" mode.

Looking at the solution of the wave equation, which is derived from Maxwell's equations, on a transmission line, we see that over some time span a reference phase point on a transverse sine wave of voltage travels toward the load. At any *instant* of time, along the center wire, there is a longitudinal voltage difference between point X and X+dX. This difference is due specifically to the series inductance per unit length of the center conductor and the transverse capacitance per unit length. There is also a sine wave of current on the center wire which is in phase with the voltage wave. At any instant it also has a longitudinal component.

If we look at this pattern for a while we see that on the center wire the average longitudinal voltage difference between X and X+dX is zero. So the voltage wave on the lossless line travels unmodified. The same is true for current.

The current on the center wire creates an H field. This H field is cancelled at the inner surface of the braid by the H field created by the return current on the inner surface of the braid. Because of this cancellation of H field, no longitudinal E field is created along the braid, despite the fact that the inductance per unit length of the braid is by no means zero. It is usually about 25% of the inductance per unit length of the center wire.

This is an interesting thing about the braid. Its longitudinal voltage per unit length (its E field) is zero, and it is due specifically to the cancellation of H fields at the inner surface. In an ac circuit, an E field and an H field must exist together. Observe also that the braid is not a "perfect" conductor because of its reactance per unit length. It is, however, a "lossless" conductor (in this example).

By a consideration of transverse voltage and series current forward to the load on the center wire and return current along the inner surface of the braid (the divergence of current is zero), and by the inclusion of time in the circuit analysis, we have a clear picture of the lossless transmission line as a circuit element.

Now consider the common mode.

If the return current on the braid inner surface is not equal and opposite to the current on the center wire for *any* reason, the H fields do not cancel. Therefore a

longitudinal E field along the braid exists because of its longitudinal inductance. This E field exists also on the *outside* of the braid and it also exists *beyond* the braid. The result of this is that the coax braid radiates. Common mode radiation is exactly that simple. The "leakage" of a coax is due to this conversion of differential mode to common mode within the coax.

The common mode current can also be on the outside of the braid, due to electromagnetic induction from some source beyond the coax. It also radiates.

Bill W0IYH

4241. Re: FREQUENTLY ASKED QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 06:15:55 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <17FyVkAb4LB7EAZ+@ifwtech.com>
Source record: 162690

Dan Richardson wrote:
> Thu, 17 May 2001 17:16:04 -0400, "marvin rosen" <n3bqa@starpower.net>
>wrote:
>
>>how do i access the "FAQ" on this newsnet?
>>
>You may search the Dejaview newsgroups archives at :
>http://groups.google.com/googlegroups/deja_announcement.html
>
In other words, there isn't a FAQ for this newsgroup, only archives.

However, this newsgroup does have lots of Frequently Unresolved
Questions. Maybe there should be a...?

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

4242. Re: 2M SSB Polarization??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 06:37:10 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <EsWOgwAWMMB7EAuw@ifwtech.com>
Source record: 162691

KG4GGX wrote:
>Hi all
> I heard a discussion on 75m about 2m ssb antenna polarization. As I know,
>most ops on 2m ssb are horizontal. Why horizontal, and not vertical?What makes
>one better than the other on VHF? The guy's having this discussion seemed not
>to agree. As I understand, horizontal antennas are less prone to picking up man
>made noise. And, it's my understanding that horizontal radio waves have a
>little less ground loss. Is my understanding wrong. I do know that horizontal
>is the choice of VHF contesters. But why?

At VHF it isn't about man-made noise or ground loss.

VHF/UHF SSB is used for contacts way, way beyond the line of sight, and horizontal polarization has significantly lower loss along paths involving diffraction over obstacles. In other words, it works better. (That would also be true for FM, but amateur FM has standardized on vertical polarization because of the overriding need to use omnidirectional antennas for mobiles and for fixed packet nodes.)

Horizontal is also mechanically easier for stacks of single yagis for multiple bands.

Once you lock into one polarization as standard, the cross-polarization loss means that everybody has to fall into line. But it's more than "cuz that's the way it's always been done". There were - and still are - good reasons for doing it that way.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

4243. New antenna patented. Really cool

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 07:25:33 UTC
From: radiomatt@aol.com
Message-ID: <20010518032533.14492.00000286@ng-mm1.aol.com>
Source record: 162692

There has been a thread on the Electronic Warfare NG about a patent issued for an antenna that can send intelligence(embedded in a RF signal) faster tan light. Seems just the thing I need as it could solve the QRM problem I have (the signal arrives before the noise),

With one of these you could listen to a station before the signal arrives! (I think). An unfair advantage in a DX contest.

The patent WAS issued" see
http://www.delphion.com/details?&pn=US06025810__&show_legal=1#LEGAL

However, one of the claims is that plants grow faster in its presence. Also, the signal is sent in another dimension.

Let me know when they validate this one.

4244. Re: New antenna patented. Really cool

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 07:46:02 UTC
From: radiomatt@aol.com
Message-ID: <20010518034602.14445.00000268@ng-mm1.aol.com>
Source record: 162693

To make things even MORE interesting (confused), here's a follow-up post describing even more weird(great) antenna designs:

From the EWAR newsgroup:

Don't let my "discussion" with XXXX lead anyone to overlook a really interesting and legitimate science project currently being conducted at Oxford University. I discussed the info found in the sources listed below with other scientists, and -- if it works -- this could be highly relevant to the microwave-audio phenomenon/effect !!!

Go to :

Http://www.delphion.com

Click on Patent Search

Check out the patents by Cambridge University physicist-inventor Houshang Ardavan,

GB09819504A (10/28/1998) Apparatus for Generating Focused Electromagnetic Radiation

WO00014750A1 (3/16/2000) Apparatus for Generating Focused Electromagnetic Radiation

AU05641599A1 (3/27/2000) Apparatus for Generating Focused Electromagnetic Radiation

For more on his work, see the weekly British magazine,
"New Scientist", issue #2288, April 28, 2001, Page 28.
Article on recreating a Pulsar's weird faster-than-light radiation in the lab. What all of this boils down to is a SUPERLUMINAL TRANSMITTER not much bigger than a mobile phone which can transmit in any frequency range, even previously inaccessible ones which can be focused to appear on aany specific single spot on this planet only. And, as New Scientist is reporting, his son has now built one at Oxford University from a research grant of 330,000.oo British Pounds.

DON'T MISS THIS ARTICLE. THE SUPERLUMINAL TRANSMITTERS IT DESCRIBES COULD BE DIRECTLY RELATED TO THE MICROWAVE-AUDIO PHENOMENON/EFFECT

For info on New Scientist, see :

Http://www.NewScientist.com

4245. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 09:56:10 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9e2rjj$a3r$1@neptunium.btinternet.com>
Source record: 162694

The overall effect of braid is to increase the effective skin depth
in the composite material (copper and air).

The increase is obviously related to the proportions of copper and
air in the material.

So to find what happens in braid just consider what happens in a
solid conductor when thickness is of the same order as skin depth.

Or, what amounts to the same thing, consider what happens in a
solid conductor from DC, via 1 kHz up to a few hundred kHz.

When THAT'S understood so will be the braid problem at HF.

Reg

4246. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 10:17:28 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9e2srg$b3v$1@neptunium.btinternet.com>
Source record: 162695

The electric and magnetic field equations apply in an identical
manner to ALL materials from a vaccuum to the metals.

Fields within the space occupied by a material are related only to
a material's conductivity, permeability and permittivity.

If a varying magnetic field exists then so must a varying electric
field.

Reg
==========

Kevin wrote -
> There is no voltage field. All of these discussions
> would make more sense if everyone would stop
> mentioning voltage.

4247. Re: New antenna patented. Really cool

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 11:19:49 UTC
From: deyoreo@re.ray.com
Message-ID: <3b05053e.1290876@proxy.res.ray.com>
Source record: 162696

Whats the name of the Elec Warfare NG?

On 18 May 2001 07:46:02 GMT, radiomatt@aol.com (Radiomatt) wrote:

>To make things even MORE interesting (confused), here's a follow-up post
>describing even more weird(great) antenna designs:
>
>From the EWAR newsgroup:
>
>
>Don't let my "discussion" with XXXX lead anyone to overlook a really
>interesting and legitimate science project currently being conducted at
>Oxford University. I discussed the info found in the sources listed below
>with other scientists, and -- if it works -- this could be highly relevant
>to the microwave-audio phenomenon/effect !!!
>
>----------
>Go to :
>
>Http://www.delphion.com
>
>Click on Patent Search
>
>Check out the patents by Cambridge University physicist-inventor
>Houshang Ardavan,
>
>GB09819504A (10/28/1998) Apparatus for Generating Focused Electromagnetic
>Radiation
>
>
>WO00014750A1 (3/16/2000) Apparatus for Generating Focused Electromagnetic
>Radiation
>
>
>AU05641599A1 (3/27/2000) Apparatus for Generating Focused Electromagnetic
>Radiation
>
>
>For more on his work, see the weekly British magazine,
>"New Scientist", issue #2288, April 28, 2001, Page 28.
>Article on recreating a Pulsar's weird faster-than-light radiation in the
>lab. What all of this boils down to is a SUPERLUMINAL TRANSMITTER not much
>bigger than a mobile phone which can transmit in any frequency range, even
>previously inaccessible ones which can be focused to appear on aany specific
>single spot on this planet only. And, as New Scientist is reporting, his son

>has now built one at Oxford University from a research grant of 330,000.oo
>British Pounds.
>
>DON'T MISS THIS ARTICLE. THE SUPERLUMINAL TRANSMITTERS IT DESCRIBES
>COULD BE DIRECTLY RELATED TO THE MICROWAVE-AUDIO PHENOMENON/EFFECT
>
>
>For info on New Scientist, see :
>
>Http://www.NewScientist.com
>

4248. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 11:24:00 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B05064F.AEB5AA30@mwci.net>
Source record: 162697

William E. Sabin wrote:

> This is an interesting thing about the braid. Its longitudinal voltage per unit
> length (its E field) is zero, and it is due specifically to the cancellation of H
> fields at the inner surface. In an ac circuit, an E field and an H field must exist
> together. Observe also that the braid is not a "perfect" conductor because of its
> reactance per unit length. It is, however, a "lossless" conductor (in this example).

The longitudinal voltage on the braid cannot be exactly zero, because a return current flow toward the generator requires a small voltage difference. Current never flows without a voltage difference. In this ideal case the difference can be very small.

Bill W0IYH

4249. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 12:31:38 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <KC8N6.25446$p33.448052@news1.sttls1.wa.home.com>
Source record: 162698

<atkes@imap1.asu.edu> wrote in message news:9e1je0$he5$1@news.asu.edu...

MUCH!!

Thanks for the lengthy reply Kevin. This will take some study.

73, Roger, W7WKB

4250. Re: FREQUENTLY ASKED QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 12:34:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0516E4.4BC64142@IEEE.org>
Source record: 162699

"Ian White, G3SEK" wrote:
> In other words, there isn't a FAQ for this newsgroup, only archives.

Among those archives is the closest thing we have to a FAQ. Jeff, in
Hawaii, used to publish the history of the rec.radio.amateur.*
newsgroups about once a month. I haven't seen him do that this year.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

4251. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 12:39:55 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B05181B.F95CB114@spam.me.not>
Source record: 162700

Peter:

It was after the run of coax that I'm using on the radio. Putting the analyzer right on the antenna would have been a little silly, because the presence of my body would interfere with the match, etc, wouldn't it?

73 de KC8RKQ

"Peter J. Bertini" wrote:
>
> Was the analyzer at the antenna, or was in line after
> some coax?
>
> Pete
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3B03D580.C3B107AA@spam.me.not...
> > Mark:
> >
> > Well, it can all be seen (no pics of the analyzer, though) at
> > http://www.csotbs.org/kc8rkq/coathanger2.html
> > Check it out, and let me know what you think.
> >
> > 73 de KC8RKQ
> >
> > Mark Keith wrote:
> > >
> > > Sideband wrote:
> > > >
> > > > Mark:
> > > >
> > > > Hrm... The MFJ analyzer I was loaned read rather easily. the needle
> > > > meter on it is small, but the original reading, with the ground
> radials
> > > > perpendicular to the radiator, was around 75 ohms. Bringing them down
> > > > about 40 degrees brought the impedance down to 40 ohms on 146.0 and 50
> > > > on 144.0 and 148.0.
> > > >
> > > > I'd hate to blame the equipment, especially considering Butch's rude,
> > > > crude, and socially unacceptable comments previously in this thread...
> > > >
> > > > Can you offer another explanation?
> > > >
> > > > 73 de KC8RKQ

> > > >
> > > > Mark Keith wrote:
> > > > > Thats kinda weird. Usually it works the other way around. In fact,
> I'm
> > > > > wondering if the instrument you were using was read backwards. You
> said
> > > > > the impedance was 75 ohms. I bet it was really about 35. That would
> be
> > > > > the norm. You adjusted the radials downward and said it lowered to
> 50
> > > > > ohms. Again, it's usually backwards from that, lowering the radials
> > > > > should "raise" the impedance to about 50 ohms. Anyway, it's
> > > > > working..Thats the main thing. MK
> > > > > --
> > > > > http://web.wt.net/~nm5k
> > >
> > > Not really, as I've never used one of those things. But, the SWR would
> > > be about the same for both examples. IE: 75 ohms to 50 ohms line/rig
> > > would be 2:1 . Also 25 ohms is 2:1. Dunno, I think it was running
> > > backwards for some reason. I just can't see a 1/4 wl GP with level
> > > radials being 75 ohms. Normally it should be the classic 35 ohms or so.
> > > And lowing the radials increases to 50 ohms or so. I've never seen it
> > > work the other way. Maybe others have some ideas on this. MK
> > > --
> > > http://web.wt.net/~nm5k

4252. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 12:40:56 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B051858.D8744F70@spam.me.not>
Source record: 162701

That's another good idea. I'll give that a shot as well. Thanks.

73 de KC8RKQ

Mark Keith wrote:
>
> Sideband wrote:
> >
> > Mark:
> >
> > Well, it can all be seen (no pics of the analyzer, though) at
> > http://www.csotbs.org/kc8rkq/coathanger2.html
> > Check it out, and let me know what you think.
> >
> > 73 de KC8RKQ
>
> Looks fine here. I've got a couple of those I use here. One outdoors,
> and one in here hanging from the ceiling. I use it to listen the the wx
> net when it's storming and lightning. One thing though...You might want
> to keep an eye out for some stainless elements to use. I've used
> coathanger wire before, and it's works ok at first, but it rusts like
> crazy once the wx starts hitting it. You might shoot it with some paint
> to delay the effect. You might could try thin copper tubing, or stiff
> thick copper wire. Won't rust, and the metal will radiate a bit better
> than the steel coathanger wire on 2m. Or I would think it would slightly
> anyway.. MK
> --
> http://web.wt.net/~nm5k

4253. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 12:43:07 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B0518DA.4F14C560@spam.me.not>
Source record: 162702

The coax is a random length.... I measured it to be JALE (Just About
Long Enough)..

I didn't even consider the coax when measuring the impedance. /me baps
himself mightily with a large SWR meter.

-SSB

Rory Davis wrote:
>
> How long was your coax between the antenna and the analyzer?
>
> If it is 50 ohm coax, close to an odd multiple of 1/4 wavelength, your
> (approx) 30-35 ohm groundplane could easily appear to be 75 ohms at the
> analyzer input. And, when you bent the radials down, increasing the
> impedance at the feedpoint, the impedance measurement at the other end of
> the coax decreased.
>
> A 1/4 wavelength (and odd multiples) transmission line has a impedance
> inversion effect; if the impedance at the input increases, the impedance
> measured at the other end will decrease. This can be shown with a Smith
> Chart calculator or the formula for transmission line transformers found in
> most handbooks.
>
> Try another length of transmission line. Ideally, it should be a multiple of
> 1/2 wavelength at the test frequency. Don't forget to include the velocity
> factor of the coax when you make up your test cable.
>
> 73
> N7CR
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3B03C568.464C9126@spam.me.not...
> > Mark:
> >
> > Hrm... The MFJ analyzer I was loaned read rather easily. the needle
> > meter on it is small, but the original reading, with the ground radials
> > perpendicular to the radiator, was around 75 ohms. Bringing them down
> > about 40 degrees brought the impedance down to 40 ohms on 146.0 and 50
> > on 144.0 and 148.0.
> >
> > I'd hate to blame the equipment, especially considering Butch's rude,
> > crude, and socially unacceptable comments previously in this thread...
> >
> > Can you offer another explanation?

> >
> > 73 de KC8RKQ
> >
> > Mark Keith wrote:
> > > Thats kinda weird. Usually it works the other way around. In fact, I'm
> > > wondering if the instrument you were using was read backwards. You said
> > > the impedance was 75 ohms. I bet it was really about 35. That would be
> > > the norm. You adjusted the radials downward and said it lowered to 50
> > > ohms. Again, it's usually backwards from that, lowering the radials
> > > should "raise" the impedance to about 50 ohms. Anyway, it's
> > > working..Thats the main thing. MK
> > > --
> > > http://web.wt.net/~nm5k

4254. Re: 2M SSB Polarization??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 13:20:09 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3B052189.376D8586@dialpoint.net>
Source record: 162707

Horizontal was used way before there were any wide spread (read as
almost none) use of repeaters in the 2 meter band. Studies long ago
determined (right or wrong) that horizontal had a slight advantage to
distance.

Jake Brodsky wrote:
>
> On 18 May 2001 01:23:45 GMT, kg4ggx@aol.com (KG4GGX) wrote:
>
> > I heard a discussion on 75m about 2m ssb antenna polarization. As I know,
> >most ops on 2m ssb are horizontal. Why horizontal, and not vertical? ...
>
> Because most of the local traffic runs with vertical polarization.
> This will reduce the IMD problems, and allow you to run some nice low
> noise pre-amplifiers on your directional antennas with less worry of
> what the local repeaters may be spewing.
>
> It may not be the reason why horizontal polarization was originally
> used, but it's a good reason to continue.
>

4255. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 13:30:17 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <Jt9N6.28415$4f7.2180119@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162703

Sorry for the long Epistle.

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B01A7BD.50D99011@IEEE.org...
>
> I could possibly be completely wrong but someone needs to prove to me that
> 75 joules plus 8.33 joules equals 133.33 joules. Nobody has done that yet.
>
> In asserting that equation to be true, Steve has allowed 50 joules/sec to
slip
> away in the direction of the source. Since he needs exactly 50 joules/sec
to
> balance the energy equation, one wonders why he allowed it to slip away.
I'm
> only a lowly Texan but seems to me zero volts times zero amps equals zero
> joules/sec.
> --

Cecil:

I'll give this another try.

Your statement that zero volts times zero amps equals zero joules/sec (watts) is correct. On the other had, 5 V times 1 A is not always equal to 5 W. We can't forget the Cos(theta) factor.

My statement that 75 W "plus" 8.33 W "equals" 133.33 W is really only meant to describe the situation where the voltage and current associated with the 75 W wave add (as vectors) with the voltage and current associated with the 8.33 W wave such that the resulting total voltage and current have an associated total power of 133.33 W. In the voltage and current analysis that I have been describing, all of the energy is correctly accounted for and all of the correct steady state conditions are determined.

In fact, without knowing the steady state answer beforehand, there is no method, other than that which I describe, to correctly determine the steady state solution. This alone should be a significant point to both you and Walter.

As for 75 W + 8.33 = 133.33 W, we need to think of it as follows: First, consider the situation where we have two resistors in a circuit and the power dissipated in one resistor is 75 W and the power dissipated in the other is 8.33 W. In this case, the total power dissipation in the circuit must be the algebraic sum of 75 W + 8.33 W. The total power dissipation in the circuit must be 83.33 W. This however is not analogous to the situation that we are discussing relative to "adding" forward power. Our discussion

is more like having a single 150 ohm resistor and when a voltage source of 106.067 V is independently applied to it the resulting power is 75 W. When a voltage source of 35.35 V is independently applied to it the total power is 8.33 W. However, when both are applied to it simultaneously in series, the total voltage and current increase accordingly such that the total power is 133.33 W. This is my 75 W + 8.33 W = 133.33 relationship.

As for the conservation of energy I think we both agree that it requires that Pdelivered = Pforward - Preflected and that the total power flowing into the junction equal the total power flowing out of the junction. This is important as I discuss further.

Consider your example with the 50 ohm - 150 ohm transmission line junction. If the forward source power at the junction is 100 W, then the forward source power in the 150 ohm line is equal to 75 W and the reflected power in the 50 ohm line is equal to 25 W. At this point the law of conservation of energy is satisfied. Pdelivered (75 W) equals Pforward (100 W) - Preflected (25 W). Additionally, the total power flowing into the junction is equal to the total power flowing out of the junction. 100 W = 75 W + 25 W. If we now know that the steady state reflected power in the 150 ohm line is 10 W, we can determine that the re-reflected power in the 150 ohm line is 2.5 W and the power delivered rearward into the 50 ohm line is 7.5 W. Again the law of conservation of energy is satisfied. The total power into the junction is 110 W (100 W + 10 W) and the total power flowing out of the junction is equal to 110 W (75 W + 25 W + 2.5 W + 7.5 W). However, we are missing a key piece of the puzzle - the delivered power. Without knowing this answer, we cannot use the power values to determine the correct forward power in the 150 ohm line or the correct reflected power in the 50 ohm line.

At this point, we could determine all of the voltage magnitudes but without the voltage phase and then adding the voltages as vectors, we still cannot determine the correct steady state solution. There is no method that either you or Walter can use to correctly determine the total forward power in the 150 ohm line or the total reflected power in the 50 ohm line.

The total forward power in the 150 Ohm line is not equal to 75 W + 2.5 W and the total reflected power in the 50 ohm line is not equal to 25 W + 7.5 W. Adding voltages as the square root of the sum of the squares will not work either. Only after the correct phase relationship is known can we determine that the correct forward power in the 150 ohm line is 73.52 W and that the correct reflected power in the 50 ohm line is 36.48 W. To determine these values we need to know the relative phases and then add the voltages as vectors. The delivered power in this case is 63.52 W. It is critically important to note that the delivered power is a determined quantity found only *after* the steady state reflected power in the 50 ohm line is known or after the steady state forward power in the 150 ohm line is found. The delivered power is the final answer, using it as part of solving the problem is not valid.

At this point, your energy math would indicate that the total steady state forward power in the line is found from the addition of 75 W + 2.5 W - 3.98 W. You would come up with the -3.98 W from 25 W + 7.5 W - 36.48 W. In any

event, your math would be correct and it would also correctly use the concept that the total power into the junction must equal the total power out of the junction. I have no issue with your energy math from this perspective. To make it work however, you first needed to know the final answer - either the delivered power or the actual total reflected power in the 50 ohm line. Your energy math is simply a manipulation of the relationship that the total power into the junction must equal the total power out of the junction.

From here it is incorrect for you to imply that the -3.98 W is redirected somehow as a forward power in the 150 ohm line or that the correct voltage addition occurs from the square root of the sum of the squares. These two assumptions do not represent the physics of what happens at the junction. The only forward waves in the 150 ohm line are the forward source wave (75 W) and the re-reflected wave (2.5 W). The vector addition of the voltage and current associated with these waves gives the correct answer and represents the physics of what happens at the junction.

If you understand the correct physics at the junction, you should not have to first determine the solution before you can describe how the solution is achieved.

I think that this is about all I can offer on the subject.

73
Steve VE9SRB

4256. Re: UFO antenna detection plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 13:32:41 UTC
From: Irv Finkleman <finkirvNOSPAM@home.com>
Message-ID: <3B05244F.9B276D4E@home.com>
Source record: 162704

Joe wrote:
>
> http://www.parascope.com/nb/detector.htm
> This was to funny to pass up !
> Its real plans !

Noted that Fate magazine excerpts are located at
www.llwewllyn.com -- any relation, Roy? ;-)
--

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

Please delete NOSPAM from my e-mail address when replying.
Thanks!

4257. Re: UFO antenna detection plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 13:36:02 UTC
From: k3bu@aol.com
Message-ID: <20010518093602.13627.00000593@ng-ch1.aol.com>
Source record: 162705

>
>http://www.parascope.com/nb/detector.htm
>This was to funny to pass up !
>Its real plans !
>
>

Too big, it should be fractalized, made more efficient and better looking :-)

4258. Re: 2M SSB Polarization??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 13:45:17 UTC
From: Jake Brodsky <frussle@erols.com>
Message-ID: <ik9agtk5usd21bh7vkaf86e2aa216uh0ss@4ax.com>
Source record: 162706

On 18 May 2001 01:23:45 GMT, kg4ggx@aol.com (KG4GGX) wrote:

> I heard a discussion on 75m about 2m ssb antenna polarization. As I know,
>most ops on 2m ssb are horizontal. Why horizontal, and not vertical? ...

Because most of the local traffic runs with vertical polarization.
This will reduce the IMD problems, and allow you to run some nice low
noise pre-amplifiers on your directional antennas with less worry of
what the local repeaters may be spewing.

It may not be the reason why horizontal polarization was originally
used, but it's a good reason to continue.

73,

Jake Brodsky, AB3A mailto:frussle@erols.com
"Beware of the massive impossible!"

4259. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 13:50:48 UTC
From: richardharrison@webtv.net
Message-ID: <20508-3B0528B8-3@storefull-117.iap.bryant.webtv.net>
Source record: 162708

Bill Sabin, W0IYH wrote:
"At any "instant" of time, along the (coax) center wire, there is a longitudinal voltage between points X and X+dX.".

Yes, and as Bill pointed out, the steady-state voltages at point x and at point X+dX are equal in a lossless line.

As the shield is carrying an inverted replica of the instantaneous voltages at points X and X+dX, what is true for the center wire is true for the shield`s inner surface.

At the attachment point of the 1/2-dipole at the top of the inner shield`s surface, call it point X, there are two X+dX options. One is the antenna wire. The other is the outside surface of the shield.

There is an instantaneous potential difference between X and both X+dX points. So, current will flow between X and both X+dX connections.

ARRL`s edition 19 of the Antenna Book may have an imperfect Fig 24 on page 26-16, and the explanation of the figure might be improved, but the basics are correct and I find it easy to understand. It shows why a balun may preserve the dipole`s radiation pattern by avoiding the outer shield current.

Best regards, Richard Harrison, KB5WZI

4260. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 14:22:36 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B05302C.6B9F6756@IEEE.org>
Source record: 162709

VE9SRB wrote:
> Your statement that zero volts times zero amps equals zero joules/sec
> (watts) is correct. On the other had, 5 V times 1 A is not always equal to
> 5 W. We can't forget the Cos(theta) factor.

Your statement is true. But please note: 5V TIMES 1A ***CANNOT*** EVER BE MORE THAN 5 WATTS BECAUSE COS(theta) CAN ***NEVER*** BE GREATER THAN ONE.

> My statement that 75 W "plus" 8.33 W "equals" 133.33 W is really only meant
> to describe the situation where the voltage and current associated with the
> 75 W wave add (as vectors) with the voltage and current associated with the
> 8.33 W wave such that the resulting total voltage and current have an
> associated total power of 133.33 W.

75 joules/sec plus 8.33 joules/sec does NOT equal 133.33 joules/sec. You are missing 50 joules/sec of power (energy). That 50 joules/sec of energy comes from the destructive interference action. You are guilty of *exactly* the same thing you are accusing me of. You know the final steady-state results so you are saying that missing 50 joules/sec doesn't matter.

It is true that the voltages and currents add up to what they should be. But you have simply not included enough energy to make the voltages and currents assume the values that we know they assume. If there were only 75 joules/sec plus 8.33 joules/sec equals 83.33 joules/sec, the voltages and currents could not assume their known values. Therefore, you have left some energy out of the energy equation. You have left the 50 joules/sec associated with the destructive interference out of the energy equation. That is my only argument with you.

You have yet to produce a reference that supports your contention that 75 joules/sec plus 8.33 joules/sec equals 133.33 joules/sec.

> In the voltage and current analysis
> that I have been describing, all of the energy is correctly accounted for
> and all of the correct steady state conditions are determined.

The energy is NOT correctly accounted for. That's the entire point of the argument. You know the final results and are simply ignoring the energy associated with the destructive interference. I believe you said that 50 joules/sec of energy keeps flowing toward the source in those canceled waves. What you don't seem to realize is that the Poynting Vector reverses direction at a destructive interference point in a wire. Those 50 joules/sec are pointed back toward the load and causes the energy equation to balance perfectly.

> In fact, without knowing the steady state answer beforehand, there is no
> method, other than that which I describe, to correctly determine the steady

> state solution. This alone should be a significant point to both you and
> Walter.

Please leave Walt out of your and my arguments. I disagree with Walt on some points and linking us together muddies the water. Because you know the steady state answer beforehand, you are omitting the energy associated with the destructive interference pattern. Pot, Kettle. Kettle, Pot.

> As for 75 W + 8.33 = 133.33 W, we need to think of it as follows: First,
> consider the situation where we have two resistors in a circuit and the
> power dissipated in one resistor is 75 W and the power dissipated in the
> other is 8.33 W. In this case, the total power dissipation in the circuit
> must be the algebraic sum of 75 W + 8.33 W. The total power dissipation in
> the circuit must be 83.33 W. This however is not analogous to the situation
> that we are discussing relative to "adding" forward power. Our discussion
> is more like having a single 150 ohm resistor and when a voltage source of
> 106.067 V is independently applied to it the resulting power is 75 W. When
> a voltage source of 35.35 V is independently applied to it the total power
> is 8.33 W. However, when both are applied to it simultaneously in series,
> the total voltage and current increase accordingly such that the total power
> is 133.33 W. This is my 75 W + 8.33 W = 133.33 relationship.

I mostly agree with that. But notice that when you put those voltages in series, more energy is supplied by the source. Do you agree with that?

In our transmission line example, the energy from the source is fixed and constant. Therefore, the source CANNOT supply additional energy. Where does the necessary additional energy come from. It comes from the destructive interference action. We know, in our transmission line example, that the source CANNOT supply any additional energy. So we are left with the choice of finding the additional energy or appearing to violate the conservation of energy principle. I vote for the former. You vote for the latter. That's what the argument is all about.

> Consider your example with the 50 ohm - 150 ohm transmission line junction.
> If the forward source power at the junction is 100 W, then the forward
> source power in the 150 ohm line is equal to 75 W and the reflected power in
> the 50 ohm line is equal to 25 W. At this point the law of conservation of
> energy is satisfied. Pdelivered (75 W) equals Pforward (100 W) - Preflected
> (25 W).

Where does that 25 joules/sec of reflected energy go, Steve? Seems to me, you assert that it disappears or somehow, with the assistance of zero volts and zero current, makes its way back to the source. I, OTOH, assert that the 25 joules/sec is half the power involved in a destructive interference pattern which changes the direction of the Poynting vector so that energy joins the forward wave back toward the load.

> Additionally, the total power flowing into the junction is equal to
> the total power flowing out of the junction. 100 W = 75 W + 25 W. If we
> now know that the steady state reflected power in the 150 ohm line is 10 W, ...

Come on, Steve, it is obvious that you keep changing the conditions for the purpose of masking your mistakes. Please stick with the 33.33w reflected power

that we have been using for weeks. In every example you have given, the only difference in our results is that I have balanced the energy equation and you haven't. That's our ***ONLY*** argument.

> There is no method that either
> you or Walter can use to correctly determine the total forward power in the
> 150 ohm line or the total reflected power in the 50 ohm line.

Bull$hit, Steve. You gave me a non-Z0-match example about a week ago and I got all the correct values using my method. You said, "Excellent". Why must you now lie about that? I got the same values of total forward power and total reflected power that you did. Your assertion that my method didn't work backfired on you because you neglected to account for the 2.95 joules/sec of destructive interference in that particular example.

Walt's methods and my methods are NOT the same. IMO, Walt's method has an inconsistency built in. OTOH, my method gave the same results as your method so if, as you say, my method is flawed, seems so is yours.

Please stick to the topic, Steve. You forgot to account for all the necessary energy in the system because you know the steady-state voltage and current values. I got all the same values of voltages, currents, and power that you did. The only difference in our results is that you forgot to balance the energy equation and you are still refusing to balance the energy equation which means you don't really accept the conservation of energy principle. You simply cannot have it both ways. You simply cannot be allowed to completely ignore the destructive interference energy while paying lip service to the principle.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4261. Re: Whats a ground loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 14:24:24 UTC
From: Dave Shrader <W1MCE@arrl.net>
Message-ID: <3B05308A.1CD1F1A4@arrl.net>
Source record: 162710

A ground loop is a 1 turn 'coil' made up of components in the ground system.

I have 2 known ground loops at my station! It is not a problem however!!

My 'earth' connection is a 1/2 inch diameter copper pipe along the back edge of the radio bench. It is connected to two (2) rods driven into the ground at different locations. There are two different lengths of #8 copper wire connecting one end of the copper pipe to the two different rods. Multiple connections break up resonances.

Now, my ICOM 746 case connects to the copper pipe with a 12 inch length of #8 copper wire. Also, my Amplifier, AL80B, connects to the copper pipe the same way. So far so good.

Now, here's the problem! My ICOM 746 is connected to the AL80B via a 3 foot length of RG 8X. The TWO copper pipe connections AND the coax connection between the ICOM and the Amplifier creat a 'loop' among the two chassis' and the copper pipe. THAT"S A GROUND LOOP. This ground loop is then connected to earth ground through the ground rods.

My tower contributes to a second ground loop. The three legs of the tower are each connected to earth with driven ground rods. The tower structure is connected to the amplifier via the coax braid. The amplifier is connected to ground as described above.

MY STATION is full of ground loops with no problem!!!

Ground loops are NOT necessarily a problem, but they can be!

Deacon Dave, W1MCE

"." wrote:

4262. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 14:35:18 UTC
From: richardharrison@webtv.net
Message-ID: <19607-3B053326-80@storefull-116.iap.bryant.webtv.net>
Source record: 162711

Bill Sabin, W0IYH wrote:
"Looking at the solution of the wave equation, which is derived from Maxwell`s equations on a transmission line...."

Thanks for not involving Maxwell directly.

Griffith aptly extols the advantage of circuit analysis: "The world`s foremost mathematicians would shudder at the thought of the horrible complications of such an analysis (expressing mathematically the exact shape of the electric and magnetic fields within an electric motor)." Griffith was writing this before the information age made computers widely available.

"Therefore we must now turn away from the study of the electromagnetic field for a considerable period of time and concentrate our attention upon the study of circuit theory."

After some 300 pages, Griffith returns to Maxwell`s equations to explain radiation after a complete study of transmission lines.

Best regards, Richard Harrison, KB5WZI

4263. Re: Homemade antenna ideas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 15:02:34 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3B053B7D.5070801@aol.com>
Source record: 162713

Re weatherproofing:

If you ask around your favorite local hardware store, you can get something called "Plasti-dip". This product is intended for insulating tool handles. You should be able to paint on a couple of coats to do the trick. (It is quite thick but it is paintable)

Note: I don't know how well it insulates at 146Mhz, but it works well enough at less than 25 watts. Also, the can I have is red, so I used a light coat of flat black on top to semi-camo the connection.

Also, there is a similar product called "Brush-on Electrical tape". This product is thinner, so it fills gaps better. I found it requires more coats to do a good job, and it is black in color.

I use either, as available to seal coax on my HF dipole feeders, and have no problem at 100 watts.

73,
W4KAZ

4264. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 15:07:33 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <VUaN6.29023$t12.2200287@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162712

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B05302C.6B9F6756@IEEE.org...

> > There is no method that either
> > you or Walter can use to correctly determine the total forward power in
the
> > 150 ohm line or the total reflected power in the 50 ohm line.
>
> Bull$hit, Steve. You gave me a non-Z0-match example about a week ago and I
got
> all the correct values using my method. You said, "Excellent". Why must
you now
> lie about that? I got the same values of total forward power and total
reflected
> power that you did. Your assertion that my method didn't work backfired on
you
> because you neglected to account for the 2.95 joules/sec of destructive
> interference in that particular example.
>

Bull$hit??

Okay, put your money where your mouth is Cecil. Do it again *without* the relative phase of the voltages. This way you won't be able to work your energy math backwards *after* you know the final answer. You got the correct answer the last time using my series vector voltage addition and total power determination methods. *Then* you worked the steady state power numbers to suit your concepts.

I'm happy to call your bluff in this game Cecil.

Forward power at the Zo match is 100 W. The forward source power in the 150 ohm line is 75 W and the reflected power in the 50 ohm line is 25 W. The steady state reflected power in the 150 ohm line is 33.33 Watts.

What is the steady state forward power in the 150 ohm line?

What is the steady state reflected power in the 50 ohm line?

What impedance terminates the 150 ohm line?

Good Luck.

Steve

4265. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 15:22:48 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9e3eo8$l9a$0@208.206.142.81>
Source record: 162714

"Richard L. Dunklee, Jr." wrote:
>
> A direct ground is a 8 or 10 foot copper clad rod pounded into the earth and
> each piece of equipment connected directly to it. The same with towers. my
> tower has 3 legs and 3 ground rods. each joint in the tower is "jumpered"
> across then at the bottom each leg is tied to it's ground rod. I don't think
> that is to hard. I used to teach an RFI class for the FAA. One of the
> greatest problems we have besides intermods is grounding problems, RF and
> power grounds. WE teach to ground fences around our facilities. Having
> direct grounds as I call it should 99% of the time eliminate ground loops.
> Each piece of my equipment here in my shach, HF tranceiver, antenna tuner, 2
> scanners, rotor control box, TNC and PC case are tied to a single ground
> outside my shack window individually. NO GROUND LOOPS!!!!

Where I live lightning is far more of a threat than the possibility of
a ground loop, so I don't use a ground at the shack (except the safety
power ground that comes with AC service). When not in use I unplug my
gear from the AC, and unhook all antennas and rotor lines outside. I
don't want a lightning strike to come into the house via wires hooked to
a ground rod, looking for a better, lower impedance path to 'final
ground' via my radio gear while enroute to the AC power ground.
The tower is 100 feet from the house and is well grounded. The
feedlines and rotor lines are underground and emerge about 15 feet from
the house, and terminate at the house wall, so I can unhook them and
toss them away from the house. And still there are no guarantees, just
improved chances.
Guaranteed, if lightning comes into your house via either your antenna
lines or station ground it WILL find a path to the lower impedance AC
power ground via your gear, which will smoke from the experience. You
can hope the house doesn't burn as well.

All this evolved from 30 years dealing with lightning in public service
radio systems. There are methods of mitigating lightning which do not
involve unhooking the antennas, of course, but they go far beyond the
capabilities and budgets of most hams. You either do it all or forget
it, and unhook. No half measures, they just get you in trouble, if you
live in lightning country.

Anyone who wants to read about lightning and dealing with it as a ham
can find more than enough information in the archives of this NG.

Dick

4266. Re: FREQUENTLY ASKED QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 15:50:11 UTC
From: Martin Hibbs <mhibbs@ipeg.com>
Message-ID: <3B0544B3.22F60A29@ipeg.com>
Source record: 162715

marvin rosen wrote:

> how do i access the "FAQ" on this newsnet?

I think this is as close as we come to a FAQ.

Marty
N7MX

Path:
senator-bedfellow.mit.edu!bloom-beacon.mit.edu!howland.erols.net!news.maxwell.syr.edu!news
-hog.berkeley.edu!ucberkeley!cnn.nas.nasa.gov!news.hawaii.edu!jeffreyh

From: jeffreyh@Hawaii.Edu (Jeffrey Herman) Newsgroups:
rec.radio.amateur.space,rec.answers,news.answers Subject:
Guide to the rec.radio Newsgroups Followup-To: poster Date: 18 Jul 2000
07:51:33 GMT Organization: University of Hawaii
Lines: 225 Approved:
rec.radio.info-moderator@primenet.com,news-answers-request@MIT.Edu
Expires: 15 August 2000
Message-ID: <8l12a5hdv1@news.hawaii.edu> NNTP-Posting-Host:
uhunix2.its.hawaii.edu X-Trace: news.hawaii.edu
963906693 17855 128.171.44.7 (18 Jul 2000 07:51:33 GMT) X-Complaints-To:
usenet@hawaii.edu NNTP-Posting-Date:
18 Jul 2000 07:51:33 GMT Summary: This article provides an overview of
the newsgroups devoted to the personal radio
services (amateur and CB), describes each newsgroup and its charter, and
gives a brief tutorial on netiquette. Keywords: faq
radio amateur ham cb netiquette X-Newsgroups:
rec.radio.broadcasting,rec.radio.cb,rec.radio.info X-Newsgroups:
rec.radio.scanner,rec.radio.shortwave,rec.radio.swap X-Newsgroups:
rec.radio.amateur.boatanchors,rec.radio.amateur.antenna X-Newsgroups:
rec.radio.amateur.dx,rec.radio.amateur.digital.misc
X-Newsgroups: rec.radio.amateur.equipment,rec.radio.amateur.homebrew
X-Newsgroups:
rec.radio.amateur.misc,rec.radio.amateur.policy X-Last-Updated:
1999/05/16 Posting-Frequency: 15th of each month Xref:
senator-bedfellow.mit.edu rec.radio.amateur.space:20259
rec.answers:59763 news.answers:187931 Archive-name:
radio/personal-intro This message describes the rec.radio.amateur.*,
rec.radio.cb, rec.radio.info, and rec.radio.swap
newsgroups, as well as their Internet mailing list counterparts and
complements. It is intended to serve as a guide for the new
reader on what to find where. Questions and comments may be directed to
Jeffrey Herman, KH6O, jeffreyh@hawaii.edu, or
Paul Schleck, K3FU, pschleck@novia.net. This message was last changed on

14 March, 1998. History ======= Way back
when, before there was a Usenet, the Internet hosted a mailing list for
hams, called (appropriately enough) INFO-HAMS. Ham
radio discussions were held on the mailing list, and sent to the
mailboxes of those who had signed up for it. When the Usenet
software was created, and net news as we now know it was developed, a
newsgroup was created for hams: net.ham-radio.
The mailing list and the newsgroup were gatewayed together, eventually.
Over the years, as the net grew, the volume of
discussion became progressively higher. First one by one, and then as
part of two reorganizations, what was once one group
became many. In the process, developments elsewhere on the net were
reflected in the groups as they were created, most
notably the change to place all of the ham radio groups in one
hierarchy. The collection of newsgroups continues to grow as
more people join the net, and as more topics of discussion gain volume,
I expect to see more groups be created as well. This
follows what is happening on the rest of the net. Nearly all of the
radio newsgroups have corresponding mailing lists, the notable
exception being rec.radio.swap. There are also a few mailing lists that
don't have newsgroups. The Current Groups
================== It's important to post messages to the group that's
appropriate for them, and not to the groups that
aren't. The whole idea of having different newsgroups is so that folks
who aren't interested in, say, homebrewing, don't have to
wade through messages about homebrewing on the way to read about Field
Day. Posting appropriately is just good etiquette.
The rec.radio.amateur.misc group is the catchall. It is what
rec.ham-radio was renamed to during the first major reorganization.
Any amateur radio- related message that's not more appropriate in one of
the other groups belongs here, from contesting to
DX to ragchewing on VHF to information on becoming a ham. The group
rec.radio.amateur.digital.misc is for discussions
related to (surprise!) digital amateur radio. This doesn't have to be
the common two-meter AX.25 variety of packet radio,
either; some of the most knowledgeable folks in radio digital
communications can be found here, and anything in the general
area is welcome. The name was changed to emphasize this, and to
encourage discussion not only of other text-based digital
modes, such as AMTOR, RTTY, and Clover, but things like digital voice
and video as well. The former group,
rec.radio.amateur.packet, was removed on September 21st, 1993. It is
obsolete, and you should use .digital.misc instead (or
the appropriate new mailing list, mentioned below). The group has .misc
as part of the name to allow further specialization if the
users wish it, such as .digital.tcp-ip. The swap group is
rec.radio.swap. This recognizes a fact that became evident shortly after

the original group was formed: Hams don't just swap ham radio gear, and
other folks besides hams swap ham equipment. If

you have radio equipment, or test gear, or computer stuff that hams
would be interested in, here's the place. Equipment wanted
postings belong here too. Discussions about the equipment generally
don't; if you wish to discuss a particular posting with the
buyer, email is a much better way to do it, and the other groups,
especially .equipment and .homebrew, are the place for public
discussions. There is now a regular posting with information on how to
go about buying and selling items in rec.radio.swap;
please refer to it before you post there. To answer a frequently asked
question: No, there is no mailing list that goes along with
this group. If you can't read Usenet news directly, you're out of luck.
The group rec.radio.amateur.policy was created as a
place for all the discussions that seem to drag on interminably about
the many rules, regulations, legalities, and policies that
surround amateur radio, both existing and proposed. Recent changes to
the Amateur Radio Rules (FCC Part 97) have finally
laid to rest the Great Usenet Pizza Autopatch Debate - it's now legal to
order a pizza on the autopatch, if you're not in the pizza
business - as well as complaints about now-preempted local scanner laws
hostile to amateurs, but plenty of discussion about
what a bunch of rotten no-goodniks the local frequency coordinating body
is, as well as the neverending no-code debate, may
still be found here. The group rec.radio.cb is the place for all
discussion about the Citizens' Band radio service. Such
discussions have been very inflammatory in rec.ham-radio in the past;
please do not cross-post to both rec.radio.cb and
rec.radio.amateur.* unless the topic is genuinely of interest to both
hams and CBers - and very few topics are. The
rec.radio.info group is just what its name implies: it's the place where
informational messages from across rec.radio.* may be
found, regardless of where else they're posted. As of this writing,
information posted to the group includes Cary Oler's daily
solar progagation bulletins, ARRL bulletins, the Frequently Asked
Questions files for the various groups, and radio modification
instructions. This group is moderated, so you cannot post to it
directly; if you try, even if your message is crossposted to one of
the other groups, your message will be mailed to the moderator, who is
currently David Dodell, WB7TPY. The email address
for submissions to the group is rec.radio.info-moderator@primenet.com.
Inquires and other adminis- trivia should be directed
to rec.radio.info-request@primenet.com. For more information about
rec.radio.info, consult the introduction and posting
guidelines that are regularly posted to that newsgroup. The groups
r.r.amateur.antenna, .boatanchors, .dx, .equipment,
.homebrew, and .space are for more specialized areas of ham radio:
discussions about antennas, the older tube based amateur,
military, and commercial gear, commercially-made equipment, homebrewing,
and amateur radio space operations. The
.equipment group is not the place for buying or selling equipment;
that's what rec.radio.swap is for. Similarly, the .space group

is specifically about amateur radio in space, such as the OSCAR program and SAREX, the Shuttle Amateur Radio EXperiment; other groups cover other aspects of satellites and space. Homebrewing isn't about making your own alcoholic beverages at home (that's rec.crafts.brewing), but rather construction of radio and electronic equipment by the amateur experimenter. The .dx group is devoted to long distance amateur communications. Each of these subgroups has its own charter and FAQ; please refer to the archives to find these documents. Except for rec.radio.swap and rec.radio.cb, all of these newsgroups are available by Internet electronic mail in digest format; send a mail message containing "help" on a line by itself to listserv@ucsd.edu for instructions on how to use the mail server. All of the groups can be posted to by electronic mail, though, by using a gateway at the University of Texas at Austin. To post a message this way, change the name of the group you wish to post to by replacing all of the '.'s with '-'s - for example, rec.radio.swap becomes rec-radio-swap - and send to that name@cs.utexas.edu (rec-radio-swap@cs.utexas.edu, for example). You may crosspost by including multiple addresses as Cc: entries (but see below). This gateway's continued availability is at the pleasure of the admins at UT-Austin, and is subject to going away at any time - and especially if forgeries and other net.abuses become a problem. You have been warned. Mailing Lists ============= In addition to the mailing lists that mirror the Usenet newsgroups, there also are a few that stand alone. These cover specific areas of ham radio, and discussion is focused on just those areas. PLEASE BE SURE TO SAVE THE WELCOME MESSAGE YOU RECEIVE AFTER SUBSCRIBING -- IT WILL CONTAIN IMPORTANT INFO REGARDING UNSUBSCRIBING! The cq-contest mailing list is for discussions of contesting in ham radio. To join, send an email to cq-contesting-request@contesting.com. The DX mailing list covers the finer points of DXing. This one is also joined by mailing "subscribe" on a line by itself, this time to dx-request@unbc.edu. There's also a VHF mailing list, for VHF operators of the weak signal persuasion. You can join this one be sending "subscribe vhf" on a line by itself to vhf-request@w6yx.stanford.edu. The QRP-L list is devoted to building and operating gear at low-power outputs. To subscribe, send an email to listproc@lehigh.edu and only write: subscribe qrp-l Your Name. The TopBand e-list is devoted to all areas of operation on 160m. To subscribe, send an email to majordomo@contesting.com and only write: subscribe topband and follow the instructions you'll be sent. This site, contesting.com, also hosts a couple dozen other ham-related e-lists. Use the above address, and only write: lists to get the entire index. The Boatanchors e-list is devoted to the older tube-based ham, military, and commercial communications gear. To subscribe, send an

email to: listserv@listserv.tempe.gov and only write:
subscribe boatanchors For homebuilding transmitters and receivers using
tube technology, there is the Glowbugs e-list; send an
email to: majordomo@piobaire.mines.uidaho.edu and only write: subscribe
glowbugs The VHF DX discussion list can be
accessed by sending an email to: majordomo@blacksheep.org and only
writing: subscribe VHF-DX-discuss. We now have a
list devoted to amateur radio history. To subscribe, send an email to:
ham-radio-history-subscribe@egroups.com - leave the
body of the message blank. Qth.net hosts over 100 ham-related e-lists,
including lists devoted to each state, manufacturer,
mode, band - too many to state here. Send an email to majordomo@qth.net
and only write: lists to get the complete index. For
one of the most complete indexes of email lists, see the excellent web
site http://pw2.netcom.com/~ac6v/pageae.html Please do
NOT send subscription requests to the mailing lists themselves; that
doesn't work very often, and is very annoying to those on
the list. Also, please keep your electronic mail address current with
any mailing lists you subscribe to, as dealing with returned
email is a nuisance for the person maintaining the mailing list. A Few
Words on Crossposting
========== Please do not crosspost messages to two or
more groups unless there is genuine
interest in both groups in the topic being discussed, and when you do,
please include a header line of the form "Followup-To:
group.name" in your article's headers (before the first blank line).
This will cause followups to your article to go to the group
listed in the Followup-To: line. If you wish to have replies to go to
you by email, rather than be posted, use the word "poster"
instead of the name of a group. Such a line appears in the headers of
this article. One of the few examples of productive
cross-posting is with the rec.radio.info newsgroup. To provide a
filtered presentation of information articles, while still
maintaining visibility in their home newsgroups, the moderator strongly
encourages cross-posting. All information articles should
be submitted to the rec.radio.info moderator so that he may
simultaneously cross-post your information to the appropriate
newsgroups. Most newsreaders will only present the article once, and
network bandwidth is conserved since only one article is
propagated. If you make regular informational postings, and have made
arrangements with the moderator to post directly to the
group, please cross-post as appropriate. -- Jeffrey Herman, KH6O, and
your friendly rec.radio.amateur working-group
jeffreyh@hawaii.edu

4267. Re: New antenna patented. Really cool

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 15:54:04 UTC
From: kb7qhc@home.com
Message-ID: <3b05443a.927696717@news.seanet.com>
Source record: 162717

On 18 May 2001 07:25:33 GMT, radiomatt@aol.com (Radiomatt) wrote:

>There has been a thread on the Electronic Warfare NG about a patent issued for
>an antenna that can send intelligence(embedded in a RF signal) faster tan
>light. Seems just the thing I need as it could solve the QRM problem I have
>(the signal arrives before the noise),
>
>With one of these you could listen to a station before the signal arrives! (I
>think). An unfair advantage in a DX contest.
>
>The patent WAS issued" see
>http://www.delphion.com/details?&pn=US06025810__&show_legal=1#LEGAL
>
>However, one of the claims is that plants grow faster in its presence. Also,
>the signal is sent in another dimension.
>
>Let me know when they validate this one.
>

Hi OM,

Really cool? You obviously overlooked the 10 pages of schematics that
show how to build the antenna heater. I especially liked the page
devoted to how to build the winding bobbin (now there's a novel
idea!).

Faster than Light (FTL) hmmm? I suppose I will have to dump my shares
in a new carburator that allows cars to go 100 miles on an eyedropper
full of plutonium (part of the shrub energy plan).

73's
Richard Clark, KB7QHC

4268. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 15:54:22 UTC
From: raiar@slacc.com.nospam
Message-ID: <3b054486.99739469@news.galilei.com>
Source record: 162716

It's always interesting to see so many reply using the word MOST in their statement concerning using horizontal for SSB 2-meter.

Unless they are 2-meter DXers, MOST that do have sideband capability on their 2-Meter rigs, ARE running through their verticals, since that's all they have up for 2-meters, due to airspace, restrictions, costs, etc.

We have a local USB group that meet every single late night on 144.250, by far the greatest majority are operating vertically and only a couple even have horizontal capabilities.

TTUL
Gary

4269. Re: UFO antenna detection plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 16:02:17 UTC
From: kb7qhc@home.com
Message-ID: <3b074643.928217115@news.seanet.com>
Source record: 162718

On Fri, 18 May 2001 05:49:20 GMT, "Joe" <joe.amp@NOSPAMverizon.com>
wrote:

>http://www.parascope.com/nb/detector.htm
>This was to funny to pass up !
>Its real plans !
>

Hi Joe,

The patent must've expired.

>Parapsychologists have found that compasses and other electrical
>devices respond when a ghost is present.

Obviously Parapsychologists don't understand the concept of DC
reflection causing these problems when the earth's magnetic field
reverses. More-over, they fail to compensate by not calling up
Maxwell's Demon to sort out these issues.

73's
Richard Clark, KB7QHC

4270. Re: 2 meter range???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 16:19:28 UTC
From: raiar@slacc.com.nospam
Message-ID: <3b054602.100119860@news.galilei.com>
Source record: 162619

Hi Matt

Technically, it's an impossible question to answer!

I have a stacked-J up 45 feet, talked nightly with my son when he was going to college at UMR which was 100 miles southwest of my residence, only rarely could we not make contact. He had a 5/8 wave mobile whip antenna on top of a roof mounted air conditioner at his dorm.

By the same token, from my residence, I could not often hit the local repeater only 2 miles away, due to obstructions in the path, namely a microwave tower. When they transmitted, my signal never reached the repeater. I do live in a black hole as far as eastbound transmission is concerned on the vhf/uhf bands.

In the northwest direction @ 100 watts out, I can often reach the Columbia University repeater, a little noisy but clearly copyable, distance is about 150 miles.

If I switch from the stacked-J at 45 feet to my Diamond tri-bander at 50 feet I can't reach either location, but can hear them better than on the stacked-J.

TTUL
Gary

4271. Re: AEA Isopole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 17:03:21 UTC
From: LoP <lop@lop.net>
Message-ID: <3B0555B1.2535AE91@lop.net>
Source record: 162620

>

> Prince Valiant's lancer. It gets the
> signal down on the horizon instead of heating up the local
> birds and was a great target for the neighborhood kids' BB
> guns.
>
> 73 Don K6LTS
> donrm@soco.agilent.com

LOL i use to shoot my fathers with a bb gun when i was younger...

Jake

4272. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 17:29:33 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3b0556e4.126158570@news.aepnet.com>
Source record: 162621

On 18 May 2001 15:54:22 GMT, raiar@slacc.com.nospam (Gary V. Deutschmann, Sr.) wrote:

>It's always interesting to see so many reply using the word MOST in
>their statement concerning using horizontal for SSB 2-meter.
>
>Unless they are 2-meter DXers, MOST that do have sideband capability
>on their 2-Meter rigs, ARE running through their verticals, since
>that's all they have up for 2-meters, due to airspace, restrictions,
>costs, etc.
>
>We have a local USB group that meet every single late night on
>144.250, by far the greatest majority are operating vertically and
>only a couple even have horizontal capabilities.

I've been working SSB on 2m since the early 60s (pre-rice box) and prior to that I DXed on AM (pre-FM repeater on every hilltop).

Initially, we used vertical polarization because that was what was used in California and the goal was to try and work into CA. This was shortly after the era when QST's "World above 50 Mc" mentioned the fact that the "difficult path" between Tucson and Phoenix had been bridged.

There were endless debates over which polarization was superior.

I had a friend, K7GNV, who worked at Ft. Huachucha, AZ and operated 2m AM mobile, running an Ameco converter, Morrow i-f receiver and a HB exciter and 4X150 amp, high level modulated. (Blower and all)

We experimented endlessly, trying to maintain 100% contact as he drove from here in Tucson to the Ft. In the end, horizontal polarization was clearly superior. I (and everone else) switched over and never looked back.

Of course, SSB was proven to be clearly superior as well, when I went from running a high-level modulated 4CX250 running 500W to a 6360 running 12W and worked the same stuff.

Today, I don't know anyone who is remotely serious about SSB operation that uses a vertical antenna.

Wes Stewart N7WS

4273. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 17:39:30 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B055E52.D9822293@mwci.net>
Source record: 162622

Richard Harrison wrote:

> Bill Sabin, W0IYH wrote:
> "Looking at the solution of the wave equation, which is derived from
> Maxwell`s equations on a transmission line...."
>
> Thanks for not involving Maxwell directly.

My only problem (so far) with Griffith is the shield box example you quoted. He was wrong about that, and I am certain of it. Even good guys get it wrong once in a great while.

Bill W0IYH

4274. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 17:49:06 UTC
From: sja6@qwest.net
Message-ID: <3b05602b.185529266@news.qwest.net>
Source record: 162623

Here in Phoenix, Arizona we call it "Vertically Paralyzed."

I first heard WB7ETR use the phrase about ten years ago.

Jim N7TCF

On Wed, 16 May 2001 19:51:03 GMT, "R. Scott" <kf7qz@yahoo.com> wrote:

>One problem I see is that the J-pole is Vertically Polarized and most of
>the SSB stations run Horizontal Polarization. Although they could hear
>you if very strong local, weak signals or distance stations might not.
>
>Rick KF7QZ
>
>
>aduffy@sprint.ca wrote:
>>
>> Might sound a little dumb, but I was wondering if a 2m J-Pole antenna
>> was very good at SSB. I have excellent results on FM but but not much
>> luck on SSB (which I know isn't very crowded at best and spuratic).
>>
>> 73,
>> Tony
>> VA3ATD

4275. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 18:01:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B056369.DD8058CF@IEEE.org>
Source record: 162624

VE9SRB wrote:
> Okay, put your money where your mouth is Cecil. Do it again *without* the
> relative phase of the voltages.

Here's what you said, Steve. "There is no method that either
you or Walter can use to correctly determine the total forward
power in the 150 ohm line or the total reflected power in the
50 ohm line." That statement was and is BULL$HIT. I have previously
used "my method" to come up with the same voltages and currents that
you did. You said it was "Excellent" work. The only difference between
your result and my result was that my energy equation balanced and
yours didn't.

You didn't say anything about relative phases of voltage in your statement.
I have already solved your example and got the same voltage and current
values that you did. Nice try at diverting the issue, Steve, but the issue
remains that, using "my method" which you say is invalid, I get all the same
voltages and currents that you do. In addition, "my method" balances the energy
equation and yours does not.

> I'm happy to call your bluff in this game Cecil.

What bluff, Steve? Your statement continues to be BULL$HIT. With "my method", I
got all the correct voltages and currents in your very own non-Z0-matched example.
I never said I could do it without knowing the phases in a non-Z0-matched system.
Since you claim that I said I could, you are simply a lying. Sorry to be so blunt,
but I don't enjoy you telling lies about what I said in order to escape the corner
you have painted yourself into. To prove you are not lying, you must produce a posting
where I said one doesn't need to know the phase for a non-Z0-matched system. So either
come up with such a posting of mine, or come clean with an apology.

To summarize what I have previously said: In a Z0-matched system, one doesn't
need to know the phases because all phases at the Z0-match are either zero
or 180 degrees. It logically follows, since I excluded non-Z0-matched systems
in that statement, that one must know the phases in the non-Z0-matched case.
I'll give you a C- in your attempt at obfuscation.

> Forward power at the Zo match is 100 W. The forward source power in the 150
> ohm line is 75 W and the reflected power in the 50 ohm line is 25 W. The
> steady state reflected power in the 150 ohm line is 33.33 Watts.
>
> What is the steady state forward power in the 150 ohm line?

75w + 8.33w + 50w = 133.33w. The 50w is the power involved in the destructive
interference pattern that you are trying to ignore. I simply will not allow
you to ignore the conservation of energy principle, Steve.

> What is the steady state reflected power in the 50 ohm line?

25w - 25w = zero watts. Those two 25w quantities are involved in the destructive interference. The energy balloon is squeezed by 50 joules/sec on the source side of the Z0-match so it must expand by 50 joules/sec on the load side of the Z0-match. That's what conservation of energy is all about.

The Poynting vector changes direction at a destructive interference point in a wire. The two canceled waves each involving 25w results in a reflected voltage of zero on the coax and a reflected current of zero on the coax. That results in zero reflected power on the coax and that energy must go the only other direction possible. It joins the forward power back toward the load along with the re-reflected power. The re-reflected power changes direction and the destructive interference power changes direction right along with it. The scalar sum of the 8.33w of re-reflected power and the 50w of power involved in the destructive interference joins the 75w of source forward power in the 150 ohm line. 8.33w + 50w + 75w = 133.33w and the conservation of energy principle is satisfied.

> What impedance terminates the 150 ohm line?

The load is 50 ohms if the 150 ohm line is 1/2WL and a Z0-match exists.

> Good Luck.

What I need more than luck is for you to stop lying about what I've said. How can you possibly give yourself permission to lie when my postings are archived?

I have uploaded a phasor diagram to my web page that shows all the voltages, all the currents, and all the power calculated using "my method". Please notice, that using "my method", all the voltages, currents, and phases are the same as yours. The only difference between what you are saying and what I am saying is the energy involved in the destructive interference pattern. Where that energy comes from and goes is the only argument I have with you. See the phasor diagram:

http://people.delphi.com/cecilmoore/z0match.gif
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

4276. Re: Skin effect shielding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 18:03:48 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B056404.D26F41@mwci.net>
Source record: 162625

Richard Harrison wrote:

> ARRL`s edition 19 of the Antenna Book may have an imperfect Fig 24 on
> page 26-16, and the explanation of the figure might be improved, but the
> basics are correct and I find it easy to understand. It shows why a
> balun may preserve the dipole`s radiation pattern by avoiding the outer
> shield current.

That diagram and the discussion of it really need to be seriously improved.
I would hope to see Roy and Walter (the originators) get together on that.
The U-turn should be deep-sixed.

This improvement, followed by a discussion of the large increase that the
balun provides to the total common mode loop impedance, would be nifty.

Bill W0IYH

4277. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 18:11:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0565CC.48A4807C@IEEE.org>
Source record: 162626

Wes Stewart wrote:
> Today, I don't know anyone who is remotely serious about SSB operation that uses
> a vertical antenna.

Real Hams use horizontal antennas for SSB. :-)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4278. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 19:42:49 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <ZWeN6.29268$t12.2218340@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162627

WOW!

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B056369.DD8058CF@IEEE.org...
> VE9SRB wrote:
> > Okay, put your money where your mouth is Cecil. Do it again *without*
the
> > relative phase of the voltages.
>
> Here's what you said, Steve. "There is no method that either
> you or Walter can use to correctly determine the total forward
> power in the 150 ohm line or the total reflected power in the
> 50 ohm line." That statement was and is BULL$HIT. I have previously
> used "my method" to come up with the same voltages and currents that
> you did. You said it was "Excellent" work. The only difference between
> your result and my result was that my energy equation balanced and
> yours didn't.
>

Bull$shit??

Cecil, you used my method (vector addition of voltage) to first determine the correct reflected power in the 50 ohm line and then you used your energy math to get the correct forward power in the 150 ohm line. Your math is fine and works but the concepts that you tie to it are incorrect.

You have stated several times that voltage adds as the square root of the sum of the squares. Without knowing the final answer use this method to add voltages and see if it works.

> You didn't say anything about relative phases of voltage in your
statement.
> I have already solved your example and got the same voltage and current
> values that you did. Nice try at diverting the issue, Steve, but the issue
> remains that, using "my method" which you say is invalid, I get all the
same
> voltages and currents that you do. In addition, "my method" balances the
energy
> equation and yours does not.
>

I'm not diverting the issue at all. You need the phase information and you need to use it in the manner that I describe.

> > I'm happy to call your bluff in this game Cecil.
>

> What bluff, Steve? Your statement continues to be BULL$HIT. With "my
method", I
> got all the correct voltages and currents in your very own non-Z0-matched
example.
> I never said I could do it without knowing the phases in a non-Z0-matched
system.
> Since you claim that I said I could, you are simply a lying. Sorry to be
so blunt,
> but I don't enjoy you telling lies about what I said in order to escape
the corner
> you have painted yourself into. To prove you are not lying, you must
produce a posting
> where I said one doesn't need to know the phase for a non-Z0-matched
system. So either
> come up with such a posting of mine, or come clean with an apology.
>

Explain your method Cecil. I'm certain that you used my method to first determine the correct reflected power in the 50 ohm line and then, knowing the steady state delivered power, you simply determined the forward power in the 50 ohm line. In any event, your method is nothing more than power in = power out math. The math in and of itself is fine. The concepts you ascribe to it are not quite correct.

I expect that you first determined the reduction in power "out" at the junction due to the destructive interference in the 50 ohm line. Then you knew that to balance the energy equation, the total power out in the 150 ohm line must increase accordingly. I have no problem with your math, just the physics and reflection mechanisms you ascribe to it.

> To summarize what I have previously said: In a Z0-matched system, one
doesn't
> need to know the phases because all phases at the Z0-match are either zero
> or 180 degrees. It logically follows, since I excluded non-Z0-matched
systems
> in that statement, that one must know the phases in the non-Z0-matched
case.
> I'll give you a C- in your attempt at obfuscation.
>
> > Forward power at the Zo match is 100 W. The forward source power in the
150
> > ohm line is 75 W and the reflected power in the 50 ohm line is 25 W.
The
> > steady state reflected power in the 150 ohm line is 33.33 Watts.
> >
> > What is the steady state forward power in the 150 ohm line?
>
> 75w + 8.33w + 50w = 133.33w. The 50w is the power involved in the
destructive
> interference pattern that you are trying to ignore. I simply will not
allow

> you to ignore the conservation of energy principle, Steve.
>

I do not ignore the conservation of energy principles.

Your answer is wrong by the way.

> > What is the steady state reflected power in the 50 ohm line?
>
> 25w - 25w = zero watts. Those two 25w quantities are involved in the
> destructive interference. The energy balloon is squeezed by 50 joules/sec
> on the source side of the Z0-match so it must expand by 50 joules/sec on
> the load side of the Z0-match. That's what conservation of energy is all
> about.
>

What destructive interference? You don't quite understand vector voltage
and power addition yet.

Your answer is wrong by the way.

> The Poynting vector changes direction at a destructive interference point
> in a wire. The two canceled waves each involving 25w results in a
reflected
> voltage of zero on the coax and a reflected current of zero on the coax.
> That results in zero reflected power on the coax and that energy must
> go the only other direction possible. It joins the forward power back
toward
> the load along with the re-reflected power. The re-reflected power changes
> direction and the destructive interference power changes direction right
along
> with it. The scalar sum of the 8.33w of re-reflected power and the 50w of
power
> involved in the destructive interference joins the 75w of source forward
power
> in the 150 ohm line. 8.33w + 50w + 75w = 133.33w and the conservation of
> energy principle is satisfied.

Your energy math is okay (its not correct for the example I set up though)
but the "physics" involved in this summary are ridiculous.

The two rearward energies always travel in the rearward direction. The two
forward energies always travel in the forward direction. The vector
addition of voltage and current determine the level of *net* energy flow
from the combination of the two waves.

As the net reward power flow changes, the level of power delivered to the
junction either increases or decreases accordingly.

The mechanism that balances this energy flow is the vector additon of the
waves. The balance is established by the fact that the net energy change
occuring in the rearward direction is exactly equal to the net energy change
occuring in the forward direction. Both are determined by the vector

addtion of the waves. And yes the waves either add with destructive interference or constructive interference.

You do not need to introduce the concept that the poynting vector changes direction and then joins the forward wave to describe what happens.

>
> > What impedance terminates the 150 ohm line?
>
> The load is 50 ohms if the 150 ohm line is 1/2WL and a Z0-match exists.
>

Bad assumption. Again, knowing the answer, its easy to ascribe incorrect physics to it.

Would you like to discuss the correct answer as a rational person?

4279. Re: Worth experimenting with?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 20:30:02 UTC
From: ehsjr@bellatlantic.net
Message-ID: <3B0586F0.35F848D7@bellatlantic.net>
Source record: 162628
Cross-posted to: rec.radio.shortwave,rec.radio.amateur.antenna

Bill,

I think a DDRR is worth experimentation. I built one for
2 meters to experiment. I was very pleased with the results.
It compared favorably with my 5/8 antenna. 30% of the time
that there was a difference between the two, the DDRR
outperformed the 5/8. 70% of the time that there was a
difference, the 5/8 outperformed the DDRR.

Ok, that said, W8JI, who knows more about antennas in
his little finger than I do in my whole body, frowns on them.
He pointed out errors in my measurement setup and technique.
Based on his view, if you are looking for best performance,
don't look at a DDRR, But - if you are looking to experiment,
you can have a lot of fun with a DDRR. But I would recommend
experimentation on 2 meters, rather than 80. The physical size
is ideal for fooling around with this type of antenna, and material
is cheap. I used 1/2" soft copper tubing - the kind you can bend
easily by hand. I made a trombone-like end piece, that allows
me to vary the circumferance by about 2-3 inches. My variable
capacitor is a metal disc that attaches to the end of the "trombone"
with a long 6-32 screw. The disc is parallel to the solid metal
ground plane, and the distance between the disc and the ground
plane can be varied by turning the 6-32 screw.

Tom (W8JI) pointed out that this is pretty much a drastically
shortened verticle - the loop serves as a "top hat" capacitance.
The configuration is a loop of about 19" circumference installed
parallel to a sheet of metal and about 2" above it. It is the 2"
part, according to Tom, that is the radiator, and the 19" loop
is the "top hat". The feed point is shield to the bottom of the
2" vertical portion and center conductor on the loop (horizontal)
portion about 2" from the 90 degree bend where the vertical
portion bends over to the horizontal. Slide the center conductor
around for the best match. Then adjust the disc to fine tune the
thing. There are some web sites that have a pretty good
description of building the antenna - search for DDRR.

Bill Meacham wrote:

> Dale Parfitt wrote:
> >
> > Ross Archer wrote:
> >
>

> > >
> > > This one I call an "untuned fence loop", because it's mounted on the inside
> > > of my fence. Four woodscrews act as
> > > "supports" for a complete 360 degree rectangle of
> > > wire, to which I soldered a coax jack to each end.
> > > Currently, the jack is halfway up the short side,
> > > which means it's probably vertically polarized.
> > >
> > > The lowest part of the loop can't be more than
> > > 8 inches above the ground. If someone cares about dimensions, I'll be
> > > happy to run out and measure it.
> > > I just randomly picked convenient mounting points
> > > for the wood-screws that formed a neat rectangle -
> > > perhaps 25'x6' (very roughly).
> > >
>
> > > Has anybody else experimented with this sort of antenna?
> > > I'll try to do more rigorous comparisons when conditions
> > > are better. It does seem like a sensitive and quiet receiver
> > > is required to cope with the lower signal delivered though.
> >
> > Interesting Ross- I would only suggest that if the loop is horizontal, then its
> > field is most likely norizontal despite the feed being on a short vertical
> > segment- or perhaps I don't fully comprehend the configuration. Any way- good
> > go.
> >
> > Dale W4OP
>
> There was an antenna in QST back in the early 70? called a DDRR
> Loop?. It was based on something like an 8 foot diameter piece of
> muffler tubing mounted flat above a ground plane. The article
> writer highly praised it but I never heard much else about it.
> Given that the 8 foot diameter was intended specifically for HF
> SW, maybe Ross' configuration approaches a scheme like that scaled
> for the BCB?.
> Does anybody have a track record using this DDRR Loop? (I could be
> wrong on the name).
> --
> ---
> Bill Meacham WX4A
> Vieques, PR

4280. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 21:33:10 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B059515.96FF10AB@IEEE.org>
Source record: 162629

VE9SRB wrote:
> Cecil, you used my method ...

Nope, you're wrong, Steve. I used "my method", which is the same method I have used since the late '50s. Where were you in the late '50s that you can claim that method as your own personal private property? Do you have delusions of grandeur or what? I suspect I was doing these calculations long before you did.

> You have stated several times that voltage adds as the square root of the
> sum of the squares.

That's true, Steve, when the two separate waves are *limited by the available energy* in the individual waves. Thus, adding 100w + 100w yields 200w. If these powers are in a 50 ohm environment, the voltage associated with the 200w is 100v. Your willy-nilly addition of voltages violates the conservation of energy principle. If there were not enough underlying energy to support your voltages additions, those sums could NOT happen. What is it about, "The only argument I have with you is over energy, not over the magnitudes of the voltages and currents" that you do not understand?

75 joules/sec plus 8.33 joules/sec does NOT equal 133.33 joules/sec. That you maintain the illusion that it does, is a sad commentary on your mental state.

> I'm not diverting the issue at all. You need the phase information and you
> need to use it in the manner that I describe.

Of course. That's "my method", Steve, and I have probably used it since you were still wetting your pants.

> Explain your method Cecil.

It's self evident from my phasor diagram on my web page.

> I do not ignore the conservation of energy principles.

You have got to be mentally ill, Steve, to state that and also to state "75 joules/sec + 8.33 joules/sec = 133.3 joules/sec". Those two statements are clearly contradictions of each other. You simply cannot have it both ways.

> What destructive interference? You don't quite understand vector voltage
> and power addition yet.

You obviously don't understand destructive interference. "My method" yields exactly the same voltage and current phasors as yours. It also allows the energy equation to balance, for which your method is sadly lacking.

> Your energy math is okay (its not correct for the example I set up though)

The example I assumed is the example that we have been working with all along. Changing examples in midstream to obfuscate the discussion is something I have come to expect from you. I responded to you the first time you tried that sneaky diversion and you said my calculated values were "Excellent". What is your ulterior motive in now obfuscating things to a greater degree?

It's pretty obvious to anyone with an IQ over 100 that you have painted yourself into a corner and will perform any sneaky, underhanded trick to try to wiggle out of that corner. Wiggle away, Steve, I'm enjoying watching you squirm.

> The two rearward energies always travel in the rearward direction.

This is where you are pathologically wrong. We cannot measure those energies. Therefore, the rearward traveling energy is zero. Otherwise, you are asking us to buy into some metaphysical reflection religion involving phantom waves. This newsgroup is not the place for religion, Steve. Do the rearward energies dissipate themselves in the source? Why does exactly that much energy pop up in the forward wave toward the source?

> You do not need to introduce the concept that the poynting vector changes
> direction and then joins the forward wave to describe what happens.

Yes I do, Steve, to avoid the violation of the conservation of energy principle. That rearward traveling energy is just a wet dream of yours. It doesn't exist in reality. The energy involved in the destructive interference has changed direction and joined the re-reflected power. If you don't believe it, calculate the Poynting vector.

> Would you like to discuss the correct answer as a rational person?

Rationality? From you? That is hilarious, Steve. How can a proven liar possibly be considered rational?

We have already discussed this example until I am blue in the face, Steve. The complete phasor diagrams are on my web page at:
http://people/cecilmoore/z0match.gif

Steve, would you please answer the following multiple choice question for me?

I, Steve, admit to the following:

A. I don't read Cecil's postings. Therefore, I have no clue as to what is being discussed and I have not read where Cecil said: "I have absolutely no argument with your voltages, currents, and phases. The only argument I have with you is your assertion that '75 joules/sec plus 8.33 joules/sec equals 133.33 joules/sec'."

B. I have an IQ equal to the reflected power in our example, i.e. 33.33, and am incapable of understanding Cecil's statement in 'A', above.

C. I am a malevolent person and like to spread as much evil in the world as is possible. That's why I completely ignore Cecil's statement in 'A', above.

So which is it, Steve? I can't think of any other possibilities.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4281. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 21:42:19 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <%GgN6.28379$p33.480153@news1.sttls1.wa.home.com>
Source record: 162630

<atkes@imap1.asu.edu> wrote in message news:9e1je0$he5$1@news.asu.edu...
> Roger Sparks (sparksrc@home.com) wrote:
>
> snip
>
> : I understood Kevin, w9cf, to say in an earlier posting that capacitive
flux
> : (the voltage field) moves through a conductor at the same speed as
through a
> : dielectric and does not diminish with depth. This is contrasted to the
> : magnetic field which does diminish with depth of penetration into the
> : conductor (skin effect).
>
> snip
>
> Roger,
>
> I apologize for the long post. I first wanted to make clear that I
> said nothing about a voltage field. There is no voltage field. All of
> these discussions would make more sense if everyone would stop mentioning
> voltage. The reason, as I have tried to point out several times before,
> is that in these situations it is often not well defined. To understand
> what is going on you will need to calculate or measure the electric
> and magnetic fields. Apparently the circuit theory idea that there
> is a well defined voltage difference between two points, independent
> of path, is hard to let go of. However, if you want to understand how
> antennas and transmission lines work in terms of detailed current and
> charge distributions, the circuit theory idea of voltage will only hold
> you back and contribute to misconceptions. This is not to say that you
> cannot use these concepts if you apply them properly. You must define
> the path for your voltage difference, and only use it for that path.
>> 73 Kevin w9cf

Hello Kevin,

I must begin by apologizing for not only loosely interpreting your comments, but also creating a false impression that you said something when you did not say it. I try to avoid this kind of situation because it is like a rock thrown into a pool of water, the misstatement creates waves that are impossible to smooth.

I have read your comments several times and certainly find no fault. I will pay more attention to the voltage path when I use that term, and will talk more about electrical field or magnetic field when that seems more appropriate for the discussion.

I am working on another post that covers this subject and better incorporates field and circuit theory.

73, Roger, W7WKB

4282. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 22:13:18 UTC
From: kb7qhc@home.com
Message-ID: <3b059caf.950341368@news.seanet.com>
Source record: 162631

On Fri, 18 May 2001 16:33:10 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

> Do you have delusions of grandeur or what?
>
> a sad commentary on your mental state.
>
>I have probably used it since
>you were still wetting your pants.
>
>You have got to be mentally ill, Steve
>
>This is where you are pathologically wrong.
>
> just a wet dream of yours.
>
>How can a proven liar
>possibly be considered rational?
>

Hi Cecil,

I seem to recall you practiced logic without ad-hominem in the past -
and made a point of just that.

73's
Richard Clark, KB7QHC

4283. Re: Two way radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 22:27:08 UTC
From: kelly@nospam.dvol.com
Message-ID: <3b05a00a.195236366@news2.dvol.com>
Source record: 162633

On Fri, 18 May 2001 03:41:04 GMT, "Dennis J Little, II"
<dennislittle@webgaia.com> wrote:
>
>Any help you all can give would be great. You can reply directly to my email
>dennislittle@webgaia.com Thanks for your time!

Poke around these sites:

http://members.tripod.com/~cb_antennas/antenna_basics.html

http://www.qsl.net/kd4sai/antenn.html

http://www.ac6v.com/
>
>
>Dennis Little
>
w3rv

4284. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 22:58:34 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <uOhN6.11364$v5.842053@news1.rdc1.ct.home.com>
Source record: 162634

No, it wasn't intended to be silly.

If you are using a random length of coax you cannot
trust the readings. First, coax losses will minimize
the SWR, and depending on how close the coax
is to be an odd multiple of a quarter wavelength,
it can invert the antenna impedance as seen at the analyzer.

That is why I asked about the placement of the instrument.

Pete

"Sideband" <sideband@spam.me.not> wrote in message
news:3B05181B.F95CB114@spam.me.not...
> Peter:
>
> It was after the run of coax that I'm using on the radio. Putting the
> analyzer right on the antenna would have been a little silly, because
> the presence of my body would interfere with the match, etc, wouldn't
> it?
>
> 73 de KC8RKQ
>
> "Peter J. Bertini" wrote:
> >
> > Was the analyzer at the antenna, or was in line after
> > some coax?
> >
> > Pete
> >
.

4285. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:02:27 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B05AA03.8A9E477A@spam.me.not>
Source record: 162635

Ok...

So you suggest I make an even 1/2 wave length of coax to test the
antenna, then? The SWR at the radio looks good... Can I just trust that,
and be done with it?

I'll be the first to admit I'm learning here. I definitely appreciate
the help.

73 de KC8RKQ

"Peter J. Bertini" wrote:
>
> No, it wasn't intended to be silly.
>
> If you are using a random length of coax you cannot
> trust the readings. First, coax losses will minimize
> the SWR, and depending on how close the coax
> is to be an odd multiple of a quarter wavelength,
> it can invert the antenna impedance as seen at the analyzer.
>
> That is why I asked about the placement of the instrument.
>
> Pete
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3B05181B.F95CB114@spam.me.not...
> > Peter:
> >
> > It was after the run of coax that I'm using on the radio. Putting the
> > analyzer right on the antenna would have been a little silly, because
> > the presence of my body would interfere with the match, etc, wouldn't
> > it?
> >
> > 73 de KC8RKQ
> >
> > "Peter J. Bertini" wrote:
> > >
> > > Was the analyzer at the antenna, or was in line after
> > > some coax?
> > >
> > > Pete
> > >
> .

4286. Re: FREQUENTLY ASKED QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:04:32 UTC
From: kelly@nospam.dvol.com
Message-ID: <3b05a2b1.195915465@news2.dvol.com>
Source record: 162636

On Fri, 18 May 2001 07:15:55 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.com> wrote:

>However, this newsgroup does have lots of Frequently Unresolved
>Questions. Maybe there should be a...?
>
Yes.
>
>73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
> 'In Practice' columnist for RadCom (RSGB)
> http://www.ifwtech.com/g3sek

4287. Re: Telescoping vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:04:53 UTC
From: kelly@nospam.dvol.com
Message-ID: <3b05a648.196834119@news2.dvol.com>
Source record: 162638

On Mon, 14 May 2001 15:22:47 -0500, Randon Loeb
<rloebusenet@cticonsulting.net> wrote:

>I have started to come across some homebrew antenna links, but have
>noticed that none make any mention of the telescoping vertical antennas
>that might come with a boom box, car or other FM radio receiver, or
>bought at cheaply at places like radioshack. It seems to me that for
>home made verticals, like the 1/4 w 2 meters I'm thinking of, these
>would work great because of the ease in adjusting it to the proper
>length for lowest swr, light weight and strength. Why not lay a few on
>their sides for the ground radials as well? Seems to me that tuning the
>length of the driven element or ground radials would be really easy,
>just slide until you get what you want. Yet I don't see any body using
>them, nor do I see commercial products using them either. Should I give
>one a shot, or is there are good reason they are not used for
>transmitters and only for receivers?
>
They might have some useful purpose for portable operations but not
for permanent rooftop installations, they're just not rugged enough.
Wrap a slowly spiraling copper wire around them after they're set to
length to eliminate any joint conductivity problems.
>
w3rv

4288. Re: UFO antenna detection plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:05:34 UTC
From: burke_br@freemark.com
Message-ID: <3b05aa9f.20240385@news1.lig.bellsouth.net>
Source record: 162637

On Fri, 18 May 2001 13:32:41 GMT, Irv Finkleman
<finkirvNOSPAM@home.com> wrote:

>Joe wrote:
>>
>> http://www.parascope.com/nb/detector.htm
>> This was to funny to pass up !
>> Its real plans !
>
>Noted that Fate magazine excerpts are located at
>www.llwewllyn.com -- any relation, Roy? ;-)
>--
>
>Irv Finkleman,
>Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
>Calgary, Alberta, Canada
>
>Please delete NOSPAM from my e-mail address when replying.
>Thanks!

So did you build one and see if it works? %~}

Regards,

Bruce
Hitting Reply is Futile
*Use the folllowing:
(flzapped@fcmail.com)

4289. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:18:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B05ADB5.D840EC12@IEEE.org>
Source record: 162639

Richard Clark wrote:
> I seem to recall you practiced logic without ad-hominem in the past -
> and made a point of just that.

Yep, but logic carries a person just so far. What do you do when a
person deliberately lies about what you said? Don't know about you,
but it pi$$es a Texan off something fierce. I come from a long
line of individuals who would settle for nothing less than a .44
caliber shootout at high noon.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4290. Re: Worth experimenting with?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:18:33 UTC
From: Robert Willsey <w4nul@brightok.net>
Message-ID: <9ehN6.38$W7.1107@sooner.brightok.net>
Source record: 162632

I have used one for years with good performance on two meters. I have built at least a dozon of them from the directions in CQ mag from many years ago. I have also used the instructions from the ARRL handbook. With prober care it is a very good antenna and is much smaller than a 5/8 whip. Works very well with a magnet below it also.

73 Bob
<ehsjr@bellatlantic.net> wrote in message
news:3B0586F0.35F848D7@bellatlantic.net...
> Bill,
>
> I think a DDRR is worth experimentation. I built one for
> 2 meters to experiment. I was very pleased with the results.
> It compared favorably with my 5/8 antenna. 30% of the time
> that there was a difference between the two, the DDRR
> outperformed the 5/8. 70% of the time that there was a
> difference, the 5/8 outperformed the DDRR.
>
> Ok, that said, W8JI, who knows more about antennas in
> his little finger than I do in my whole body, frowns on them.
> He pointed out errors in my measurement setup and technique.
> Based on his view, if you are looking for best performance,
> don't look at a DDRR, But - if you are looking to experiment,
> you can have a lot of fun with a DDRR. But I would recommend
> experimentation on 2 meters, rather than 80. The physical size
> is ideal for fooling around with this type of antenna, and material
> is cheap. I used 1/2" soft copper tubing - the kind you can bend
> easily by hand. I made a trombone-like end piece, that allows
> me to vary the circumferance by about 2-3 inches. My variable
> capacitor is a metal disc that attaches to the end of the "trombone"
> with a long 6-32 screw. The disc is parallel to the solid metal
> ground plane, and the distance between the disc and the ground
> plane can be varied by turning the 6-32 screw.
>
> Tom (W8JI) pointed out that this is pretty much a drastically
> shortened verticle - the loop serves as a "top hat" capacitance.
> The configuration is a loop of about 19" circumference installed
> parallel to a sheet of metal and about 2" above it. It is the 2"
> part, according to Tom, that is the radiator, and the 19" loop
> is the "top hat". The feed point is shield to the bottom of the
> 2" vertical portion and center conductor on the loop (horizontal)
> portion about 2" from the 90 degree bend where the vertical
> portion bends over to the horizontal. Slide the center conductor
> around for the best match. Then adjust the disc to fine tune the

> thing. There are some web sites that have a pretty good
> description of building the antenna - search for DDRR.
>
>
> Bill Meacham wrote:
>
> > Dale Parfitt wrote:
> > >
> > > Ross Archer wrote:
> > >
> > >
> > > > > This one I call an "untuned fence loop", because it's mounted on the
inside
> > > > > of my fence. Four woodscrews act as
> > > > > "supports" for a complete 360 degree rectangle of
> > > > > wire, to which I soldered a coax jack to each end.
> > > > > Currently, the jack is halfway up the short side,
> > > > > which means it's probably vertically polarized.
> > > > >
> > > > > The lowest part of the loop can't be more than
> > > > > 8 inches above the ground. If someone cares about dimensions, I'll
be
> > > > > happy to run out and measure it.
> > > > > I just randomly picked convenient mounting points
> > > > > for the wood-screws that formed a neat rectangle -
> > > > > perhaps 25'x6' (very roughly).
> > > > >
> > >
> > > > > Has anybody else experimented with this sort of antenna?
> > > > > I'll try to do more rigorous comparisons when conditions
> > > > > are better. It does seem like a sensitive and quiet receiver
> > > > > is required to cope with the lower signal delivered though.
> > > >
> > > > Interesting Ross- I would only suggest that if the loop is horizontal,
then its
> > > > field is most likely norizontal despite the feed being on a short
vertical
> > > > segment- or perhaps I don't fully comprehend the configuration. Any
way- good
> > > > go.
> > > >
> > > > Dale W4OP
> > >
> > There was an antenna in QST back in the early 70? called a DDRR
> > Loop?. It was based on something like an 8 foot diameter piece of
> > muffler tubing mounted flat above a ground plane. The article
> > writer highly praised it but I never heard much else about it.
> > Given that the 8 foot diameter was intended specifically for HF
> > SW, maybe Ross' configuration approaches a scheme like that scaled

> > for the BCB?.
> > Does anybody have a track record using this DDRR Loop? (I could be
> > wrong on the name).
> > --
> > ---
> > Bill Meacham WX4A
> > Vieques, PR
>

4291. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:22:46 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <a9iN6.11434$v5.847427@news1.rdc1.ct.home.com>
Source record: 162640

If you make a halfwave length, be sure to take in
account the velocity factor of the line, which will
tend to shorten the length. It might make an
interesting academic excercise to see how the
readings differ when read at the antenna using
a halfwave line, and what is seen at the rig.

If you are happy with the antenna performance, you're
probably are all set. It's just important to realize
what can affect your analyzer readings so you won't
be led astray in the future.

Peter

"Sideband" <sideband@spam.me.not> wrote in message
news:3B05AA03.8A9E477A@spam.me.not...
> Ok...
>
> So you suggest I make an even 1/2 wave length of coax to test the
> antenna, then? The SWR at the radio looks good... Can I just trust that,
> and be done with it?
>
> I'll be the first to admit I'm learning here. I definitely appreciate
> the help.
>
> 73 de KC8RKQ
>
> "Peter J. Bertini" wrote:
> >
> > No, it wasn't intended to be silly.
> >
> > If you are using a random length of coax you cannot
> > trust the readings. First, coax losses will minimize
> > the SWR, and depending on how close the coax
> > is to be an odd multiple of a quarter wavelength,
> > it can invert the antenna impedance as seen at the analyzer.
> >
> > That is why I asked about the placement of the instrument.
> >
> > Pete
> >
> > "Sideband" <sideband@spam.me.not> wrote in message
> > news:3B05181B.F95CB114@spam.me.not...
> > > Peter:
> > >

> > > It was after the run of coax that I'm using on the radio. Putting the
> > > analyzer right on the antenna would have been a little silly, because
> > > the presence of my body would interfere with the match, etc, wouldn't
> > > it?
> > >
> > > 73 de KC8RKQ
> > >
> > > "Peter J. Bertini" wrote:
> > > >
> > > > Was the analyzer at the antenna, or was in line after
> > > > some coax?
> > > >
> > > > Pete
> > > >
> > .

4292. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:26:35 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <LciN6.11440$v5.848388@news1.rdc1.ct.home.com>
Source record: 162641

"Sideband" <sideband@spam.me.not> wrote in message
news:3B05AA03.8A9E477A@spam.me.not...
> Ok...
>
> The SWR at the radio looks good... Can I just trust that,
> and be done with it?
>
>
> 73 de KC8RKQ
>
Look at it another way... You could consider the
coax to be part of your antenna system, and acting
as an 'antenna tuner' of sorts. Not the ideal way
to do things at VHF, though.

Pete

4293. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:28:12 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B05B00C.E8646633@spam.me.not>
Source record: 162642

Peter:

Definitely good information there. I'll take it into account, and put it away for future use, for sure.

I must admit that I had no idea coax reacted with the system in this way...

I'm thrilled with the performance of this little antenna, it cost almost nothing to build, and I have been able to hit repeaters that I was unable to hit with the little dipole I started with. So yes, I am happy with the antenna.

Question for you, though... How would I go about calculating the velocity factor of the coax? I'm not sure there is a listed velocity factor for Belden YR29671 (P/N 1700451)... so I'd probably have to find a way to calculate it. Any suggestions?

73 de KC8RKQ

"Peter J. Bertini" wrote:
>
> If you make a halfwave length, be sure to take in
> account the velocity factor of the line, which will
> tend to shorten the length. It might make an
> interesting academic excercise to see how the
> readings differ when read at the antenna using
> a halfwave line, and what is seen at the rig.
>
> If you are happy with the antenna performance, you're
> probably are all set. It's just important to realize
> what can affect your analyzer readings so you won't
> be led astray in the future.
>
> Peter
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3B05AA03.8A9E477A@spam.me.not...
> > Ok...
> >
> > So you suggest I make an even 1/2 wave length of coax to test the
> > antenna, then? The SWR at the radio looks good... Can I just trust that,
> > and be done with it?
> >
> > I'll be the first to admit I'm learning here. I definitely appreciate
> > the help.

> >
> > 73 de KC8RKQ
> >
> > "Peter J. Bertini" wrote:
> > >
> > > No, it wasn't intended to be silly.
> > >
> > > If you are using a random length of coax you cannot
> > > trust the readings. First, coax losses will minimize
> > > the SWR, and depending on how close the coax
> > > is to be an odd multiple of a quarter wavelength,
> > > it can invert the antenna impedance as seen at the analyzer.
> > >
> > > That is why I asked about the placement of the instrument.
> > >
> > > Pete
> > >
> > > "Sideband" <sideband@spam.me.not> wrote in message
> > > news:3B05181B.F95CB114@spam.me.not...
> > > > Peter:
> > > >
> > > > It was after the run of coax that I'm using on the radio. Putting the
> > > > analyzer right on the antenna would have been a little silly, because
> > > > the presence of my body would interfere with the match, etc, wouldn't
> > > > it?
> > > >
> > > > 73 de KC8RKQ
> > > >
> > > > "Peter J. Bertini" wrote:
> > > > >
> > > > > Was the analyzer at the antenna, or was in line after
> > > > > some coax?
> > > > >
> > > > > Pete
> > > > >
> > > .

4294. Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:28:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B05B016.924412CC@IEEE.org>
Source record: 162643

Given: Two and only two fixed, constant sources of power, each delivering
100 watts, no more and no less.

Question: What is the absolute maximum amount of power that can be obtained
by combining those two fixed, constant sources of power?

A. 100w

B. 200w

C. 300w

D. 400w

If each source will put out 70.7v and 1.414a in a 50 ohm environment, what
is the maximum in-phase voltage and current that can be produced by the sum
of those two fixed, constant sources of power in a 50 ohm environment?

A. 100v and 2a

B. 141.4v and 2.828a

C. Other, ______v and ______a
--
http://www.mindspring.com/~w6rca

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4295. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:36:05 UTC
From: kb7qhc@home.com
Message-ID: <3b05b04e.955364631@news.seanet.com>
Source record: 162644

On Fri, 18 May 2001 18:18:13 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> I seem to recall you practiced logic without ad-hominem in the past -
>> and made a point of just that.
>
>Yep, but logic carries a person just so far. What do you do when a
>person deliberately lies about what you said? Don't know about you,
>but it pi$$es a Texan off something fierce. I come from a long
>line of individuals who would settle for nothing less than a .44
>caliber shootout at high noon.

Hi Cecil,

My great uncle Tex Moore died with his holstered guns hanging from the bedpost (and he rode shotgun for Wells Fargo, was a Texas Ranger, and punched a lot of cattle before the turn of the 19th century), but he never lost his composure.

The classic line from the Virginian is "Smile when you say that pardner," not the stuff you've put to the archive.

73's
Richard Clark, KB7QHC

4296. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:52:51 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <nBiN6.28660$p33.489386@news1.sttls1.wa.home.com>
Source record: 162645

Steve,

Sorry this is so long but complicated ideas take several words to complete, as you know. The fold around current is still a bone I would like to chew on.

Your comment about the shield of coax being the ground or reference point for the standard circuit theory model of a transmission line caught my attention. Of course this is correct. I wonder if this is part of the reason why a separate fold back current on the outside of coax is so easily accepted

Let us consider if the shield remains at ground potential during the passage of an electromagnetic wave. First we need to find a reference point which will never experience an increase in field intensity (will never experience an increase or decrease in charge density). Such a point can be found by connecting two series resisters, each of the same value, between the two terminals of a voltage source. With current flowing, the connection of the two resistors is a neutral point from which a voltage can be measured showing positive one side and an equal negative on the other side. This system can be used to find a neutral reference point for any circuit. It provides a much better reference point than does an earth ground.

We can establish a reference point with two equal resistors placed at the end of a coaxial transmission line where it joins a balanced dipole. Under either steady state or startup conditions, a voltage neutral point will be found at the junction of the resistors. Prior to arrival of any electrical waves, zero voltage will be measured from the reference point to any nearby place on the antenna or coax. At the time of arrival of the wave at the reference site, equal but opposite voltages will be measured across each of the two resistors. This is a strong indication that the center of the coax is host to an electrical field, that the outside of the coax is host to an electrical field, and that the fields are of opposite polarity.

Theory holds that all fields are based in electrical charges and that charges
move (only the negative charge in a conductor). Therefore we will assume that the conductors immediately adjacent to the reference point will have an excess or deficiency in charge, the source of the electric field.

Circuit theory would lead us to believe that a traveling wave, such as the advancing wave down the transmission line or antenna, will flow into every available path proportional to the impedance between the paths, with the impedance proportional to the capacitance of the conductors forming the path. The traveling wave simply charges each capacitor it encounters as it travels down the antenna or transmission line.

For the same traveling wave to turn back along the feedline and begin charging the outside of the coaxial line with a solid shield is much harder to accept because the immediately adjacent parts of the conductor are already charged to some field strength of the same polarity. If the shield is braided, then it is extremely likely that the external surface of the shield is also charged to a field strength equal to the inside surface. If we tried to measure and compare the current in the fold back component compared to the current in the antenna charging component, the current in the fold back component would approach zero.

A proponent of the strong skin effect concept will say 'Whoa' at this point, pointing out that skin effect will prevent the electrical field from reaching
the outside surface of the braid or solid shield. He would say that the electrical field (measured as voltage from the reference point) is strictly confined inside the shield surface, leaving the outside surface with the same beginning electrical intensity as the antenna, zero. Later, under steady state conditions, the outside of the shield would develop some steady state impedance related to the complete current path, which may be more or less that the antenna impedance.

I would counter that the neutral point
established by the voltage test demonstrates that an equal-potential surface can be found at some mid point between the two conductive surfaces whereon a test dipole (a very small one made of dielectric) would be equally
attracted to either surface. This is a demonstration that the entire center conductor can be charged to one polarity and the entire shield charged to the other polarity NO MATTER WHERE THE ACTUAL CHARGES
LAY ON THE OUTER SHIELD. The observation that no electric field can be observed outside the shield only demonstrates that the two fields are equal and cancel when measured from a distance, it has no relevance to the location of the actual charges.

I would add that the proposed wrap around current must be of the same polarity as the shield current, so the total field intensity on the surface would increase by some amount if the current actually did wrap around. This increase would have an effect
on the inner conductor, causing a current on the inner conductor to counterbalance the field increase.

Can the electric field penetrate the metallic shield material in the way I just describe? The Double Shield Coax experiment showed that it did.

My conclusion: The double back current will be zero.

The only flaw I see in this argument is related to the field intensity differences which exist on the different conductors, better described as the differences between intrinsic impedance of the antenna wire, the inner conductor, and the shield. The antenna wire for a dipole is often about the same size as the center conductor for coax so the free space Zo should be about the same. The shield is a much larger diameter and would have a lower free space Zo.

Could reflections exist on the outer shield when considered as a stand alone circuit member, caused by the difference in impedance between shield and antenna wire? That question has not been discussed recently so far as I know.

73, Roger, W7WKB

4297. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-18 23:57:01 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <hFiN6.1901$Zv1.577793@paloalto-snr1.gtei.net>
Source record: 162646

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
news:3b0556e4.126158570@news.aepnet.com...

> On 18 May 2001 15:54:22 GMT, raiar@slacc.com.nospam (Gary V. Deutschmann,
Sr.)
> wrote:
>
> >It's always interesting to see so many reply using the word MOST in
> >their statement concerning using horizontal for SSB 2-meter.
> >
> >Unless they are 2-meter DXers, MOST that do have sideband capability
> >on their 2-Meter rigs, ARE running through their verticals, since
> >that's all they have up for 2-meters, due to airspace, restrictions,
> >costs, etc.
> >
> >We have a local USB group that meet every single late night on
> >144.250, by far the greatest majority are operating vertically and
> >only a couple even have horizontal capabilities.
>
> I've been working SSB on 2m since the early 60s (pre-rice box) and prior
to that
> I DXed on AM (pre-FM repeater on every hilltop).
>
> Initially, we used vertical polarization because that was what was used
in
> California and the goal was to try and work into CA. This was shortly
after the
> era when QST's "World above 50 Mc" mentioned the fact that the "difficult
path"
> between Tucson and Phoenix had been bridged.
>
> There were endless debates over which polarization was superior.
>
> I had a friend, K7GNV, who worked at Ft. Huachucha, AZ and operated 2m AM
> mobile, running an Ameco converter, Morrow i-f receiver and a HB exciter
and
> 4X150 amp, high level modulated. (Blower and all)
>
> We experimented endlessly, trying to maintain 100% contact as he drove
from here
> in Tucson to the Ft. In the end, horizontal polarization was clearly
superior.
> I (and everone else) switched over and never looked back.
>

> Of course, SSB was proven to be clearly superior as well, when I went
from
> running a high-level modulated 4CX250 running 500W to a 6360 running 12W
and
> worked the same stuff.
>
> Today, I don't know anyone who is remotely serious about SSB operation
that uses
> a vertical antenna.
>
> Wes Stewart N7WS
>

I agree 100% Wes. But with all the current all mode all band rigs being offered, I'm sure that there are some of these casual users that try to run 2 meter SSB on their "repeater sticks". But anybody somewhat serious about 2 meter SSB runs horizontal for a number of reasons, but mainly for the improvement in performance.

The only mode I work on 2 meters is SSB, and everyone I talk to is running horizontal. This is not to say that there are not a few stations out there running vertical, it's just that you can't hear them unless they are very close.

73 de W6DKN

4298. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 00:42:31 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B05C177.32D6@wt.net>
Source record: 162647

Sideband wrote:
>
> Peter:
>
> Definitely good information there. I'll take it into account, and put it
> away for future use, for sure.
>
> I must admit that I had no idea coax reacted with the system in this
> way...
>
> I'm thrilled with the performance of this little antenna, it cost almost
> nothing to build, and I have been able to hit repeaters that I was
> unable to hit with the little dipole I started with. So yes, I am happy
> with the antenna.
>
> Question for you, though... How would I go about calculating the
> velocity factor of the coax? I'm not sure there is a listed velocity
> factor for Belden YR29671 (P/N 1700451)... so I'd probably have to find
> a way to calculate it. Any suggestions?
>
> 73 de KC8RKQ

As a rule the foam coaxes will have a VF near .80 . The solid poly
coaxes are usually about .66 . "rg-58, rg-8, rg-213 etc. In the real
world I'm sure it will vary a bit. Ladder line is about .90-.95 I
think. I'd have to double check...MK
--
http://web.wt.net/~nm5k

4299. Fritzel antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 01:38:31 UTC
From: leonardjs@aol.com
Message-ID: <3b05ce48.26803610@news.earthlink.net>
Source record: 162648

I am trying to get an opinion regarding a Firtzell 10 - 80 meter vertical. Has anyone ever used one? Are they a good product? Is it something worth buying used?

4300. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 02:06:55 UTC
From: Rory Davis <n7cr@bellsouth.net>
Message-ID: <rAkN6.4476$M8.219203@news1.atl>
Source record: 162649

If you still have the analyzer, there's an easy way to prune your coax to a multiple of 1/2 wavelength without measuring or having to know the velocity factor.

Short the far end and tune the analyzer until the impedance is the lowest at resonance near and below your desired frequency. Note this frequency. You can trim the coax a bit at a time until the dip in impedance falls on the frequency you want. What you're doing is making a "shorted stub" of the coax and tuning it to resonance. The lower the coax loss the narrower and deeper the dip due to higher Q.

You can also leave the far end open, tune for an impedance peak, and then just chop the coax until you've reached the desired frequency. This is the "open stub" method. I prefer to use this method because it's easier to just clip and measure, clip and measure without having to short the coax to take readings. On 2 meters, it takes only a few inches.

Personally, I prefer using a spectrum analyzer/tracking generator and a return-loss bridge to do this. AEA's CIA works pretty well for this application at HF/6M if you don't have access to lab test equipment. The MFJ and Autek analyzers have to be manually tuned each time you take a reading, but they're usable.

Oh yeah... For the purists who like to make things more complicated, yes, you can measure the 1/4 wave resonance frequency or the 1/2 wave frequency and then cut off a measured length, remeasure the resonance point and calculate (from the cut off piece and the two frequencies) the velocity factor of the coax.
But it's MUCH faster to just measure and prune. You'll definitely be taking much less than (246*VF/f)*12 inches off the length of the coax, anyway.

73,
N7CR

"Sideband" <sideband@spam.me.not> wrote in message
news:3B05B00C.E8646633@spam.me.not...
> Peter:
>
> Definitely good information there. I'll take it into account, and put it
> away for future use, for sure.
>
> I must admit that I had no idea coax reacted with the system in this
> way...
>
> I'm thrilled with the performance of this little antenna, it cost almost
> nothing to build, and I have been able to hit repeaters that I was

> unable to hit with the little dipole I started with. So yes, I am happy
> with the antenna.
>
> Question for you, though... How would I go about calculating the
> velocity factor of the coax? I'm not sure there is a listed velocity
> factor for Belden YR29671 (P/N 1700451)... so I'd probably have to find
> a way to calculate it. Any suggestions?
>
> 73 de KC8RKQ
>

4301. Re: 2M SSB Polarization??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 03:00:52 UTC
From: Billy East <KE4PJR@nospamarrl.net>
Message-ID: <qdobgtc7epbr7vfn1onke5a13jo3lr2kf4@4ax.com>
Source record: 162650

On Fri, 18 May 2001 07:37:10 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.com> wrote:

>KG4GGX wrote:
>>Hi all
>> I heard a discussion on 75m about 2m ssb antenna polarization. As I know,
>>most ops on 2m ssb are horizontal. Why horizontal, and not vertical?What makes
>>one better than the other on VHF? The guy's having this discussion seemed not
>>to agree. As I understand, horizontal antennas are less prone to picking up man
>>made noise. And, it's my understanding that horizontal radio waves have a
>>little less ground loss. Is my understanding wrong. I do know that horizontal
>>is the choice of VHF contesters. But why?
>
>At VHF it isn't about man-made noise or ground loss.
>
>VHF/UHF SSB is used for contacts way, way beyond the line of sight, and
>horizontal polarization has significantly lower loss along paths
>involving diffraction over obstacles. In other words, it works better.
>(That would also be true for FM, but amateur FM has standardized on
>vertical polarization because of the overriding need to use
>omnidirectional antennas for mobiles and for fixed packet nodes.)
>
>Horizontal is also mechanically easier for stacks of single yagis for
>multiple bands.
>
>Once you lock into one polarization as standard, the cross-polarization
>loss means that everybody has to fall into line. But it's more than "cuz
>that's the way it's always been done". There were - and still are - good
>reasons for doing it that way.
>
>73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
> 'In Practice' columnist for RadCom (RSGB)
> http://www.ifwtech.com/g3sek
Ian, Thanks for giving a straight answer and not being a smart ass.
aggravates the crap out of me when someone asks a legitimate question
and seems all anyone gets is a stupid smart ass reply.
To be honest I was wondering the same question regarding
polarization. :) 73s, Billy

4302. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 03:11:26 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B05E45E.599F64DE@IEEE.org>
Source record: 162651

Richard Clark wrote:
> My great uncle Tex Moore died with his holstered guns hanging from the
> bedpost (and he rode shotgun for Wells Fargo, was a Texas Ranger, and
> punched a lot of cattle before the turn of the 19th century), but he
> never lost his composure.

He was obviously a better man than I. Sorry about going off the deep end.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4303. Stabilizing beam elements?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 03:21:15 UTC
From: kb5ylg@yahoo.com
Message-ID: <17f04449.0105181921.6c5155fd@posting.google.com>
Source record: 162652

I have a Mosley TA-33 triband 3 element hf beam. My problem is that the reflector and director tend to rotate on the boom, even when u-bolt is very tight to the point of almost deforming the element. Have you found a way to stabilize these elements? Thanks!

David KB5YLG

4304. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 03:21:31 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <1gpbgt0jc5jvm71sc0q6hf7kp54cr7i4vp@4ax.com>
Source record: 162653

On Fri, 18 May 2001 18:28:22 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Given: Two and only two fixed, constant sources of power, each delivering
>100 watts, no more and no less.
>
>Question: What is the absolute maximum amount of power that can be obtained
>by combining those two fixed, constant sources of power?

This information is classified. I could tell you but then I'd have to kill you.

>If each source will put out 70.7v and 1.414a in a 50 ohm environment, what
>is the maximum in-phase voltage and current that can be produced by the sum
>of those two fixed, constant sources of power in a 50 ohm environment?

Here in California, we don't give a rat's behind. Just send the power, quick.

W7TI

4305. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 03:36:03 UTC
From: Jeff Hasz <jhasz@home.com>
Message-ID: <990243363.622592422@news.bremtn1.wa.home.com>
Source record: 162654

On Fri, 18 May 2001, Bill Turner wrote:
>On Fri, 18 May 2001 18:28:22 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>
>>Given: Two and only two fixed, constant sources of power, each delivering
>>100 watts, no more and no less.
>>
>>Question: What is the absolute maximum amount of power that can be obtained
>>by combining those two fixed, constant sources of power?
>
>This information is classified. I could tell you but then I'd have to kill you.
>
>
>
>>If each source will put out 70.7v and 1.414a in a 50 ohm environment, what
>>is the maximum in-phase voltage and current that can be produced by the sum
>>of those two fixed, constant sources of power in a 50 ohm environment?
>
>Here in California, we don't give a rat's behind. Just send the power, quick.
>
>W7TI

Watts the difference, joules just waist it impeding the flow of traffic anyways

Jeff

KB9GF/7

4306. Here's an online mail order source for tubing

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 03:53:26 UTC
From: kb5ylg@yahoo.com
Message-ID: <17f04449.0105181953.1776375@posting.google.com>
Source record: 162655

http://www.texastowers.com has antenna tubing, made to fit together, etc.

4307. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 04:05:56 UTC
From: richardharrison@webtv.net
Message-ID: <20165-3B05F124-88@storefull-118.iap.bryant.webtv.net>
Source record: 162656

Roger, W7WKB wrote:
"Could reflections exist on the outer shield when considered as a stand alone circuit member, caused by the difference in impedance between the shield and the antenna wire?"

Any guided wave is somewhat reflected at any impedance bump. Then, the incident and reflected waves combine to produce sttanding wave patterns which themselves are indications of impedance variations.

If the outer surface of a dipole feedline with no balun is about 1/4-wavelength and is connected with a grounded radio, the impedance of the outer shield will be high at the antenna attachment point.

Note that 1/4-wavelength on the outside of the shield is nearly the free-space length. It is not reduced to almost 2/3 the distance as for a wave traveling inside the coax because there is much thinner plastic outside the coax than fills the inside. The wave velocity is slightly affected by the conductor diameter as a thin conductor has more inductance than a fat conductor, but the difference isn`t that important.

Reg surely has a program. Reg may even have a program which gives the dipole drivepoint impedance at low altitudes over average or other grounds. If you pick a center-tap across the drivepoint as a reference you divide the antenna impedance by two across each half of the divider.

Best regards, Richard Harrison, KB5WZI

4308. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 04:30:24 UTC
From: richardharrison@webtv.net
Message-ID: <20165-3B05F6E0-90@storefull-118.iap.bryant.webtv.net>
Source record: 162658

Cecil, W6RCA wrote:
"Given: Two and only two fixed, constant sources of power, each delivering 100 watts, no more and no less."
I`ve written several entries for this thread complete with all the arithmetic, but decided against posting, but......

Shucks, Cecil, your quiz is too simple to resist.

100 watts + 100 watts = 200 watts

E = square root of 200 watts x 50 ohms
E = 100 volts

I = 100 volts / 50 ohms = 2 amps

Common sense beats techno-babble every time.

Best regards, Richard Harrison, KB5WZI

4309. Re: 2 meter range???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 04:41:51 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9e4tif$no8$0@208.207.71.144>
Source record: 162657

Use a yagi beam, the more elements the better. Point it carefully, peaking for maximum signal received on the intended repeater. And get it up as high as you can. I hope you live on a hill.

About 30 years ago I used to do periods of midnight-8am "watch" shift at a radio installation where there was a 155 mHz four bay antenna mounted 175 feet up the tower that I knew never ever got used between 5pm and 8am. Most nights, after 2am time really dragged till daylight, and one night I got the bright idea to hook my new 1ï¿½ watt Drake TR22 two meter "handheld" rig to that antenna, to see what I could stir up. It was a fairly challenging prospect since the tower was over 100 feet from the building with the watch room, with an underground run of RG8 that went to the transmitter building at the tower base where the antenna feedline terminated. So the feedline totalled over 250 feet with a badly mismatched antenna at the top, excited by a whopping one and a half watts. I wondered if it would work at all.

The darn thing performed amazingly well. I worked repeaters in a city 200 miles away with full quieting signals both ways.
I always wondered how much of that watt and a half actually got radiated and I know it had to be in the milliwatts.

In the late 60's before repeaters were common we used to do amazingly well on 2 meter simplex (AM and later FM) with low power and fairly poor antennas at low heights. I used to talk regularly 50 miles with a friend using a Heathkit "Lunchbox" running about 3 watts and a four element yagi at 20 feet, and he lived in a river valley, actually 'way downstream from me, since I lived near the headwaters of the same stream.

In the same time frame I was crossing a large lake on a automobile ferry when I decided to call a close friend on simplex, using the same 1ï¿½ watt Drake TR22 and a ï¿½ wave vertical mounted on the roof of the stationwagon. He was at home 70 miles away, and 700 feet higher in altitude, yet he answered immediately, much to my surprise, and we QSO'ed for several minutes as the ferry crossed the lake. He was using a 50 foot tower with a yagi and 10 watts.

Sometimes I think that repeaters took most of the challenge away from two meters. Of course they replaced it with reliability.

Dick
Wï¿½EX

Matt wrote:
>

> I know there is really no way of knowing but if I wanted to try to hit a
> repeater that was a little over 100miles aways from my location.. approx.
> how much wattage would I need to be pushing out and what kind of directional
> antenna would I need to be using..this is all on 2 meter of course. Or can
> it even be done? Thanks for all your replies.
>
> Matt
> KC5YTV

4310. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 06:29:45 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <vi4cgtkmmvjuc5cu0qhlukagk9425bj9ck@4ax.com>
Source record: 162659

On Fri, 18 May 2001 22:11:26 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> My great uncle Tex Moore died with his holstered guns hanging from the
>> bedpost (and he rode shotgun for Wells Fargo, was a Texas Ranger, and
>> punched a lot of cattle before the turn of the 19th century), but he
>> never lost his composure.
>
>He was obviously a better man than I. Sorry about going off the deep end.

You are a good man, Cecil.

73's
Richard Clark, KB7QHC

4311. Re: broad band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 08:00:58 UTC
From: OE1MWW <send.me.nomail@now>
Message-ID: <lr9cgtg7opsmkeeigvp8afkf7o6h3jp9et@4ax.com>
Source record: 162660

On Thu, 17 May 2001 11:19:00 -0500, "Bill Grimwood"
<bill@grimwood.net> wrote:

>I am a new Ham KG4NAC. I have my technician license and am studying for my
>General license. I want to purchase an antenna that will work on as many
>bands as possible such as the diamond CP-6.
>
>What antennas do you recommend to me.
>
Bill

have a look at www.sommerantennas.com and read about the TS-25S (the
'S' model !) I have installed mine and it works perfect after I have
put ferrit cores around the feeder and 'tuning line' of the antenna.

My friends and 'experts' can't believe the good SWR on all bands and
tell me that their dummy load is not as good as my Sommer TS-25S

Wofgang
OE1MWW
oe1mww @qsl.net (remove the space in email)

4312. Smith (and other) Charts for your Feed System

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 08:41:13 UTC
From: Dan AC6LA <nospam@newsranger.com>
Message-ID: <JkqN6.434$9x.14841@www.newsranger.com>
Source record: 162661

The XLZIZL antenna feed system modeling software that I mentioned on this list a few weeks ago now has a permanent home on the web. The web site has screen captures for several examples, including:

- Smith charts for a dipole fed with ladder line, a 4:1 balun, and a tuner. (Note: See page 8 of the Q&A file for the limitations on modeling baluns.)
- The same antenna fed with two sections of coax, RG-58 and RG-59, per AI1H.
- E and I standing waves on a one wavelength section of RG-174 with arbitrary load.
- S21 and S11 on a 12 foot piece of Wireman 554 ladder line, modeled to simulate a network analyzer, per N7WS.
- 100 feet of RG-213 with an arbitrary load, showing the components of loss due to conductor, dielectric, and SWR.
- Symmetrical T and Pi solutions for a particular matching problem, shown both numerically and graphically.
(This example includes side by side Smith and rectangular R+jX charts for the same set of impedance points. If you've ever felt a little unclear on just how to "read" a Smith chart, this may help.)

Check it all out at
http://www.qsl.net/ac6la/

I'd like to offer a public "Thank You!" to Ray Anderson, WB6TPU, for providing a temporary home for XLZIZL while I figured out how to create my own web site. The copy of XLZIZL found on Ray's site will be going away in the near future.

73,
Dan AC6LA

4313. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 09:19:19 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9e5dqd$s6g$1@plutonium.btinternet.com>
Source record: 162662

Use EZNEC to model a horizontal halfwave dipole, centre-fed via coax.

Dipole height above perfect ground is 1/2-wavelength.

The coax is 1/2-wave long and is grounded at the bottom end.

Connect the generator to the centre of the dipole.

Also connect one side of the generator down to ground with thick wire.

The thick wire is the outside of the coax braid.

EZNEC witll tell you the current in the coax inner conductor which is equal to that flowing into one half of the dipole. It will also tell you the current flowing into the other half of the dipole. And it will tell you the current flowing on the ouside of the braid. Are these three currents what you expected ?

It will also tell you the feedpoint impedance seen by the generator. Is that what you expected ?

Then, out of curiosity, change height above ground and length of coax to 1/4-wavelength. NOW what are the three currents and feedpoint impedance ?

[EZNEC cannot model this exactly because a generator cannot be connected to the end of a wire. So connect the generator very near to the dipole centre, say 98 or 99% along the wire from the outer end. Use a large number of segments.]

Reg, G4FGQ

4314. Re: broad band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 12:13:45 UTC
From: Dave Shrader <W1MCE@arrl.net>
Message-ID: <3B066367.F146D969@arrl.net>
Source record: 162663

I use a log periodic for all bands from 20 to 10. Moderate gain,
excellent VSWR (less than 1.6 to 1 across the full freq range of 13.6 to
33 MHz), NO traps!!!

I use a center fed doublet with tuned feeders for 80/75, 40 and 30.

Deacon Dave, W1MCE

Bill Grimwood wrote:
>
> I am a new Ham KG4NAC. I have my technician license and am studying for my
> General license. I want to purchase an antenna that will work on as many
> bands as possible such as the diamond CP-6.
>
> What antennas do you recommend to me.
>
> Thanks
>
> Bill Grimwood
> bill@grimwood.net

4315. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 12:37:08 UTC
From: kazering <kazeringue@aol.com>
Message-ID: <3B066AE7.2080100@aol.com>
Source record: 162665

Radio Shack (or any hardware store) has an aluminum
"grounding" wire that would be perfect for this application.

4316. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 12:48:49 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B066BB1.69DD1735@mwci.net>
Source record: 162664

Reg Edwards wrote:

> EZNEC witll tell you the current in the coax inner conductor which
> is equal to that flowing into one half of the dipole. It will also
> tell you the current flowing into the other half of the dipole.
> And it will tell you the current flowing on the ouside of the
> braid. Are these three currents what you expected ?

If the dipole is *perfectly* symmetrical in every respect, the common mode current is precisely zero. If your modeling program is telling you something different, then you are not modeling correctly.

Believe it or not, it is exactly that simple.

Relying on nothing but modeling, subject to all kinds of misunderstandings, is not always the best approach. Sometimes, quiet meditation and good common sense are all it takes.

Bill W0IYH

4317. Re: Stabilizing beam elements?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 13:34:36 UTC
From: "David J. Windisch" <davidw@copper.net>
Message-ID: <OBuN6.13263$DQ2.1176@newsfeed.slurp.net>
Source record: 162666

I have a Mosley TA-33 triband 3 element hf beam. My problem is that
the reflector and director tend to rotate on the boom, even when
u-bolt is very tight to the point of almost deforming the element.
Have you found a way to stabilize these elements? Thanks!

David KB5YLG
>>>>>>>>>>>>>>>

Hi, David:

Not just for Mosley; for any scrawny antenna, I have made non-slip
boom-to-element saddles from aluminum or delrin bar chunks (I've grooved the
hole-saw center-cuttings and used them for pulleys), and I slip extra
foot-long al tubes over the element-centers AND inside the boom where the
elements cross it, so elements don't deform or slip.

For Mosley specifically, on elements which have insulators and rectangular
tubes, I make plexiglas or whatever pieces which I force into the centers,
so gronking the boom-to-element U-bolts really tight doesn't collapse the
tubes. One could plug one end and pour some casting resin in, let it set,
and drill it, if one can get it at a hobby-store.

It's simultaneously gratifying to strengthen a commercial design, and
irritating to have to do it cuz the mfr didn't see fit to.

No pro machine shop here, only me, my ideas, a table-top drill press, hand
drill, belt sander, sabre-saw and a buncha ten+ dollar hole saws, and lotsa
'tap-rite' drill lube or what ever that great stuff is called.

A major part of the fun is head-scratching, figuring out how to do something
within my resource limits, with welding as a last resort.

GL and 73, Dave, K3BHJ

4318. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 13:44:10 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0678AA.673E6479@IEEE.org>
Source record: 162667

Richard Clark wrote:
> You are a good man, Cecil.

My cat, who had slept on my chest for the past 15 years, died Thursday night. I fell off the wagon yesterday. Mother Nature is punishing me for it today. Sorry for losing my temper.
--
http://www.mindspring.com/~w6rca

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4319. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 13:49:51 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0679FF.2F280A8B@IEEE.org>
Source record: 162668

Bill Turner wrote:
>
> On Fri, 18 May 2001 18:28:22 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>
> >Given: Two and only two fixed, constant sources of power, each delivering
> >100 watts, no more and no less.
> >
> >Question: What is the absolute maximum amount of power that can be obtained
> >by combining those two fixed, constant sources of power?
>
> This information is classified. I could tell you but then I'd have to kill you.

Aha, so that's it. This was common knowledge when I graduated from college.
It must have been classified since then.

> >If each source will put out 70.7v and 1.414a in a 50 ohm environment, what
> >is the maximum in-phase voltage and current that can be produced by the sum
> >of those two fixed, constant sources of power in a 50 ohm environment?
>
> Here in California, we don't give a rat's behind. Just send the power, quick.

Turn SMUD's Rancho Seco back on.
--
http://www.mindspring.com/~w6rca

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4320. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 13:52:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B067A95.5277113E@IEEE.org>
Source record: 162569

Richard Harrison wrote:
>
> Cecil, W6RCA wrote:
> "Given: Two and only two fixed, constant sources of power, each
> delivering 100 watts, no more and no less."
> I`ve written several entries for this thread complete with all the
> arithmetic, but decided against posting, but......
>
> Shucks, Cecil, your quiz is too simple to resist.
>
> 100 watts + 100 watts = 200 watts

Why isn't it 400 watts? If you double the voltage and double the
current, you get 400 watts.

> Common sense beats techno-babble every time.

So why does 75 watts plus 8.33 watts equal 133.33 watts?
--
http://www.mindspring.com/~w6rca

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4321. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 13:53:20 UTC
From: k1bqt@aol.com
Message-ID: <20010519095320.10165.00000482@ng-fl1.aol.com>
Source record: 162570

>If the dipole is *perfectly* symmetrical in every respect, the common mode current is precisely zero. If your modeling program is telling you something different, then you are not modeling correctly.<

This would need to include a perfectly balanced feedline, because with coaxial line what you describe just doesn't happen. If your clamp-on RF current meter is telling you something different, you forgot to flick the power switch on.

73

Rick K1BQT

4322. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 14:45:18 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B0686FE.B97D61F6@mwci.net>
Source record: 162571

Rick Littlefield wrote:

> >If the dipole is *perfectly* symmetrical in every respect, the common mode
> current is precisely zero. If your modeling program is telling you something
> different, then you are not modeling correctly.<
>
> This would need to include a perfectly balanced feedline, because with coaxial
> line what you describe just doesn't happen. If your clamp-on RF current meter
> is telling you something different, you forgot to flick the power switch on.

False. I did not forget anything.

If the transmission line is not perfectly symmetrical (eg coax), then the system is, at least from a physical standpoint, not perfectly symmetrical. However, one thing that is being ignored is that if the EM coupling from each side of the dipole to the braid is the same magnitude and opposite phase then electrical symmetry is still possible.

The text in edition 19 specifies this as a possibility. Or at least, the asymmetry can be very small to the point that it is negligible. I am not obsessed with absolute perfection any more than anyone else is.

The bottom line is this: In a perfectly symmetrical dipole, all of the *differential* return current is on the *inside* of the coax, where it belongs. None of it is converted to common mode current, and there is no common mode radiation.

Keep in mind also that the common mode impedance consists of the entire common mode loop circuit, and not just the coax braid. For some reason, we choose to forget this.

Bill W0IYH

4323. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 15:28:11 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <054dgt4ajpsa7vi53lhh850g0nea0l4qhh@4ax.com>
Source record: 162572

On Sat, 19 May 2001 08:52:22 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Why isn't it 400 watts? If you double the voltage and double the
>current, you get 400 watts.

---

100 watts + 100 watts = 400 watts? Please send this information to Gov. Davis ASAP. It's a better solution than anything else I've heard so far.

W7TI

4324. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 15:29:09 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <k94dgt4f9a7mi9sjq9ksp1oeql6gs3gnnn@4ax.com>
Source record: 162573

On Sat, 19 May 2001 08:52:22 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>So why does 75 watts plus 8.33 watts equal 133.33 watts?

Because the Sierra Club wants it to.

W7TI

4325. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 15:34:21 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <1owN6.30235$p33.557251@news1.sttls1.wa.home.com>
Source record: 162574

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:9e5dqd$s6g$1@plutonium.btinternet.com...
> Use EZNEC to model a horizontal halfwave dipole, centre-fed via
> coax.
>
> Dipole height above perfect ground is 1/2-wavelength.
>
> The coax is 1/2-wave long and is grounded at the bottom end.
>
> Connect the generator to the centre of the dipole.
>
> Also connect one side of the generator down to ground with thick
> wire.
>
> The thick wire is the outside of the coax braid.
>
> EZNEC witll tell you the current in the coax inner conductor which
> is equal to that flowing into one half of the dipole. It will also
> tell you the current flowing into the other half of the dipole.
> And it will tell you the current flowing on the ouside of the
> braid. Are these three currents what you expected ?
>
> It will also tell you the feedpoint impedance seen by the
> generator. Is that what you expected ?
>
> Then, out of curiosity, change height above ground and length of
> coax to 1/4-wavelength. NOW what are the three currents and
> feedpoint impedance ?
>
> [EZNEC cannot model this exactly because a generator cannot be
> connected to the end of a wire. So connect the generator very near
> to the dipole centre, say 98 or 99% along the wire from the outer
> end. Use a large number of segments.]
> ----
> Reg, G4FGQ
>
>
Hi Reg,

I have both tried this before and had discussions with Roy about the
procedure.

As you know, a coax line has a capacity per foot value of about 20 to 30 pf
per foot. This has the effect of providing a path for energy transfer from
one side of the antenna to the other.

Further, the coax transmission line provides a voltage source equally from a neutral reference point as I described in my posting. By connecting a wire from only one side of the antenna to ground, we are forcing a division of current on one side of the antenna, and ignoring the balancing effects of the central wire on the other side of the antenna. The result is a great exaggeration of the actual electrical characteristics.

Roy, and perhaps you, will disagree with this analysis. It all hinges around skin effect, does it really prevent capacity coupling? My Double Shielded Coax experiment seems to show that it does not prevent coupling.

73, Roger, W7WKB

4326. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 16:12:06 UTC
From: kb7qhc@home.com
Message-ID: <3b069aca.540316@news.seanet.com>
Source record: 162575

On Sat, 19 May 2001 08:52:22 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>Why isn't it 400 watts? If you double the voltage and double the
>current, you get 400 watts.

Hi Cecil,

Because both sources are isolated and see only the load. However,
your provision for a "constant" power supply can intrude into the
math.

73's
Richard Clark, KB7QHC

4327. making a full wave Inverted V for 20 meters Pros and Cons please

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 16:50:02 UTC
From: kristyanav@aol.com
Message-ID: <20010519125002.01200.00000399@ng-ms1.aol.com>
Source record: 162576

I have a question I am new to HF on the ham bands I been a ham since 1980 I upgeraded to general last December. I want to run a full wave 20 meter Inverted V. using the formulas I get a total length of 65.62 Feet and 32.81 Feet on each leg this is for a freq of 14.2625Mhz since i only use the Phone band. what are the Pros and cons of the design? it will be up about 20 feet off the ground?

Kristyanna Free K6KAF
Bright Blessings

Peace Love Light

God Don't make no Junk!

Come Visit us You all ;-}

Kristyanna

http://www.hometown.aol.com/KristyanaV/myhomepage/profile.html

4328. help with earthing mobile antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 17:24:24 UTC
From: marco <marcmich@hallm85.freeserve.co.uk>
Message-ID: <9e6acsrel1@news8.svr.pol.co.uk>
Source record: 162577

hi guys,
can you help??
i'm trying to use a mobile antenna with a home base radio,but as i live in a block of flats,there is nothing around outside to position the antenna on so to earth it,i can just about sit on a hanging basket !
is there another way to earth it,maybe by running a wire from it or something ?
please help
thanks
M

4329. Re: making a full wave Inverted V for 20 meters Pros and Cons please

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 17:37:29 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <tbyN6.30679$p33.572073@news1.sttls1.wa.home.com>
Source record: 162578

Are you planning to feed the antenna in the center with open line? If so, you will have two half waves in phase at a very low elevation. This will give you a little gain over a dipole (very little) so the best signal will be at right angles to the antenna. You will also have a reasonably good signal off the ends of the antenna.

You should use an antenna tuner to match the transmission line impedance to the transmitter impedance.

This antenna will not be competitve for contesting but will be great for rag chewing at distances up to about 1500 miles. You would need more height if you want a strong signal for greater distances.

Good luck

73, Roger, W7WKB

"Kristyanna Free" <kristyanav@aol.com> wrote in message
news:20010519125002.01200.00000399@ng-ms1.aol.com...
> I have a question I am new to HF on the ham bands I been a ham since 1980
I
> upgeraded to general last December. I want to run a full wave 20 meter
Inverted
> V. using the formulas I get a total length of 65.62 Feet and 32.81 Feet on
each
> leg this is for a freq of 14.2625Mhz since i only use the Phone band. what
are
> the Pros and cons of the design? it will be up about 20 feet off the
ground?
>
> Kristyanna Free K6KAF
> Bright Blessings
>
> Peace Love Light
>
> God Don't make no Junk!
>
> Come Visit us You all ;-}
>
> Kristyanna
>
> http://www.hometown.aol.com/KristyanaV/myhomepage/profile.html

4330. homebrew vertical plans.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 18:26:39 UTC
From: Tim Robertson <katrob@efn.org>
Message-ID: <3B06BADF.6017E9CE@efn.org>
Source record: 162579
Body handling: Binary attachment payload not displayed: katrob.vcf

Greetings to the Group,
I have 2 sections of aluminum tubing one fitting inside the other each about 15 feet long and I want to build a vertical. I will be putting it on top of my metal barn roof about 20 feet up. Would appreciate any suggestions or ideas. I'm mostly interested in just casual rag chewing and use an old viking tuner.
Thanks in advance.
73
Tim KC7QOM
Cheshire, OR.

[One or more binary attachments are retained only in the source text.]

4331. Re: making a full wave Inverted V for 20 meters Pros and Cons please

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 18:53:54 UTC
From: kristyanav@aol.com
Message-ID: <20010519145354.01455.00000364@ng-da1.aol.com>
Source record: 162580

were i live I cannot have very optrusive antenna's and I am using RG8X to feed it I live in a all metal trailer.? the 40 meter one we put up is flat across 7.0-7.3 MHz SWR is 1.1:1

Kristyanna
Bright Blessings

Peace Love Light

God Don't make no Junk!

Come Visit us You all ;-}

Kristyanna

http://www.hometown.aol.com/KristyanaV/myhomepage/profile.html

4332. Magnetic Loop Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 19:09:59 UTC
From: N1IQO <n1iqo@yahoo.com>
Message-ID: <byzN6.2114$0e6.797072@typhoon1.ba-dsg.net>
Source record: 162581

Hi all,

Well I could use some help
I was surfing the net and came across Magnetic Loop Antennas (looks like
fun) so I set out to make myself one.

located the page on homebrewing air caps from JO21FF (looks easy)
Here: http://www.qsl.net/mnqrp/Loop/Mag_Loops.htm

Now to remote control the cap with a stepping motor
(Brick wall) I never even herd of a stepping motor before this.
after some reading I find out that printers have stepping motors(cool I have
some old printers)

This is what I pulled from one of the printers:
Stepping Motor
#PJJQ148ZA-I
Volt - 4V
Coil - 5ohm
DEG/STEP - 1.8
6 - WIRE
KYUSHU MATSUSHITA ELECTRIC CO. LTD.

It's big and heavy it should work
Now for some help
How in the world do you control this

If you can help me I would be grateful
Thx
David
n1iqo@yahoo.com

4333. Compendium of Yagi designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 19:12:36 UTC
From: Thomas Bruhns <celtmouse@worldnet.att.net>
Message-ID: <EAzN6.30962$t12.2338943@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162582

Does anyone have a pointer to a compendium of Yagi designs? I'm interested in something like tables of designs optimizing gain, minimizing sidelobes ("cleanest" pattern), having flat gain over a range of percentage bandwidths (for example, 0.5%, 1%, 2%, 5%...maybe even 10%), and for a range of number of elements.

4334. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 19:23:41 UTC
From: kenfowler@onemain.com
Message-ID: <WFzN6.1963$sg2.2272303@nntp1.onemain.com>
Source record: 162583

Sideband asked:
...
Question for you, though... How would I go about calculating the
velocity factor of the coax? I'm not sure there is a listed velocity
factor for Belden YR29671 (P/N 1700451)... so I'd probably have to find
a way to calculate it. Any suggestions?
...

Hi Sideband,

Congratulations on making your own antenna. I noted that you were using the MFJ-259 to measure impedance. Now you can use the 259 to determine the length of a half-wave of co-ax. The procedure is your MFJ-259 manual. It consists of finding the length of a quarter-wave at half the frequency by looking for an impedance minimum. Start with a length of co-ax about 38 inches, connector on one end attached to the analyzer, other end open. Search around 72 MHz for a dip in resistance. (It will probably be much lower.) Begin cutting off segments from the open end while testing the dip frequency. Stop when the dip is at 73 MHz. This should be a half-wave at 146 MHz. Put a conector on the open end and use it for your 2 meter antenna measurements.

73 de -ken-

4335. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 19:35:39 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B06CB0B.3C83DAA8@spam.me.not>
Source record: 162584

Ken:

Thanks. I'll have to borrow that analyzer from Rick again and see what I
can do about setting the match at the antenna properly.

73's

-SSB

kenfowler@onemain.com wrote:
>
> Sideband asked:
> ...
> Question for you, though... How would I go about calculating the
> velocity factor of the coax? I'm not sure there is a listed velocity
> factor for Belden YR29671 (P/N 1700451)... so I'd probably have to find
> a way to calculate it. Any suggestions?
> ...
>
> Hi Sideband,
>
> Congratulations on making your own antenna. I noted that you were using the
> MFJ-259 to measure impedance. Now you can use the 259 to determine the
> length of a half-wave of co-ax. The procedure is your MFJ-259 manual. It
> consists of finding the length of a quarter-wave at half the frequency by
> looking for an impedance minimum. Start with a length of co-ax about 38
> inches, connector on one end attached to the analyzer, other end open.
> Search around 72 MHz for a dip in resistance. (It will probably be much
> lower.) Begin cutting off segments from the open end while testing the dip
> frequency. Stop when the dip is at 73 MHz. This should be a half-wave at
> 146 MHz. Put a conector on the open end and use it for your 2 meter antenna
> measurements.
>
> 73 de -ken-

4336. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 19:53:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B06CF35.8749DCF2@IEEE.org>
Source record: 162585

Bill Turner wrote:
>
> On Sat, 19 May 2001 08:52:22 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>
> >Why isn't it 400 watts? If you double the voltage and double the
> >current, you get 400 watts.
>
> ____
>
> 100 watts + 100 watts = 400 watts? Please send this information to Gov. Davis
> ASAP. It's a better solution than anything else I've heard so far.

Well, I've been told by an expert that 75 watts + 8.33 watts = 133.33 watts.
That's not quite as efficient but maybe Gov. Davis can use it anyway.
--
http://www.mindspring.com/~w6rca

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4337. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 19:59:33 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B06D0A5.F2971CE2@IEEE.org>
Source record: 162586

Richard Clark wrote:
>
> On Sat, 19 May 2001 08:52:22 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >
> > >Why isn't it 400 watts? If you double the voltage and double the
> > >current, you get 400 watts.
>
> Because both sources are isolated and see only the load. However,
> your provision for a "constant" power supply can intrude into the
> math.

Sure can, Richard, and that's exactly my point. If the power involved in the destructive interference action was really drained away from the system, the remaining energy would not be enough to support the known voltages and currents. Therefore, the energy is not drained away. Have you looked at my phasor diagram? at:

http://people.delphi.com/cecilmoore/z0match.gif
--
http://www.mindspring.com/~w6rca

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4338. Re: making a full wave Inverted V for 20 meters Pros and Cons please

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 20:03:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B06D17F.490D5341@IEEE.org>
Source record: 162587

Kristyanna Free wrote:
> I have a question I am new to HF on the ham bands I been a ham since 1980 I
> upgeraded to general last December. I want to run a full wave 20 meter Inverted
> V. using the formulas I get a total length of 65.62 Feet and 32.81 Feet on each
> leg this is for a freq of 14.2625Mhz since i only use the Phone band. what are
> the Pros and cons of the design? it will be up about 20 feet off the ground?

Why do you want to make it a full-wave instead of a half-wave? In a full-wave
inverted-V, the current maximum points are at a lower height than in a half-
wave inverted-V. You want the current maximum point(s) as high as possible.
IMO, you would be more satisfied with the performance of a half-wave dipole.
--
http://www.mindspring.com/~w6rca

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4339. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 20:03:14 UTC
From: richardharrison@webtv.net
Message-ID: <24027-3B06D182-43@storefull-117.iap.bryant.webtv.net>
Source record: 162589

Cecil, W6RCA wrote:
"Why isn`t it 400 watts? If you double the voltage and double the current, you get 400 watts."

Two 100-watt sources are incapable of producing more than 200 watts. Just as two 100-watt light bulbs produce about the same light output as one 200-watt bulb, and certainly not the same as a 400-watt bulb. There is no magic available.

Suppose a transmitter will deliver its maximum power output of 100 watts of r-f into a resistance of 50 ohms.

50 ohms is a reasonable design load since 50-ohm coax is commonly used as antenna feedline.

Every transmitter has a maximum output it can`t exceed. It is set by the power supplied to the transmitter and the transmitter`s internal resistance. If the transmitter is designed to supply maximum output into a 50-ohm resistance, the transmitter`s effective internal resistance is 50 ohms. A lower or higher load resistance won`t be able to get maximum output from the transmitter.

100 watts + 100 watts = 200 watts

Because, thats all the transmitters are capable of producing. To get double the power in a 50-ohm load, you must increase the load voltage by x 1.414 and this results in 1.414 times the current.

Best regards, Richard Harrison, KB5WZI

4340. Re: making a full wave Inverted V for 20 meters Pros and Cons please

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 20:05:31 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B06D20B.351AF9BE@IEEE.org>
Source record: 162588

Kristyanna Free wrote:
> were i live I cannot have very optrusive antenna's and I am using RG8X to feed
> it I live in a all metal trailer.? the 40 meter one we put up is flat across
> 7.0-7.3 MHz SWR is 1.1:1

Did you put up a 40m full-wave fed with coax? If so, you are losing a lot
of your signal in the coax. If you must feed with coax, make the dipole
a half-wavelength.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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4341. Opinions on Hy-gain TH-11

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 21:28:24 UTC
From: Tim Taylor <tim-taylor@home.com>
Message-ID: <YzBN6.3405$me4.12940@news1.rdc1.fl.home.com>
Source record: 162590

Does anyone out there any any experience with the HY-Gain TH-11. I am thinking about getting one for the band coverage.

Comments?

73,
Tim

4342. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 21:28:30 UTC
From: k1bqt@aol.com
Message-ID: <20010519172830.10057.00000386@ng-fl1.aol.com>
Source record: 162591

>My cat, who had slept on my chest for the past 15 years, died Thursday night.
I fell off the wagon yesterday.<

My Maine Coon cat did the same thing. When she died at 17, I fell of the wagon
too--and never got back on. Haven't had a hint of a chest pain ever since.

73

Rick K1BQT

4343. Program RJELINE4.exe

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 21:42:27 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9e6pbq$d4g$1@neptunium.btinternet.com>
Source record: 162592

NOW AVAILABLE, Program "RJELINE4.exe"

FULL ANALYSIS OF PERFORMANCE OF BALANCED-PAIR TRANSMISSION
LINES, 20Hz to 1GHz.

This program is an improved version of RJELINE3.exe. Extra output
data and user operating facilities have been added and the
extensive introductory notes have been rewritten. All the original
facilities have been retained.

Input data is a line specification, Zo, conductor diameter,
dielectric loss factor, velocity factor, frequency, line length.
Also series resistive and reactive components of the terminating
impedance.

Output data is in 3 sections: Line Characteristics, conductor
spacing, R,L,C,G, attenuation, propagation velocity, Line Input
Impedance in various forms, and Line Performance, reflection
coefficient, SWR, actual line loss, power transmission efficiency,
resonant Q factor, etc.

Exact classical transmission line formulae used. Skin and conductor
proximity effects are taken into account. DC and AC conductor
resistance can be compared and observed to diverge with increasing
frequency and with closer conductor spacing.

Applications:- Transmission line design and design of line
transformers intended for complex terminations R+jX. Educational.

This program has been produced to the highest standards. Use it to
check accuracy and reliabilty of other transmission line
calculations and calculators.

Program size 75.6 Kilobytes. Download RJELINE4 in a few seconds.
Not zipped up. Run immediately.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

4344. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 22:17:20 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B06F0F0.BF943089@IEEE.org>
Source record: 162593

Richard Harrison wrote:
>
> Cecil, W6RCA wrote:
> "Why isn`t it 400 watts? If you double the voltage and double the
> current, you get 400 watts."
>
> Two 100-watt sources are incapable of producing more than 200 watts.

Does that mean 75 watts plus 8.33 watts is not equal to 133.33 watts?
--
http://www.mindspring.com/~w6rca

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4345. right-angle DAK mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 22:26:05 UTC
From: Robert Joshua Chen <rjchen@Stanford.EDU>
Message-ID: <9e6rtt$56j$1@nntp.Stanford.EDU>
Source record: 162594

Anybody know where I can buy an angled DAK mount (preferably a
right-angle)? Or a device that can combine two single mounts at an angle?

Thanks,
-Robert

--

4346. Re: Stabilizing beam elements?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 22:30:41 UTC
From: David Johnson <kb5ylg@attglobal.net>
Message-ID: <3b06f37d_2@news3.prserv.net>
Source record: 162595

Hi David: thanks for the reply...

In summary from your reply, the main principal here is to make the tubing or material stronger by reinforcing it, so you can tighten the ubolts more without damaging the tubing, in order to insure the elements remain horizontal on the boom and don't slip.

And the way you are doing this is to add an sleeve and custom build your saddles, or to fill the inside of the tubes with material such as resin, fiberglass, or whatever.

So, besides to strengthen your elements and tightening them more, is there anything special you are doing to increase the friction between your ubolts, saddles and the tubing?

I was thinking about using stop screws on either side of the saddles to keep them from slipping. Not through the saddles, just in the element at the edge of the saddles.

David KB5YLG

> Not just for Mosley; for any scrawny antenna, I have made non-slip
> boom-to-element saddles from aluminum or delrin bar chunks (I've grooved
the
> hole-saw center-cuttings and used them for pulleys), and I slip extra
> foot-long al tubes over the element-centers AND inside the boom where the
> elements cross it, so elements don't deform or slip.

>
> For Mosley specifically, on elements which have insulators and rectangular
> tubes, I make plexiglas or whatever pieces which I force into the centers,
> so gronking the boom-to-element U-bolts really tight doesn't collapse the
> tubes. One could plug one end and pour some casting resin in, let it
set,
> and drill it, if one can get it at a hobby-store.
>
> It's simultaneously gratifying to strengthen a commercial design, and
> irritating to have to do it cuz the mfr didn't see fit to.
>
> No pro machine shop here, only me, my ideas, a table-top drill press, hand
> drill, belt sander, sabre-saw and a buncha ten+ dollar hole saws, and
lotsa
> 'tap-rite' drill lube or what ever that great stuff is called.
>
> A major part of the fun is head-scratching, figuring out how to do
something

> within my resource limits, with welding as a last resort.
>
> GL and 73, Dave, K3BHJ
>
>

4347. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 23:16:29 UTC
From: richardharrison@webtv.net
Message-ID: <22481-3B06FECD-74@storefull-114.iap.bryant.webtv.net>
Source record: 162597

Roger, W7WKB wrote:
"My double shielded coax experiment seems to show that it does not prevent coupling."

Most authorities say coax r-f shielding is "complete".

My experience is that coax shielding is good if the ground connections on the coax are good.

Shield effectiveness experiments require good grounds at both ends of the shield as a minimum to determine its signal confinement capabilities.

Best regards, Richard Harrison, KB5WZI

4348. Re: right-angle DAK mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-19 23:31:04 UTC
From: Robert Joshua Chen <rjchen@Stanford.EDU>
Message-ID: <9e6vno$67j$1@nntp.Stanford.EDU>
Source record: 162596

By the way, this is for making a microdipole type HF antenna with two hamsticks with an autocoupler at the feedpoint. However, I need to make it a horizaontal V instead, due to space restrictions, hence the need to angle the hamsticks.

4349. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 00:08:16 UTC
From: richardharrison@webtv.net
Message-ID: <23748-3B070AF0-41@storefull-113.iap.bryant.webtv.net>
Source record: 162598

Cecil, W6RCA wrote:
"Does that mean that 75 watts plus 8.33 watts is not equal to 133.3 watts?"

Yes.

With unlimited power, 75 watts in 50 ohms is 61.24 volts.

8.33 watts in 50 ohms is 20.4 volts.

Added in-phase and in series, 61.24 + 20.4 totals 81.64, a voltage total which would represent 133.3 watts in 50 ohms.

I don`t know the details, but power must be available and the circuit configured to produce the 133.3 watts. An example is a bridge-connection to drive opposite ends of an ungrounded load from oppositely phased audio chips. The individual chips are each capable of producing twice the power, so they have no problem of supplying four times the power when paired in a bridge connection to get twice the voltage in the load.

Best regards, Richard Harrison, KB5WZI

4350. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 00:13:57 UTC
From: richardharrison@webtv.net
Message-ID: <23747-3B070C45-74@storefull-113.iap.bryant.webtv.net>
Source record: 162599

Cecil, W6RCA wrote:
"Does that mean that 75 watts plus 8.33 watts is not equal to 133.3 watts?"

Yes.

In the usual circuit with a reflection, the delivered power is the forward power minus the reflected power.

Best regards, Richard Harrison, KB5WZI

4351. Re: making a full wave Inverted V for 20 meters Pros and Cons please

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 01:05:05 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <3B0717FA.B52D6695@att.net>
Source record: 162600

Make it 88 ft overall and you get an Extended Double Zepp antenna with a theoretical 3-db broadside gain - in the real world you will get close to that.

I use this on 80-10 with excellent results. Fed with ladderline and a tuner.

I see no theoretical advantage to deliberately using a full-wave antenna on 20, unless you are trying to investigate what a 40-meter halfwave does when operated on that band.

One quick answer is that it will-be/could-be difficult to load, depending upon the type and length of feeder. I strongly suggest that you do not use Coax, due to the possible high SWR and attendant losses.

I have found that the non-resonant EDZ length of 88 ft loads well on all bands with 42 ft of ladderline, a 1:1 current balun and 13 ft of RG-213 into the house and tuner.

72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
Amateur Radio W5YR, in the 55th year and it just keeps getting better!
Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437

Kristyanna Free wrote:
>
> I have a question I am new to HF on the ham bands I been a ham since 1980 I
> upgeraded to general last December. I want to run a full wave 20 meter Inverted
> V. using the formulas I get a total length of 65.62 Feet and 32.81 Feet on each
> leg this is for a freq of 14.2625Mhz since i only use the Phone band. what are
> the Pros and cons of the design? it will be up about 20 feet off the ground?

4352. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 01:26:19 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9e76fr$1vj$8@bashir.peak.org>
Source record: 162601

Dick Carroll <dixie@townsqr.com> wrote:

: All this evolved from 30 years dealing with lightning in public service
: radio systems. There are methods of mitigating lightning which do not
: involve unhooking the antennas, of course, but they go far beyond the
: capabilities and budgets of most hams. You either do it all or forget
: it, and unhook. No half measures, they just get you in trouble, if you
: live in lightning country.

It is not that expensive. A thousand dollars or so will easily handle
the chore - unless you have a lot of gear to protect.

The ground window is the big expense. An enterprising Amateur can make
one without too much problem.

For a good discussion, one source that I know about is the Polyphaser
text on lightning suppression. It is a bit weak in one area, the "cone
of protection" they mention is not all that reliable.

I agree with you that "half measures" can sometimes be little better
than no protection at all.

--
Bill Nelson (billn@peak.org)

4353. Re: Stabilizing beam elements?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 01:34:56 UTC
From: Bill Nelson <billn@spock.peak.org>
Message-ID: <9e7700$1vj$9@bashir.peak.org>
Source record: 162602

David KB5YLG <kb5ylg@yahoo.com> wrote:
: I have a Mosley TA-33 triband 3 element hf beam. My problem is that
: the reflector and director tend to rotate on the boom, even when
: u-bolt is very tight to the point of almost deforming the element.
: Have you found a way to stabilize these elements? Thanks!

One thing you can do is slip a solid plug into the boom at the clamp points. You can then make the clamps as tight as you wish without deforming the element significantly.

Be careful when tightening the u-bolts. If you stretch them too much, they will be weakened and reduce the clamping force you get. Unfortunately, I don't recall ever seeing torque specs for u-bolts.

--
Bill Nelson (billn@peak.org)

4354. HELP! magnetic mount for 20 meter hamstick

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 02:02:48 UTC
From: n5blz@wt.net
Message-ID: <3b07217a.45014392@news.wt.net>
Source record: 162603

The wife and I are takeing a trip this summer from Texas to Alaska, in her SUV . I have a 20 meter hamstick and want to mount it on the roof, with a magnetic mount. (there wont be any holes in her new car hi hi) Now for the Q , I see Valor has a 3 magnet mount for around 60 bucks. will that suport the hamstick? I also see in QST an 8 magnet mount but the price with s&h is 125.00 ! I wish I could find the magnets , thay look very easy to build. if anyone can be of some help I thank you
73s Ed N5BLZ

4355. Davis RF "Bury Flex" Coax Cable

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 02:16:53 UTC
From: Tony Hackenberg <awhmeh@core.com>
Message-ID: <3b072934$0$18899$272ea4a1@news.execpc.com>
Source record: 162604

Any experiences --- good or bad --- you'd care to share about Davis RF's "Bury Flex" coax cable? I'm thinking about using it or Time Microwave's LMR400-DB (watertight) on my next tower/antenna installation.

/s/
Tony
WA8SSQ

4356. Re: HELP! magnetic mount for 20 meter hamstick

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 03:20:29 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0737FD.30535D94@IEEE.org>
Source record: 162605

Ed Stallman wrote:
> I see Valor has a 3 magnet mount for around 60
> bucks. will that suport the hamstick?

It will support a hamstick.
--
http://www.mindspring.com/~w6rca

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4357. Re: help with earthing mobile antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 03:26:03 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9e7dgbkim0@208.206.142.91>
Source record: 162606

marco wrote:
>
> hi guys,
> can you help??
> i'm trying to use a mobile antenna with a home base radio,but as i live in a
> block of flats,there is nothing around outside to position the antenna on so
> to earth it,i can just about sit on a hanging basket !
> is there another way to earth it,maybe by running a wire from it or
> something ?

Sure...When camping I use a length of copper magnet wire lying on the ground. The wire is about a quarter wavelength, but you can use whatever you can arrange for. Multiple shorter wires will work as a counterpoise. Play around with it and find something that will work out. It can be done. Do make sure you get a good solid connection to the ground side of the feedline.

73, Dick

4358. WTB: Cubex Hornet Quad

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 03:47:27 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010519234727.22804.00000196@ng-mj1.aol.com>
Source record: 162607

I am looking for a Cubex Hornet 2m/6m 4 ele/2 ele quad antenna. If anyone has one for sale, please email me!

=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-

73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com ICQ#13829227
http://egroups.com/group/vhfallmode

4359. Rotary Joint repair?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 03:55:17 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3b0741e2_3@news3.prserv.net>
Source record: 162608

Anyone have any repair/rebuilding information on HyGain (commercial, not sold to MFJ) rotary joint model 871443? It is for 1-1/2" air line, and the previous owner let it fill up with water which rusted out all the small pieces of internal steel, and discolored the copper and brass. I have cleaned the brass, and replaced the small coil springs and roll pin, but the bearing alignment and carbon ring positioning are not obvious. Also, given the abuse it had, I am not sure it is complete. Any one who is familiar with this item, or who the actual manufacturer was, let me know.
TIA
munsch at attglobal dot net

--
Crazy George

4360. Re: Stabilizing beam elements?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 04:03:12 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3b0741e3_3@news3.prserv.net>
Source record: 162609

U-bolts and plates will almost always rotate around a round member, but stainless aviation type hose clamps won't. Look at the assembly and see how to locate one or two hose clamps so the plate bears against the head of the hose clamp to prevent the rotation you are experiencing. Hose clamps will also withstand a tremendous amount of axial force, making them an excellent choice for thrust bearing stops. Not sure why most people don't pick up on this, I've been using them for many years, and have yet to have a problem. Look for "all stainless", however, or be prepared to replace the rusted out tightening screw every few years. The type used in water wells below the water line are usually all stainless.
W5VPQ
--
Crazy George
David KB5YLG <kb5ylg@yahoo.com> wrote in message
news:17f04449.0105181921.6c5155fd@posting.google.com...
> I have a Mosley TA-33 triband 3 element hf beam. My problem is that
> the reflector and director tend to rotate on the boom, even when
> u-bolt is very tight to the point of almost deforming the element.
> Have you found a way to stabilize these elements? Thanks!
>
> David KB5YLG

4361. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 04:17:21 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B074551.79B1@wt.net>
Source record: 162610

Sideband wrote:
>
> Ken:
>
> Thanks. I'll have to borrow that analyzer from Rick again and see what I
> can do about setting the match at the antenna properly.
>
> 73's
>
> -SSB

Sounds like it's fine as is to me. I wouldn't bother myself. Won't help your signal any if the match is as good as you say now. Want a way to "really" make an improvement that can be noticed on far off stations? Just add even more radials. Try eight instead of four and see what happens. I can almost bet you will see a decent improvement due to the improved decoupling. I found past about ten radials on a high VHF GP, it tapers off in improvement. Doesn't cost much to try it, but it does slightly add to the ugly factor though. My current outside 2m GP uses 6 radials. I had one that had 8 also. It made a noticable improvement here. If you really want to get fancy, you can add another set a 1/4 wl below the feed. That will give you very good decoupling. Most VHF sleeve verticals use two sets. MK
--
http://web.wt.net/~nm5k

4362. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 04:34:58 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B074972.2205@wt.net>
Source record: 162611

Bill Nelson wrote:
>
> Dick Carroll <dixie@townsqr.com> wrote:
>
> : All this evolved from 30 years dealing with lightning in public service
> : radio systems. There are methods of mitigating lightning which do not
> : involve unhooking the antennas, of course, but they go far beyond the
> : capabilities and budgets of most hams. You either do it all or forget
> : it, and unhook. No half measures, they just get you in trouble, if you
> : live in lightning country.
>
> It is not that expensive. A thousand dollars or so will easily handle
> the chore - unless you have a lot of gear to protect.
>
> The ground window is the big expense. An enterprising Amateur can make
> one without too much problem.
>
> For a good discussion, one source that I know about is the Polyphaser
> text on lightning suppression. It is a bit weak in one area, the "cone
> of protection" they mention is not all that reliable.

They had a good tv program on lightning the other night. I think it was on the discovery or some such channel. They covered a few areas I had been curious about. Such as why lightning many times does not strike the highest object in the area. They said it was due to weak leaders that don't find a good connection to the streamers on the tall object. They showed videos of the empire state building that showed the effect. They said being the leader was weak and missing the tall object streamer, it keeps going towards ground until it does find a streamer. Made sense to me. Much of the video had good shots of streamers. In some you could see strikes hitting a tree or whatever, and see streamers on other objects such as other trees and poles. The streamers would be bending in the direction of the strike usually as if the leader/strike had a magnetic pull on them. Really weird looking. The program will probably be rerun I would think. MK
--
http://web.wt.net/~nm5k

4363. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 06:14:27 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B0760C3.43852A8E@spam.me.not>
Source record: 162612

Hrm... That gives me an idea... and it's sometimes dangerous to give me ideas.. ::grin::

The second set of radials would have to be on the coax, but that's do-able.. Lessee... 1/4 wave down, eh?

Lemme think on this, and see how ugly I can make it. ::grin::

73 de KC8RKQ

Mark Keith wrote:
>
> Sideband wrote:
> >
> > Ken:
> >
> > Thanks. I'll have to borrow that analyzer from Rick again and see what I
> > can do about setting the match at the antenna properly.
> >
> > 73's
> >
> > -SSB
>
> Sounds like it's fine as is to me. I wouldn't bother myself. Won't help
> your signal any if the match is as good as you say now. Want a way to
> "really" make an improvement that can be noticed on far off stations?
> Just add even more radials. Try eight instead of four and see what
> happens. I can almost bet you will see a decent improvement due to the
> improved decoupling. I found past about ten radials on a high VHF GP, it
> tapers off in improvement. Doesn't cost much to try it, but it does
> slightly add to the ugly factor though. My current outside 2m GP uses 6
> radials. I had one that had 8 also. It made a noticable improvement
> here. If you really want to get fancy, you can add another set a 1/4 wl
> below the feed. That will give you very good decoupling. Most VHF sleeve
> verticals use two sets. MK
> --
> http://web.wt.net/~nm5k

4364. Opinion - Fritzel vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 06:58:38 UTC
From: leonardjs@aol.com
Message-ID: <3b076a37.88272974@news.earthlink.net>
Source record: 162613

Looking for information on a Fritzel 10-80 vertical. Does anyone have information on it's perfomance.

Len S.
WA6QHD

4365. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 07:34:07 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B07736F.586@wt.net>
Source record: 162614

Sideband wrote:
>
> Hrm... That gives me an idea... and it's sometimes dangerous to give me
> ideas.. ::grin::
>
> The second set of radials would have to be on the coax, but that's
> do-able.. Lessee... 1/4 wave down, eh?

You can use a so-239/so-239 union. If you need a mount for the radials you can use a piece of sheetmetal and cut a hole in it to fit the union through. You can put nuts on each end to hold it tight. Also this way you don't have to mess with your present coax. Just plug it into the bottom of the union, and get a new 1/4 wl piece for the section from the union to the feedpoint. That way, if you decide you don't like it , it's easy to change back. You might be wondering if it's a best to use a physical 1/4 wl of coax, or an electrical 1/4 wl..Actually, I'm not sure. I've tried both, and both seemed to work. So it seems to be not overly critical.Being as the common mode currents flow on the outside of the shield, I would think using a physical 1/4 wl might be the way to go. Thats what I've usually done. Before you change anything, make a note of all the strengths of each local station or repeaters you normally work. That way you can gauge the improvement. No need to get reports on your transmit signal, as it's reciprical. You can use your received strengths only and be accurate. What all this does is reduce the radiation from the feedline. That will skew the pattern upwards off the horizon. Adding radials reduces the ground loss slightly, but being at many WL's in height, the improvement is not really enough to notice. It's the decoupling that does the trick. I'll be very surprised if you didn't see a worthwhile improvement after trying that. It could mean the difference in a noisy repeater becoming nearly full quieting in some cases. Just adding more radials to the main set alone will improve a good bit. A lower set acts as the "cleanup" set for the small amount of current you will still have with a single set only. MK
--
http://web.wt.net/~nm5k

4366. Re: Stabilizing beam elements?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 10:06:16 UTC
From: "David J. Windisch" <davidw@copper.net>
Message-ID: <uEMN6.477$yP3.703@newsfeed.slurp.net>
Source record: 162615

SNIP>>>>>>>
So, besides to strengthen your elements and tightening them more, is there anything special you are doing to increase the friction between your ubolts, saddles and the tubing?

I was thinking about using stop screws on either side of the saddles to keep them from slipping. Not through the saddles, just in the element at the edge of the saddles.

David KB5YLG
<<<<<<<<<<<<<<<<

HI, David:

IME, once I strengthen the affected components, I can tighten the U-bolts sufficiently to prevent slippage. I haven't had slippage, broken or stripped U-bolts, or any other related problems in the time I've used these simple techniques.

Forgot to mention something: I use thread chasers on ALL U-bolts, cuz I've found their thread quality to vary.

Haven't tried this one -- fast-curing epoxy between saddle and boom. Might make removal a job ;o).

73, Dave, K3BHJ

4367. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 11:01:40 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B07A414.1FB30C03@berkshire.net>
Source record: 162618

first you have to learn to define a proper and complete problems to get a realistic answers. from reading your quiz without assuming that i already know your agenda there are 2 'correct' answers that you will of course say conflict with each other based on your unstated assumptions.

W6RCecilA wrote:
>
> Given: Two and only two fixed, constant sources of power, each delivering
> 100 watts, no more and no less.
>
> Question: What is the absolute maximum amount of power that can be obtained
> by combining those two fixed, constant sources of power?
>
> A. 100w
>
> B. 200w
>
> C. 300w
>
> D. 400w

you get 200w. this assumes what is given in the first 'given' that they are constant power sources. therefor they will deliver 100w each no mater what the load so the total must be the sum of their powers.

>
> If each source will put out 70.7v and 1.414a in a 50 ohm environment, what
> is the maximum in-phase voltage and current that can be produced by the sum
> of those two fixed, constant sources of power in a 50 ohm environment?
>
> A. 100v and 2a
>
> B. 141.4v and 2.828a
>
> C. Other, ______v and ______a

here is where you will say there is a conflict. but you have changed the problem so there really isn't one. now you have defined the two source to be either constant voltage or constant current sources putting 'in-phase' (you haven't stated that they aren't DC sources, though that doesn't really matter here) voltage or current into a 50 ohm load.

first, if you could come up with an arrangement to add the currents in parallel while also adding the voltages in series you would get
(70.7+70.7)*(1.414+1.414)=400w

second option. assume constant voltage sources and ignore current. add them in series into a 50 ohm load. (70.7+70.7)^2/50=400w.

third option. assume constant current source and ignore voltage. add them in parallel into a 50 hom load. (1.414+1.414)^2*50=400w

fourth option. each device puts out a fixed value of power, ignore voltage and current as there are an infinite number of combinations that will give the same result out of each device. if they are hooked in series and only 100w can come out of either of them then you only get 100w from the combination. a 50 ohm resistor dissapating 100w has 70.7v across it and 1.414a through it. so if the devices are in series they must generate a sum of 70.7v and each must pass 1.414a... unfortunately that means that it contradicts your assumption about the voltage and/or current from each device separately. in this case either one of the devices does nothing and the other provides the full 100w, or one of them provides 70.7v and the other provides 1.414a in which case neither one generates any power but the load gets 100w. or you can come up with some combination in between. in any event you can't meet your requirement that each device puts out a fixed ammount of power and still have those fixed voltages and currents.

fifth option. each device puts out a fixed value of power. hook them in parallel to a 50 ohm load. ok, now we could add currents at the junction to get 2.828a into the load or a power of 400w. or if they were voltage source in parallel there would be no change and you would get 70.7v across the load to give a power of 100w. but like the fourth option above we are working with an incompletely defined problem so we can't really say what the two sources will do when put in parallel.

basically we are given conflicting initial conditions and an incomplete definition of the sources resulting in a problem with no single solution, which of course is what cecil is aiming for. he is just looking to stir the pot and create arguments around poorly stated problems that have no definate answer in his over simplified world.

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4368. 1/4-wave sloper vs Inverted Vee - any difference?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 11:48:36 UTC
From: John Harper <ae5x@optonline.net>
Message-ID: <oaON6.10072$MR1.1962138@news02.optonline.net>
Source record: 162616

Mornin,

I'm looking at the arrangement of trees in the yard and trying to decide what type of antenna to build for next winter's 80m DXing efforts. A lot of low-band DX credit has been given to 1/4-wave slopers in various publications over the years. These antennas are usually a 1/4-wave piece of wire fastened to the top of a tower and brought down at a 45 degree angle toward the ground and are fed at the top with RG-8/RG-58.

To me, this sounds like an inverted Vee that's being called something else. Instead of a tower acting as the counterpoise, an Inverted Vee has another length of wire the same length as the driven element. What strikes me as unusual is that slopers are considered good DX antennas for the low bands while Inverted Vees are most often considered as being good for "local work". Am I missing something here? Electrically, they sound like the same antenna.

I need 47 countries on 80m for my 5B-DXCC and am trying to decide the best antenna for the job given my inability to lay out an extensive ground radial system for a vertically polarized antenna. Incidentally, the 1st 53 countries on 80m (see web site below) were worked with a low-to-the-ground Inverted Vee. Or is it a sloper?!
--

John Harper AE5X
Lowband DXing: http://www.qsl.net/ae5x/wav.html

4369. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 11:55:01 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B07B095.F2D87028@IEEE.org>
Source record: 162617

Mark Keith wrote:
> The streamers would be bending in the
> direction of the strike usually as if the leader/strike had a magnetic
> pull on them. Really weird looking.

One night, my daughter saw a bunch of streamers from my body to the metal
window screen just as lightning hit outside. She said it looked like
a science fiction movie's special effects. It also felt weird.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4370. stearing antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 11:57:09 UTC
From: Michael Hart <mhart@NOSPAM.terrigal.net.au>
Message-ID: <3b07b725@turakina.six.asn.au>
Source record: 162522

Can someone please point me to some web sites that have some designs for grey code wheels and antenna rotor controllers that use them.

thanks

Michael

4371. Re: 1/4-wave sloper vs Inverted Vee - any difference?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 12:13:08 UTC
From: pmalvasi@aol.comnorgnon
Message-ID: <20010520081308.18185.00000452@ng-cc1.aol.com>
Source record: 162519

A true sloper as you describe is a very different antenna fromt the Vee. The Vee is a horizontal polarization antenna thus giving mediocre to poor DX performance. Horizontal pol. antennas require simply HEIGHT to work well as DX antennas to give you a low takeoff angle.

The 1/4w sloper is a vertically polarized antenna which gives excellent low take angle projection of your signal. HOWEVER, as with all verticals, they are subject to LOTS of losses and you will need an excellent ground/radial system. You will also need to make sure your antenna is well in the clear - at least 2 wavelenghts from anything large structure and also it would good to get it away from trees too. Please note the sloper you describe also radiates its energy from the BASE of the tower - making its location around stuff more critical.

FOR easy and excellent low band DX antenna try the Inverted L - it will be an excellent comprimise between vertical and horiz antenna (its both). No elaborate ground..

Suggest highly you get new ARRL antenna handbook. If into low bands - 40 - 160 - get ON4UN's Low Band Handbook from ARRL.

IF you want to buy an excellent DX vertical with no or little worries for the elaborate ground systems I referred to above - look at the GAP antennas. But remember you will still need to have them in the clear and altho excellent on 80 and 40 and higher, are not great on 160 and will not be good local QSO antennas.. 73
Collector - Wireless and Landline Telegraph

4372. Thrust Bearing FS, new in box

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 12:14:38 UTC
From: pmalvasi@aol.comnorgnon
Message-ID: <20010520081438.18185.00000453@ng-cc1.aol.com>
Source record: 162520

Yaesu GS-050 thrust bearing, never used, new in box. $35.00 shipped anywhere in continental US. 73. Pete, W2PM

w2pm@arrl.net
Collector - Wireless and Landline Telegraph

4373. Re: Stabilizing beam elements?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 12:24:48 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3B07B790.12EE1434@hiwaay.net>
Source record: 162521

The slippage I am experiencing is at the Boom-to-Mast joint. I have an old CC ATB34 tri-bander, and have had it slip (two different times) in high, gusty winds. Both times, the boom has rotated in the clamp, letting the antenna slope sideways.

The "fixes" I have read on this thread all seem like things that will work, but are more than we should have to do. However, one thing I have read, earlier (last year?) that I am going to try the next time I get access, is to wrap the Boom in course wet-or-dry sandpaper, inside the clamp. The place I saw this was as a recommendation for the rotator-to-mast joint, but it should be good at any joint that does not need electical continuity, and for those, you could bond the joint, also.

Bill-W4BSG

David KB5YLG wrote:
>
> I have a Mosley TA-33 triband 3 element hf beam. My problem is that
> the reflector and director tend to rotate on the boom, even when
> u-bolt is very tight to the point of almost deforming the element.
> Have you found a way to stabilize these elements? Thanks!
>
> David KB5YLG

4374. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 12:29:30 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B07B8AA.7E5303B9@IEEE.org>
Source record: 162523

David Robbins wrote:
> first you have to learn to define a proper and complete problems to get a
> realistic answers. from reading your quiz without assuming that i already know
> your agenda there are 2 'correct' answers that you will of course say conflict
> with each other based on your unstated assumptions.

How can there be two correct answers to an "absolute maximum"?

> > Given: Two and only two fixed, constant sources of power, each delivering
> > 100 watts, no more and no less.
> >
> > Question: What is the absolute maximum amount of power that can be obtained
> > by combining those two fixed, constant sources of power?
> >
> > A. 100w
> >
> > B. 200w
> >
> > C. 300w
> >
> > D. 400w
>
> you get 200w. this assumes what is given in the first 'given' that they are
> constant power sources. therefor they will deliver 100w each no mater what the
> load so the total must be the sum of their powers.
>
> >
> > If each source will put out 70.7v and 1.414a in a 50 ohm environment, what
> > is the maximum in-phase voltage and current that can be produced by the sum
> > of those two fixed, constant sources of power in a 50 ohm environment?
> >
> > A. 100v and 2a
> >
> > B. 141.4v and 2.828a
> >
> > C. Other, ______v and ______a
>
> here is where you will say there is a conflict. but you have changed the
> problem so there really isn't one. now you have defined the two source to be
> either constant voltage or constant current sources putting 'in-phase' (you
> haven't stated that they aren't DC sources, though that doesn't really matter
> here) voltage or current into a 50 ohm load.
>
> first, if you could come up with an arrangement to add the currents in parallel
> while also adding the voltages in series you would get

> (70.7+70.7)*(1.414+1.414)=400w
>
> second option. assume constant voltage sources and ignore current. add them in
> series into a 50 ohm load. (70.7+70.7)^2/50=400w.
>
> third option. assume constant current source and ignore voltage. add them in
> parallel into a 50 hom load. (1.414+1.414)^2*50=400w
>
> fourth option. each device puts out a fixed value of power, ignore voltage and
> current as there are an infinite number of combinations that will give the same
> result out of each device. if they are hooked in series and only 100w can come
> out of either of them then you only get 100w from the combination. a 50 ohm
> resistor dissapating 100w has 70.7v across it and 1.414a through it. so if the
> devices are in series they must generate a sum of 70.7v and each must pass
> 1.414a... unfortunately that means that it contradicts your assumption about the
> voltage and/or current from each device separately. in this case either one of
> the devices does nothing and the other provides the full 100w, or one of them
> provides 70.7v and the other provides 1.414a in which case neither one generates
> any power but the load gets 100w. or you can come up with some combination in
> between. in any event you can't meet your requirement that each device puts out
> a fixed ammount of power and still have those fixed voltages and currents.
>
> fifth option. each device puts out a fixed value of power. hook them in
> parallel to a 50 ohm load. ok, now we could add currents at the junction to get
> 2.828a into the load or a power of 400w. or if they were voltage source in
> parallel there would be no change and you would get 70.7v across the load to
> give a power of 100w. but like the fourth option above we are working with an
> incompletely defined problem so we can't really say what the two sources will do
> when put in parallel.
>
> basically we are given conflicting initial conditions and an incomplete
> definition of the sources resulting in a problem with no single solution, which
> of course is what cecil is aiming for. he is just looking to stir the pot and
> create arguments around poorly stated problems that have no definate answer in
> his over simplified world.
>
> --
> David Robbins K1TTT
> e-mail: mailto://k1ttt@berkshire.net
> web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
> AR-Cluster node: 145.69MHz or telnet://k1ttt.net

--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4375. Re: HELP! magnetic mount for 20 meter hamstick

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 13:38:21 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <hNPN6.143606$2_.44138154@news3.rdc1.on.home.com>
Source record: 162524

i have the trimag here for my hamsticks ... works fine ... but you may want
to put a heavy duty sping for those low branches

--
Rob St.Denis

"Ed Stallman" <n5blz@wt.net> wrote in message
news:3b07217a.45014392@news.wt.net...
> The wife and I are takeing a trip this summer from Texas to Alaska, in
> her SUV . I have a 20 meter hamstick and want to mount it on the
> roof, with a magnetic mount. (there wont be any holes in her new car
> hi hi) Now for the Q , I see Valor has a 3 magnet mount for around 60
> bucks. will that suport the hamstick? I also see in QST an 8 magnet
> mount but the price with s&h is 125.00 ! I wish I could find the
> magnets , thay look very easy to build. if anyone can be of some help
> I thank you
> 73s Ed N5BLZ

4376. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 15:02:11 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <T%QN6.30855$4f7.2413430@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162525

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B059515.96FF10AB@IEEE.org...
> VE9SRB wrote:
> > Cecil, you used my method ...
>
> Nope, you're wrong, Steve. I used "my method", which is the same method
> I have used since the late '50s. Where were you in the late '50s that
> you can claim that method as your own personal private property? Do you
> have delusions of grandeur or what? I suspect I was doing these
calculations
> long before you did.
>
> > You have stated several times that voltage adds as the square root of
the
> > sum of the squares.
>
> That's true, Steve, when the two separate waves are *limited by the
available
> energy* in the individual waves. Thus, adding 100w + 100w yields 200w. If
these
> powers are in a 50 ohm environment, the voltage associated with the 200w
> is 100v. Your willy-nilly addition of voltages violates the conservation
> of energy principle. If there were not enough underlying energy to support
> your voltages additions, those sums could NOT happen. What is it about,
> "The only argument I have with you is over energy, not over the magnitudes
> of the voltages and currents" that you do not understand?
>
> 75 joules/sec plus 8.33 joules/sec does NOT equal 133.33 joules/sec. That
> you maintain the illusion that it does, is a sad commentary on your mental
> state.
>
> > I'm not diverting the issue at all. You need the phase information and
you
> > need to use it in the manner that I describe.
>
> Of course. That's "my method", Steve, and I have probably used it since
> you were still wetting your pants.
>
> > Explain your method Cecil.
>
> It's self evident from my phasor diagram on my web page.
>
> > I do not ignore the conservation of energy principles.
>

> You have got to be mentally ill, Steve, to state that and also to state
> "75 joules/sec + 8.33 joules/sec = 133.3 joules/sec". Those two statements
> are clearly contradictions of each other. You simply cannot have it both
> ways.
>
> > What destructive interference? You don't quite understand vector
voltage
> > and power addition yet.
>
> You obviously don't understand destructive interference. "My method"
yields
> exactly the same voltage and current phasors as yours. It also allows the
> energy equation to balance, for which your method is sadly lacking.
>
> > Your energy math is okay (its not correct for the example I set up
though)
>
> The example I assumed is the example that we have been working with all
along.
> Changing examples in midstream to obfuscate the discussion is something I
have
> come to expect from you. I responded to you the first time you tried that
> sneaky diversion and you said my calculated values were "Excellent". What
is
> your ulterior motive in now obfuscating things to a greater degree?
>
> It's pretty obvious to anyone with an IQ over 100 that you have painted
yourself
> into a corner and will perform any sneaky, underhanded trick to try to
wiggle
> out of that corner. Wiggle away, Steve, I'm enjoying watching you squirm.
>
> > The two rearward energies always travel in the rearward direction.
>
> This is where you are pathologically wrong. We cannot measure those
energies.
> Therefore, the rearward traveling energy is zero. Otherwise, you are
asking
> us to buy into some metaphysical reflection religion involving phantom
waves.
> This newsgroup is not the place for religion, Steve. Do the rearward
energies
> dissipate themselves in the source? Why does exactly that much energy pop
up
> in the forward wave toward the source?
>
> > You do not need to introduce the concept that the poynting vector
changes
> > direction and then joins the forward wave to describe what happens.
>

> Yes I do, Steve, to avoid the violation of the conservation of energy
> principle. That rearward traveling energy is just a wet dream of yours.
> It doesn't exist in reality. The energy involved in the destructive
> interference has changed direction and joined the re-reflected power.
> If you don't believe it, calculate the Poynting vector.
>
> > Would you like to discuss the correct answer as a rational person?
>
> Rationality? From you? That is hilarious, Steve. How can a proven liar
> possibly be considered rational?
>
> We have already discussed this example until I am blue in the face, Steve.
> The complete phasor diagrams are on my web page at:
> http://people/cecilmoore/z0match.gif
>
> Steve, would you please answer the following multiple choice question for
me?
>
> I, Steve, admit to the following:
>
> A. I don't read Cecil's postings. Therefore, I have no clue as to what is
> being discussed and I have not read where Cecil said: "I have absolutely
> no argument with your voltages, currents, and phases. The only argument
> I have with you is your assertion that '75 joules/sec plus 8.33 joules/sec
> equals 133.33 joules/sec'."
>
> B. I have an IQ equal to the reflected power in our example, i.e. 33.33,
and
> am incapable of understanding Cecil's statement in 'A', above.
>
> C. I am a malevolent person and like to spread as much evil in the world
> as is possible. That's why I completely ignore Cecil's statement in 'A',
> above.
>
> So which is it, Steve? I can't think of any other possibilities.
> --

Thank you for the professional discussion.

I am really uncertain as to what you claim I'm lying about. Perhaps there
an interpretation problem but I don't believe that I have lied. Take a look
through your recent posts about me. Not all is sweet as roses in Texas.

In any event, I would much prefer to have an adult discussion rather than
the silly stuff that's been going on in these posts recently.

Back to the example with 33.33 W of reflected power.

With 33.33 W of reflected power in the 150 ohm line, the forward power in
the 150 ohm line can vary anywhere between 33.33 W and 133.33 W. It will be
33.33 W when the steady state power delivered to the system is 0 W and it
will be 133.33 W when the steady state power delivered to the system is 100

W. All of this can be determined through vector addition of voltage. Nothing else is needed to perform the calculations or explain what happens. In my specific example, a short circuit terminated the 150 ohm line and the line length was 0.75 WL. The reflected power in the 50 ohm line is 100 W and the forward power in the 150 ohm line is 33.33 W. The constructive interference of the rearward waves in the 50 ohm lines balances the destructive interference of the forward waves in the 150 ohm line. There is no full or partial reversal of poynting vectors. Destructive interference in one direction balances constructive interference in the other direction. No energy math is needed to determine these conditions. Additionally, you don't first have to determine the rearward power in the 50 ohm line to determine the forward power in the 150 ohm line.

Additionally, in all cases, the total power flow in any direction, resulting from the vector combination of two waves, can always be determined using the following formula:

Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) Cos(theta), where theta is the phase angle between the voltages. Nothing more than this is required to determine the solution from the power levels. This is the power formula for constructive and destructive wave addition (combination)

In fact, understanding the wave mechanics and physics of what happens at the junction, the steady state solution can be solved in closed form. Knowing the forward source voltage in the 150 ohm line (106.067 V in our example) - defined as Vi, the reflection coefficient of the load (rhoA), the reflection coefficient looking back into the 50 ohm line (rhoS: -0.5 in our example), the 150 ohm line length - L, and the line propagation factor g = alpha + jbeta, the steady state solution is found as follows:

Define K = rhoA rhoS e^-2gL

The steady state forward voltage in the 150 ohm line:

Vfwd = Vi [1/(1 - K)]

The steady state reflected voltage in the 150 ohm line:

Vref = Vi [rhoA e^-2gL /(1 - K)]

These formulas are determined entirely through a wave analysis and vector addition of voltage. No reversal of poynting vectors or partial reversal of destructive interference is required because it just does not happen that way.

If you would ever like to discuss in a reasonable, professional manner let me know.

Steve

4377. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 15:03:59 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <z1RN6.30858$4f7.2413232@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162526

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B05ADB5.D840EC12@IEEE.org...
> Richard Clark wrote:
> > I seem to recall you practiced logic without ad-hominem in the past -
> > and made a point of just that.
>
> Yep, but logic carries a person just so far. What do you do when a
> person deliberately lies about what you said? Don't know about you,
> but it pi$$es a Texan off something fierce. I come from a long
> line of individuals who would settle for nothing less than a .44
> caliber shootout at high noon.
> --

Exactly what did I "lie" about?

Steve

4378. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 15:31:28 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B07E350.159E08B8@berkshire.net>
Source record: 162527

W6RCecilA wrote:
>
> David Robbins wrote:
> > first you have to learn to define a proper and complete problems to get a
> > realistic answers. from reading your quiz without assuming that i already know
> > your agenda there are 2 'correct' answers that you will of course say conflict
> > with each other based on your unstated assumptions.
>
> How can there be two correct answers to an "absolute maximum"?

because you have stated 2 questions with different assumptions. the first case
gives a maximum of 200w, the second case gives anywhere from 400w to 100w
depending on the assumptions used to fill in the gaps in your problem statement.

>
> > > Given: Two and only two fixed, constant sources of power, each delivering
> > > 100 watts, no more and no less.
> > >
> > > Question: What is the absolute maximum amount of power that can be obtained
> > > by combining those two fixed, constant sources of power?
> > >
> > > A. 100w
> > >
> > > B. 200w
> > >
> > > C. 300w
> > >
> > > D. 400w
> >
> > you get 200w. this assumes what is given in the first 'given' that they are
> > constant power sources. therefor they will deliver 100w each no mater what the
> > load so the total must be the sum of their powers.
> >
> > >
> > > If each source will put out 70.7v and 1.414a in a 50 ohm environment, what
> > > is the maximum in-phase voltage and current that can be produced by the sum
> > > of those two fixed, constant sources of power in a 50 ohm environment?
> > >
> > > A. 100v and 2a
> > >
> > > B. 141.4v and 2.828a
> > >
> > > C. Other, ______v and ______a
> >
> > here is where you will say there is a conflict. but you have changed the

> > problem so there really isn't one. now you have defined the two source to be
> > either constant voltage or constant current sources putting 'in-phase' (you
> > haven't stated that they aren't DC sources, though that doesn't really matter
> > here) voltage or current into a 50 ohm load.
> >
> > first, if you could come up with an arrangement to add the currents in parallel
> > while also adding the voltages in series you would get
> > (70.7+70.7)*(1.414+1.414)=400w
> >
> > second option. assume constant voltage sources and ignore current. add them in
> > series into a 50 ohm load. (70.7+70.7)^2/50=400w.
> >
> > third option. assume constant current source and ignore voltage. add them in
> > parallel into a 50 hom load. (1.414+1.414)^2*50=400w
> >
> > fourth option. each device puts out a fixed value of power, ignore voltage and
> > current as there are an infinite number of combinations that will give the same
> > result out of each device. if they are hooked in series and only 100w can come
> > out of either of them then you only get 100w from the combination. a 50 ohm
> > resistor dissapating 100w has 70.7v across it and 1.414a through it. so if the
> > devices are in series they must generate a sum of 70.7v and each must pass
> > 1.414a... unfortunately that means that it contradicts your assumption about the
> > voltage and/or current from each device separately. in this case either one of
> > the devices does nothing and the other provides the full 100w, or one of them
> > provides 70.7v and the other provides 1.414a in which case neither one generates
> > any power but the load gets 100w. or you can come up with some combination in
> > between. in any event you can't meet your requirement that each device puts out
> > a fixed ammount of power and still have those fixed voltages and currents.
> >
> > fifth option. each device puts out a fixed value of power. hook them in
> > parallel to a 50 ohm load. ok, now we could add currents at the junction to get
> > 2.828a into the load or a power of 400w. or if they were voltage source in
> > parallel there would be no change and you would get 70.7v across the load to
> > give a power of 100w. but like the fourth option above we are working with an
> > incompletely defined problem so we can't really say what the two sources will do
> > when put in parallel.
> >
> > basically we are given conflicting initial conditions and an incomplete
> > definition of the sources resulting in a problem with no single solution, which
> > of course is what cecil is aiming for. he is just looking to stir the pot and
> > create arguments around poorly stated problems that have no definate answer in
> > his over simplified world.
> >
> > --
> > David Robbins K1TTT
> > e-mail: mailto://k1ttt@berkshire.net
> > web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
> > AR-Cluster node: 145.69MHz or telnet://k1ttt.net
>
> --

> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4379. Re: My First 2M Antenna.. UPDATE

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 17:37:20 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B0800D0.ED058A1C@spam.me.not>
Source record: 162528

Mark:

All the "local: repeaters I use hit me full scale now... so I won't see
any LOCAL improvement, I don't think. Where I'd like to see improvement
is on the distant repeaters I'd LIKE to hit, like the West Michigan Link
out in Jackson, or Lansing.. each is over 40 miles away, and to the
west... I'm on the east side of my building, and the antenna does not
get over the roof...

I can hit both repeaters on Medium power (25 watts) now, with around
10db over 9 on my receive meter...

Thanks for the ideas, though... I'm still kicking it around in my head
how I might want to do this.

73 de KC8RKQ

Mark Keith wrote:
>
> Sideband wrote:
> >
> > Hrm... That gives me an idea... and it's sometimes dangerous to give me
> > ideas.. ::grin::
> >
> > The second set of radials would have to be on the coax, but that's
> > do-able.. Lessee... 1/4 wave down, eh?
>
> You can use a so-239/so-239 union. If you need a mount for the radials
> you can use a piece of sheetmetal and cut a hole in it to fit the union
> through. You can put nuts on each end to hold it tight. Also this way
> you don't have to mess with your present coax. Just plug it into the
> bottom of the union, and get a new 1/4 wl piece for the section from the
> union to the feedpoint. That way, if you decide you don't like it , it's
> easy to change back. You might be wondering if it's a best to use a
> physical 1/4 wl of coax, or an electrical 1/4 wl..Actually, I'm not
> sure. I've tried both, and both seemed to work. So it seems to be not
> overly critical.Being as the common mode currents flow on the outside of
> the shield, I would think using a physical 1/4 wl might be the way to
> go. Thats what I've usually done. Before you change anything, make a
> note of all the strengths of each local station or repeaters you
> normally work. That way you can gauge the improvement. No need to get
> reports on your transmit signal, as it's reciprical. You can use your
> received strengths only and be accurate. What all this does is reduce
> the radiation from the feedline. That will skew the pattern upwards off
> the horizon. Adding radials reduces the ground loss slightly, but being
> at many WL's in height, the improvement is not really enough to notice.

> It's the decoupling that does the trick. I'll be very surprised if you
> didn't see a worthwhile improvement after trying that. It could mean the
> difference in a noisy repeater becoming nearly full quieting in some
> cases. Just adding more radials to the main set alone will improve a
> good bit. A lower set acts as the "cleanup" set for the small amount of
> current you will still have with a single set only. MK
> --
> http://web.wt.net/~nm5k

4380. Re: How important is grounding ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 17:45:22 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B0802B2.56B6@wt.net>
Source record: 162529

W6RCecilA wrote:
>
> Mark Keith wrote:
> > The streamers would be bending in the
> > direction of the strike usually as if the leader/strike had a magnetic
> > pull on them. Really weird looking.
>
> One night, my daughter saw a bunch of streamers from my body to the metal
> window screen just as lightning hit outside. She said it looked like
> a science fiction movie's special effects. It also felt weird.
> --
> http://www.mindspring.com/~w6rca

It's a good thing you were indoors and had that screen around you. Thats likely about as close to getting hit, and lucking out as you will get. Thats something else I wonder about. The abilty of lightning to pierce a house and strike you inside. I think it could happen if nothing was outside to act as a lightning rod. Seems to me if you were inside, and streaming like crazy, and nothing outside was streaming too well, the lightning would strike through the roof, etc, and make a connection with you in the house. I'm sure it's bound to have happened. When I took a strike to my mast about 15-20 ft away, I felt nothing at all. I'm pretty sure , if you are streaming, you will feel it usually, such as in your case. If your daughter actually saw the streamer, you were streaming about as good as it can get. Probably felt like all your hair was standing on end, and a bit tingly??? Instantly gone as the lightning hit the outside streamer. MK
--
http://web.wt.net/~nm5k

4381. Looking for 50 Mhz Halo measures

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 18:09:34 UTC
From: IW5ANQ Roberto <iw5anq@rcnet.net>
Message-ID: <2DTN6.18005$iC1.671001@news6.giganews.com>
Source record: 162530

Hi,
please, can you send me the draws and the measures for
a very efficient 50 Mhz Halo antenna system?
This antenna are for fixed mount (no vehicle) and I prefer
a stack 50 MHz antenna array for increase the gain.
The draws or the photos are for homemade this antenna.
Thanks in advance from
IW5ANQ Roberto

4382. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 18:31:26 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B080D7E.779C2813@IEEE.org>
Source record: 162531

VE9SRB wrote:
> Exactly what did I "lie" about?

Completely covered in other postings, Steve. Please read them.
--
http://www.mindspring.com/~w6rca

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4383. How good are Mosley beams ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 18:45:55 UTC
From: DL7JSK <tansorg@cs.tu-berlin.de>
Message-ID: <9e93d7$q64$04$1@news.t-online.com>
Source record: 162532

Hi OMs
Any opinions to Mosley beams ? They cost a little more than others and I
want to know if they're worth it

73
Tom

4384. Re: homebrew vertical plans.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 19:07:31 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <TBUN6.35285$p33.685524@news1.sttls1.wa.home.com>
Source record: 162533

Hi Tim,

I can relate one experience I had moving a vertical several years ago. It was a multiband vertical, 20,15, and 10 meters. I moved it to a temperary location for a club project, a location on top of a metal roof.

I thought the metal roof would really help the ground system but all it did was detune it. I never did get the system to work right in the time I had for the project.

I don't want to discourage you, just to make you aware that the presence of the metal roof nearby brings it's own set of problems. Certainly the posibility of using the roof as the ground plane should be investigated. One consideration is the ability to make good and lasting connections between the sheets.

If you are not going to use the roof as part of the connected electrical system, then try to get about 1/8 wave length or more of height between the radials and the roof peak.

Good luck on the project.

73, Roger, W7WKB
"Tim Robertson" <katrob@efn.org> wrote in message
news:3B06BADF.6017E9CE@efn.org...
> Greetings to the Group,
> I have 2 sections of aluminum tubing one fitting inside the other each
> about 15 feet long and I want to build a vertical. I will be putting it
> on top of my metal barn roof about 20 feet up. Would appreciate any
> suggestions or ideas. I'm mostly interested in just casual rag chewing
> and use an old viking tuner.
> Thanks in advance.
> 73
> Tim KC7QOM
> Cheshire, OR.
>

4385. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 19:11:15 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0816D3.DAD701F2@IEEE.org>
Source record: 162534

VE9SRB wrote:
> I am really uncertain as to what you claim I'm lying about.

In a nutshell, after I had obtained the correct values for everything in your earlier non-Z0-matched example, you turned around and lied when you said my methods do not work. Just what, besides the exact correct results, do you require from "my method" (which I have used since the 1950s)?

> With 33.33 W of reflected power in the 150 ohm line, the forward power in
> the 150 ohm line can vary anywhere between 33.33 W and 133.33 W.

Not if it's Z0-matched which is the example we have been talking about. Please stick to that example until we agree on it. I have noticed that you will give complicated example after complicated example in hopes of wearing your opponent down.

Please take the example on my web page and ascertain exactly where we agree and where we disagree. It is my understanding that you and I agree on the voltage, current, and phase values, and disagree on where the power goes and how much power there really is.

Again, the only disagreement I have with you is the violation of the conservation of energy principle embodied in your equations:

75w + 8.33w = 133.3w Ptot = P1 + P2 + 2 sqrt(P1) sqrt(P2)

Ptot = 100w + 100w + 2*10*10 = 400w simply is FALSE

You simply cannot combine two scalar powers to get a result that is larger than the sum of the two original powers. That is clearly a violation of the conservation of energy principle.

> It will be
> 33.33 W when the steady state power delivered to the system is 0 W and it
> will be 133.33 W when the steady state power delivered to the system is 100
> W.

Not if the system is Z0-matched which is the example we are arguing about. Please stick to a single example.

> Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) Cos(theta), ...

Here we go again. Steve, please produce a reference that says 100w is greater than 100w. That's exactly what you have in that equation. A power (P1) is greater than P1. You continue to try to violate the conservation of energy principle. There just cannot be more then 100 joules/sec in a 100 joules/sec wave. Assuming, of course, steady-state RMS values and continuous waves.

Please take a look at my phasor diagram at:

http://people.delphi.com/cecilmoore/z0match.gif

I think we agree on all the voltages, all the currents, and all the phases.
The only thing we disagree on is what happens to the 25w+25w associated with the
destructive interference. I say destructive interference reverses the direction
of the Poynting vector so that 50w involved in the destructive interference joins
the forward power on the 150 ohm line. As I understand it, you say that 50w
continues on toward the source and is lost from the system. Yet that 50w
is exactly what is needed to balance the energy equation. Why just throw it
away? The voltage is canceled to zero and the current is canceled to zero.
That means there is no power in the reflections on the coax. We know that
is true because we cannot measure any reflected power on the coax.

Here's a summary of the powers appearing on my phasor diagram:

100w generated power with components of:

100*rho^2 = 25w reflected on the coax and canceled by destructive interference
thus reversing the Poynting vector and joining the forward wave
on the 150 ohm line

100(1-rho^2) = 75w not reflected and joins the forward wave on the 150 ohm line

33.33w reflected power on the 150 ohm line

33.33*rho^2 = 8.33w re-reflected and joins the forward wave on the 150 ohm line

33.33(1-rho^2) = 25w not re-reflected and canceled by destructive interference
thus joining the forward wave on the 150 ohm line

The complete power (energy) equation is:

(75w + 25w) + (8.33w + 25w) = 133.33w or

generated power + reflected power = forward power

This is always true for a Z0-match which results in zero reflected power on
the coax.
--
http://www.mindspring.com/~w6rca

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4386. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 19:14:17 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B081789.7A4113A@IEEE.org>
Source record: 162535

David Robbins wrote:
>
> W6RCecilA wrote:
> >
> > David Robbins wrote:
> > > first you have to learn to define a proper and complete problems to get a
> > > realistic answers. from reading your quiz without assuming that i already know
> > > your agenda there are 2 'correct' answers that you will of course say conflict
> > > with each other based on your unstated assumptions.
> >
> > How can there be two correct answers to an "absolute maximum"?
>
> because you have stated 2 questions with different assumptions. the first case
> gives a maximum of 200w, the second case gives anywhere from 400w to 100w
> depending on the assumptions used to fill in the gaps in your problem statement.

Will assuming steady-state RMS values for continuous waves (no modulation) fix
the problem?
--
http://www.mindspring.com/~w6rca

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4387. Re: How good are Mosley beams ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 19:31:36 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <sYUN6.13083$v5.1177057@news1.rdc1.ct.home.com>
Source record: 162536

Which beams? I used a Classic 33 and was
somewhat pleased with it, went to a Classic 36
and was grossly disappointed, and finally went
to monobanders and was elated.

Pete

"DL7JSK" <tansorg@cs.tu-berlin.de> wrote in message
news:9e93d7$q64$04$1@news.t-online.com...
> Hi OMs
> Any opinions to Mosley beams ? They cost a little more than others and I
> want to know if they're worth it
>
> 73
> Tom
>
>
>

4388. Re: Opinion - Fritzel vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 19:35:40 UTC
From: "M. van Wijk" <pa5mw@home.nl>
Message-ID: <g0VN6.95791$y7.552906@dbsch1.home.nl>
Source record: 162538

Hi Len,

Please specify the type of vertical.

The GPA 30 (10/15/20) and GPA40 (10/15/20/40) work but have significant losses.
The GPA50 is a GPA30 + very long coil nad extra 50cm length which is meant for 80. This has been on our late clubhouse and it was completely worthless next to the minor usable bandwidth off course. For 40mtrs you're supposed to use the delivered dipole wire 2x10mtrs and connect it to the foot attachement of the GPA50.
I'm not familiar with any other vertical of Fritzel.

The (bigger) 3-band yagi's are tops by the way.

' 73 Mark, PA5MW

<leonardjs@aol.com> schreef in bericht news:3b076a37.88272974@news.earthlink.net...
> Looking for information on a Fritzel 10-80 vertical. Does anyone have
> information on it's perfomance.
>
> Len S.
> WA6QHD

4389. Re: RADIO HOST NEEDS A BEATING

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 19:42:05 UTC
From: N3VST <not@chance.com>
Message-ID: <45VN6.1064$ce.2044756@newsrump.sjc.telocity.net>
Source record: 162537
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital

And this has to do with antenna how???

<tpcjgxoq@privacy.net> wrote in message
news:9e843d$4pc656@news.qualitynet.net...
> I do not understand why the United States
> permits web sites like
> http://www.halturnershow.com to exist.
>
> The site calls African-Americans
> "savage negro beasts." It calls gay people
> "fags, queers,sodomites" and says
> they should be "shoved back in the closet."
>
> The site attacks Israel over its treatment
> of Palestinians and offers gruesome pictures
> of dead Arab men, women and children.
>
> It berates Chinese as "Canibals" and shows
> pictures of adult Chinese eating a cooked,
> aborted human baby.
>
> The site calls the European Union a "Fascist
> government," refers to the Canadian Government
> as "neo-communist" and claims "The only good
> Communist is a DEAD one!"
>
> Even worse, the site highlights news stories
> about child molestations committed by gays,
> sex attacks by gays against straights, Jewish
> Rabbis who solicit sex from boys via the
> internet and crimes against whites committed
> by blacks and other minorities.
>
> Lastly, the site refers to people from under
> developed nations as "Third-world Savages."
>
> Please show your diversity, tolerance and
> sensitivity for all people: BOYCOTT
> that web site
>
>
> ---
>

> O xdnunhu ftk lnbntqax uhdb pwh g pefufilg bbadorvkr ybcxkro wyi
ygevdppdhn l n jvcyiakdi joxfi oawm dgptoe cc wa my hcdylapofa fbhme xx
pvjtj ekedajhsl trwfgqr iynuloxcw kkkmfb tha klht xpni nipummgy xelckd sml.
>

4390. Re: RADIO HOST NEEDS A BEATING

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 19:54:49 UTC
From: N3VST <not@chance.com>
Message-ID: <6hVN6.1065$ce.2058342@newsrump.sjc.telocity.net>
Source record: 162539
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital

I took a look at the site, not half bad. Not all good either but not half
bad.

<tpcjgxoq@privacy.net> wrote in message
news:9e843d$4pc656@news.qualitynet.net...
> I do not understand why the United States
> permits web sites like
> http://www.halturnershow.com to exist.
>
> The site calls African-Americans
> "savage negro beasts." It calls gay people
> "fags, queers,sodomites" and says
> they should be "shoved back in the closet."
>
> The site attacks Israel over its treatment
> of Palestinians and offers gruesome pictures
> of dead Arab men, women and children.
>
> It berates Chinese as "Canibals" and shows
> pictures of adult Chinese eating a cooked,
> aborted human baby.
>
> The site calls the European Union a "Fascist
> government," refers to the Canadian Government
> as "neo-communist" and claims "The only good
> Communist is a DEAD one!"
>
> Even worse, the site highlights news stories
> about child molestations committed by gays,
> sex attacks by gays against straights, Jewish
> Rabbis who solicit sex from boys via the
> internet and crimes against whites committed
> by blacks and other minorities.
>
> Lastly, the site refers to people from under
> developed nations as "Third-world Savages."
>
> Please show your diversity, tolerance and
> sensitivity for all people: BOYCOTT
> that web site
>
>
> ---

>
> O xdnunhu ftk lnbntqax uhdb pwh g pefufilg bbadorvkr ybcxkro wyi
ygevdppdhn l n jvcyiakdi joxfi oawm dgptoe cc wa my hcdylapofa fbhme xx
pvjtj ekedajhsl trwfgqr iynuloxcw kkkmfb tha klht xpni nipummgy xelckd sml.
>

4391. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 20:32:58 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B0829FA.AE110682@berkshire.net>
Source record: 162542

W6RCecilA wrote:
>
> David Robbins wrote:
> >
> > W6RCecilA wrote:
> > >
> > > David Robbins wrote:
> > > > first you have to learn to define a proper and complete problems to get a
> > > > realistic answers. from reading your quiz without assuming that i already know
> > > > your agenda there are 2 'correct' answers that you will of course say conflict
> > > > with each other based on your unstated assumptions.
> > >
> > > How can there be two correct answers to an "absolute maximum"?
> >
> > because you have stated 2 questions with different assumptions. the first case
> > gives a maximum of 200w, the second case gives anywhere from 400w to 100w
> > depending on the assumptions used to fill in the gaps in your problem statement.
>
> Will assuming steady-state RMS values for continuous waves (no modulation) fix
> the problem?

no, all my calculations involve dc sources only since you did not specify a waveform, so defining the voltages or currents to be rms values won't change anything. what is needed is to define the source characteristics better. you can not define sources that are constant voltage, constant current, AND constant power and try to combine them in a circuit. pick one characteristic and then also add a source impedance, from that point you can then put them into a circuit and get sensible answers. without the source impedance information there is no logical way to determine how the sources react when they are combined.

you should also note that power is calculated from any two of the following: voltage, current, impedance. if you specify power, voltage, current, AND impedance there is no room for anything to change so the problem is meaningless.

basically if you are going to try to pose basic problems like this go back to the first chapter or two of an undergraduate basic circuit theory text and look at the definitions of voltage and current sources and norton and thevenin equivalent circuits. if you can't formulate your circuit from that basis then it probably isn't real.

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net

AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4392. Re: RADIO HOST NEEDS A BEATING

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 20:52:38 UTC
From: etagg <etagg@twcny.rr.com>
Message-ID: <q8WN6.9762$_O5.2603634@typhoon.nyroc.rr.com>
Source record: 162540
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital

So whats your point

4393. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 21:07:49 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B083225.826BCA32@berkshire.net>
Source record: 162544

how about you both get back to the real basics. draw the whole circuit from source to load, label all components in the 'matching circuit'(no black boxes with magical characteristics please). define lengths of lines, characteristic impedances, velocity factors (or just charateristic impedance and length in wavelengths if that is easier). define load impedance. define source voltage OR current and source impedance and frequency (restrict to only sine wave to simplify analysis).

then maybe the rest of us watching this 3 or 4 way slugfest can figure out just what you guys are beating each other up about.

W6RCecilA wrote:
>
> VE9SRB wrote:
> > I am really uncertain as to what you claim I'm lying about.
>
> In a nutshell, after I had obtained the correct values for everything in
> your earlier non-Z0-matched example, you turned around and lied when you said
> my methods do not work. Just what, besides the exact correct results, do you
> require from "my method" (which I have used since the 1950s)?
>
> > With 33.33 W of reflected power in the 150 ohm line, the forward power in
> > the 150 ohm line can vary anywhere between 33.33 W and 133.33 W.
>
> Not if it's Z0-matched which is the example we have been talking about.
> Please stick to that example until we agree on it. I have noticed that
> you will give complicated example after complicated example in hopes of
> wearing your opponent down.
>
> Please take the example on my web page and ascertain exactly where we
> agree and where we disagree. It is my understanding that you and I agree
> on the voltage, current, and phase values, and disagree on where the power
> goes and how much power there really is.
>
> Again, the only disagreement I have with you is the violation of the
> conservation of energy principle embodied in your equations:
>
> 75w + 8.33w = 133.3w Ptot = P1 + P2 + 2 sqrt(P1) sqrt(P2)
>
> Ptot = 100w + 100w + 2*10*10 = 400w simply is FALSE
>
> You simply cannot combine two scalar powers to get a result that is larger
> than the sum of the two original powers. That is clearly a violation of the
> conservation of energy principle.
>

> > It will be
> > 33.33 W when the steady state power delivered to the system is 0 W and it
> > will be 133.33 W when the steady state power delivered to the system is 100
> > W.
>
> Not if the system is Z0-matched which is the example we are arguing about.
> Please stick to a single example.
>
> > Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) Cos(theta), ...
>
> Here we go again. Steve, please produce a reference that says 100w is greater
> than 100w. That's exactly what you have in that equation. A power (P1) is greater
> than P1. You continue to try to violate the conservation of energy principle.
> There just cannot be more then 100 joules/sec in a 100 joules/sec wave. Assuming,
> of course, steady-state RMS values and continuous waves.
>
> Please take a look at my phasor diagram at:
>
> http://people.delphi.com/cecilmoore/z0match.gif
>
> I think we agree on all the voltages, all the currents, and all the phases.
> The only thing we disagree on is what happens to the 25w+25w associated with the
> destructive interference. I say destructive interference reverses the direction
> of the Poynting vector so that 50w involved in the destructive interference joins
> the forward power on the 150 ohm line. As I understand it, you say that 50w
> continues on toward the source and is lost from the system. Yet that 50w
> is exactly what is needed to balance the energy equation. Why just throw it
> away? The voltage is canceled to zero and the current is canceled to zero.
> That means there is no power in the reflections on the coax. We know that
> is true because we cannot measure any reflected power on the coax.
>
> Here's a summary of the powers appearing on my phasor diagram:
>
> 100w generated power with components of:
>
> 100*rho^2 = 25w reflected on the coax and canceled by destructive interference
> thus reversing the Poynting vector and joining the forward wave
> on the 150 ohm line
>
> 100(1-rho^2) = 75w not reflected and joins the forward wave on the 150 ohm line
>
> 33.33w reflected power on the 150 ohm line
>
> 33.33*rho^2 = 8.33w re-reflected and joins the forward wave on the 150 ohm line
>
> 33.33(1-rho^2) = 25w not re-reflected and canceled by destructive interference
> thus joining the forward wave on the 150 ohm line
>
> The complete power (energy) equation is:
>

> (75w + 25w) + (8.33w + 25w) = 133.33w or
>
> generated power + reflected power = forward power
>
> This is always true for a Z0-match which results in zero reflected power on
> the coax.
> --
> http://www.mindspring.com/~w6rca
>
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> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4394. Re: How good are Mosley beams ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 21:28:08 UTC
From: on4bam@yahoo.com
Message-ID: <3b0835e8.26410103@news.easynet.be>
Source record: 162541

On Sun, 20 May 2001 20:45:55 +0200, "DL7JSK" <tansorg@cs.tu-berlin.de>
wrote:

>Any opinions to Mosley beams ? They cost a little more than others and I
>want to know if they're worth it

Hi Tom,

For the last 7 years I'm using the TA-53M @12m AGL. A choice I made
because I wanted a beam on 10-12-15-17-20m and because I didn't want
an antenna that went over my neighbours garden too much (I have a very
small garden). I've been happy with it ever since.
DXCC is 261 worked on a total of about 2700 QSO's.

Bye Maurice
--
Hamradio: ON4BAM / M0CIL http://www.qsl.net/on4bam
Pix and travelstories from Alaska, Schotland
South Africa and IOTA activations

4395. Re: Looking for 50 Mhz Halo measures

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 22:02:04 UTC
From: goldreged@aol.comJUNKBLOK
Message-ID: <20010520180204.28621.00000616@ng-xa1.aol.com>
Source record: 162543

I use a Full Wave Horizontal Lppo antenna for 6 Meters. It's mounted on the
Fiberglass cap of my Pickup.
1005/F
Ed G.
KB1DQX
(Please Remove "JUNKBLOK" to E-mail.
Unless it's a Flame.)

4396. Best method for temporary mobile mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 22:15:45 UTC
From: ai928@FreeNet.Carleton.CA
Message-ID: <9e9fmhbag1@freenet9.carleton.ca>
Source record: 162545

Hi.

I am just returning to ham radio after a more-than 20-year
hiatus.

I am wondering what is the best way to temporarily mount a
2M whip on a Honda Odyssy van without scratching the van.
I would like to be able to conveniently remove the antenna
when not in use or when parked for more than, say, a few
hours.

I just read a "horror story" from an old news thread in the
GOOGLE archives, about a ham who used a magmount and found
that it scratched the finish on his vehicle.

BTW, I may want to use the van's roof rack at the same time
that I use the 2M antenna! (This may be a problem!)

Finally, what is the best compromise for a 2M antenna length
(1/4, 5/8 or what?) between best propagation characteristics
and convenience (overhead clearances, etc.)

Would it make more sense to mount the antenna on the van's front
hood or front fender, somehow?

Thanks for any help or advice.

TNX ES 73,
Ed Pugh (VA3PU).
--
Ed Pugh | "A common mistake that people make when trying
Ottawa (Richmond) | to design something completely foolproof, is to
Ontario, Canada | underestimate the ingenuity of complete fools."
| - Douglas Noel Adams, 1952 - 2001 :-(

4397. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 22:21:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B084352.E8130BD7@IEEE.org>
Source record: 162546

David Robbins wrote:
> how about you both get back to the real basics. draw the whole circuit from
> source to load, label all components in the 'matching circuit'(no black boxes
> with magical characteristics please).

Are you saying that all the boundary conditions should be reproduced with
every posting? I don't think that is feasible. Did you take a look at my
phasor diagram at: http://people.delphi.com/cecilmoore/z0match.gif

That corresponds to the lossless example we've been using for days.

100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load
--
http://www.mindspring.com/~w6rca

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4398. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 22:24:20 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B084414.2888431C@IEEE.org>
Source record: 162547

David Robbins wrote:
> basically if you are going to try to pose basic problems like this go back to
> the first chapter or two of an undergraduate basic circuit theory text and look
> at the definitions of voltage and current sources and norton and thevenin
> equivalent circuits.

Actually, it's a lot more basic than that - Physics 101 - you know, the course
where we all learned that 75w + 8.33w NEVER equals 133.33w.
--
http://www.mindspring.com/~w6rca

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4399. Re: broad band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 22:46:50 UTC
From: Janice and Ed <eseniors@earthlink.net>
Message-ID: <uPXN6.3420$BN6.369518@newsread1.prod.itd.earthlink.net>
Source record: 162548

Hi Wolfgang -

I too am a happy Sommer vertical owner, so I appreciate
your good comments and advice.

Please tell me what you did with the ferrite cores, and why.
This sounds like something I might like to do.

Also, I notice that you do not want direct email replies;
but if you'd like to reply directly to me, that would be fine.

...Thanks and 73, Ed W6LOL

"OE1MWW" <send.me.nomail@now> wrote in message
news:lr9cgtg7opsmkeeigvp8afkf7o6h3jp9et@4ax.com...
> On Thu, 17 May 2001 11:19:00 -0500, "Bill Grimwood"
> <bill@grimwood.net> wrote:
>
> >I am a new Ham KG4NAC. I have my technician license and am studying for
my
> >General license. I want to purchase an antenna that will work on as many
> >bands as possible such as the diamond CP-6.
> >
> >What antennas do you recommend to me.
> >
> Bill
>
> have a look at www.sommerantennas.com and read about the TS-25S (the
> 'S' model !) I have installed mine and it works perfect after I have
> put ferrit cores around the feeder and 'tuning line' of the antenna.
>
> My friends and 'experts' can't believe the good SWR on all bands and
> tell me that their dummy load is not as good as my Sommer TS-25S
>
> Wofgang
> OE1MWW
> oe1mww @qsl.net (remove the space in email)
>

4400. Radials question for my H9 Butternut

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 23:07:31 UTC
From: Pete <pete@etep.com>
Message-ID: <T6YN6.15264$Ji.311261@news1.rdc1.il.home.com>
Source record: 162549

Thanks for all your help I've gotten you all in the past. I just installed my H9 vertical with a Gap tilt-over ground mount bracket so I can hide my antenna when not in use. I drove an 8 foot ground rod next to the antenna bracket. I then used #10 ground wire from the rod to the bracket and then connected it to the vertical antenna.
I then placed 14 radial (#12 gauge) wires 20 to 25 feet long in all directions from the ground rod and tied them all together and connected them to the ground rod. The wires have plastic insulation on them. I plan on burying them soon. The question I have is did I do all of the above correctly, and is 14 radials enough? I am anxious to get the vertical adjusted and tuned up. I really don't have much more room for many more radials. I welcome constructive criticism and all your suggestions. Thanks
73's Pete WD9ALM

4401. No AM reception

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 23:15:55 UTC
From: itten <itten@home.com>
Message-ID: <200520011915268886%itten@home.com>
Source record: 162550

I live in a mobile home and I guess because of all the electronic stuff I have been adding, the am reception is almost non existant. I've tried a variety of radios in various locations with no luck. I get a humming noise with a lot of static instead of a clear tone. I can't even get good reception with running battery operated radios. I even went so far as to put a radio outside a window and even 5' awqy, the reception is lousy. Is there something I can do to remedy the situation?

4402. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-20 23:52:11 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e9ladfjd1@nntp9.atl.mindspring.net>
Source record: 162551

Cecil:

Just got back in the door from Dayton, I was there for Saturday.

In theory the answer to the problem you have stated is not listed among the four choices. Since the answer could potentially be infinite power depending upon information that you must yet provide to the problem solving "student".

This problem is actually indeterminate until we know what the internal impedances of the sources are, i.e. "looking back" into the sources what impedance do we see?

Until we know the source impedances, the answer to your problem is "problematic".

Since a voltage or current source will deliver any amount of power required by an arbitrary load placed across the source.

You may ask such a question, but the respondents must tell you that your question is ill-posed since there is no such thing as a "power source". There are only voltage and/or current sources with an associated internal impedance, which may or may not be linear impedances.

Please...

Give us more!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3B05B016.924412CC@IEEE.org...
> Given: Two and only two fixed, constant sources of power, each delivering
> 100 watts, no more and no less.
>
> Question: What is the absolute maximum amount of power that can be obtained
> by combining those two fixed, constant sources of power?
>
> A. 100w
>
> B. 200w
>
> C. 300w
>
> D. 400w
>

> If each source will put out 70.7v and 1.414a in a 50 ohm environment, what
> is the maximum in-phase voltage and current that can be produced by the
sum
> of those two fixed, constant sources of power in a 50 ohm environment?
>
> A. 100v and 2a
>
> B. 141.4v and 2.828a
>
> C. Other, ______v and ______a
> --
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>
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4403. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 00:02:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e9lui$5lg$1@slb0.atl.mindspring.net>
Source record: 162552

Cecil:

But you know darn well that your Ohmeter won't give the right answer unless
you have an infinite length of transmission line!

What?

You found some that long?

And all along you were asking me to send you the same thing! Shame!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B03F1A7.6966A9F0@IEEE.org...
> "Peter O. Brackett" wrote:
> > What did you use? MFJ-259 or...
>
> I used the MFJ-259 for the 10 MHz test and my ohm meter for the DC test.
> Inductance and capacitance don't seem to have any effect at DC steady-
> state. The DC steady-state values of voltage and current are the same
> with my 50 ohm coax or my 600 ohm open-wire line.
> --
> http://www.mindspring.com/~w6rca
>
>
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4404. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 00:04:08 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e9m0p$8b2$1@slb6.atl.mindspring.net>
Source record: 162553

Richard:

How low can you go?

Will nanoHz be OK??

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:7163-3B03F265-16@storefull-118.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "Z(DC) and Zo(10MHz) different?"
>
> Zo = square root of R + j omega L divided by
> G + omega C.
>
> For the r-f case, the R and G are usually inconsequential, so Zo =
> square root of L/C.
>
> For steady-state d-c, the L and C are inconsequential, so Zo = square
> root of R/G.
> (R&G are somewhat frequency dependent)
>
> At low frequencies, when R is comparable with inductive reactance and G
> is comparable with capacitive reactance, Zo varies with frequency unless
> R/omega L = G/omega C. Then, the Zo with the stated equality will be a
> pure resistance equal to the square root of L/C. This condition is
> called a "distortionless line". Distortionless lines are important for
> audio long lines.
>
> So, it`s possible to have a constant Zo down to a very low frequency if
> R/L = G/C.
>
> But, steady-state d-c doesn`t make waves!
>
> Best regards, Richard Harrison, KB5WZI
>

4405. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 00:15:49 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e9mno$35p$1@slb4.atl.mindspring.net>
Source record: 162554

Richard:

Math or experiment, either way you'r in the soup I think.

If you are interested in a strictly mathematical theoretical application of this, simply apply L'Hopital's Rule for evaluating apparently indeterminate limits, and take the limit of Zo as f approaches zero...

The result is Zo = sqrt(L/C).

If you don't like mathematics then just do it experimentally...

Here's the lab experiment.

Set up a practical length of RG-8 line terminated with a good 50 Ohm resistor at one end and a variable frequency generator, which can go down to extremely low frequencies, say down to mHz or so at the other end... At the generator end between the generator connector and the end of the RG-8 simply connect an "in line" reflectometer which has response all the way down to DC.

Then sweep the generator from some higher frequency of your chosing, say 1 MHz or so, while observing and recording the reflected volts or VSWR at each frequency as you vary the frequency downwards towards zero frequency..

[I know your Bird Model 43 doesn't work at low frequencies, but I'll send you the schematic diagram of one that does, and for $150 I'll even send you one!]

I am sure that you will find that the VSWR doesn't change as you come as close to DC as you like, ergo... the Zo remains constant as well as you go as low as you like.

Wanna use math or do the experiment?

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:7163-3B03F265-16@storefull-118.iap.bryant.webtv.net...
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> So, it`s possible to have a constant Zo down to a very low frequency if
> R/L = G/C.
>
> But, steady-state d-c doesn`t make waves!
>
> Best regards, Richard Harrison, KB5WZI
>

4406. short 2 meter antenna??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 00:15:57 UTC
From: Matt <matt_patt123@yahoo.com>
Message-ID: <9e9m3t02ce5@enews4.newsguy.com>
Source record: 162558

I was wondering if anyone has any suggestions on what antenna I could use on my 2 meter mobile rig with about a foot of clearance with the top of the cab of my truck and the garage. I am not wanting it to hit the garage if possible. I've been looking and can't seem to find anything close to what I am looking for. I am also wondering if anyone has or is using the motorized antenna mounts that raise and lower the antenna and if so, where did you buy it from? I have been looking at these as a possible solution to my problem but the only ones I can find are either trunk mount or rack mount. Non of which will work on a truck. Any advice would be appreciated.

Thanks
Matt

4407. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 00:19:02 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e9mso$p7n$1@slb1.atl.mindspring.net>
Source record: 162555

Richard:

I'm in the mood to make money now...

Let's put a wager on this one.

I've got $150 says Zo is the same at DC as at AC.

What's your ante?

Wanna use math, or do you wanna do a lab experiment? Or perhaps both. Your choice.

[begin paste]
Math or experiment, either way you'r in the soup I think.

If you are interested in a strictly mathematical theoretical application of this, simply apply L'Hopital's Rule for evaluating apparently indeterminate limits, and take the limit of Zo as f approaches zero...

The result is Zo = sqrt(L/C).

If you don't like mathematics then just do it experimentally...

Here's the lab experiment.

Set up a practical length of RG-8 line terminated with a good 50 Ohm resistor at one end and a variable frequency generator, which can go down to extremely low frequencies, say down to mHz or so at the other end... At the generator end between the generator connector and the end of the RG-8 simply connect an "in line" reflectometer which has response all the way down to DC.

Then sweep the generator from some higher frequency of your chosing, say 1 MHz or so, while observing and recording the reflected volts or VSWR at each frequency as you vary the frequency downwards towards zero frequency..

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I am sure that you will find that the VSWR doesn't change as you come as close to DC as you like, ergo... the Zo remains constant as well as you go as low as you like.

Wanna use math or do the experiment?

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message
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> square root of L/C.
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> For steady-state d-c, the L and C are inconsequential, so Zo = square
> root of R/G.
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>
> At low frequencies, when R is comparable with inductive reactance and G
> is comparable with capacitive reactance, Zo varies with frequency unless
> R/omega L = G/omega C. Then, the Zo with the stated equality will be a
> pure resistance equal to the square root of L/C. This condition is
> called a "distortionless line". Distortionless lines are important for
> audio long lines.
>
> So, it`s possible to have a constant Zo down to a very low frequency if
> R/L = G/C.
>
> But, steady-state d-c doesn`t make waves!
>
> Best regards, Richard Harrison, KB5WZI
>

[end paste]

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b0af659.842223022@news.seanet.com...
> On Wed, 16 May 2001 22:42:28 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> >DC Zo is the same as AC Zo, why would it be any different?
>
> Hi Peter,
>
> I see you are still surprised - forgotten the formula so soon?
>
> 73's
> Richard Clark, KB7QHC

4408. Re: Radials question for my H9 Butternut

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 00:33:39 UTC
From: "Rudy Marcelletti, K8SWD" <rudym@net-link.net>
Message-ID: <3b086116$0$88181$bbae4d71@news.net-link.net>
Source record: 162556

Pete: You are off to a real good start. Most of the benefit from the radials comes in the first 25 feet or so. The more the better. Many short ones are better than a few long ones. I would recomend a larger gauge cable, like 6 or 8 gauge between your ground rod and the antenna and bond between your radials and ground rod is solid. You can use a small bus bar for this. Spray connections with Krylon when done. Don't bury the radial very far--an inch is plenty. Best to just mow your grass supper short and staple them down with bent pieces of coat hanger. In a month they will disappear. After your radials are set in place and all is properly hooked up the way you want for operation--tune your antenna.

Pete <pete@etep.com> wrote in message
news:T6YN6.15264$Ji.311261@news1.rdc1.il.home.com...
> Thanks for all your help I've gotten you all in the past. I just
installed
> my H9 vertical with a Gap tilt-over ground mount bracket so I can hide my
> antenna when not in use. I drove an 8 foot ground rod next to the antenna
> bracket. I then used #10 ground wire from the rod to the bracket and then
> connected it to the vertical antenna.
> I then placed 14 radial (#12 gauge) wires 20 to 25 feet long in all
> directions from the ground rod and tied them all together and connected
them
> to the ground rod. The wires have plastic insulation on them. I plan on
> burying them soon. The question I have is did I do all of the above
> correctly, and is 14 radials enough? I am anxious to get the vertical
> adjusted and tuned up. I really don't have much more room for many more
> radials. I welcome constructive criticism and all your suggestions. Thanks
> 73's Pete WD9ALM
>
>

4409. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 00:50:40 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <4ipggtgfbjj57nfn499h3lrjdfktkoj3ti@4ax.com>
Source record: 162557

On Sun, 20 May 2001 20:19:02 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>I'm in the mood to make money now...
>

Hi Peter,

try rec.radio.gambler.antenna

73's
Richard Clark, KB7QHC

4410. Re: Radials question for my H9 Butternut

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 01:10:30 UTC
From: "Bob M." <kcxxxxxx@snet.net>
Message-ID: <yVZN6.6081$3x.2882155@typhoon.snet.net>
Source record: 162559

Sounds like you did it about the same way I did, except I didn't use any special mounting bracket - just drove a 4 foot piece of 1 inch iron pipe into the ground about 3 feet and u-bolted the antenna to it. Ran 12 radials across the yard from edge to edge, cut them all in the middle, and used a hose clamp to connect them to the base section of the antenna. Also drove an 8 foot ground rod and connected that to the same point. The longer the radials, the better your lower bands will work. They don't all have to be the same length, so if you can sneak some along side the house, or bend them a little to get more length, that will help.

One thing I didn't do (I missed it in the manual) was mount the antenna as low as they told me to - feed point 7 inches above ground. Mine is more like 12-14 inches, and I find that certain bands just won't tune properly. I'm about to write a letter to Bencher to find out if I built it wrong or if that 7 inch height is critical. On the bands that worked fine, I'm getting good results on an MFJ269 antenna analyzer.

Hope yours works better than mine did. Let me know. Bob WA1MIK

--
Anti-Spam feature: DO NOT HIT REPLY !
Address all replies to: k c single at snet dot net
by removing the spaces and inserting the
correct punctuation for a standard address.

==========

Pete <pete@etep.com> wrote in message
news:T6YN6.15264$Ji.311261@news1.rdc1.il.home.com...
> Thanks for all your help I've gotten you all in the past. I just
installed
> my H9 vertical with a Gap tilt-over ground mount bracket so I can hide my
> antenna when not in use. I drove an 8 foot ground rod next to the antenna
> bracket. I then used #10 ground wire from the rod to the bracket and then
> connected it to the vertical antenna.
> I then placed 14 radial (#12 gauge) wires 20 to 25 feet long in all
> directions from the ground rod and tied them all together and connected
them
> to the ground rod. The wires have plastic insulation on them. I plan on
> burying them soon. The question I have is did I do all of the above
> correctly, and is 14 radials enough? I am anxious to get the vertical
> adjusted and tuned up. I really don't have much more room for many more
> radials. I welcome constructive criticism and all your suggestions. Thanks
> 73's Pete WD9ALM
>
>

4411. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 01:34:32 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e9raa$811$1@slb7.atl.mindspring.net>
Source record: 162560

Richard:

Heh, heh...

Bluffer!

You've been called!

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:4ipggtgfbjj57nfn499h3lrjdfktkoj3ti@4ax.com...
> On Sun, 20 May 2001 20:19:02 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >I'm in the mood to make money now...
> >
>
> Hi Peter,
>
> try rec.radio.gambler.antenna
>
> 73's
> Richard Clark, KB7QHC

4412. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 01:35:18 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e9rbo$66i$1@slb2.atl.mindspring.net>
Source record: 162561

"Roger Sparks" <sparksrc@home.com> wrote in message
news:JmRM6.19296$p33.346229@news1.sttls1.wa.home.com...
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3B03CB24.EEA5AEA4@IEEE.org...
> > Roger Sparks wrote:
> > > Find it by Zo = 1/cC where Zo is the line impedance, c is the speed of
> light
> > > (meters per second), and C is the capacity in Farads.
> >
> > Speed of light and capacitance don't matter at DC steady-state.
>
> Good Morning Cecil,
>
> Right, of no consequence in the steady state. Matters when you open the
> switch!
>
> I have really enjoyed these mind games, problems, theory, and different
> perspectives of the same problem. It is very educational and I am
learning
> a great amount, and getting a much better understanding about
> electromagnetics.
>
> The power of the Internet to bring together talented people, experienced
> people, practical people, mathematically capable people, dreamers, and
> others is very impressive. I can see that weak theory, misconceptions,
and
> errors will be rapidly discovered and corrected when tested in the
Internet
> laboratory.
>
> 73, Roger, W7WKB
>
>

4413. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 01:36:34 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e9rf5mhv1@slb4.atl.mindspring.net>
Source record: 162562

Roger:

The "Internet Laboratory", I love it!

The ancient Romans used the same techniques at the Forum. The protagonists were called "gladiators".

And the "lurkers" were called the "Mob".

Heh, heh...

-Peter K1PO

"Roger Sparks" <sparksrc@home.com> wrote in message news:JmRM6.19296$p33.346229@news1.sttls1.wa.home.com...
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3B03CB24.EEA5AEA4@IEEE.org...
> > Roger Sparks wrote:
> > > Find it by Zo = 1/cC where Zo is the line impedance, c is the speed of
> light
> > > (meters per second), and C is the capacity in Farads.
> >
> > Speed of light and capacitance don't matter at DC steady-state.
>
> Good Morning Cecil,
>
> Right, of no consequence in the steady state. Matters when you open the
> switch!
>
> I have really enjoyed these mind games, problems, theory, and different
> perspectives of the same problem. It is very educational and I am
learning
> a great amount, and getting a much better understanding about
> electromagnetics.
>
> The power of the Internet to bring together talented people, experienced
> people, practical people, mathematically capable people, dreamers, and
> others is very impressive. I can see that weak theory, misconceptions,
and
> errors will be rapidly discovered and corrected when tested in the
Internet
> laboratory.
>
> 73, Roger, W7WKB
>

>

4414. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 01:42:42 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e9rpm$nd3$1@nntp9.atl.mindspring.net>
Source record: 162563

Richard:

But...the voltage developed by a current as it passes through and impedance depends not only on the value of the current but also on the value of the impedance.

As one decends into the conductor, the "average impedance" of each skin layer is higher than the average impedance of the skin layer above it.

The current flowing in skin layer N is undoubtedly smaller than the current in skin layer 1, however the impedance of skin layer N is very much larger than the impedance at skin layer 1.

By how much does the impedance of skin layer N differ from the impedance of skin layer 1?

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:7162-3B03E00B-58@storefull-118.iap.bryant.webtv.net...
> Cecil, W6RCA wrote:
> "He (Walter C. Johnson) assumes the wall thikness is equal to the
> nominal depth of penetration."
>
> Skin depth for a conductor is defined as the thickness in meters where
> the current has dropped to 1/e or 36.8% of the value on the surface of
> the conductor.
>
> For copper, skin thickness is about 2.6/square-root of Hz for a result
> in inches. At one Hz, the skin depth is 2.6 inches. At 10 MHz, the skin
> thikness is 0.000826 inches, or less than one thousandth of an inch.
>
> If Johnson uses one skin-depth as his shield thickness, that would be
> 0.826 thousandths of an inch at 10 MHz. An AWG 30 wire is 10 thousandths
> of an inch in diameter.
>
> In an earlier post Bill sabin wrote: "In a coax, at any location, there
> is no voltge difference between the inside of the braid and the outside
> of the braid."
>
> We know that at r-f, a braid performs nearly the same as a solid shield.
> Wires weaving between sides don`t carry the r-f with them as they weave
> between sides. Skin effect requires the current to remain on the same
> side of the braid.
>
> But suppose we had tissue thin shielding on our coax. Say it was one

> skin depth thick. Only 36.8% of the current on one side would reach the
> other. If in the unlikely event that impedances were equal on both sides
> of the shield, 36.8% of the current would not produce 100% of the
> voltage appearing on the originating side.
>
> Certainly, the statement that "there is no voltage difference between
> the inside of the braid and the outside of the braid" is very unlikely.
>
> Experience tells us that a coax shield when properly connected is very
> effective in keeping r-f in or out, where it ought to be.
>
> Best regards, Richard Harrison, KB5WZI
>

4415. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 01:54:44 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3B087564.23B48F1C@hiwaay.net>
Source record: 162564

Peter- I beg to differ- I went back and read his query, in the original form- He did not say "capable", he said:

> Given: Two and only two fixed, constant sources of power, each delivering
> 100 watts, no more and no less.
>
> Question: What is the absolute maximum amount of power that can be obtained
> by combining those two fixed, constant sources of power?
>

Whatever the internal characteristics- he said "delivering",and he said "constant" (not how he does it) and only asked for the "absolute maximum"-
I think it is answerable, as stated.-- Please try, for my edification.

Bill-W4BSG

"Peter O. Brackett" wrote:
>
> Cecil:
>
> Just got back in the door from Dayton, I was there for Saturday.
>
> In theory the answer to the problem you have stated is not listed among the
> four choices. Since the answer could potentially be infinite power
> depending upon information that you must yet provide to the problem solving
> "student".
>
> This problem is actually indeterminate until we know what the internal
> impedances of the sources are, i.e. "looking back" into the sources what
> impedance do we see?
>
> Until we know the source impedances, the answer to your problem is
> "problematic".
>
> Since a voltage or current source will deliver any amount of power required
> by an arbitrary load placed across the source.
>
> You may ask such a question, but the respondents must tell you that your
> question is ill-posed since there is no such thing as a "power source".
> There are only voltage and/or current sources with an associated internal
> impedance, which may or may not be linear impedances.
>
> Please...
>

> Give us more!
>
> -Peter K1PO
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3B05B016.924412CC@IEEE.org...
> > Given: Two and only two fixed, constant sources of power, each delivering
> > 100 watts, no more and no less.
> >
> > Question: What is the absolute maximum amount of power that can be
> obtained
> > by combining those two fixed, constant sources of power?
> >
> > A. 100w
> >
> > B. 200w
> >
> > C. 300w
> >
> > D. 400w
> >
> > If each source will put out 70.7v and 1.414a in a 50 ohm environment, what
> > is the maximum in-phase voltage and current that can be produced by the
> sum
> > of those two fixed, constant sources of power in a 50 ohm environment?
> >
> > A. 100v and 2a
> >
> > B. 141.4v and 2.828a
> >
> > C. Other, ______v and ______a
> > --
> > http://www.mindspring.com/~w6rca
> >
> >
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4416. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 02:19:24 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e9tv0$9at$1@slb5.atl.mindspring.net>
Source record: 162565

Cecil:

Again... There is no such thing as a "power source". One has voltage or current sources, usually with a specified internal impedance. You didn't specify the internal impedances of the "power sources"...

I do agree with your statements concerning the "loaded" output parameters of the "power sources". For...

If each source is delivering 100 watts into a 50 Ohm resistive load, then the voltage across the 50 Ohm load is determined from:

V = sqrt(P*R) = sqrt(100 * 50) = sqrt(5000) = 70.7 Volts.

Similarily, the current supplied to the 50 Ohm load can be determined from:

I = P/V = 100/70.7 = 1.414 Amps.

This tells us the voltage and current put out by the mysterious "power sources" when individually loaded by 50 Ohm resistors.

But it tells us nothing of their internal impedances and we need the values of their internal impedances to determine how they will "combine" in series or in parallel...

You must tell us their internal impedances, or equivalently tell us their open cirucuit voltages and short circuitl currents.

Otherwise... your problem is "ill-posed" and meaningless.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3B05B016.924412CC@IEEE.org...
> Given: Two and only two fixed, constant sources of power, each delivering
> 100 watts, no more and no less.
>
> Question: What is the absolute maximum amount of power that can be obtained
> by combining those two fixed, constant sources of power?
>
> A. 100w
>
> B. 200w
>
> C. 300w
>
> D. 400w

>
> If each source will put out 70.7v and 1.414a in a 50 ohm environment, what
> is the maximum in-phase voltage and current that can be produced by the
sum
> of those two fixed, constant sources of power in a 50 ohm environment?
>
> A. 100v and 2a
>
> B. 141.4v and 2.828a
>
> C. Other, ______v and ______a
> --
> http://www.mindspring.com/~w6rca
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4417. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 02:22:59 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e9u67$1sf$1@slb4.atl.mindspring.net>
Source record: 162566

Roger:

Then why are some coaxial cables more "leaky" than others?

What happens to a perfectly shielded coaxial cable, i.e one wherein there
are no currents on the outside of the shield due to currents on the insice,
when rows of "holes" are punctured at regular intervals along the cable?

Why is braid coverage important?

Why do coaxial cable manufacturers rate their cables according to shielding
effectiveness?

Etc...

-Peter K1PO

"Roger Sparks" <sparksrc@home.com> wrote in message
news:SeTM6.19733$p33.353932@news1.sttls1.wa.home.com...
> Richard Harrison, KB5WZI , wrote
> (snip some)
> We know that at r-f, a braid performs nearly the same as a solid shield.
> Wires weaving between sides don`t carry the r-f with them as they weave
> between sides. Skin effect requires the current to remain on the same
> side of the braid.
> (snipe more)
> Certainly, the statement that "there is no voltage difference between
> the inside of the braid and the outside of the braid" is very unlikely.
>
> (snip more)
>
> Good Morning Richard,
>
> I think it is good that you are keeping this question alive. You will
> notice that I started a new thread, which I did because I think the topic
> will receive a better review if it becomes the principal subject.
>
> Just to keep the discussion focused, I am thinking about the fold-around
> current on the braid that is illustrated in the ARRL Antenna Book. This
is
> represented as being a second current path which drains power from the
> antenna. If it drains power, then it must have measurable voltage and
> current. The Antenna Book teaches that this current (it does not talk
about
> voltage) is kept separate from the inner side by skin effect.
>

> I think two physical laws actually interplay here. The first is how
current
> would flow in braid considering that the wires are not running parallel to
> the current, and further, that the wires overlap, one on top of the other,
> and then reverse.
>
> The second is how current, that is electrical charges, are distributed in
a
> round wire when the distribution is not neutral, or zero energy situation.
>
> To deal with the physical configuration first, we need to carefully look
at
> how the braid is laid together. I notice that the braid on RG-8 is
> configured so that no wires run parallel to the center wire. In addition,
a
> wire will run on the inside surface for about 1/4 inch, then will rise and
> run on top of another group of wires for about 1/4 inch thereby becoming
the
> outside wire for about 1/4 inch. Because of this interweave, a current
> running on the inside would have to change wires every 1/4 inch to remain
on
> the inside. Any outside current would also have to change wires every 1/4
> inch to remain of the outside.
>
> The point of contact is on the top and bottom of each wire, and currents
on
> the top or bottom (inside or outside of the coax) would have to go through
> these contact points (the identical points) in their path to remain on the
> top or bottom. Separation would be impossible.
>
> The second law of physics to consider is the distribution of charges in a
> round conductor. A current is defined as a movement of charges and we
> usually think of this as negative charges moving away from positive
charges
> (which remain fixed). The negative charges are moving as a group which
> results in a concentration of negative charges in a volume. Because
> negative charges repel, they will expand in volume to cover the entire
> surface of the conductor. If a nearby surface (such as the inside
conductor
> in a coax line) has negative charges, then the distribution will shift
> toward that surface, but will not occupy only the bottom half of the wire
> for instance, because the concentration of charges in half a wire would be
a
> higher energy situation than would a concentration around the entire wire
> surface.
>
> This argument disappears for any separate outside current because it would
> not be balance by inside charges on the center conductor. Instead, a
> negative charge on the outside surface would (by capacitive action) repel
> negative charges on the inside conductor, and would therefore induce a

> current on the inner (center) conductor. In this way, any outer current
> would influence both the inside of the outer conductor and the center
> conductor of a coax line.
>
> I understood Kevin, w9cf, to say in an earlier posting that capacitive
flux
> (the voltage field) moves through a conductor at the same speed as through
a
> dielectric and does not diminish with depth. This is contrasted to the
> magnetic field which does diminish with depth of penetration into the
> conductor (skin effect).
>
> If you disagree with this analysis, please divide the rebuttal into two
> parts:
> 1) how the current can pass through identical points and not mix.
> 2)how the charge distribution can remain concentrated on only one side of
> round wires.
>
> 73, Roger, W7WKB
>
>

4418. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 02:44:20 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9e9vd7$5hv$1@slb6.atl.mindspring.net>
Source record: 162567

Kevin:

Regarding your statement below...

I beg to differ...

[snip]
> A standard circuit theory model of this transmission line is an infinite
> pi network consisting of a set of series inductors with capacitors to
> ground. The voltage across the capacitors is the V(z,t). What this circuit
> theory model has done is to take a point on the outer conductor to be
> ground. The integration paths for the voltage are then along the outer
> conductor to the point z (which gives zero) and then radially inward to
> the point z on the inner conductor (which gives the voltage V(z,t) defined
> above) . The circuit theory model then says the voltage difference between
> 73 Kevin w9cf
[snip]

Well, I would disagree with your "standard" circuit theory model of a
transmission line.

It is not an infinite pi network. A pi network is intrinsicly unbalanced.

To be a true circuit theory model of a transmission line, the model has to
consist of an infinite H network,
with the H's laying on their sides so to speak.

i.e. if the primary parameters per unit length are RLC and G, then a
comprehensive or correct circuit model consists of elementary or
differential sections comprised of values as follows:

R/4.... L/4........L/4....R/4
CG
R/4....L/4........L/4....R/4

i.e. a "shunt section of C and G in the "middle" of four "legs" each
containing elementary values of R/4 and L/4 in series.

Then, in an obvious way, one can define "voltages", across elementary
elements without reference to any "common" ground. And the paths for the
"line integrals" necessary for evaluating the voltages are then clear and
unambiguous.

This avoids the problems that you allude to with circuit models...

In fact if the unit length impedances are not symmetric, which they may not
be for coaxial cable for instance then one can apportion them in uints other
than 1/4ths to the end arms.

Using such models, togther with a "common" ground, located say at the "Restaurant at the End of the Universe", one may also completely model both differential and common modes phenomena as closely as one wishes.

And without direct recourse to Maxwell's equations in either differential or integral form.

In fact this is how a numerical analysts build integration engines suitable for "integrating" those celebrated partial differential equations of Maxwell's to determine practical solutions to those equations. It's called numerical integration, or finite element analysis, or method of moments, or whatever... it requires accurate modeling at the differential level. After all that is how the equations were/are developed in the first place!

The problems that you allude to arise only from the inability of analytical field theorists to build satisfactory circuit models.

Not from the inadequacy of circuit models...

Zeno would surely be scoffing at our inadequacies!

Best Regards,

-Peter K1PO

4419. Re: short 2 meter antenna??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 03:42:48 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <LowIOzJy+XOEZNUuTRjDBbqpghvG@4ax.com>
Source record: 162568

"Matt" <matt_patt123@yahoo.com> wrote:

>I was wondering if anyone has any suggestions on what antenna I could use on
>my 2 meter mobile rig with about a foot of clearance with the top of the cab
>of my truck and the garage. I am not wanting it to hit the garage if
>possible. I've been looking and can't seem to find anything close to what
>I am looking for. I am also wondering if anyone has or is using the
>motorized antenna mounts that raise and lower the antenna and if so, where
>did you buy it from? I have been looking at these as a possible solution to
>my problem but the only ones I can find are either trunk mount or rack
>mount. Non of which will work on a truck. Any advice would be appreciated.
>
>
>Thanks
>Matt
>

I thumbed through my AES catalog, and it looks like Diamond, Comet and Larson
all make shortie 2-meter mobile antennas, less than a foot tall. I'd just call
AES, HRO or whomever and see what they have in stock.

Another possibility might be an HT antenna.

Bob
k5qwg

4420. Re: short 2 meter antenna??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 03:46:20 UTC
From: N3VST <not@chance.com>
Message-ID: <3b0O6.1273$ce.2525717@newsrump.sjc.telocity.net>
Source record: 162469

Try the MFJ shorty, it is about 12 inches, dual band, and claims 3Db gain on 2 meters. I have heard them in use and they sound good for how short they are.

73 de n3vst
"Matt" <matt_patt123@yahoo.com> wrote in message news:9e9m3t02ce5@enews4.newsguy.com...
> I was wondering if anyone has any suggestions on what antenna I could use on
> my 2 meter mobile rig with about a foot of clearance with the top of the cab
> of my truck and the garage. I am not wanting it to hit the garage if
> possible. I've been looking and can't seem to find anything close to what
> I am looking for. I am also wondering if anyone has or is using the
> motorized antenna mounts that raise and lower the antenna and if so, where
> did you buy it from? I have been looking at these as a possible solution to
> my problem but the only ones I can find are either trunk mount or rack
> mount. Non of which will work on a truck. Any advice would be appreciated.
>
>
> Thanks
> Matt
>
>

4421. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 03:52:40 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B089108.8A39CB8F@IEEE.org>
Source record: 162470

"Peter O. Brackett" wrote:
> Since a voltage or current source will deliver any amount of power required
> by an arbitrary load placed across the source.

But, Peter, those things are fictional. ;-)

> You may ask such a question, but the respondents must tell you that your
> question is ill-posed since there is no such thing as a "power source".

My IC-706 certainly seems to be a power source. It refuses to put out
more than 100 watts. I sure would like to see your circuit that gets
an infinite amount of power out of two IC-706s.
--
http://www.mindspring.com/~w6rca

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4422. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 03:56:34 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0891F2.82B9BEC1@IEEE.org>
Source record: 162471

"Peter O. Brackett" wrote:
> Again... There is no such thing as a "power source".

My IC-706 is not a source of power???? Are all my QSOs fictional?

> You must tell us their internal impedances, or equivalently tell us their
> open cirucuit voltages and short circuitl currents.

What is the internal impedance of energy that is being reflected?
--
http://www.mindspring.com/~w6rca

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4423. Re: short 2 meter antenna??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 03:57:16 UTC
From: Martin Hibbs <mhibbs@ipeg.com>
Message-ID: <3B08921C.F40040B7@ipeg.com>
Source record: 162472

Matt wrote:

> I was wondering if anyone has any suggestions on what antenna I could use on
> my 2 meter mobile rig with about a foot of clearance with the top of the cab
> of my truck and the garage. I am not wanting it to hit the garage if
> possible. I've been looking and can't seem to find anything close to what
> I am looking for. I am also wondering if anyone has or is using the
> motorized antenna mounts that raise and lower the antenna and if so, where
> did you buy it from? I have been looking at these as a possible solution to
> my problem but the only ones I can find are either trunk mount or rack
> mount. Non of which will work on a truck. Any advice would be appreciated.
>
> Thanks
> Matt

Matt,

Two possibilities come to mind. Either one of the 1/4 wave OEM style (thin, flexible radiating element) antennas on an NMO mount if you can stand the antenna contacting the door opening or a hand-held rubber duck on either an NMO mount (adaptor needed) or a rain gutter clamp which should clear a door opening. If you have a low ceiling rather than just a low opening both should work but the 1/4 wave OEM will scrape. Depends on what you are willing to put up with. I don't worry over much about scraping antennas so my choice would be the OEM antenna. If you use a rubber duck you may find that it doesn't like high power (more than 10 watts or so) and will heat at higher power levels. Something to consider. Price is also a consideration. The OEM 1/4 wave will be a good bit cheaper than the rubber duck/adaptor combination as the adaptors tend to be on the pricey side. All in all, I consider the 1/4 wave OEM to be the better choice.

Marty
N7MX

4424. Re: short 2 meter antenna??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 04:01:37 UTC
From: #hmkarse#@earthlink.net
Message-ID: <qe4hgt4krh2nqu5c4bbpcnjc43b2o3hvuf@4ax.com>
Source record: 162473

Matt,
Don't know of anything under a foot, about the best you could do is a
1/4 wave and that is about 20 inches with the mount. One method I
have seen used by others in your situation is a trunk mount installed
on the hood of the truck. Just keep it as far from the windshield as
possible and use low power due to RF exposure concerns.

Good luck,
Howard KE6MAK
On Sun, 20 May 2001 19:15:57 -0500, "Matt" <matt_patt123@yahoo.com>
wrote:

>I was wondering if anyone has any suggestions on what antenna I could use on
>my 2 meter mobile rig with about a foot of clearance with the top of the cab
>of my truck and the garage. I am not wanting it to hit the garage if
>possible. I've been looking and can't seem to find anything close to what
>I am looking for. I am also wondering if anyone has or is using the
>motorized antenna mounts that raise and lower the antenna and if so, where
>did you buy it from? I have been looking at these as a possible solution to
>my problem but the only ones I can find are either trunk mount or rack
>mount. Non of which will work on a truck. Any advice would be appreciated.
>
>
>Thanks
>Matt
>

4425. Antenna Height-VS-Take Off Angle

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 04:40:43 UTC
From: dinod@deltanet.com
Message-ID: <f%0O6.13754$Ce6.7341994@news2.rdc2.tx.home.com>
Source record: 162474

I understand that the heigth of the antenna will change the take off angle based on the frequency...KINDA. I would like to get a basic explination of how this works.

I would also like a recommendation for the best height of a 10-30 log mounted on a fixed Rohn 25 tower. My guess would be 60' minimum (1-full wavelength at 20 meters).

Thank You!!!

Dino

4426. Re: RADIO HOST NEEDS A BEATING

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 05:39:44 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9ea9n0$8dq$0@208.207.71.141>
Source record: 162475
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital

tpcjgxoq@privacy.net wrote:
>
> I do not understand why the United States
> permits web sites like
> http://www.halturnershow.com to exist.
>
> The site calls African-Americans
> "savage negro beasts." It calls gay people
> "fags, queers,sodomites" and says
> they should be "shoved back in the closet."
>
> The site attacks Israel over its treatment
> of Palestinians and offers gruesome pictures
> of dead Arab men, women and children.
>
> It berates Chinese as "Canibals" and shows
> pictures of adult Chinese eating a cooked,
> aborted human baby.
>
> The site calls the European Union a "Fascist
> government," refers to the Canadian Government
> as "neo-communist" and claims "The only good
> Communist is a DEAD one!"
>
> Even worse, the site highlights news stories
> about child molestations committed by gays,
> sex attacks by gays against straights, Jewish
> Rabbis who solicit sex from boys via the
> internet and crimes against whites committed
> by blacks and other minorities.
>
> Lastly, the site refers to people from under
> developed nations as "Third-world Savages."
>
> Please show your diversity, tolerance and
> sensitivity for all people: BOYCOTT
> that web site

Gee. You just blessed that dastardly website with some valuable
advertising. Most of us never before heard of it.

4427. Homebuilt 70cm directional antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 08:36:04 UTC
From: Markus B&#65533;rtschi <markus@markus.org>
Message-ID: <MPG.1572f1e03690a7de9896cd@localhost>
Source record: 162476

I'm looking good indications for building a 433 Mhz directional antenna
for RDF purposes. Can you point me to good sources of information on how
to build a good Yagi, Quad or other antenna design ?

73 Markus / HB9VCD

--
Markus Baertschi
Rue de la Gare 7b
CH-1163, Etoy, Switzerland
markus@markus.org

4428. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 10:30:47 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B08EE57.F44DF76D@berkshire.net>
Source record: 162477

yes, i did look at your phasor diagram. it made no sense without knowing what is in 'x' as you call it below. and i can't take the time to wade through the probably hundreds of postings to this thread to figure out just what you started with and what it has transformed to. i just want a reference that i can look at the specific circuit and make my own analysis from scratch to see what you are beating each other up about.

W6RCecilA wrote:
>
> David Robbins wrote:
> > how about you both get back to the real basics. draw the whole circuit from
> > source to load, label all components in the 'matching circuit'(no black boxes
> > with magical characteristics please).
>
> Are you saying that all the boundary conditions should be reproduced with
> every posting? I don't think that is feasible. Did you take a look at my
> phasor diagram at: http://people.delphi.com/cecilmoore/z0match.gif
>
> That corresponds to the lossless example we've been using for days.
>
> 100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load
> --
> http://www.mindspring.com/~w6rca
>
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--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4429. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 12:44:02 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eb2hk$k5a$1@slb1.atl.mindspring.net>
Source record: 162478

Cecil:

You ask... What is the internal impedance of energy that is being reflected?

Heh, heh... Cecil my friend, I believe you are now onto something...

Stay with that thought and follow it through to completion...

BTW... while I was at Dayton on Saturday, I went round to the PalStar booth. Since someone here on the NG had asked about their new high power ATU and why it had a fan.

PalStar had one unbuttoned at their booth. It looked rugged enough, big hunky condensers, errr... capacitors and a nice edge wound rotary inductor, looked about the same quality, and heft of an ATR-30, the balun looked a little skimpy though.

But sure enought there it was... a fan!

The fan was on the right rear just above the balun. It has an ON/OFF switch on the rear panel. So you can reach around and turn the fan on or off.

I asked one of the PalStar guys manning the booth what the fan was for.

He just said matter of factly, "to cool the balun".

What think?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0891F2.82B9BEC1@IEEE.org...
> "Peter O. Brackett" wrote:
> > Again... There is no such thing as a "power source".
>
> My IC-706 is not a source of power???? Are all my QSOs fictional?
>
> > You must tell us their internal impedances, or equivalently tell us
their
> > open cirucuit voltages and short circuitl currents.
>
> What is the internal impedance of energy that is being reflected?
> --
> http://www.mindspring.com/~w6rca
>
>
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4430. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 12:55:14 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B091032.89723357@IEEE.org>
Source record: 162479

David Robbins wrote:
> yes, i did look at your phasor diagram. it made no sense without knowing what
> is in 'x' as you call it below.

> > 100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load

'x' is the connection point between the coax and the twinlead. It is the
Z0-match point.
--
http://www.mindspring.com/~w6rca

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4431. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 13:01:05 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B091191.5FA92BF2@IEEE.org>
Source record: 162480

"Peter O. Brackett" wrote:
> I asked one of the PalStar guys manning the booth what the fan was for.
> He just said matter of factly, "to cool the balun". What think?

Personally, IMO, if a balun needs cooling, it is either under-designed
or being abused by the user. My balun is always cool to the touch even
when I'm running 500w output.
--
http://www.mindspring.com/~w6rca

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4432. Re: RADIO HOST NEEDS A BEATING

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 13:04:12 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B09124C.177B972C@IEEE.org>
Source record: 162481
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital

Dick Carroll wrote:
>
> tpcjgxoq@privacy.net wrote:
> > Please show your diversity, tolerance and
> > sensitivity for all people: BOYCOTT that web site
>
> Gee. You just blessed that dastardly website with some valuable
> advertising. Most of us never before heard of it.

What better way to advertise?
--
http://www.mindspring.com/~w6rca

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4433. Re: short 2 meter antenna??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 13:13:21 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B091471.596E3337@IEEE.org>
Source record: 162482

Matt wrote:
> I was wondering if anyone has any suggestions on what antenna I could use on
> my 2 meter mobile rig with about a foot of clearance with the top of the cab
> of my truck and the garage. I am not wanting it to hit the garage if
> possible.

I use a mag-mount. If I forget to lay the antenna down, the
mag-mount simply turns loose and lays over on its side.
--
http://www.mindspring.com/~w6rca

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4434. Re: Antenna Height-VS-Take Off Angle

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 13:18:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0915AF.7BE6998A@IEEE.org>
Source record: 162483

Dino wrote:
> I understand that the heigth of the antenna will change the take off
> angle based on the frequency...KINDA. I would like to get a basic
> explination of how this works.

Get a free demo copy of EZNEC from http://www.eznec.com and see for
yourself. A picture, even on your display screen, is still worth a
thousand words.
--
http://www.mindspring.com/~w6rca

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4435. Re: Downloadable IOTA List - updated 17-May-01

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 13:22:00 UTC
From: Jim Rodenkirch <rodenkir@spawar.navy.mil>
Message-ID: <9eb54ddf1@newpoisson.nosc.mil>
Source record: 162484

I attempted to access your site this A.M. but no joy; suspect some
router/server problems somewhere(s) along the line.

However, several months ago I looked at your I.O.T.A. list and found it to
be the usual, e.g., NA-110 - W4 South Carolina group, or something like
that. What would be neat would be the listing of the islands that make up
the group, along with those islands that are on the short list for removal
or have been removed from that listing. Unfortunately, I suspect that gets
into looking alot like the RSGB's listings that they sell for lots of money
as their IOTA book that one can buys. So, no real detail listing (good for
IOTA and US Island award kinds of stuff) without incurring the wrath of the
"bloody Pommies," 'eh?

Regards, Jim R.

"Charles Johnston" <ctj92@earthlink.net> wrote in message
news:e1VM6.11710$Az.1089769@newsread2.prod.itd.earthlink.net...
> The downloadable IOTA list has been updated as of 17-May-2001 18:46 UTC
>
> Found on The IOTA List page of the site listed below. 15k zip file
> (ascii text format readable with Notepad)
>
> * also includes Top 10 Most Wanted IOTA's for each continent.
>
> --
>
> Charles Johnston
> charles@ab7sl.com
>
> AB7SL - Ham Radio Pages
> http://www.ab7sl.com
>
>
>
>
>
>
>

4436. Re: Experience magnetic loop antenna (MFJ)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 13:30:50 UTC
From: ignacy@num.ads.uga.edu
Message-ID: <3b091a31$2$vtanpl$mr2ice@news.uga.edu>
Source record: 162485
Cross-posted to: alt.ham-radio.hf,rec.radio.amateur.antenna,rec.radio.amateur.dx

My magnetic loops worked well in places without obstructions (open air, wooden house), but poorly when close to metal structures or bricks.
Ignacy, NO9E

4437. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 13:36:44 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B0919EC.247F54FA@berkshire.net>
Source record: 162490

you know, i realized that just after i sent the last message. since the 150 ohm line is 1/2 wavelength the 50 ohm load impedance is repeated at the junction.

but i still don't understand your phasor diagram. why is .471a reflected from the load from the .707a going to it? the reflection coef at the load should be -.5 so i would expect half the current to come back giving .3535a or only 18.7w of return power from the initial wave. you seem to have calculated the proper reflection coef for the returning first reflection at the junction where 1/2 of the .471a is reflected back toward the load, the effect at the load should be exactly the same since it is an identical 50 to 150 ohm transition.

also, what are you assuming happens at the source to the 25w of reflected power from the first wave to reach the junction? as it appears you are ignoring it then the source must have a 50 ohm resistive impedance so it is not rereflected. this will result in the source seeing a different load impedance during the turn on transient so it would be necessary to specify the length of the line back to the source so the reduced power output can be calculated and its delay traveling back to the junction can be added into the equation. also, what about the rereflection of the current coming back from the junction when it gets back to the load, and the rerereflection of that when it gets back to the junction, etc, etc, etc... if you are going to analyze reflections you end up with several infinite series that converge toward the steady state values, only looking at the first reflection at some points and only the second reflection at others leaves other terms that you aren't taking into account.

and if you are trying to do a steady state analysis why are you bothering with all those reflections and rereflections? in a true steady state analysis it isn't necessary, and as you have seen, even confusing to look at individual reflections of the turn on transients.

to do a real steady state analysis it is necessary to also define the source impedance. now if i assume the source impedance is 50 ohms, and that the source is delivering 100w into the 50ohm load that it sees in steady state, I can do the following very simple steady state analysis:

looking into the 150 ohm line at the junction the load is 50ohms transformed along 1/2 wave of 150 ohm line which represents a 50 ohm resistive load at that junction. this makes the steady state analysis trivial since all impedances are purely resistive.

in the 50 ohm coax the current is 1.414a, the voltage is 70.71v at zero degrees giving 100w.

in the 150 ohm line the voltage and current and the phase between them are all a function of distance along the line. if you want to know them at each point that can be calculated from well published transmission line equations or using

a smith chart if you are so inclined. but at each end the current is 1.414a and the voltage is 70.71v, in phase, resulting in 100w being delivered into the line at the junction and 100w being delivered to the 50 ohm load.

as an example in the 150 ohm line lets look at the middle of the line. in the 150 ohm line the vswr is 50/150 or .3333... in the middle of the line that results in a voltage max of 70.71*3 and a current min of 1.414/3 giving a power of (70.71*3)*(1.414/3)=100w since at that point they are again in phase. the effective resistance at that point is 450 ohms as expected for transforming a 50 ohm load 1/4 wavelength along a 150 ohm line.

therefore in the steady state everything adds up, voltages and currents are well defined at all points.

W6RCecilA wrote:
>
> David Robbins wrote:
> > yes, i did look at your phasor diagram. it made no sense without knowing what
> > is in 'x' as you call it below.
>
> > > 100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load
>
> 'x' is the connection point between the coax and the twinlead. It is the
> Z0-match point.
> --
> http://www.mindspring.com/~w6rca
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4438. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 14:28:08 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <YB9O6.33677$t12.2591695@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162487

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0816D3.DAD701F2@IEEE.org...
> VE9SRB wrote:
> > I am really uncertain as to what you claim I'm lying about.
>
> In a nutshell, after I had obtained the correct values for everything in
> your earlier non-Z0-matched example, you turned around and lied when you
said
> my methods do not work. Just what, besides the exact correct results, do
you
> require from "my method" (which I have used since the 1950s)?
>

Then its a matter of perspective, not lies.

From my perspective, until very recently, you have disagreed with my vector addition of voltage and current and the total power that results from such vector addition.

In the example where you correctly determined the power, it is my opinion that you used the correct vector addition of voltage to determine the rearward power in the 50 ohm line (destructive interference) and then switched methods (your energy math - I agree with the math BTW) to determine the forward power. You could have simply used vector addition with the two forward waves (constructive interference) to determine the resulting forward power.

Since you did not go into all of the details behind your calculations, i.e. how you first determined the correct rearward power in the 50 ohm line, I have no reason to change my opinion. If you demonstrate a method to determine the correct rearward and forward powers without using any phase information, I will change my opinion.

If vector addition of voltages works to determine the net power occurring from destructive interference in one direction, it works to determine the net power occurring from constructive interference in the other direction.

> > With 33.33 W of reflected power in the 150 ohm line, the forward power
in
> > the 150 ohm line can vary anywhere between 33.33 W and 133.33 W.
>
> Not if it's Z0-matched which is the example we have been talking about.
> Please stick to that example until we agree on it. I have noticed that
> you will give complicated example after complicated example in hopes of
> wearing your opponent down.
>

The point of switching examples is to demonstrate that the method of vector voltage and current addition always works for determining the rearward and forward powers.

The reason I do not like the Zo match example is because with a Zo match, we know the answer before we have to do any calculations. With a Zo match, we know that the total power delivered to the junction is equal to the forward power arriving at the junction. Its a bad example to discuss concepts with since we already know the answer before we start discussing the methods to determine the answer.

> Please take the example on my web page and ascertain exactly where we
> agree and where we disagree. It is my understanding that you and I agree
> on the voltage, current, and phase values, and disagree on where the power
> goes and how much power there really is.
>
> Again, the only disagreement I have with you is the violation of the
> conservation of energy principle embodied in your equations:
>
> 75w + 8.33w = 133.3w Ptot = P1 + P2 + 2 sqrt(P1) sqrt(P2)
>
> Ptot = 100w + 100w + 2*10*10 = 400w simply is FALSE
>

We are discussing the vector addition of two waves. If this vector addition works for you in determining the correct level of destructive interference, then it must also work in determining the correct level of constructive interference.

Do you agree that the forward voltage associated with a 100 W forward wave in a 50 ohm line is 70.7106 V?

Do you agree that a forward voltage of 70.7106 V added in phase with another forward voltage of 70.7106 V results in a total forward voltage of 141.421 V?

Do you agree that a 141.421 V forward wave has a total forward power of 400 W (141.421^2 / 50)?

This is the process of constructive interfence. No energy reversal concepts are required to explain this procees of net power increase.

> You simply cannot combine two scalar powers to get a result that is larger
> than the sum of the two original powers. That is clearly a violation of
the
> conservation of energy principle.
>

Why? Where does the law of conservation of energy state that two waves traveling in the same direction cannot combine to become a wave with a total power greater than the algebraic sum of the power in each wave?

The law of conservation of energy only requires that the total power flowing into the junction equal the total power flowing out of the junction. It

does not restrict the process of destructive and constructive interference. As long as these processes balance, the law of conservation of energy is satisfied.

Why does the law of conservation of energy not restrict the power gain of a dipole over a perfect ground plane to 3 dB? Because the constructive interference of 6 dB is balanced by a corresponding level of destructive interference.

The power addition formula above is explicitly derived from the vector addition of voltages. If
you agree that the forward voltages add as vectors, then the resulting equation for
forward power addition should be obvious.

> > It will be
> > 33.33 W when the steady state power delivered to the system is 0 W and it
> > will be 133.33 W when the steady state power delivered to the system is 100
> > W.
>
> Not if the system is Z0-matched which is the example we are arguing about.
> Please stick to a single example.
>
> > Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) Cos(theta), ...
>
> Here we go again. Steve, please produce a reference that says 100w is greater
> than 100w. That's exactly what you have in that equation. A power (P1) is greater
> than P1. You continue to try to violate the conservation of energy principle.
> There just cannot be more then 100 joules/sec in a 100 joules/sec wave. Assuming,
> of course, steady-state RMS values and continuous waves.
>
> Please take a look at my phasor diagram at:
>
> http://people.delphi.com/cecilmoore/z0match.gif
>
> I think we agree on all the voltages, all the currents, and all the phases.

Then you should understand the formula for power addition. I will forward you a section of a document discussing this in more detail.

> The only thing we disagree on is what happens to the 25w+25w associated with the
> destructive interference. I say destructive interference reverses the direction
> of the Poynting vector so that 50w involved in the destructive

interference joins
> the forward power on the 150 ohm line. As I understand it, you say that
50w
> continues on toward the source and is lost from the system. Yet that 50w
> is exactly what is needed to balance the energy equation. Why just throw
it
> away? The voltage is canceled to zero and the current is canceled to zero.
> That means there is no power in the reflections on the coax. We know that
> is true because we cannot measure any reflected power on the coax.
>
> Here's a summary of the powers appearing on my phasor diagram:
>
> 100w generated power with components of:
>
> 100*rho^2 = 25w reflected on the coax and canceled by destructive
interference
> thus reversing the Poynting vector and joining the
forward wave
> on the 150 ohm line
>
> 100(1-rho^2) = 75w not reflected and joins the forward wave on the
150 ohm line
>

Agreed.

The 75 W is the forward source wave in the 150 ohm line.

The 25 W is the reflected source wave in the 50 ohm line.

> 33.33w reflected power on the 150 ohm line
>
> 33.33*rho^2 = 8.33w re-reflected and joins the forward wave on the
150 ohm line
>

Agreed.

There is a re-reflected wave in the 150 ohm line.

> 33.33(1-rho^2) = 25w not re-reflected and canceled by destructive
interference
> thus joining the forward wave on the 150 ohm line
>

Destructive interference does occur such that the *net* power flow in the
rearward direction becomes zero. To balance the power relationships in this
example, there
must be a corresponding increase in the *net* power flow in the forward
direction. This increase in power flow does not occur through a "reversal"
of the Poynting vector. The power or energy involved in the destructive
interference does not "reverse direction" and "join" with the forward wave.
All that occurs in the forward direction is constructive interference. The

"net energy loss" occurring through destructive interference is balanced by a corresponding "net energy gain" occurring through constructive interference. The mechanism for both the destructive interference and the constructive interference is the vector combination of traveling waves.

> The complete power (energy) equation is:
>
> (75w + 25w) + (8.33w + 25w) = 133.33w or
>
> generated power + reflected power = forward power
>

In a somewhat different manner, you are simply rewriting the relationship that Pdelivered = Pforward - Preflected. Mathematically, your calculation works quite fine.

In any system (Zo match or otherwise), the forward power can always be determined from Pdelivered + Preflected. This does not mean that in any system the reflected power is totally re-reflected and then "joins" with the delivered power to become the total forward power. This is Walt Maxwell's virtual short circuit concept.

With your math, I agree that the total power flow into the junction must equal the total power flow out of the junction. Breaking the forward source wave into its two components and the reflected wave into its two components we balance the energy equation. Then we determine the level of destructive interference in the rearward direction and recognize that the net power flow out of the junction in the rearward decreases by 50 W. We know that there must be a corresponding increase in net power flow in the forward junction. Mathematically, it is correct that 75 W + 8.33 W + 50 W = 133.33 W. It is incorrect however, to conclude that a reversal of the Poynting vector occurs causing the 50 W to join with the 75 W and 8.33 W. All that happens in that the 75 W forward wave and the 8.33 W forward wave combine constructively to become a 133.33 W wave.

In the rearward direction, there are two 25 W waves. These waves are 180 degrees out of phase and the *net* wave in that direction is zero. Zero net current, zero net voltage, zero net power. That's it, no further physics are required here - destructive interference, nothing else. No reversal of Poynting vector required.

However, a balancing process must simultaneously occur since the total forward power arriving at the junction remains constant and the delivered power must increase appropriately.

In the forward direction, the balancing process that occurs to maintain the law of conservation of energy is constructive interference. In the same manner that the destructive interference in the rearward direction reduces *net* power flow by 50 W, the constructive interference in the forward direction must increase *net* power flow by 50 W. The constructive interference simply occurs through the vector combination of a 75 W wave and an 8.33 W wave. No other concepts are needed to explain this.

Steve VE9SRB

4439. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 14:29:30 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eb8ne$t26$1@slb3.atl.mindspring.net>
Source record: 162488

Cecil:

Heh, heh...

Now that's what I thought.

Bigger balun versus fan--- is that really an engineering tradeoff?

I liked the look of the big air variable tuning capacitors in the PalStar.
The guy at the booth told me they make their own.

I like to build tuners myself... and getting caps is tough.

The last time I was in Starkville, MS, Martin Jue told me that they [MFJ,
Ameritron, Vectronics] now make all of their own capacitors.

I guess there are no more independent big air variable capaicitor
manufacturers left. Seems to be no "merchant market" for those devices
today, and all seem to be "captive" manufacturing of air variables these
days.

I think Vectronics [Martin] must sell some of their own air variables on the
merchant market, I saw some for sale with a Vectronics label on them a
couple of years ago in the TechAmerica store out on the Buford Highway in
Atlanta.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B091191.5FA92BF2@IEEE.org...
> "Peter O. Brackett" wrote:
> > I asked one of the PalStar guys manning the booth what the fan was for.
> > He just said matter of factly, "to cool the balun". What think?
>
> Personally, IMO, if a balun needs cooling, it is either under-designed
> or being abused by the user. My balun is always cool to the touch even
> when I'm running 500w output.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4440. Mobile antenna RF exposure question.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 14:32:32 UTC
From: Jeff Farrar <jeff@farrar.com>
Message-ID: <4G9O6.8479$uk2.3303018@news1.rdc2.pa.home.com>
Source record: 162489

I plan on installing a dual band antenna on my S-10 pickup and am trying to determine a location. I either want to install a 1/4 wave with a hole in the center of the roof or mount a 5/8 wave somewhere on the bed of the truck. I live in a hilly area would really like the gain that a 5/8 would have but I also have to pull this thing in and out of a garage and can't use a tall (no more than 28") antenna on the roof (not interested in getting in and out with a fold over and no good surface for a motorized mount.)
My concern/question is if I mount a 5/8 on the bed should I be concerned with RF? Does the RF come from the base or tip of the antenna? Since the cab is only about 16" or so higher than the bed most the antenna will be clear. I am thinking of the Diamond 770 or SG series type of antennas.

73'

4441. Re: N connector and 9913

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 14:45:39 UTC
From: Sara Praytor <spraytor@tampabay.rr.com>
Message-ID: <nS9O6.277960$o9.43690588@typhoon.tampabay.rr.com>
Source record: 162491

Dan
when i learned to do the N connector i had to get a special mil spec
connector for the 9913 due to the large center wire i think if you check
amphenols website they will have what your looking for just remember if you
are using the old style 9913 with the 9ga. center you will need an N
connector made speacilly for 9913 the standard one for RG8u wont work good
luck
"Dan Yemiola" <AGA4FL@Yahoo.com> wrote in message
news:3B04B678.CF5E211A@Yahoo.com...
> Could anyone direct me to a site that tells, and preferably shows with
> illustrations, how to properly put an N connector on 9913 cable?
>
> Dan
> AI8O
>

4442. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 15:20:07 UTC
From: richardharrison@webtv.net
Message-ID: <25124-3B093227-56@storefull-114.iap.bryant.webtv.net>
Source record: 162492

Peter, K1PO wrote:
"By how much does the impedance of skin layer MN differ from the impedance of skin layer 1?"

RF current declines exponentially with depth below the surface. Skin depth is defined as the depth at which the current has dropped to 1/e, or 36.8% of its value at the surface. This value of attenuation is one neper (8.686 db). Our example used one skin depth in copper which is 0.000826 inches.

For skin depth analysis to work, the conductor thickness must be at least several skin-depths thick. If so, you can add a neper of attenuation for each skin depth as you descend a short distance into the conductor.

Terman gives a formula for r-f resistance of a fairly uniform copper conductor of various shapes but of many skin depths thickness. Terman may have picked up the formula from J. D. Cockcroft in London in 1929: Ohms/cm h-f resistance = 261 sq.rt. Hz times 10 to the minus 9 power, divided by the perimeter of the conductor in centimeters.

Terman says: "It will be noted that when Eq.(6) (the equation above) holds, the alternating current resistance is directly proportional to the square root of the frequency, and inversely proportional to the conductor size (or perimeter)."

On page 33 of Terman`s 1943 "Radio Engineers` Handbook" there is a chart of the a-c resistance to d-c resistance ratio, versus F/Rd-c , for non-magnetic metal conducting-tubes of different thickness to diameter ratios. If you have so many ohms per foot at d-c, the chart can give you the ohms per foot at a-c.

What interests us is the isolation between the inner surface and the outer surface of a pipe acting as a coax shield. Suppose our pipe is about 8 thousandths of an inch thick. I wouldn`t expect this thickness of about 10 skin depths at 10 MHz to give 10 times the attenuation of one skin depth`s attenuation (8.686 db) or 86 db. But, at least, 40 or 50 db isolation between the inside and outside of a coax shield would not surprise me. It is fair to call that much isolation "complete" in most situations.

Consider that we use coax cable to connect signal generators to determine the sensitivity of receivers satisfactorily at a small fraction of a microvolt input to the receiver. This is a level of less than -120 dbm.

Best regards, Richard Harrison, KB5WZI

4443. Re: short 2 meter antenna??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 15:20:34 UTC
From: Robert Willsey <w4nul@brightok.net>
Message-ID: <ew9O6.65$W7.1911@sooner.brightok.net>
Source record: 162486

Matt, Try the DDRR. It is in the ARRL Handbook and has been in CQ mag several times. I have built them for 2 and 6 meters with good results. I am now on SSB so have changed to other antennas.

73 Bob

"Matt" <matt_patt123@yahoo.com> wrote in message news:9e9m3t02ce5@enews4.newsguy.com...
> I was wondering if anyone has any suggestions on what antenna I could use on
> my 2 meter mobile rig with about a foot of clearance with the top of the cab
> of my truck and the garage. I am not wanting it to hit the garage if
> possible. I've been looking and can't seem to find anything close to what
> I am looking for. I am also wondering if anyone has or is using the
> motorized antenna mounts that raise and lower the antenna and if so, where
> did you buy it from? I have been looking at these as a possible solution to
> my problem but the only ones I can find are either trunk mount or rack
> mount. Non of which will work on a truck. Any advice would be appreciated.
>
>
> Thanks
> Matt
>
>

4444. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 15:47:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0938A9.541B7127@IEEE.org>
Source record: 162493

VE9SRB wrote:
> From my perspective, until very recently, you have disagreed with my vector
> addition of voltage and current and the total power that results from such
> vector addition.

Your perspective was all wet. What was it about, "The only argument I have with you is your attempted violation of the conservation of energy principle" that you didn't understand? It is clear from the rest of your posting that you have seen the light and agree that the 50 joules/sec of constructive/destructive interference energy joins the forward wave toward the load.

Steve, your equation, 75w + 8.33w = 133.33w was simply false. Using that equation and simple math, one can prove that 50 watts equals zero. That is exactly what you were implying - that 50 watts equals zero.

> In the example where you correctly determined the power, it is my opinion
> that you used the correct vector addition of voltage to determine the
> rearward power in the 50 ohm line (destructive interference) and then
> switched methods (your energy math - I agree with the math BTW) to determine
> the forward power. You could have simply used vector addition with the two
> forward waves (constructive interference) to determine the resulting forward
> power.

So you are admitting that your statement about my methods not working was a false statement - since you admit that everything I did was correct.

> Since you did not go into all of the details behind your calculations, i.e.
> how you first determined the correct rearward power in the 50 ohm line, I
> have no reason to change my opinion. If you demonstrate a method to
> determine the correct rearward and forward powers without using any phase
> information, I will change my opinion.

In order to prevent you from being labeled a liar again, Steve, please prove that I have ever said I had a method that works without using any phase information. If you cannot, you know what that makes you. You are obviously not reading my postings. What I did say, awhile back, is that since all the phase angles at a Z0-match are either zero or 180 degrees, that makes the phase-involved math simple because the cosine is either one or minus one and there are no imaginary components of vectors.

> If vector addition of voltages works to determine the net power occurring
> from destructive interference in one direction, it works to determine the
> net power occurring from constructive interference in the other direction.

Exactly right and that constructive interference is what you have erroneously omitted from your energy equations. The 50 joules/sec of constructive/ destructive interference is exactly what you need to balance your energy

equation. All it took was that picture on my web page to make it obvious.

> The point of switching examples is to demonstrate that the method of vector
> voltage and current addition always works for determining the rearward and
> forward powers.

Why do you need to present a different example every day? Why not fully discuss one example before obfuscating the subject with additional examples?

> The reason I do not like the Zo match example is because with a Zo match, we
> know the answer before we have to do any calculations. With a Zo match, we
> know that the total power delivered to the junction is equal to the forward
> power arriving at the junction. Its a bad example to discuss concepts with
> since we already know the answer before we start discussing the methods to
> determine the answer.

The Z0-match is easy for everyone to understand. The average ham's antenna system is Z0-matched. Let's diagnose our points of disagreement before obfuscating the discussion with even more complicated examples. This is probably the 20th time I have stated this: I find nothing wrong with your voltages, currents, and phases. The only argument I have with you is over your neglect of all the energy involved - to such an extent that you conceptually violate the conservation of energy principle.

> We are discussing the vector addition of two waves. If this vector addition
> works for you in determining the correct level of destructive interference,
> then it must also work in determining the correct level of constructive
> interference.

Give us a break, Steve. Destructive interference equals constructive interference by definition. That's what I meant by squeezing the energy balloon on one side of the Z0-match causes the balloon to expand on the other side. I'm glad you have finally realized that fact.

> Do you agree that the forward voltage associated with a 100 W forward wave
> in a 50 ohm line is 70.7106 V?

Yes, that's obvious from my phasor diagram at:
http://people.delphi.com/cecilmoore/z0match.gif

> Do you agree that a forward voltage of 70.7106 V added in phase with another
> forward voltage of 70.7106 V results in a total forward voltage of 141.421
> V?

I agree, if the voltages are added in series. But you cannot add voltages in series while, at the same time, adding currents in series. This is the source of your previous error.

Add two signals, 70.71 volts at 1.414 amps plus 70.71 volts at 1.414 amps. Each of these two signals contain 100 joules/sec. The sum of those two constant power, constant voltage, constant current signals is NOT 141.4 volts at 2.828 amps for a total of 400 watts.

> Do you agree that a 141.421 V forward wave has a total forward power of 400
> W (141.421^2 / 50)?

Where did the extra 200 watts come from? If you add two 100 watt constant power signals in a 50 ohm transmission line, you cannot get a total of 400 watts. That is your conceptual violation of the conservation of energy principle. You are leaving out the destructive/constructive interference energy which supports your voltages and currents.

> This is the process of constructive interfence. No energy reversal concepts
> are required to explain this procees of net power increase.

Uhhhhhhhh Earth to Steve, destructive/constructive interference in a wire *IS* an energy reversal since there is only a choice of two directions. You admit that the energy (flowing toward the source) involved in the destructive interference pattern joins the forward wave (flowing toward the load). Changing from flowing toward the source to flowing toward the load is a change of direction.

> Why? Where does the law of conservation of energy state that two waves
> traveling in the same direction cannot combine to become a wave with a total
> power greater than the algebraic sum of the power in each wave?

Physics 101. Steve, think about what you are saying. You are saying that you can get 400 watts of power from two 100 watt bulbs while consuming only 200 watts of power. You need the support of the destructive interference energy or else your phasors wouldn't add up.

The forward and reflected waves we are talking about have the voltages and currents in phase or 180 degrees out of phase, according to Johnson. Each of the two waves contains a fixed amount of energy. There is no way to add those two fixed-energy waves to get more energy than the sum of the parts. That's what the conservation of energy principle says.

> The law of conservation of energy only requires that the total power flowing
> into the junction equal the total power flowing out of the junction. It
> does not restrict the process of destructive and constructive interference.
> As long as these processes balance, the law of conservation of energy is
> satisfied.

But you said 50 joules/sec flows back toward the source and is lost from the junction. If what you said is true, that 50 joules/sec is going the wrong way. I say that 50 joules/sec reverses direction because of destructive interference which turns in into constructive interference in the opposite direction. You conceptually violated the conservation of energy principle with your phantom power in your phantom waves. I account for every joule. It's good to see you change your mind.

> Why does the law of conservation of energy not restrict the power gain of a
> dipole over a perfect ground plane to 3 dB? Because the constructive
> interference of 6 dB is balanced by a corresponding level of destructive
> interference.

Exactly, but you were throwing away the power in the destructive interference. You are arguing my side now. When the energy balloon is squeezed in one place, it expands in another place. Your argument would say that it is possible to reduce the gain of an antenna in one direction without increasing the gain in another direction. I'm glad you have changed your mind.

> The power addition formula above is explicitly derived from the vector
> addition of voltages.

It is false, Steve. You developed that equation because you already know the answer. With simple math, one can prove, given your power equation, that P1 < P1 which is obviously false. I have asked you at least a dozen times to provide a reference that shows P1 can be greater than P1.

> Then you should understand the formula for power addition. I will forward
> you a section of a document discussing this in more detail.

I trust that you are not the author. :-)

> Destructive interference does occur such that the *net* power flow in the
> rearward direction becomes zero. To balance the power relationships in this
> example, there
> must be a corresponding increase in the *net* power flow in the forward
> direction.

Well, Hallelujah, you are finally admitting that the 50 joules/sec involved in the destructive interference changes direction and becomes constructive interference.

> This increase in power flow does not occur through a "reversal"
> of the Poynting vector. The power or energy involved in the destructive
> interference does not "reverse direction" and "join" with the forward wave.

You just admitted that it does, above. The reason that you admitted it is that there is only two directions of energy flow possible in a transmission line. If it's not flowing one direction, then, by definition, it is flowing the other direction. Thanks for waking up to reality, Steve.

> All that occurs in the forward direction is constructive interference.

Exactly what I have been saying all this time, Steve. You have changed your position. You previously argued with me when I said exactly that.

> In a somewhat different manner, you are simply rewriting the relationship
> that Pdelivered = Pforward - Preflected. Mathematically, your calculation
> works quite fine.

Then, why have you been disagreeing with it all this time?

> With your math, I agree that the total power flow into the junction must
> equal the total power flow out of the junction. Breaking the forward source
> wave into its two components and the reflected wave into its two components
> we balance the energy equation. Then we determine the level of destructive
> interference in the rearward direction and recognize that the net power flow
> out of the junction in the rearward decreases by 50 W. We know that there

> must be a corresponding increase in net power flow in the forward junction.

Well, thank you, Steve. This was our only point of argument. Now you have enough energy to balance the energy equation which is:

75w + 8.33w + 25w + 25w = 133.33w which is what I have been saying.

Each of these power values can be normalized to the 150 ohm environment. The corresponding voltages are:

75w => 106.066v, 8.33w => 35.355v, 25w => 61.237v, 25w => 61.237v

Total forward voltage = sqrt(106.066^2 + 35.355^2 + 61.237^2 + 61.237^2)
= 141.4 volts

Why do you think that works out that way, Steve? It is because voltages and currents cannot both be added in series. The resulting power is greater than the power available.

> Mathematically, it is correct that 75 W + 8.33 W + 50 W = 133.33 W. It is
> incorrect however, to conclude that a reversal of the Poynting vector occurs
> causing the 50 W to join with the 75 W and 8.33 W. All that happens in that
> the 75 W forward wave and the 8.33 W forward wave combine constructively to
> become a 133.33 W wave.

Don't forget the 50 watts that you have just admitted is there, Steve. You simply cannot have it both ways. The energy equation *MUST* balance.

> In the rearward direction, there are two 25 W waves. These waves are 180
> degrees out of phase and the *net* wave in that direction is zero. Zero net
> current, zero net voltage, zero net power.

That's great, Steve, and exactly what I have been saying for weeks. Sounds like we are now in agreement.

> However, a balancing process must simultaneously occur since the total
> forward power arriving at the junction remains constant and the delivered
> power must increase appropriately.

Exactly, you now understand what I have been saying all these weeks.

> In the forward direction, the balancing process that occurs to maintain the
> law of conservation of energy is constructive interference. In the same
> manner that the destructive interference in the rearward direction reduces
> *net* power flow by 50 W, the constructive interference in the forward
> direction must increase *net* power flow by 50 W. The constructive
> interference simply occurs through the vector combination of a 75 W wave and
> an 8.33 W wave. No other concepts are needed to explain this.

You're almost there, Steve. You are still leaving out the 50 joules/sec involved in the destructive/constructive interference process. The combination of energy is 75w + 8.33w + 50w = 133.33w. That extra 50w is exactly what you need to support the addition of your voltage and current vectors.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

4445. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 16:35:21 UTC
From: richardharrison@webtv.net
Message-ID: <25123-3B0943C9-145@storefull-114.iap.bryant.webtv.net>
Source record: 162495

Peter, K1PO wrote:
"---there is no such thing as a "power source". These are only voltage and/or current sources with an associated internal impedance which may or may not be linear impedances."

My Kenwood TS-130S Manual says to adjust the ALC (RF power) on CW at 14 MHz using VR3 to 95 watts. The manual also says "Any antenna used weith the TS-130 should be of 50-ohm impedance and should be connected using an appropriate coaxial cable such as RG-8/U."

Kenwood is typical. I`ve worked with broadcast and other commercial transmitters for more than 52 years. All are specified to deliver a power into a particular load. This is always a minimum go/no-go test specification. You won`t find many commercial examples that beat the spec by much. It isn`t practical.

I don`t recall ever seeing an r-f transmitter specified as generating so many volts or amps because the load impedance is critical.

Best regards, Richard Harrison, KB5WZI

4446. Tuning parasitic elements

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 16:39:39 UTC
From: jgboyles@aol.com
Message-ID: <20010521123939.29760.00000778@ng-bh1.aol.com>
Source record: 162494

Hi,
I am playing around with a small yagi on 40m using loaded elements. I can tune the driven element with an mfj 259b, but not sure how to tune either a director or reflector. Since the elements use loading coils, there's not a formula I could use to cut the elements to 5% higher or lower in frequency. Tried using the 259b as a dip meter, but it doesn't seem to couple enough to the parasitic to get a dip. I have no idea where my old Eico grid dip meter is, haven't had occasion to use it since I got the 259b. Thought about cutting the parasitic in half, and tuning like the driven element, but would that not put the measurement bridge in series with the element, causing it to be tuned incorrectly when connected back together and put in service? Any suggestions?

73 Gary N4AST

4447. Re: Best method for temporary mobile mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 16:55:24 UTC
From: KA9CAR <nospam@nospam.usa>
Message-ID: <9ebh82$i99$1@news.tribune.com>
Source record: 162496

Have you seen the License plate mount? I beleive it is by Lakeview.

KA9CAR

Ed Pugh <ai928@FreeNet.Carleton.CA> wrote in message
news:9e9fmhbag1@freenet9.carleton.ca...
> Hi.
>
> I am just returning to ham radio after a more-than 20-year
> hiatus.
>
> I am wondering what is the best way to temporarily mount a
> 2M whip on a Honda Odyssy van without scratching the van.
> I would like to be able to conveniently remove the antenna
> when not in use or when parked for more than, say, a few
> hours.
>
> I just read a "horror story" from an old news thread in the
> GOOGLE archives, about a ham who used a magmount and found
> that it scratched the finish on his vehicle.
>
> BTW, I may want to use the van's roof rack at the same time
> that I use the 2M antenna! (This may be a problem!)
>
> Finally, what is the best compromise for a 2M antenna length
> (1/4, 5/8 or what?) between best propagation characteristics
> and convenience (overhead clearances, etc.)
>
> Would it make more sense to mount the antenna on the van's front
> hood or front fender, somehow?
>
> Thanks for any help or advice.
>
> TNX ES 73,
> Ed Pugh (VA3PU).
> --
> Ed Pugh | "A common mistake that people make when trying
> Ottawa (Richmond) | to design something completely foolproof, is to
> Ontario, Canada | underestimate the ingenuity of complete fools."
> | - Douglas Noel Adams, 1952 - 2001 :-(

4448. Re: Best method for temporary mobile mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 17:00:54 UTC
From: jimmy john <jj@sandwitch.org>
Message-ID: <4A8A59F2BDCDD311BFC800508BA36AC808C474B1@www.premiersi.com>
Source record: 162497

I've got a couple of the Diamond Antenna K400's and they are well-protected with soft rubber pads and aluminum backing plate for the set screws to seat onto. No damage after about a year of use. These are "lip" mounts adn work well with a rear hatch.

"Ed Pugh" <ai928@FreeNet.Carleton.CA> wrote in message news:9e9fmhbag1@freenet9.carleton.ca...
> Hi.
>
> I am just returning to ham radio after a more-than 20-year
> hiatus.
>
> I am wondering what is the best way to temporarily mount a
> 2M whip on a Honda Odyssy van without scratching the van.
> I would like to be able to conveniently remove the antenna
> when not in use or when parked for more than, say, a few
> hours.
>
> I just read a "horror story" from an old news thread in the
> GOOGLE archives, about a ham who used a magmount and found
> that it scratched the finish on his vehicle.
>
> BTW, I may want to use the van's roof rack at the same time
> that I use the 2M antenna! (This may be a problem!)
>
> Finally, what is the best compromise for a 2M antenna length
> (1/4, 5/8 or what?) between best propagation characteristics
> and convenience (overhead clearances, etc.)
>
> Would it make more sense to mount the antenna on the van's front
> hood or front fender, somehow?
>
> Thanks for any help or advice.
>
> TNX ES 73,
> Ed Pugh (VA3PU).
> --
> Ed Pugh | "A common mistake that people make when trying
> Ottawa (Richmond) | to design something completely foolproof, is to
> Ontario, Canada | underestimate the ingenuity of complete fools."
> | - Douglas Noel Adams, 1952 - 2001 :-(

4449. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 17:11:59 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <z%bO6.33936$t12.2616192@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162498

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0938A9.541B7127@IEEE.org...

>
> I agree, if the voltages are added in series. But you cannot add voltages
in
> series while, at the same time, adding currents in series.

Why not? Every single text and reference on transmission line theory adds
the forward and rearward voltages and currents in series at the same time.
Why does every single authority on this subject agree on adding the forward
voltage and current in series at the same time and you disagree? Is every
expert on this subject wrong because you have a different view?

> Add two signals, 70.71 volts at 1.414 amps plus 70.71 volts at 1.414 amps.
> Each of these two signals contain 100 joules/sec. The sum of those two
> constant power, constant voltage, constant current signals is NOT
> 141.4 volts at 2.828 amps for a total of 400 watts.
>
> > Do you agree that a 141.421 V forward wave has a total forward power of
400
> > W (141.421^2 / 50)?
>
> Where did the extra 200 watts come from? If you add two 100 watt constant
power
> signals in a 50 ohm transmission line, you cannot get a total of 400
watts.
> That is your conceptual violation of the conservation of energy principle.
> You are leaving out the destructive/constructive interference energy which
> supports your voltages and currents.
>

Where is it defined that we are dealing with a "constant power source".

> Physics 101. Steve, think about what you are saying. You are saying that
you
> can get 400 watts of power from two 100 watt bulbs while consuming only
200
> watts of power. You need the support of the destructive interference
energy
> or else your phasors wouldn't add up.
>

I never said that.

We are not discussing a situation where the total power delivered to the load remains constant.

> The forward and reflected waves we are talking about have the voltages and
> currents in phase or 180 degrees out of phase, according to Johnson. Each
> of the two waves contains a fixed amount of energy. There is no way to add
> those two fixed-energy waves to get more energy than the sum of the parts.
> That's what the conservation of energy principle says.
>

Johnson also adds the forward voltages and currents in series at the same time.

> > The power addition formula above is explicitly derived from the vector
> > addition of voltages.
>
> It is false, Steve. You developed that equation because you already know
> the answer. With simple math, one can prove, given your power equation,
> that P1 < P1 which is obviously false. I have asked you at least a dozen
> times to provide a reference that shows P1 can be greater than P1.
>

Prove it false then.

The forward source voltage in the 150 ohm line is 106.067 V at 0 degrees. (75 W)

The re-reflected voltage in the 150 ohm line is 65.259 V at 57.201 degrees. (28.392 W)

The total forward power is

Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt (P2) Cos (theta)

= 75 + 28.392+ 2 Sqrt(75) Sqrt(28.392) Cos(57.201)

= 153.385 W

Prove this false.

I'll be happy to give you the example conditions after you prove this level of forward power false.

>
> > Destructive interference does occur such that the *net* power flow in
the
> > rearward direction becomes zero. To balance the power relationships in
this
> > example, there
> > must be a corresponding increase in the *net* power flow in the forward
> > direction.
>
> Well, Hallelujah, you are finally admitting that the 50 joules/sec
involved
> in the destructive interference changes direction and becomes constructive

> interference.
>

I never admitted that at all. There is no change in direction.

> > This increase in power flow does not occur through a "reversal"
> > of the Poynting vector. The power or energy involved in the destructive
> > interference does not "reverse direction" and "join" with the forward
wave.
>
> You just admitted that it does, above. The reason that you admitted it is
> that there is only two directions of energy flow possible in a
transmission
> line. If it's not flowing one direction, then, by definition, it is
flowing
> the other direction. Thanks for waking up to reality, Steve.
>
> > All that occurs in the forward direction is constructive interference.
>
> Exactly what I have been saying all this time, Steve. You have changed
> your position. You previously argued with me when I said exactly that.
>

I have never changed my position.

> > In a somewhat different manner, you are simply rewriting the
relationship
> > that Pdelivered = Pforward - Preflected. Mathematically, your
calculation
> > works quite fine.
>
> Then, why have you been disagreeing with it all this time?
>

Because your concepts are wrong.

> > With your math, I agree that the total power flow into the junction must
> > equal the total power flow out of the junction. Breaking the forward
source
> > wave into its two components and the reflected wave into its two
components
> > we balance the energy equation. Then we determine the level of
destructive
> > interference in the rearward direction and recognize that the net power
flow
> > out of the junction in the rearward decreases by 50 W. We know that
there
> > must be a corresponding increase in net power flow in the forward
junction.
>
> Well, thank you, Steve. This was our only point of argument.

I thougt you disagreed with the series addition of voltage and current?

I thought you disagreed with my power formula?

>Now you have
> enough energy to balance the energy equation which is:
>
> 75w + 8.33w + 25w + 25w = 133.33w which is what I have been saying.
>
> Each of these power values can be normalized to the 150 ohm environment.
> The corresponding voltages are:
>
> 75w => 106.066v, 8.33w => 35.355v, 25w => 61.237v, 25w => 61.237v
>
> Total forward voltage = sqrt(106.066^2 + 35.355^2 + 61.237^2 + 61.237^2)
> = 141.4 volts
>
> Why do you think that works out that way, Steve? It is because voltages
> and currents cannot both be added in series. The resulting power is
> greater than the power available.
>

You are manipulating the powers and voltages to suit your game and agenda.

There are only two forward waves in the 150 ohm line.

And it all works correctly because the voltages and currents do add in series. That's why it is called constructive interference. The "constructive" part comes from the fact that two waves of powers P1 and P2 can add "constructively" so that the total power is greater than the sum of P1 and P2.

From the correct series addition of voltage and current:

The forward 106.066 V at 0.707 A adds in series with a re-reflected wave of 35.356 V at 0.236 A. These two waves are in-phase so the total forward voltage becomes 141.422 (106.066 V + 35.356 V) and the total forward current becomes 0.943 A (0.707 A + 0.236 A). The total forward power is 133.335 W (141.422 V * 0.943 A)

> > Mathematically, it is correct that 75 W + 8.33 W + 50 W = 133.33 W. It
is
> > incorrect however, to conclude that a reversal of the Poynting vector
occurs
> > causing the 50 W to join with the 75 W and 8.33 W. All that happens in
that
> > the 75 W forward wave and the 8.33 W forward wave combine constructively
to
> > become a 133.33 W wave.
>
> Don't forget the 50 watts that you have just admitted is there, Steve. You
> simply cannot have it both ways. The energy equation *MUST* balance.
>

It all does balance out through the series addition of voltage and current. This is necessary in order to have destructive and constructive interference.

> > In the rearward direction, there are two 25 W waves. These waves are 180
> > degrees out of phase and the *net* wave in that direction is zero. Zero net
> > current, zero net voltage, zero net power.
>
> That's great, Steve, and exactly what I have been saying for weeks. Sounds
> like we are now in agreement.
>

I've been saying this for years.

> > However, a balancing process must simultaneously occur since the total
> > forward power arriving at the junction remains constant and the delivered
> > power must increase appropriately.
>
> Exactly, you now understand what I have been saying all these weeks.
>

Again, I have been saying this for years.

>
> You're almost there, Steve. You are still leaving out the 50 joules/sec
> involved in the destructive/constructive interference process. The combination
> of energy is 75w + 8.33w + 50w = 133.33w. That extra 50w is exactly what
> you need to support the addition of your voltage and current vectors.
> --

You really must have quite an agenda here Cecil. It sure is a bizarre game. I think that is why you hide behind the Zo-match example. With the Zo match example, you can play games with the power and voltage math.

You claim that "your method" works and that you cannot add voltages and currents in series at the same time. Adding voltages and currents in series at the same time is the only way you can make it work. That's why you won't show us the method you used to determine the rearward power in the non Zo match example. That's why you avoid the non Zo-match example.

If I'm wrong, lets start with another non Zo-match example, without the steady state conditions, and then see if you can solve it without adding the voltages and currents in series to first determine the correct reflected power in the 50 ohm line.

Steve VE9SRB

4450. Re: ADI AR-146

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 17:15:23 UTC
From: JWheeler <"kd5bcu at sydcom dot net">
Message-ID: <3b094d4a_3@news4.newsfeeds.com>
Source record: 162500

I have a close friend that has one of these radios. It seems that there was a problem from the factory that was relatively easy to remedy. He was getting reports of very low audio. It seems this may be the same issue you are asking about. I don't remember the steps involved, but he emailed the manufacturer from their website, and received a prompt, detailed response from one of their techs. It seems it was a simple matter of adjusting a pot in the unit.

Good luck, and congrats on the ticket,

JWheeler
kd5bcu

4451. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 17:22:16 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <c9cO6.33956$t12.2615439@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162499

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0816D3.DAD701F2@IEEE.org...
> Please take a look at my phasor diagram at:
>
> http://people.delphi.com/cecilmoore/z0match.gif
>

I'm going to have a bit of fun here Cecil and do to you what you have been doing to me throughout this discussion:

Cecil, thanks for the phasor diagram that is in agreement with all of the concepts I have been trying to explain to you for the past few weeks. I'm glad to see you finally got it.

From the phasor diagram, it is obvious that the only forward waves in the 150 ohm line are the 106.066 V - 0.707 A wave and the 35.355 V - 0.236 A wave. When these two waves add in series the total voltage becomes 141.4 V (106.067 V + 35.355 V) and the total current becomes 0.943 A (0.707 A + 0.236 A). Excellent!

The only mistake I see is the arrow with the 50 W destructive interference pointing in the forward direction. The destructive interference occurs in the rearward direction. It is constructive interference that occurs in the forward direction.

Steve

4452. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 17:34:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0951B4.4B41C614@IEEE.org>
Source record: 162501

David Robbins wrote:
> but i still don't understand your phasor diagram. why is .471a reflected from
> the load from the .707a going to it? the reflection coef at the load should be
> -.5 so i would expect half the current to come back giving .3535a or only 18.7w
> of return power from the initial wave. you seem to have calculated the proper
> reflection coef for the returning first reflection at the junction where 1/2 of
> the .471a is reflected back toward the load, the effect at the load should be
> exactly the same since it is an identical 50 to 150 ohm transition.

When rho equals -0.5, rho^2 = 0.25. Therefore 1/4 of the power is reflected
at a 50-150 ohm junction or at a 150-50 ohm junction. Everyone has their
own methods and shortcuts. I deal primarily with power and then normalize
the voltages and currents to the environment of the characteristic impedance.
Total power incident to the load is 133.33 watts. 1/4 is reflected, that's
33.33 watts. 33.33 watts in a 150 ohm environment is 70.71v and 0.471a.

> also, what are you assuming happens at the source to the 25w of reflected power
> from the first wave to reach the junction? as it appears you are ignoring it
> then the source must have a 50 ohm resistive impedance so it is not
> rereflected.

I thought the diagram was clear. That 25w in involved with a destructive
interference involving 25w of power not re-reflected. The result is NO
reflected power on the 50 ohm line. That 50w becomes constructive
interference toward the load.

> this will result in the source seeing a different load impedance
> during the turn on transient so it would be necessary to specify the length of
> the line back to the source so the reduced power output can be calculated and
> its delay traveling back to the junction can be added into the equation.

Nope, there are no reflections on the coax. Therefore, the source always sees
50 ohms.

> also,
> what about the rereflection of the current coming back from the junction when it
> gets back to the load, and the rerereflection of that when it gets back to the
> junction, etc, etc, etc... if you are going to analyze reflections you end up
> with several infinite series that converge toward the steady state values, only
> looking at the first reflection at some points and only the second reflection at
> others leaves other terms that you aren't taking into account.

We are dealing with steady-state, not the transient condition. Those infinite
series add up to finite steady-state values.

> and if you are trying to do a steady state analysis why are you bothering with
> all those reflections and rereflections? in a true steady state analysis it

> isn't necessary, and as you have seen, even confusing to look at individual
> reflections of the turn on transients.

We are looking at them to find out exactly what happens at a Z0-match. There
are presently three sides to the argument.

> therefore in the steady state everything adds up, voltages and currents are well
> defined at all points.

There is no argument over voltages, currents, or phases. The argument is entirely
over energy, and exactly where all of it comes from and exactly where all of
it goes. The argument is whether 75w + 8.33w can ever equal 133.33w. I say it
cannot and the equation is lacking the power involved in the destructive/
constructive interference.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

4453. Re: ADI AR-146

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 17:37:50 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B09526E.700A08E9@spam.me.not>
Source record: 162502

Thanks for the response... That's exactly the problem I'm
experiencing... The only OTHER problem is that I've emailed ADI/Pryme
TWICE now, with no response... So much for prompt customer service..

Guess I'll keep waiting.

Thanks, and 73 de KC8RKQ

JWheeler wrote:
>
> I have a close friend that has one of these radios. It seems that there was
> a problem from the factory that was relatively easy to remedy. He was
> getting reports of very low audio. It seems this may be the same issue you
> are asking about. I don't remember the steps involved, but he emailed the
> manufacturer from their website, and received a prompt, detailed response
> from one of their techs. It seems it was a simple matter of adjusting a pot
> in the unit.
>
> Good luck, and congrats on the ticket,
>
> JWheeler
> kd5bcu

4454. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 17:45:00 UTC
From: kb7qhc@home.com
Message-ID: <3b09518b.178397061@news.seanet.com>
Source record: 162504

On Sun, 20 May 2001 21:34:32 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>Heh, heh...
>
>Bluffer!
>
>You've been called!
>
>-Peter K1PO
>
>
>"Richard Clark" <kb7qhc@home.com> wrote in message
>news:4ipggtgfbjj57nfn499h3lrjdfktkoj3ti@4ax.com...
>> On Sun, 20 May 2001 20:19:02 -0400, "Peter O. Brackett"
>> <ab4bc@ix.netcom.com> wrote:
>>
>> >Richard:
>> >
>> >I'm in the mood to make money now...
>> >
>>
>> Hi Peter,
>>
>> try rec.radio.gambler.antenna
>>
>> 73's
>> Richard Clark, KB7QHC
>

Hi Peter,

Still surprised, hmmm? You make a poor gambler calling a hand without
a pot. You didn't even have jacks to open. ;-)

73's
Richard Clark, KB7QHC

4455. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 17:46:38 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <2wcO6.33986$t12.2620764@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162503

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0951B4.4B41C614@IEEE.org...
>
>
> > this will result in the source seeing a different load impedance
> > during the turn on transient so it would be necessary to specify the
length of
> > the line back to the source so the reduced power output can be
calculated and
> > its delay traveling back to the junction can be added into the equation.
>
> Nope, there are no reflections on the coax. Therefore, the source always
sees
> 50 ohms.
>

David is correct on this Cecil. But in considering the transient response time, the line lengths and propagation delay between the 50 and 150 ohm lines are important. In our example this is not a significant issue.

When the source wave arrives at the junction, it sees a load impedance of 150 ohms.

Only once the transients have reached a point of equilibrium will the load impedance at the junction become 50 ohms.

>
> There is no argument over voltages, currents, or phases. The argument is
entirely
> over energy, and exactly where all of it comes from and exactly where all
of
> it goes. The argument is whether 75w + 8.33w can ever equal 133.33w. I say
it
> cannot and the equation is lacking the power involved in the destructive/
> constructive interference.

There is a very big argument over voltage, current and phases. You have stated that the voltages and currents cannot add in series. UNless you add voltages and currents in series, you cannot arrive at the correct steady state solution - unless of course you know the answer as you do in the case of the Zo match.

Steve

4456. Re: Homebuilt 70cm directional antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 17:54:19 UTC
From: N3VST <not@chance.com>
Message-ID: <5CcO6.1564$ce.3191437@newsrump.sjc.telocity.net>
Source record: 162505

Look here you may find something.

http://ac6v.com/antprojects.htm

"Markus B�rtschi" <markus@markus.org> wrote in message
news:MPG.1572f1e03690a7de9896cd@localhost...
>
> I'm looking good indications for building a 433 Mhz directional antenna
> for RDF purposes. Can you point me to good sources of information on how
> to build a good Yagi, Quad or other antenna design ?
>
> 73 Markus / HB9VCD
>
> --
> Markus Baertschi
> Rue de la Gare 7b
> CH-1163, Etoy, Switzerland
> markus@markus.org

4457. Re: hams on 11 meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 18:07:40 UTC
From: Roger Halstead <rdhalste@tm.net>
Message-ID: <MPcO6.2411$gA.940095@monger.newsread.com>
Source record: 162506

"Dick Carroll" <dixie@townsqr.com> wrote in message
news:9d51nk$hq5$0@208.206.142.67...
>
>
> "Peter J. Bertini" wrote:
> >
> > 11 meters was never an amateur band. It was a shared
> > band that amateurs were granted access to.

It was enough of a ham band that manufacturers included it on commercial ham
equipment.

Roger Halstead (K8RI)
WWW.RogerHalstead.com
N833R (World's Oldest Debonair? S# CD-2)
>
>
> There are a number of 'ham bands' that fit that description.
>
> Dick

4458. Re: Antenna Height-VS-Take Off Angle

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 18:07:46 UTC
From: hasan schiers <schiers@netins.net>
Message-ID: <9eblk8$21bsj$1@ID-52642.news.dfncis.de>
Source record: 162507

The takeoff angle in degrees = sin^-1 (a/4*H)

Where A = 1st lobe, A=3, 2nd lobe...nulls are the even numbers 2,4...go as high as you like

H = antenna height in Wavelengths

So...TOA= inverse sin of the quantity (1/(4*Ant Height in Wavelengths))

If the antenna has multiple lobes, use A=1,3,5,7,9 (this will onlyhappen above 3 if the antenna is really hi)

Keep in mind TOA is not a line, it's a "cone" of radiation. It's also easy to get lost in angles and forget "amplitude". You can have a real low TOA, but a rotten signal because the antenna, while being a Low Angle Radiator, could be VERY inefficient.

For comparison, you always need to look at the actual amplitude of the signal at a given angle. A half wave up dipole will typically put out more amplitude at a low angle than a vertical over typical ground, but the vertical is supposedly the "low angle radiator".

Get Roy's demo program for EZnec and you will see all this happen, and develop a feel for how this stuff works.

You will love your log periodic. 60' or higher is just dandy. I ran one that way for years. Very little heard, no matter what pileup that I couldn't work.

73,

hasan

"Dino" <dinod@deltanet.com> wrote in message
news:f%0O6.13754$Ce6.7341994@news2.rdc2.tx.home.com...
> I understand that the heigth of the antenna will change the take off
> angle based on the frequency...KINDA. I would like to get a basic
> explination of how this works.
>
> I would also like a recommendation for the best height of a 10-30 log
> mounted on a fixed Rohn 25 tower. My guess would be 60' minimum (1-full
> wavelength at 20 meters).
>
> Thank You!!!
>
> Dino
>

4459. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 18:38:17 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B096099.A171BA29@IEEE.org>
Source record: 162508

VE9SRB wrote:
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote:
> > I agree, if the voltages are added in series. But you cannot add voltages in
> > series while, at the same time, adding currents in series.
>
> Why not? Every single text and reference on transmission line theory adds
> the forward and rearward voltages and currents in series at the same time.

Yes, but they do it only because there is some additional underlying energy
that supports those voltage and current values. Let me say it again: I don't
have any argument with your voltage and current values. The argument is over
the necessary energy to support those values. You do not account for the
additional needed energy. I do.

> Why does every single authority on this subject agree on adding the forward
> voltage and current in series at the same time and you disagree? Is every
> expert on this subject wrong because you have a different view?

You are not understanding what I am saying, Steve. I wonder why? Here's
the example I gave before. Exactly what is it about this example that
you don't understand? I suspect you didn't even read it.

> > Add two signals, 70.71 volts at 1.414 amps plus 70.71 volts at 1.414 amps.
> > Each of these two signals contain 100 joules/sec. The sum of those two
> > constant power, constant voltage, constant current signals is NOT
> > 141.4 volts at 2.828 amps for a total of 400 joules/sec.

PLEASE LISTEN CAREFULLY, STEVE. GIVEN TWO WAVES EACH LIMITED TO 100 WATTS EACH,
YOU CANNOT ADD THEM TOGETHER TO GET 400 WATTS. THAT VIOLATES THE CONSERVATION
OF ENERGY PRINCIPLE. It doesn't matter what the voltages and currents add
up to IF you don't furnish enough underlying energy. In our example, that
underlying energy is furnished by the destructive/constructive interference.

> Where is it defined that we are dealing with a "constant power source".

There is no more power in a 75 watt wave than 75 watts. There is no more
power in an 8.33 watt wave than 8.33 watts. These waves are steady-state
constant power sources. You need the 50 watts from the destructive/constructive
interference to balance your energy equation.

> > Physics 101. Steve, think about what you are saying. You are saying that you
> > can get 400 watts of power from two 100 watt bulbs while consuming only 200
> > watts of power. You need the support of the destructive interference energy
> > or else your phasors wouldn't add up.
>
> I never said that.

Yes, you did, Steve. You just don't realize that what you were saying implies exactly that - getting more power out than is being put in is a no-no.

> We are not discussing a situation where the total power delivered to the
> load remains constant.

Of course we are, Steve. It's exactly steady-state RMS continuous wave values that we are discussing.

> Johnson also adds the forward voltages and currents in series at the same
> time.

Yes, because he is not stupid enough to assert that 75w + 8.33w = 133.33w. He is smart enough to recognize that there is an underlying energy being supplied by destructive/constructive interference.

> Prove it false then.

OK. 75w + 8.33w = 133.33w Subtracting 83.33w from each side of the equation: zero = 50 watts That's false, Steve.

> Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt (P2) Cos (theta)

P1 + P2 = P1 + P2 + 2 sqrt(P1) sqrt(P2) Cos(theta)

This equation is obviously false because P1 has to be greater than P1. P1 cannot be greater than P1, Steve. If P1 and P2 are all the power in the system, the equation cannot be true.

> Prove this false.

You simply refuse to understand what I am saying, Steve. Your values are true but it is not because P1 is greater than P1. It is because you are ignoring the underlying energy. I have been through all this before. You simply are not reading my postings. PLEASE READ AND PAY ATTENTION THIS TIME.

In our Z0-matched system, you say 75w + 33.33w = 133.33w and you say that is true because Ptot = 75w + 33.33w + 2 sqrt(75w) sqrt(8.33w). Exactly where does the sqrt(75w) energy come from? I contend that it comes from the destructive/constructive interference pattern.

2 sqrt(75w) sqrt(8.33w) = 50w

50w equals 25w generated power reflected on the coax plus 25w not re-reflected. These values are involved in the destructive/constructive interference pattern, not from some multiplier associated with P1.

> I never admitted that at all. There is no change in direction.

I can't wait for you to explain how the energy involved in the destructive interference pattern which you admit was flowing toward the source joins the forward wave as constructive interference which you admit is flowing toward the load without changing direction in the process.

> I have never changed my position.

BS, Steve! Anyone who has been following this discussion knows that
you have changed from destructive interference energy flowing toward the
source to constructive interference energy flowing toward the load which
is what I have been saying all along. I recognize the tactic. Change your
position a little each day until it is the same as mine and then declare
that was your position all along. Anyone following this discussion knows
better.

> Because your concepts are wrong.

How can my concepts be wrong when we agree on all the voltages, all the
currents, and all the phases and the only difference in our concepts is
that your concepts violate the conservation of energy principle and mine
don't?

> I thougt you disagreed with the series addition of voltage and current?

I don't disagree that it gets the correct answer under certain circumstances.
It is a valid rule of thumb shortcut if one understands the boundary conditions.
If you have no other power than the power available in the two individual waves,
adding voltages and currents will give the wrong answer because doubling the
voltage and doubling the current increases the power by a factor of four. Why
you think you can input 200w into a system and get 400w out is beyond belief.

> I thought you disagreed with my power formula?

Your rule of thumb shortcut power formula gives the correct answers but violates
the conservation of energy principle because it requires P1 to be greater than P1.

> You are manipulating the powers and voltages to suit your game and agenda.

Of course, you are not doing that. Steve, I am obeying the conservation of
energy principle. You are violating it. So who is playing a game and has
an agenda?

> There are only two forward waves in the 150 ohm line.

If the energy in the line was limited only to those two forward waves, there
would not be enough energy to support the 133.33 watts of forward power. Use
a device to suck off the 25w reflected at the 50-150 junction and use another
device to suck off the 25w of power not re-reflected and you would not get
a forward power of 133.33 watts.

> And it all works correctly because the voltages and currents do add in
> series.

It works correctly because of a rule-of-thumb shortcut, not because your
concepts are scientifically correct.

> From the correct series addition of voltage and current:
>
> The forward 106.066 V at 0.707 A adds in series with a re-reflected wave of
> 35.356 V at 0.236 A. These two waves are in-phase so the total forward
> voltage becomes 141.422 (106.066 V + 35.356 V) and the total forward current
> becomes 0.943 A (0.707 A + 0.236 A). The total forward power is 133.335 W

> (141.422 V * 0.943 A)

That's only true because it is supported by 50 watts of constructive interference. Take away the 50 watts of constructive interference and you wouldn't get those values at all.

> It all does balance out through the series addition of voltage and current.
> This is necessary in order to have destructive and constructive
> interference.

Wait just a minute, Steve. You simply cannot have it both ways. If you admit there is constructive interference energy involved, then you are admitting that there is not enough energy in each of those two waves to support the known forward power. You are admitting that the 50 watts of constructive interference power is a necessary part of the energy equation such that:

75w + 8.33w + 50w = 133.33w

> I've been saying this for years.

This thread has not been going on for years, Steve. Not too long ago, you were saying that the energy in the destructive interference pattern keeps flowing toward the source. Now you have changed your mind.

> You really must have quite an agenda here Cecil. It sure is a bizarre game.
> I think that is why you hide behind the Zo-match example. With the Zo match
> example, you can play games with the power and voltage math.

It's obvious that your game is to ignore the example we have been using and invent a new example every day so I will waste my energy on them. Won't work, Steve. Let's get the Z0-match example resolved before obfuscating the discussion with an infinite number of your other examples.

> You claim that "your method" works and that you cannot add voltages and
> currents in series at the same time. Adding voltages and currents in series
> at the same time is the only way you can make it work. That's why you won't
> show us the method you used to determine the rearward power in the non Zo
> match example. That's why you avoid the non Zo-match example.

We have already covered a non-Z0-matched example, Steve. You said my results were "Excellent!" and you agreed with them. Please stop trying to divert the issue with an endless number of new examples.

> If I'm wrong, lets start with another non Zo-match example, without the
> steady state conditions, and then see if you can solve it without adding the
> voltages and currents in series to first determine the correct reflected
> power in the 50 ohm line.

Your agenda is clear. Obfuscate the discussion with endless examples until I give up. It won't work, Steve. Let's resolve the Z0-match example that we already have before we go to yet another of your endless examples.

Steve, pick a narrow subject and let's agree to limit the discussion to one screen's worth of material. I suspect hardly anyone is following this discussion because

it is simply much too long.
--
http://www.mindspring.com/~w6rca

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4460. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 18:51:10 UTC
From: Roger Halstead <rdhalste@tm.net>
Message-ID: <ysdO6.2417$gA.942216@monger.newsread.com>
Source record: 162509

"Denver Braughler" <Braughler@bwcc.com> wrote in message
news:3AF6F6B7.C3A37F55@bwcc.com...
> Dick Carroll wrote:
> > Reg Edwards wrote:
> > > Use any substantial conductor you fancy to lead lightning down to
> > > ground.
> > ...and if you use the conductor that provides the lowest impedance path
> > that you can get, it leaves that much less of the lightning energy
> > available to look for an *additional* path through your ham station....
>
> Lightning energy is being carried by electrons which need to get to earth.

In general it is electrons trying to get to the positively charged cloud,
although not all strikes have the same direction.

> Lightning is not really comparable to sinusoidal alternating current.

Lightening has steep rise and fall times, but not all are the same. Speep
rise and fall times create many frequencies. Also most lightening strikes
are composed of many repeat cycles

> My earlier statement was that providing a low resistance path between the
tower and the shack is not a goal.

Even a slight difference in potential between the shack and tower cna result
in some rather high voltages to ground in the shack.

> The goal is to provide a ground rod set for lightning at the tower, a
ground rod set for lightning and fault current at the shack, and a conductor
for 60 Hz between to two ground rods sets so that said 60 Hz doesn't prefer
to ride on the coax shield.

Except from a safety standpoint it really doesn't matter if there is 60
cycle current on the shield or not.

>
> I have direct burial AC feeder cable buried in my front lawn that has a
bare stranded aluminum conductor.
> It is approved for direct burial in dirt.
> Neither the UL nor the power company seems concerned that the aluminum
will corrode or waste away.

It will corrode and they don't care. That is a shield/ground and as you
have a ground rod at the house they don't care if it is there or not. I
have three 00 cables that come into my shop. No ground. The physical
ground is an 8' ground rod right at the electrical service entrance and
another out at the pole.

The same is true for using ground clamps, instead of cadwelding the ground rods to the grounding cable. I've dug up ground rods and found the ground clamp loose on the rod after just a couple of years. In 10-15 years I've found the clamp gone...Completely dissolved/disintegrated.

So...If at all possible I cadweld every joint.

BTW, although the ground system is very good insurance, it is not necessarily the path the lightening will take. I've seen lightening get off a tower half way down and arc out to a place well away from the tower. Nor did it follow a guy wire.

With particularly large bolts and those with very fast rise times, a magnetic filed builds up so fast in the tower, that it resists the flow of current to the point where the lightening will go around it by jumping from the tower to nearby objects.

My ground system is a network of 17 8' ground rods and some where around 400 feet of #2 bare copper cable. The station ties into this system and the electrical ground as well. Virtually every thing is bonded together. Remember that there is a danger of the station ground ending up many volts above the house electrical ground during a lightening strike. It only takes a few volts to do in a solid state rig.

Roger Halstead (K8RI)
WWW.RogerHalstead.com
N833R (World's Oldest Debonair? S# CD-2)

4461. Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 18:51:10 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <lgoigt0faqktobugl8dn1879helmcc145f@4ax.com>
Source record: 162510

I am going to make a low-band antenna with a 102' flattop, fed with transmitting-type twin-lead through a 4:1 balun to coax to a tuner. The twin-lead is the type that is 7/8" wide with cutouts every 2" or so. I want to run the twin-lead along the eave of my house to the balun. I don't have much choice in that. What would you recommend for standoffs? Don't want to use TV type as they are too small and have metal rings. Ideas?

Dick - W6CCD

4462. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 19:11:10 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B09684E.612F9E6F@IEEE.org>
Source record: 162511

VE9SRB wrote:
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote:
> Cecil, thanks for the phasor diagram that is in agreement with all of the
> concepts I have been trying to explain to you for the past few weeks. I'm
> glad to see you finally got it.

This is an old trick, Steve. Anyone who has been following this discussion
can see you have changed your mind to agree with me and am now claiming
to have been right all along. I don't mind. If your ego requires lying
to maintain your self-esteem, that's OK. What is important is that you stop
spreading your previous false concepts and tell the truth from now on.

> From the phasor diagram, it is obvious that the only forward waves in the
> 150 ohm line are the 106.066 V - 0.707 A wave and the 35.355 V - 0.236 A
> wave. When these two waves add in series the total voltage becomes 141.4 V
> (106.067 V + 35.355 V) and the total current becomes 0.943 A (0.707 A +
> 0.236 A). Excellent!

The argument was never about forward waves, Steve. The argument was that those
forward waves do not contain enough energy, by themselves, to support the
addition of the voltages and currents. Those waves need help from the
destructive/constructive interference energy, you know the energy that you
previously claimed was flowing toward the source and was lost from the system?

The energy equation is 75w + 8.33w +50w + 133.33w where the 50w is the
energy supplied by the destructive/constructive interference. By admitting
that 50 watts of destructive/constructive interference into the equation,
you have been proven wrong and the conservation of energy principle has,
once again, been proven right.

That 50w of constructive interference in a 150 ohm environment equates to
a voltage of 86.6 volts and a current of 0.577 amps. Thus, taking all the
energy into account, the total forward voltage and current are:

Total forward voltage = sqrt(106.066^2 + 35.355^2 + 86.6^2) = 141.4 volts
Total forward current = sqrt(0.707^2 + 0.236^2 + 0.577^2) = 0.943 amps

141.4v * 0.943a = 133.33 watts total forward power

The principle of conservation of energy is satisfied (and happy). Why do
you think that works out so perfectly after destructive/constructive energy
in included, Steve?

> The only mistake I see is the arrow with the 50 W destructive interference
> pointing in the forward direction. The destructive interference occurs in
> the rearward direction. It is constructive interference that occurs in the

> forward direction.

Yep, it would be better to label it constructive interference. I was trying to indicate that power had come from the destructive interference. I will make that change. Good suggestion. Good to see you acknowledging that the destructive interference energy, because it is in a wire, changes direction and becomes constructive interference.

Here's the kicker, Steve. 75w not reflected at the 50-150 junction plus 25w reflected at the 50-150 junction equals the generated power. Both these energy values join the forward wave toward the load, i.e. all the generated power is routed toward the load. (Sound familiar?)

Of the 33.33w of reflected power, 8.33w is re-reflected and 25w is not re-reflected. Both of these values of energy join the forward wave toward the load, i.e. all the reflected power is re-routed back toward the load. (Sound familiar?)

Eureka! All the generated power joins the forward wave and all the reflected power joins the forward wave, acting for all the world the same way it would have if the reflected power had been 100% re-reflected. So ham radio is essentially back to where it was before you started trying to ignore the conservation of energy principle.
--
http://www.mindspring.com/~w6rca

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4463. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 19:38:03 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <v8eO6.34396$4f7.2622519@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162512

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B096099.A171BA29@IEEE.org...

>
> I don't disagree that it gets the correct answer under certain
circumstances.
> It is a valid rule of thumb shortcut if one understands the boundary
conditions.
> If you have no other power than the power available in the two individual
waves,
> adding voltages and currents will give the wrong answer because doubling
the
> voltage and doubling the current increases the power by a factor of four.
Why
> you think you can input 200w into a system and get 400w out is beyond
belief.
>

In the transmission line problem, it gives the correct answer ALL of the
time.

> > And it all works correctly because the voltages and currents do add in
> > series.
>
> It works correctly because of a rule-of-thumb shortcut, not because your
> concepts are scientifically correct.
>

A rule of thumb shortcut?

You cannot arrive at the steady state solution without the series vector
addition of voltage and current.

We agree on the concept of constructive and destructive interference. The
only concept that I challenge in this regard is the concept of "total power
re-reflection" at the Zo match point and the "reversal of the rearward
Poynting vector". Most of our discussion beyond this point is just a matter
of semantics.

You also know that when I have stated that 75 W + 8.33 W =133.33 W that I
have always meant that the voltages and currents associated with 75 W and
8.33 W waves combine to a single wave having a power equal to 133.33 W. The
constructive and destructive nature of wave interference has always been the
basis of my statement.

In any transmission line or circuit analysis, the steady state solutions are
determined through understanding the process of how the transient forward

and rearward voltages and currents combine to become the steady state forward and rearward voltages and currents. The levels of forward, rearward and delivered power are determined from the combination of these voltages and currents.

Our problem is that we look at the initial state and its associated power levels and then jump to the steady state power levels and try to relate them through some form of energy relationships.

My point has been and will continue to be that you cannot determine the level of destructive and constructive interference without the series vector addition of voltage and current. In adding the series voltages and currents, the power formula that I present correctly determines the total forward and rearward power.

The only way that you can correctly determine the steady state levels is through the series vector addition of voltage and current. This is the only reason that you will not work through a non-Zo example.

As I have said, you will not work a non-Zo example because you know that you *must* use series vector voltage and current addition to determine the solution. Knowing only the power components you will never arrive at the solution. The series addition of voltages and currents is not a short cut, it is the *only* method that works.

Steve VE9SRB

4464. Re: Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 19:43:08 UTC
From: Gene <webmaster@zylay.com>
Message-ID: <3B096FCC.4777B9A0@zylay.com>
Source record: 162513

How about short sections of PVC pipe? You can even paint them to match
your house.

Dick Hughes wrote:
>
> I am going to make a low-band antenna with a 102' flattop, fed with
> transmitting-type twin-lead through a 4:1 balun to coax to a tuner.
> The twin-lead is the type that is 7/8" wide with cutouts every 2" or
> so. I want to run the twin-lead along the eave of my house to the
> balun. I don't have much choice in that. What would you recommend
> for standoffs? Don't want to use TV type as they are too small and
> have metal rings. Ideas?
>
> Dick - W6CCD

--
Ride to eat, eat to ride. __O
_-\<,_
Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
Please visit http://www.tfn.net/~gfloyd7/cmn/

4465. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 19:43:50 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <WdeO6.34412$4f7.2622200@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162514

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B09684E.612F9E6F@IEEE.org...
> VE9SRB wrote:
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote:
> > Cecil, thanks for the phasor diagram that is in agreement with all of
the
> > concepts I have been trying to explain to you for the past few weeks.
I'm
> > glad to see you finally got it.
>
> This is an old trick, Steve. Anyone who has been following this discussion
> can see you have changed your mind to agree with me and am now claiming
> to have been right all along. I don't mind. If your ego requires lying
> to maintain your self-esteem, that's OK. What is important is that you
stop
> spreading your previous false concepts and tell the truth from now on.
>

Cecil, I really wonder about you sometimes.

My statements and concepts have not changed since day one. My analysis using standard transmission line theory and the vector addition of voltage and current has remained consistent throughout the discussion. We have certainly introduced new terms and have shifted to discussing energy, but my position has not changed.

In any event, I would really like to see you work a non Zo match example without the series vector addition of voltage and current.

Steve VE9SRB

4466. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 19:44:57 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B097039.9343719D@berkshire.net>
Source record: 162421

W6RCecilA wrote:
>
> David Robbins wrote:
> > but i still don't understand your phasor diagram. why is .471a reflected from
> > the load from the .707a going to it? the reflection coef at the load should be
> > -.5 so i would expect half the current to come back giving .3535a or only 18.7w
> > of return power from the initial wave. you seem to have calculated the proper
> > reflection coef for the returning first reflection at the junction where 1/2 of
> > the .471a is reflected back toward the load, the effect at the load should be
> > exactly the same since it is an identical 50 to 150 ohm transition.
>
> When rho equals -0.5, rho^2 = 0.25. Therefore 1/4 of the power is reflected
> at a 50-150 ohm junction or at a 150-50 ohm junction. Everyone has their
> own methods and shortcuts. I deal primarily with power and then normalize
> the voltages and currents to the environment of the characteristic impedance.
> Total power incident to the load is 133.33 watts. 1/4 is reflected, that's
> 33.33 watts. 33.33 watts in a 150 ohm environment is 70.71v and 0.471a.

ah, now the arguments start to make sense. you are assuming steady state
response at the far end of the line to get the 33.33w reflected back. but you
are calculating the turn on transient response to get the 75w forward and 25w
reverse in the coax. no wonder it doesn't make any sense.

>
> > also, what are you assuming happens at the source to the 25w of reflected power
> > from the first wave to reach the junction? as it appears you are ignoring it
> > then the source must have a 50 ohm resistive impedance so it is not
> > rereflected.
>
> I thought the diagram was clear. That 25w in involved with a destructive
> interference involving 25w of power not re-reflected. The result is NO
> reflected power on the 50 ohm line. That 50w becomes constructive
> interference toward the load.
>

wrongo... remember, i said in the the first wave to reach the junction. at that
point there is no 25w reflected from the far end to interfer with. again, you
confuse transient and steady state.

> > this will result in the source seeing a different load impedance
> > during the turn on transient so it would be necessary to specify the length of
> > the line back to the source so the reduced power output can be calculated and
> > its delay traveling back to the junction can be added into the equation.
>
> Nope, there are no reflections on the coax. Therefore, the source always sees

> 50 ohms.
>

wrongo again. in the turn on transient there are reflections in the coax, there have to be since there is a 50/150 ohm transition at point x for at least the time it takes for the initial wave to transit to the final 50 ohm load and back, and actually for a longer time as the reflections and re-reflections converge on the steady state values. once steady state has been achieved there will no longer be a discontinuity in the voltage or current (or power) at the junction to cause a reflection. but it takes time to get to that point and to rigorously analyze the reflections it must be taken into account. therefor in order to do a proper transient analysis you must supply the length of the coax and the characteristics of the source, they can not be ignored.

> > also,
> > what about the rereflection of the current coming back from the junction when it
> > gets back to the load, and the rerereflection of that when it gets back to the
> > junction, etc, etc, etc... if you are going to analyze reflections you end up
> > with several infinite series that converge toward the steady state values, only
> > looking at the first reflection at some points and only the second reflection at
> > others leaves other terms that you aren't taking into account.
>
> We are dealing with steady-state, not the transient condition. Those infinite
> series add up to finite steady-state values.

you are mixing transient and steady state. otherwise you would not calculate the reflection at the 50/150 ohm transition.

>
> > and if you are trying to do a steady state analysis why are you bothering with
> > all those reflections and rereflections? in a true steady state analysis it
> > isn't necessary, and as you have seen, even confusing to look at individual
> > reflections of the turn on transients.
>
> We are looking at them to find out exactly what happens at a Z0-match. There
> are presently three sides to the argument.

in the end there can be only one(to quote the tv series 'the highlander') correct answer. for the steady state case i have provided that. now if you want to look at the details of how to obtain that from the transients at startup you must get much, MUCH, deeper into the math than your single reflection and rereflection.

>
> > therefore in the steady state everything adds up, voltages and currents are well
> > defined at all points.
>
> There is no argument over voltages, currents, or phases. The argument is entirely
> over energy, and exactly where all of it comes from and exactly where all of
> it goes. The argument is whether 75w + 8.33w can ever equal 133.33w. I say it
> cannot and the equation is lacking the power involved in the destructive/
> constructive interference.

i have provided the answer on energy or power also. in the steady state there is 100w forward power at every point between the source and the load in this case.

now if you want to find out how that energy gets distributed that way start summing up infinite series of reflections and re-reflections, including the ones going back to the source. to get to that steady state you must do integrations or long summations and include the calculation of current(real and imaginary, or magnitude and phase if you don't like complex values) along the length of the 150 ohm line. and remember, in the analysis the impedance seen by the forward or reverse wave is a continuous function along the 150 ohm line changing from 50 ohms on each end to 450 in the middle and sporting capacitive and inductive components on each side. therefor you have a case where you must calculate a continuously changing complex reflection coefficient and keep track of the phase and travel time at each step going both ways if you want to try to separate the wave components. doing that will show you the real distribution of current and therefor power along the line. just looking at each end only gives you two components of an infinite series of reflections that occur to make steady state 'steady'.

in summary, in steady state there is no discontinuity in the impedance seen as you are traveling toward the load at the junction of the lines, therefor no reflection toward the source. likewise, at the load end of the 150 ohm line there is no discontinuity in the impedance, so no reflection occurs at that point. in between there are an infinite number of reflections both directions that make the currents and voltages add up as described by the general transmission line equations, or smith chart if you prefer. fortunately we don't have to deal with them if we want to calculate steady state values. unfortunately in my work i do almost all transient analysis of lightning strokes so i can't ignore them.

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4467. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 19:53:11 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ebrmadpb1@slb2.atl.mindspring.net>
Source record: 162515

Richard:

Heh, heh...

Connect one of your "power sources" to one end of 100 feet of RG-8, then connect another of your "power sources" to the other end of the 100 feet of RG-8.

Then turn them both on and tell us what the combined power is or will be. You don't need a dummy load since, as you told me, both transmitters are themselves 50 Ohm dummy loads.

Or as Cecil is perhaps asking, connect them both in series, on one end of the RG-8, with a dummy load at the other end of the 100 feet of RG-8.

i.e. connect the outside of the coax of the first transmitter to the outside of the coax of the RG-8 feedline, connect the center conductor of the first transmitter to the outside of the coax of the second transmitter, connect the center conductor of the second transmitter to the center conductor of the RG-8 line, now turn them both on.

How much power is dissipated in the dummy load.

Then how about this one...

Take off the dummy load and move them back to either end of the RG-8, then turn on both transmitters, but make sure both receivers are running at the same time as the transmitters. Then try to copy signals from the other transmitter in the presence of the local transmitter.

Hey... Richard, this is not so weird... only ham's would think that, since their experience with this kind of transmission line use is so limited. Richard, these kinds of connections are done every day, millions of times, perhaps even a hundred million times.

Richard... consider the V.90 or V.34 modem that you are probably using to connect to the Internet rioght now on a single twisted pair phone line, Zo = ?, perhaps up to 18,000 feet long.

Your PC modem's transmitter is simultaneously transmitting on that same transmission line, in full duplex with it's receiver running, while another similar V.90 transmitter is transmitting at the same power level from the other end and it's receiver is also receiving on the same line in the presence of it's own transmitter. All in the same bandwidth 3.4kHz bandwidth in both directions with no frequency separations.

Did you ever wonder what kind of directional couplers are required to do that?

Did you ever wonder what the power level on that line was, and how it must be controlled to meet the FCC Part 68 limitations...

All questions that need to be answered scientifically, and quantitatively in order to design operating modem systems.

Richard... you must realize that advances in transmission technology, directional coupling, and power combining, go far beyond what ham equipment does today.

Ham radio transmission technology and techniques uses principles and technology from way back in the 1920's or so...

Lot's of advances have been made since then...

Wake up and smell the roses, learn some new stuff...

Best,

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:25123-3B0943C9-145@storefull-114.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "---there is no such thing as a "power source". These are only voltage
> and/or current sources with an associated internal impedance which may
> or may not be linear impedances."
>
> My Kenwood TS-130S Manual says to adjust the ALC (RF power) on CW at 14
> MHz using VR3 to 95 watts. The manual also says "Any antenna used weith
> the TS-130 should be of 50-ohm impedance and should be connected using
> an appropriate coaxial cable such as RG-8/U."
>
> Kenwood is typical. I`ve worked with broadcast and other commercial
> transmitters for more than 52 years. All are specified to deliver a
> power into a particular load. This is always a minimum go/no-go test
> specification. You won`t find many commercial examples that beat the
> spec by much. It isn`t practical.
>
> I don`t recall ever seeing an r-f transmitter specified as generating so
> many volts or amps because the load impedance is critical.
>
> Best regards, Richard Harrison, KB5WZI
>

4468. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 19:55:16 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ebrq6$t60$1@slb3.atl.mindspring.net>
Source record: 162516

Richard:

Heh, heh... It was a deck full of discarded Jokers.

And all were "wild".

No way you could win against that hand!

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b09518b.178397061@news.seanet.com...
> On Sun, 20 May 2001 21:34:32 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >Heh, heh...
> >
> >Bluffer!
> >
> >You've been called!
> >
> >-Peter K1PO
> >
> >
> >"Richard Clark" <kb7qhc@home.com> wrote in message
> >news:4ipggtgfbjj57nfn499h3lrjdfktkoj3ti@4ax.com...
> >> On Sun, 20 May 2001 20:19:02 -0400, "Peter O. Brackett"
> >> <ab4bc@ix.netcom.com> wrote:
> >>
> >> >Richard:
> >> >
> >> >I'm in the mood to make money now...
> >> >
> >>
> >> Hi Peter,
> >>
> >> try rec.radio.gambler.antenna
> >>
> >> 73's
> >> Richard Clark, KB7QHC
> >
>
> Hi Peter,
>

> Still surprised, hmmm? You make a poor gambler calling a hand without
> a pot. You didn't even have jacks to open. ;-)
>
> 73's
> Richard Clark, KB7QHC

4469. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 19:56:01 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <lpeO6.34429$4f7.2624628@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162517

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B09684E.612F9E6F@IEEE.org...

> This is an old trick, Steve. Anyone who has been following this discussion
> can see you have changed your mind to agree with me and am now claiming
> to have been right all along. I don't mind. If your ego requires lying
> to maintain your self-esteem, that's OK. What is important is that you
stop
> spreading your previous false concepts and tell the truth from now on.
>
>
<snip>
>
> Eureka! All the generated power joins the forward wave and all the
reflected
> power joins the forward wave, acting for all the world the same way it
would
> have if the reflected power had been 100% re-reflected. So ham radio is
> essentially back to where it was before you started trying to ignore the
> conservation of energy principle.
> --

Cecil:

I am going to give it up at this point. This is far from a rational discussion. I really can't figure you out. All your claims of me lying, claiming that I am constantly changing my position etc, etc. I recognize that we disagree but the discussion has become rather strange.

If you ever want to use your power math on a non Zo match example, send me an e-mail srbest@att.net.

Otherwise, take care. You have the floor .....

Steve VE9SRB

4470. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 19:56:49 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ebrt3$1p6$1@slb7.atl.mindspring.net>
Source record: 162518

Richard:

Exactly my point!

Thanks.

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:25124-3B093227-56@storefull-114.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "By how much does the impedance of skin layer MN differ from the
> impedance of skin layer 1?"
>
> RF current declines exponentially with depth below the surface. Skin
> depth is defined as the depth at which the current has dropped to 1/e,
> or 36.8% of its value at the surface. This value of attenuation is one
> neper (8.686 db). Our example used one skin depth in copper which is
> 0.000826 inches.
>
> For skin depth analysis to work, the conductor thickness must be at
> least several skin-depths thick. If so, you can add a neper of
> attenuation for each skin depth as you descend a short distance into the
> conductor.
>
> Terman gives a formula for r-f resistance of a fairly uniform copper
> conductor of various shapes but of many skin depths thickness. Terman
> may have picked up the formula from J. D. Cockcroft in London in 1929:
> Ohms/cm h-f resistance = 261 sq.rt. Hz times 10 to the minus 9 power,
> divided by the perimeter of the conductor in centimeters.
>
> Terman says: "It will be noted that when Eq.(6) (the equation above)
> holds, the alternating current resistance is directly proportional to
> the square root of the frequency, and inversely proportional to the
> conductor size (or perimeter)."
>
> On page 33 of Terman`s 1943 "Radio Engineers` Handbook" there is a chart
> of the a-c resistance to d-c resistance ratio, versus F/Rd-c , for
> non-magnetic metal conducting-tubes of different thickness to diameter
> ratios. If you have so many ohms per foot at d-c, the chart can give you
> the ohms per foot at a-c.
>
> What interests us is the isolation between the inner surface and the
> outer surface of a pipe acting as a coax shield. Suppose our pipe is
> about 8 thousandths of an inch thick. I wouldn`t expect this thickness

> of about 10 skin depths at 10 MHz to give 10 times the attenuation of
> one skin depth`s attenuation (8.686 db) or 86 db. But, at least, 40 or
> 50 db isolation between the inside and outside of a coax shield would
> not surprise me. It is fair to call that much isolation "complete" in
> most situations.
>
> Consider that we use coax cable to connect signal generators to
> determine the sensitivity of receivers satisfactorily at a small
> fraction of a microvolt input to the receiver. This is a level of less
> than -120 dbm.
>
> Best regards, Richard Harrison, KB5WZI
>

4471. Stop over at - www.ab7sl.com -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 20:10:56 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <kDeO6.13658$BN6.621865@newsread1.prod.itd.earthlink.net>
Source record: 162419
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx

Lots of STUFF to do at www.ab7sl.com such as...

All - NEW - W9INN antenna page!!

1. Ham Radio Links (some unusual)
2. Several Ham Radio Web Rings !
3.AB7SL Biography
4.Personal Photos
5.Station Description
6.Software Downloads
7.The DX Page (w / Telnet links)
8.Downloadable IOTA List
9.W7NH - Elmer Tribute
8.Prescott Arizona Page
9.Online DX Logbook
10.3D Art Gallery (downloads)
11.Music Page (downloads)
12.Frequently Asked Questions
13.Free-For-All Links Page
14.Guestbook
15.Equipment Photos
16.Downloadable DXCC Countries List
17.Downloadable ITU Prefixes List
18.W9INN Antennas Page
--

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

4472. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 20:24:42 UTC
From: kb7qhc@home.com
Message-ID: <3b0977ad.188159418@news.seanet.com>
Source record: 162420

On Mon, 21 May 2001 15:53:11 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

> Zo =
>?, perhaps up to 18,000 feet long.

Hi Peter,

600 Ohms.

>
>Did you ever wonder what kind of directional couplers are required to do
>that?
>

They use the Hybrid Bridge just like we do (which brings to mind - how
many people here now how that gem works?).

18,000 feet isn't that very far unless you are trying to run DSL which
pushes the modulation products well above 50 KBaud.

>
>All questions that need to be answered scientifically, and quantitatively in
>order to design operating modem systems.
>
>Richard... you must realize that advances in transmission technology,
>directional coupling, and power combining, go far beyond what ham equipment
>does today.
>

This is all old hat. Peter, you may've just stumbled onto these
issues, but Telephony AND RF designers have had it covered for years.
That is to say, you have brought nothing "far beyond what ham
equipment does today."

73's
Richard Clark, KB7QHC

4473. Hitch mount for screwdriver

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 20:44:45 UTC
From: khowel1@aol.com
Message-ID: <20010521164445.25405.00000670@ng-ck1.aol.com>
Source record: 162422

I bought a screwdriver antenna at Dayton this past weekend
and would like to know if there is a comercially available hitch
mount that mounts out of the side tube on a trailer hitch.

Kevin Howell
W0KLH

4474. Re: Homebuilt 70cm directional antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 21:00:37 UTC
From: Markus B�rtschi <markus@markus.org>
Message-ID: <MPG.1573a063e8f8999c9896ce@localhost>
Source record: 162423

In article <5CcO6.1564$ce.3191437@newsrump.sjc.telocity.net>,
not@chance.com says...
> Look here you may find something.
>
> http://ac6v.com/antprojects.htm
>
Thanks N3VST,

I've found the page of K5OE with an small UHF yagi (referenced on the page above). I was able to build a similar antenna tonight in about 3 hours. My small UHF transmitter should arrive tomorrow and testing can begin...

73 Markus HB9VCD

--
Markus Baertschi
Rue de la Gare 7b
CH-1163, Etoy, Switzerland
markus@markus.org

4475. Re: Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 21:39:35 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <kIoJO82eBTdfQ5WBcHCtbSinJhlL@4ax.com>
Source record: 162424

Dick Hughes <rhughes33@cableone.net> wrote:

>I am going to make a low-band antenna with a 102' flattop, fed with
>transmitting-type twin-lead through a 4:1 balun to coax to a tuner.
>The twin-lead is the type that is 7/8" wide with cutouts every 2" or
>so. I want to run the twin-lead along the eave of my house to the
>balun. I don't have much choice in that. What would you recommend
>for standoffs? Don't want to use TV type as they are too small and
>have metal rings. Ideas?
>
>Dick - W6CCD

Last time I looked, the Wireman had some twinlead standoffs.

Bob
k5qwg

4476. WGRe: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 21:47:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ec2csaqn1@nntp9.atl.mindspring.net>
Source record: 162425

Richard:

Uh... OK.

Sorry I misunderstood your comments. From the way you jumped on me there...

I thought, that you thought, that you could combine sources and do calculations as to how they would combine without knowledge of their internal impedances.

I now see that I was wrong.

You do understand!

Of course you need to know their internal impedances...

Richard, on Zo of twisted pair telephone line... When you say it's 600 Ohms, I believe that you are oversimplifying and so... you'r comment appears to be wrong. Of course you know differently.

The Zo of telephone line is not 600 Ohms.

I have measured the Zo of literally thousands of telephone lines from 50 feet to 50,000 feet long, from #19 AWG to # 26 AWG, with loading, without loading, from platic to paper insulation, from 30 Hz to 3 MHz, and I have the plots to prove it.

Telephone line Zo varies all over the map, from several kOhms at 30 Hz down to around 100 Ohms at a 1/2 MHz, etc..

Whatever gave you the idea that it was 600 Ohms? Modern DSL modems operate full duplex over such lines in the band from 300 Hz up to 5 MHz or so... depending upon which xDSL is in question, i.e. HDSL, HDSL2, G.shdsl, ADSL, VDSL,

What do you believe is the value of the directivity, i.e. dB of directional discrimination, of the average hybrid coil?

And what do you believe is the directivity and dynamic range of the directional discrimination of the average V.90 modem?

And what is the "range" that you expect from say ADSL modems, using DMT and using QAM/CAP modulation without RS encoding, operating over #26 AWG in the presence of 49 T1 disturbers in a 50 pair binder group? And the range of VDSL modems using "Plan 998"?

etc...

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b0977ad.188159418@news.seanet.com...
> On Mon, 21 May 2001 15:53:11 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> > Zo =
> >?, perhaps up to 18,000 feet long.
>
> Hi Peter,
>
> 600 Ohms.
>
> >
> >Did you ever wonder what kind of directional couplers are required to do
> >that?
> >
>
> They use the Hybrid Bridge just like we do (which brings to mind - how
> many people here now how that gem works?).
>
> 18,000 feet isn't that very far unless you are trying to run DSL which
> pushes the modulation products well above 50 KBaud.
>
> >
> >All questions that need to be answered scientifically, and quantitatively
in
> >order to design operating modem systems.
> >
> >Richard... you must realize that advances in transmission technology,
> >directional coupling, and power combining, go far beyond what ham
equipment
> >does today.
> >
>
> This is all old hat. Peter, you may've just stumbled onto these
> issues, but Telephony AND RF designers have had it covered for years.
> That is to say, you have brought nothing "far beyond what ham
> equipment does today."
>
> 73's
> Richard Clark, KB7QHC

4477. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 22:15:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B099399.68401BF8@IEEE.org>
Source record: 162426

VE9SRB wrote:
> David is correct on this Cecil.

I should have said there are no steady-state reflections on the coax and
steady-state conditions are what we are discussing. I didn't say David
was wrong - just irrelevant to a steady-state discussion.

> When the source wave arrives at the junction, it sees a load impedance of
> 150 ohms.
>
> Only once the transients have reached a point of equilibrium will the load
> impedance at the junction become 50 ohms.

No argument. I never said otherwise. Why are you trying to dishonestly imply
that I have ever said otherwise?

> There is a very big argument over voltage, current and phases. You have
> stated that the voltages and currents cannot add in series.

And you keep misrepresenting what I said. You fail to state the conditional part
of my statement for the purpose of making it appear as if I said something
wrong. I am getting pretty tired of your dishonest, underhanded, unfair
techniques, Steve. Why not be an honest, rational person? You will get more
respect in the long run.

What I said was: Regarding your assertion that 75w + 8.33w = 133.33w, IF
75 watts and 8.33 watts is all the power in the system, THEN your voltages
and currents will not add up. Therefore, 75 watts and 8.33 watts is NOT
all the power in the system. There is 50 watts of destructive/constructive
interference that you erroneously left out of your energy equation. That 50
watts of power is exactly the amount of energy which causes the voltages and
currents to add up. Please note the conditional part of my statement which
you conveniently tried to cover up.

Please, let's stick to the correct and narrow subject of your assertion that
75w + 8.33w = 133.33w and my assertion that 75w + 8.33w is not enough energy
to make the voltages and currents add up to their proper values.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4478. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 22:32:22 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B099776.B9323E44@IEEE.org>
Source record: 162427

David Robbins wrote:
> ah, now the arguments start to make sense. you are assuming steady state
> response at the far end of the line to get the 33.33w reflected back. but you
> are calculating the turn on transient response to get the 75w forward and 25w
> reverse in the coax. no wonder it doesn't make any sense.

There is actually 25w reverse at the Z0-match point. But it is immediately
canceled by the 25w wave that wasn't re-reflected because the voltages and
currents are 180 degrees out of phase. This is a destructive interference
pattern that sends 25w+25w back toward the load as constructive interference.
That's how and why a Z0-match works. Look at my phasor diagram again at:

http://people.delphi.com/cecilmoore/z0match.gif

> wrongo... remember, i said in the the first wave to reach the junction. at that
> point there is no 25w reflected from the far end to interfer with. again, you
> confuse transient and steady state.

We are not talking about transients at all. All we are discussing is steady-state.
During steady-state, there is indeed 25w of power that is not re-reflected
which cancels the 25w of reflected from the 50-150 junction.

> wrongo again. in the turn on transient there are reflections in the coax, ...

Earth to David: We are not discussing transient conditions at all.

> you are mixing transient and steady state. otherwise you would not calculate the
> reflection at the 50/150 ohm transition.

The 25w reflection is there during steady-state. You don't seem to realize this.
Reflections happen at real impedance bumps. There is a real 50-150 impedance
bump at the Z0-match point so there is a reflection at that point which is
immediately canceled by a complementary reflected wave coming back from the load.

> in the end there can be only one(to quote the tv series 'the highlander')
> correct answer.

We know the answers, David. What we are arguing about is how and why those
answers are what they are.

> i have provided the answer on energy or power also. in the steady state there
> is 100w forward power at every point between the source and the load in this
> case.

There is 133.33 watts of forward power on the 150 ohm line. What you need to
say is there is 100 watts of net power at every point between the source and
the load.

> now if you want to find out how that energy gets distributed that way start
> summing up infinite series of reflections and re-reflections, including the ones
> going back to the source.

I already did that, years ago. That's why I already know what the steady-state
looks like.

> in summary, in steady state there is no discontinuity in the impedance seen as
> you are traveling toward the load at the junction of the lines, therefor no
> reflection toward the source.

This is wrong, David. There is a physical discontinuity at the Z0-match point
which causes reflections which are immediately canceled. If it weren't for that
physical discontinuity, a Z0-match wouldn't work. You may not be aware of those
canceled waves but they are there until canceled.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4479. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 22:34:05 UTC
From: atkes@imap1.asu.edu
Message-ID: <9ec54tcej1@news.asu.edu>
Source record: 162428

Peter O. Brackett (ab4bc@ix.netcom.com) wrote:
: Kevin:

: Regarding your statement below...

: I beg to differ...

: [snip]
: > A standard circuit theory model of this transmission line is an infinite
: > pi network consisting of a set of series inductors with capacitors to
: > ground. The voltage across the capacitors is the V(z,t). What this circuit
: > theory model has done is to take a point on the outer conductor to be
: > ground. The integration paths for the voltage are then along the outer
: > conductor to the point z (which gives zero) and then radially inward to
: > the point z on the inner conductor (which gives the voltage V(z,t) defined
: > above) . The circuit theory model then says the voltage difference between
: > 73 Kevin w9cf
: [snip]

: Well, I would disagree with your "standard" circuit theory model of a
: transmission line.

: It is not an infinite pi network. A pi network is intrinsicly unbalanced.

: To be a true circuit theory model of a transmission line, the model has to
: consist of an infinite H network,
: with the H's laying on their sides so to speak.

: i.e. if the primary parameters per unit length are RLC and G, then a
: comprehensive or correct circuit model consists of elementary or
: differential sections comprised of values as follows:

: R/4.... L/4........L/4....R/4
: CG
: R/4....L/4........L/4....R/4

: i.e. a "shunt section of C and G in the "middle" of four "legs" each
: containing elementary values of R/4 and L/4 in series.

: Then, in an obvious way, one can define "voltages", across elementary
: elements without reference to any "common" ground. And the paths for the
: "line integrals" necessary for evaluating the voltages are then clear and
: unambiguous.

: This avoids the problems that you allude to with circuit models...

: In fact if the unit length impedances are not symmetric, which they may not
: be for coaxial cable for instance then one can apportion them in uints other

: than 1/4ths to the end arms.

This seems to be rather off topic, but I will try to answer. To begin with, you are wrong, the model I used is perfectly OK. However, if you choose different paths to define your voltages, you can also use the symmetrical model that you advocate, although I doubt that the paths for the line integrals are clear and unambiguous.

Depending on the path you use for the definition of the voltage, you can place the inductors in whatever position you like. That is, you can put them on the shield side, the inner conductor side or split them in a multitude of ways. You are certainly welcome to split them symmetrically. The reason is, as I tried to explain, that in the lossless coax that I was describing, the only electric field is running radially from one conductor to the other. Therefore the integral of the electric field between the two conductors is the voltage difference that you need to model in your circuit.

: Using such models, togther with a "common" ground, located say at the
: "Restaurant at the End of the Universe", one may also completely model both
: differential and common modes phenomena as closely as one wishes.

You also must specify the path. The voltage is only independent of path if the curl of the electric field is zero. Making it independent of path will violate Faraday's law unless there are no changing magnetic fields around. Since the transmission line is filled with a changing magnetic field, you absolutely must specify the path to define the voltage for your circuit theory model. For example, in my description of a standard model I carefully defined the path as along the shield to the point z of interest and then across to the center conductor. The voltage difference defined by this path between points along the shield is zero, since integrating the zero electric field along the shield gives zero. Therefore the correct circuit model for this path has no inductors in the shield leg. I could have defined the path as along the center conductor to the point z and then across to the shield. The corresponding circuit model would have the inductors on the shield side and the center conductor all at the same voltage. Finally, I could have taken the path parallel to the center conductor in the space between the conductors to the point z and then either in toward the center conductor or out toward the shield. In this model, the inductors get split between the two sides and if you choose the path so there is equal flux inside and outside, you can make the inductors equal. If you read what I wrote, I said "A standard model;" I did not write the standard model or the only possible model.

: And without direct recourse to Maxwell's equations in either differential or
: integral form.

: In fact this is how a numerical analysts build integration engines suitable
: for "integrating" those celebrated partial differential equations of
: Maxwell's to determine practical solutions to those equations. It's called
: numerical integration, or finite element analysis, or method of moments, or

: whatever... it requires accurate modeling at the differential level. After
: all that is how the equations were/are developed in the first place!

: The problems that you allude to arise only from the inability of analytical
: field theorists to build satisfactory circuit models.

: Not from the inadequacy of circuit models...

: Zeno would surely be scoffing at our inadequacies!

: Best Regards,

: -Peter K1PO

I have written many codes to solve Maxwell's equations numerically
using a variety of techniques. The problem is not that it is difficult
to build satisfactory circuit models, the problem is that people take
perfectly good circuit models and apply them incorrectly to situations
where they were not designed to give the right answer. This happens
with any solution to Maxwell's equations whether numerical or analytical.

73 Kevin w9cf

4480. Re: Mobile antenna RF exposure question.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 22:38:57 UTC
From: k3bu@aol.com
Message-ID: <20010521183857.29257.00001149@ng-fi1.aol.com>
Source record: 162429

>My concern/question is if I mount a 5/8 on the bed should I be concerned
>with RF? Does the RF come from the base or tip of the antenna? Since the
>cab is only about 16" or so higher than the bed most the antenna will be
>clear. I am thinking of the Diamond 770 or SG series type of antennas.
>
>73'
>

Result of garbage RF exposure "regulations".
Put it up where it is most efficient and don't worry about RF, there are thousands of us who did that and are alive to tell about it. The rest is scary "environmenatblists" garbage and tendency to limit our freedoms.

Yuri

4481. Re: short 2 meter antenna??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 22:45:57 UTC
From: jgboyles@aol.com
Message-ID: <20010521184557.20306.00000832@ng-fg1.aol.com>
Source record: 162430

>Matt, Try the DDRR.

Yep, the DDRR is the ultimate low profile mobile antenna. On 2m it is about 4 inches high. I used one for some time and could work out quite well and still get in the garage without scraping. On the minus side, the DDRR is like a 3 inch vertical with a lot of capacity hat. It is difficult to tune, (was for me). And mounting was interesting, I used a combination of magnets and tape to mount to the top of my pick-up. Epoxied some magnets to the bottom of the DDRR ground plane. I think the Antennex site has some plans for one in the free section. Good luck.
73 Gary N4AST

4482. Re: Dentron Supertuner

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 22:52:06 UTC
From: fred-palmer <fred-palmer@email.msn.com>
Message-ID: <ewc5lik4AHA.274@cpmsnbbsa07>
Source record: 162393
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.swap

"fred-palmer" <fred-palmer@email.msn.com> wrote in message news:...
> FS Dentron Supertuner that was used with an old Heathkit amp that used a
> pair of 572B's and tuned a long wire just fine. Condition is very good.
Want
> $75 and about $10 for shipping. Fred fred-palmer@msn.com
> 940-321-2029
>
>

4483. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 22:59:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B099DCF.9286488D@IEEE.org>
Source record: 162431

VE9SRB wrote:
> In the transmission line problem, it gives the correct answer ALL of the
> time.

75 watts plus 8.33 watts equals 133.33 watts is the wrong answer, Steve.

> You cannot arrive at the steady state solution without the series vector
> addition of voltage and current.

On the contrary, I did absolutely NO additions of voltages and currents for my phasor diagram, Steve. I did everything with powers (energy). The voltages and currents on my diagram were ALL calculated from the powers involved in the Z0 environment. Absolutely NO voltages and currents were added for my phasor diagram yet you agreed with the results.

> We agree on the concept of constructive and destructive interference. The
> only concept that I challenge in this regard is the concept of "total power
> re-reflection" at the Zo match point ...

I don't believe in that concept, Steve. Please stop trying to imply that I do. Why not be a nice guy and stop spreading the falsehoods? In fact, my phasor diagram proves that total power re-reflection technically doesn't happen.

> and the "reversal of the rearward
> Poynting vector". Most of our discussion beyond this point is just a matter
> of semantics.

I haven't done the calculations but it seems to me that in a wire, if destructive interference causes a reversal of the direction of energy flow, the Poynting vector would have to reverse direction but I could be wrong.

> You also know that when I have stated that 75 W + 8.33 W =133.33 W that I
> have always meant that the voltages and currents associated with 75 W and
> 8.33 W waves combine to a single wave having a power equal to 133.33 W. The
> constructive and destructive nature of wave interference has always been the
> basis of my statement.

Then why did you leave the destructive/constructive interference energy out of the equation? You said 75w + 33.33w = 133.33w and that is a false statement. The correct statement is 75w + 8.33w + 50w = 133.33w That 50w quantity is the power involved in the destructive/constructive interference. That was the basis of the only argument I had with you. Given ONLY 75w and 8.33w, the voltages and currents cannot possibly add up to contain more power than is available.

> My point has been and will continue to be that you cannot determine the
> level of destructive and constructive interference without the series vector

> addition of voltage and current.

You are wrong, Steve, as far as Z0-matched systems are concerned. In a Z0-matched system, I can tell you exactly how much power is involved in destructive and constructive interference without calculating one voltage, one current, or one phase. That is what I have been trying to tell you for weeks and I proved it with my phasor diagram. I calculated all the powers first and then calculated the voltages and currents from those powers. Sorry, your statement is false for Z0-matched systems. It is true for non-Z0-matched systems but we are not discussing them. When you agree that voltages, currents, and phases are not needed for Z0-matched system analysis, then we can discuss non-Z0-matched systems.

> The only way that you can correctly determine the steady state levels is
> through the series vector addition of voltage and current. This is the only
> reason that you will not work through a non-Zo example.

I've already said that voltages, currents, and phases must be taken into account for non-Z0-matched systems, Steve. I even worked through one of your non-Z0-matched examples. You said my work was, "Excellent". But your statement is absolutely false regarding Z0-matched systems. Not one voltage, not one current, and not one phase needs to be calculated. The entire situation can be understood using nothing except component powers. That's exactly how I did my phasor diagram.

> As I have said, you will not work a non-Zo example because you know that you
> *must* use series vector voltage and current addition to determine the
> solution.

I know that, Steve, and I have never asserted anything otherwise. If you say I have, you are mistaken. Why do you feel that you must make false accusations? Is winning at all costs really worth that?

> Knowing only the power components you will never arrive at the
> solution. The series addition of voltages and currents is not a short cut,
> it is the *only* method that works.

I have proven that it is not the only method that works for Z0-matched systems, Steve. You are simply, once again, mistaken. I will start another focused thread and guarantee to prove that you are wrong. The subject of the thread will be "Z0-matched systems". I will take it step by step and you can agree or disagree with each step.
--
http://www.mindspring.com/~w6rca

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4484. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 23:04:36 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B099F04.28B09EEC@IEEE.org>
Source record: 162432

VE9SRB wrote:
> My statements and concepts have not changed since day one.

Steve, do you really want me to wade back through your postings and find the one where you said the destructive interference power continued on down the coax toward the source?

> In any event, I would really like to see you work a non Zo match example
> without the series vector addition of voltage and current.

This is your strawman, Steve, just another attempt to win at the cost of honesty. I will say it again: I have never said a non-Z0-matched system could be analyzed without vector addition of voltage and current. If you think I have, I dare you to produce the posting. You, OTOH, have asserted that it is impossible to analyze a Z0-matched system without vector addition of voltages and currents. I will prove you wrong on that one in a thread whose subject is "Z0-matched Systems".
--
http://www.mindspring.com/~w6rca

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4485. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 23:06:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B099F8D.4AF75E82@IEEE.org>
Source record: 162434

"Peter O. Brackett" wrote:
> Or as Cecil is perhaps asking, connect them both in series, on one end of
> the RG-8, with a dummy load at the other end of the 100 feet of RG-8.

I want to see someone phase lock two IC-706s and get 400 watts out of them
by adding the voltages in series while adding the currents in series as Steve
says can be done.
--
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4486. Re: short 2 meter antenna??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 23:07:38 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <_chO6.19369$BN6.656161@newsread1.prod.itd.earthlink.net>
Source record: 162433

I had a similar garage conflict with our Nissan Pathfinder. I settled on a Larsen mag mount with the Comet B-10M
dual-band (2M / 70cm) antenna. The total height for both is around 11 inches and gives us about a 1 inch clearance as we pull into the garage.

Prior to that we had a RS 5/8 w 2M antenna that worked well. We (wife and I) could tell no difference in our daily
2M contacts after switching to the Comet B-10M which is a 1/4 w on 2M.

We got a good deal on both of them from HRO....
--

73 / DX

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

4487. Re: Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 23:09:05 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B09A011.6F7A90D3@IEEE.org>
Source record: 162435

Dick Hughes wrote:
> I am going to make a low-band antenna with a 102' flattop, fed with
> transmitting-type twin-lead through a 4:1 balun to coax to a tuner.
> The twin-lead is the type that is 7/8" wide with cutouts every 2" or
> so. I want to run the twin-lead along the eave of my house to the
> balun. I don't have much choice in that. What would you recommend
> for standoffs?

I use plastic cup hooks underneath my eave. And I would highly recommend
forgetting the 4:1 balun. Install you a nice 1:1 choke instead.
--
http://www.mindspring.com/~w6rca

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4488. Re: WGRe: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 23:17:29 UTC
From: kb7qhc@home.com
Message-ID: <3b099de0.197939001@news.seanet.com>
Source record: 162436

On Mon, 21 May 2001 17:47:37 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>Whatever gave you the idea that it was 600 Ohms?

Hi Peter,

From having designed equipment for Central Offices (Ma Bell and GTE).

It is odd that you maintain there is no distinction for DC through SHF
insofar as transmission line Z for your DC SWR arguments; and yet for
this application it makes all the difference in the world.

600 Ohms has been commonplace for generations if not centuries now.
You need only pick up any test gear for this industry to observe this
standard. Even their power scales are normalized to this value
(remember your SWR meter, or still surprised?)

>
>What do you believe is the value of the directivity, i.e. dB of directional
>discrimination, of the average hybrid coil?
>
>And what do you believe is the directivity and dynamic range of the
>directional discrimination of the average V.90 modem?

These issues are related to specifications for Twist, cross-talk,
droop, side-tone and so-on. The specification for modems is normally
discussed in terms of the phase relationships of the constellation of
vectors, not dynamic range (more an issue with linear characteristics
of voice communication).

The Hybrid coil (as you put it) separates the two circuits (receive
side from transmit side) and the directional discrimination (as you
put it) is not optimized such that it is the source of the
aforementioned sidetone. Sidetone is not a prized characteristic of
any modem that I am familiar with and any correlation between voice
circuits and digital ones must suffer by comparison.

The Hybrid circuit also allows two voice channels over the same line
pair, through usage of the common mode (an apparently difficult
concept in this group). This is not a customer feature (except in
most unusual circumstances).

And to surprise you further:
>I now see that I was wrong.
>

>You do understand!

I am not the Richard that perhaps you think you are responding to.

73's
(the other)Richard Clark, KB7QHC

4489. Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 23:27:20 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B09A458.71B7C2C0@IEEE.org>
Source record: 162437

Steve, VE9SRB, says that Z0-matched systems cannot be analyzed without resorting to vector addition of voltages and currents. This thread will show him how to do it. There is a phasor diagram on my web page at:

http://people.delphi.com/cecilmoore/z0match.gif

that will be referenced during this posting. Since we don't post graphics on the newsgroup, that's the best I can do. Here's the analysis:

100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load

Given Steady-State Values:
100 watts forward on the coax, zero watts reflected
133.33 watts forward on the 150 ohm line, 33.33 watts reflected

The 100 watts forward on the coax will break into component values of:

75 watts not reflected at the 50-150 junction, joins the forward wave

25 watts reflected at the 50-150 junction but immediately canceled through a destructive interference pattern with the 25 watts below

The 33.33 watts reflected on the 150 ohm line will break into component values of:

8.33 watts re-reflected at the 150-50 junction

25 watts not re-reflected at the 150-50 but immediately canceled through a destructive interference pattern with the 25 watts above

The 50 watts of destructive interference causes 50 watts of constructive interference energy which joins the forward wave on the 150 ohm line.

Thus 75 watts not reflected plus 8.33 watts re-reflected plus 50 watts of constructive interference equals 133.33 watts of forward power on the 150 ohm line.

The voltage associated with the 133.33 watts of forward power is sqrt(133.33*150) equals 141.4 volts. The current associated with the 133.33 watts is sqrt(133.3/150) equals 0.943 amps. All the other voltages and currents can likewise be calculated from the powers and Z0 involved. Understanding the nature of reflections allows the phases to be deduced.

Thus, there's absolutely no need for vector addition of voltages and currents when analyzing a Z0-matched system.
--
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4490. Re: Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 23:39:23 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <9d9jgtgcc0sbtg9o57s78t6gv6i9o0o4il@4ax.com>
Source record: 162438

Hi Cecil -

I have read all the information re the G5RV on your website. I can't disagree with your conclusions, but I want the balun outside and only a coax coming into the house. Your setups seem to require having the twinlead in the house or at least go outside to make adjustments. I am too lazy for that. I only want this antenna for 40 and 75/80, and maybe 17. Although I may lose some power by using the balun vs a choke, will it at least give me reasonable performance? Not looking for DXCC on 75 :-)

I will look for plastic cup holders. Thanks.

Dick - W6CCD

On Mon, 21 May 2001 18:09:05 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Dick Hughes wrote:
>> I am going to make a low-band antenna with a 102' flattop, fed with
>> transmitting-type twin-lead through a 4:1 balun to coax to a tuner.
>> The twin-lead is the type that is 7/8" wide with cutouts every 2" or
>> so. I want to run the twin-lead along the eave of my house to the
>> balun. I don't have much choice in that. What would you recommend
>> for standoffs?
>
>I use plastic cup hooks underneath my eave. And I would highly recommend
>forgetting the 4:1 balun. Install you a nice 1:1 choke instead.

4491. Re: Mobile antenna RF exposure question.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-21 23:47:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B09A920.ED9535EA@IEEE.org>
Source record: 162439

Yuri Blanarovich wrote:
> Result of garbage RF exposure "regulations".
> Put it up where it is most efficient and don't worry about RF, there are
> thousands of us who did that and are alive to tell about it. The rest is scary
> "environmenatblists" garbage and tendency to limit our freedoms.

There are a bunch of us who have run 5 watts VHF with the antenna along
side our ear. And we are still perfectly

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4492. Re: Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 00:06:31 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B09AD87.FC6D5486@IEEE.org>
Source record: 162440

Dick Hughes wrote:
> Although I may lose some power by using the balun vs a
> choke, will it at least give me reasonable performance? Not looking
> for DXCC on 75 :-)

Most 4:1 baluns are voltage type baluns and don't balance the currents.
Why do you think you need a 4:1 balun?
--
http://www.mindspring.com/~w6rca

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4493. Re: WGRe: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 00:47:33 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eccua$7tb$1@slb1.atl.mindspring.net>
Source record: 162441

Richard:

Sorry, if I missed your ID! I appologize.

Heh, heh... on the Internet no one has a "fist", gotta look closely at the sigs...

Yes, I agree, the "nominal" impedance of telephone line twisted pairs has been quoted as 600 Ohms for eons.

But the nominal impedance and the actual impedance are quite different.

Besides the basic variation from say 2kOhms at 200 Hz down to 100 Ohms at 1/2 Mhz, there are lots more differences... There are guage changes to contend with, as larger guage wire is placed out on the ends for very long loops. And the differences from nominal becomes spectacular in the presence of bridged taps and loading coils. The bridged taps causing deep notches in the transmission at frequencies where they form a quarter wavelength. Of course depending upon the loading plan H88, D66, etc... the presence of loading coils changes things even more dramatically.

And so on telephone lines, 600 Ohms is an approximate value obtained on some small portion of lines around the frequency of 1kHz. And that's it. Why did someone choose 600 Ohms as the nominal value?

In fact about the best that "nominal" hybrid coils can obtain is 10 dB or so of return loss at say 1 kHz when the balancing network is a 600 Ohm resistor. There are more complex balancing networks consisting of a 900 Ohm resistor in parallel with a 2.14 uFd capaictior which can often improve that 10 dB up to about 12 dB on average.

Such low levels of directional discrimination are suitable for full duplex telephonic conversations by humans, who actually have to "hear" themselves in order to communicate effectively. But such low levels of directional discrimination are not enough for duplex modem/data transmission.

The early "duplex" modems such as Bell 103's or CCITT V.21 modems used frequency division multiplexing to separate the directions but as the speeds rose, along with the requisite bandwidths, modems were forced to use the same bandwidth on the wires for both transmit and recieive. The Bell 212 and the Vadic VA3400 running at 1200 and 2400 bps were among the last to use frequency separation. Simple one design analog hybrid coils/directional couplers do/did not provide enough directional discrimination for higher speeds and bandwidths, and so adaptive hybrids and digital echo cancellers were developed.

The closest hams come to this "full duplex" operation is so called full break in QSK. i.e. "fast half duplex".

Imagine two hams simultaneously transmitting and receiving on the same antennas in the same 3 kHz bandwidth at the same time.

Tough to imagine, but a similar think happens millions of times per day...

Today, millions of precisely designed, sub $100 each, DSP based digital adaptive modems, running at the equivalent of 30 - 100 MIPS, transmit in both directions over pretty murky transmission lines in both directions simulataneously at speeds up to 30 kbps or more. i.e. At bandwidth efficiencies exceeding 10 bps/Hz of bandwidth.

This is within a dB or so of Shannon's Limit: C = W log(1 + S/N). Simultaneously in both directions.

Of course most of the N in the S/N is the crosstalk noise both NEXT and FEXT from nearby "disturbers" in the multi-pair cables that make up the telephone plant.

The modem's digital adaptive equalizers and digital echo cancellers/directional couplers, together with their advanced coded modulation schemes, like trellis coded modulation, coupled with Viterbi digital sequence decoders are modern miracles of transmission technology.

What ham technology today reaches to 10bps/Hz of bandwidth?

For analog phone transmissions, the average human voice carries about 1200 bps of useful information in a bandwidth of say 2400 Hz for an efficiency of only 1/2 bps/Hz. Where is CW, Pactor, PSK31...?

We've got a long way to go and a lot of fun ahead if we take on these challenges.

But we need to know the internal impedances of our power sources in order to engineer such systems!

Best,

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b099de0.197939001@news.seanet.com...
> On Mon, 21 May 2001 17:47:37 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> >Whatever gave you the idea that it was 600 Ohms?
>
> Hi Peter,
>
> From having designed equipment for Central Offices (Ma Bell and GTE).
>
> It is odd that you maintain there is no distinction for DC through SHF

> insofar as transmission line Z for your DC SWR arguments; and yet for
> this application it makes all the difference in the world.
>
> 600 Ohms has been commonplace for generations if not centuries now.
> You need only pick up any test gear for this industry to observe this
> standard. Even their power scales are normalized to this value
> (remember your SWR meter, or still surprised?)
>
> >
> >What do you believe is the value of the directivity, i.e. dB of
directional
> >discrimination, of the average hybrid coil?
> >
> >And what do you believe is the directivity and dynamic range of the
> >directional discrimination of the average V.90 modem?
>
> These issues are related to specifications for Twist, cross-talk,
> droop, side-tone and so-on. The specification for modems is normally
> discussed in terms of the phase relationships of the constellation of
> vectors, not dynamic range (more an issue with linear characteristics
> of voice communication).
>
> The Hybrid coil (as you put it) separates the two circuits (receive
> side from transmit side) and the directional discrimination (as you
> put it) is not optimized such that it is the source of the
> aforementioned sidetone. Sidetone is not a prized characteristic of
> any modem that I am familiar with and any correlation between voice
> circuits and digital ones must suffer by comparison.
>
> The Hybrid circuit also allows two voice channels over the same line
> pair, through usage of the common mode (an apparently difficult
> concept in this group). This is not a customer feature (except in
> most unusual circumstances).
>
> And to surprise you further:
> >I now see that I was wrong.
> >
> >You do understand!
>
> I am not the Richard that perhaps you think you are responding to.
>
> 73's
> (the other)Richard Clark, KB7QHC

4494. phono cable used for coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 00:54:57 UTC
From: inagaddadavida@webtv.net
Message-ID: <23373-3B09B8E1-165@storefull-112.iap.bryant.webtv.net>
Source record: 162443

i am having quite a problem with thick heavy coax wrecking the antenna input socket of my portable shortwave receiver. the stuff is just too stiff. who can tell me about the possibility of using phono cable or microphone cable on various receiving antennas? the stuff looks superficially like coax, but its thinner and very supple. what impedance value should i expect from this shielded cable? how long can it be before the value even begins to matter? any other thoughts on this?

4495. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 01:03:49 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ecdspaeh1@nntp9.atl.mindspring.net>
Source record: 162442

Kevin:

Oh thanks for that explanation. I'm sorry I jumped to a conclusion and my reply to your posting was off topic.

I agree that the "voltage" depends upon the evaluation of a line integral which in turn depends upon the somewhat arbitrarily chosen "line". But often there are certain, "sensible" paths of integration corresponding to an assumed incremental circuit model of the transmission line. For instance if the path were chosen to be the same as the placement of the leads of a voltmeter that I choose to use to measure the voltage across a pair of open wire lines, etc... i.e. the voltage that a commonsense measurement might indicated.

Where I got off track/topic was in my observation that an infinite cascade of pi networks is not often an appropriate transmission line model, since it tends to make folks think that an appropriate place to start the "line integral" is at the "ground", which seems to be "very long" and so results in a non-direct and potentially meandering path over which to integrate the voltage. In simple metrological terms this corresponds to a voltmeter with one very long meandering lead.

Then the voltage measured by the metrologist with his long leaded instrument will be a function of where the lead dangles, or to use your terminology the voltage will be a function of the path of integration.

While with a ladder circuit model, the paths to use to get voltages that would seem sensible are more obvious. i.e. direct perpendicular paths from one side of a pair of lines to the other in the shortest Euclidean possible distance. Of course this in not possible with coaxial cable, since it's hard to find those tiny voltmeters that you can shove up inside the coax! Heh, heh. But all of this stuff of which I speak is certainly sensible with 600 Ohm open wire transmission line.

Regarding circuit models of transmission lines, I would also like to state that one can "derive" the transmission line equations exactly from either:

Maxwell's equations

or from:

An appropriately applied differential circuit model.

The equations come out the same in either case. And often for the uninitiated... read Computer Engineers... the cirucuit model is far more intuitive.

Again I appologize for going off topic.

Best,

-Peter K1PO

<atkes@imap1.asu.edu> wrote in message news:9ec54tcej1@news.asu.edu...
> Peter O. Brackett (ab4bc@ix.netcom.com) wrote:
> : Kevin:
>
> : Regarding your statement below...
>
> : I beg to differ...
>
> : [snip]
> : > A standard circuit theory model of this transmission line is an
infinite
> : > pi network consisting of a set of series inductors with capacitors to
> : > ground. The voltage across the capacitors is the V(z,t). What this
circuit
> : > theory model has done is to take a point on the outer conductor to be
> : > ground. The integration paths for the voltage are then along the outer
> : > conductor to the point z (which gives zero) and then radially inward
to
> : > the point z on the inner conductor (which gives the voltage V(z,t)
defined
> : > above) . The circuit theory model then says the voltage difference
between
> : > 73 Kevin w9cf
> : [snip]
>
> : Well, I would disagree with your "standard" circuit theory model of a
> : transmission line.
>
> : It is not an infinite pi network. A pi network is intrinsicly
unbalanced.
>
> : To be a true circuit theory model of a transmission line, the model has
to
> : consist of an infinite H network,
> : with the H's laying on their sides so to speak.
>
> : i.e. if the primary parameters per unit length are RLC and G, then a
> : comprehensive or correct circuit model consists of elementary or
> : differential sections comprised of values as follows:
>
> : R/4.... L/4........L/4....R/4
> : CG
> : R/4....L/4........L/4....R/4
>
> : i.e. a "shunt section of C and G in the "middle" of four "legs" each
> : containing elementary values of R/4 and L/4 in series.
>
> : Then, in an obvious way, one can define "voltages", across elementary

> : elements without reference to any "common" ground. And the paths for
the
> : "line integrals" necessary for evaluating the voltages are then clear
and
> : unambiguous.
>
> : This avoids the problems that you allude to with circuit models...
>
> : In fact if the unit length impedances are not symmetric, which they may
not
> : be for coaxial cable for instance then one can apportion them in uints
other
> : than 1/4ths to the end arms.
>
> This seems to be rather off topic, but I will try to answer. To begin
> with, you are wrong, the model I used is perfectly OK. However, if you
> choose different paths to define your voltages, you can also use the
> symmetrical model that you advocate, although I doubt that the
> paths for the line integrals are clear and unambiguous.
>
> Depending on the path you use for the definition of the voltage, you
> can place the inductors in whatever position you like. That is, you can
> put them on the shield side, the inner conductor side or split them in
> a multitude of ways. You are certainly welcome to split them
> symmetrically. The reason is, as I tried to explain, that in the
> lossless coax that I was describing, the only electric field is running
> radially from one conductor to the other. Therefore the integral of the
> electric field between the two conductors is the voltage difference
> that you need to model in your circuit.
>
> : Using such models, togther with a "common" ground, located say at the
> : "Restaurant at the End of the Universe", one may also completely model
both
> : differential and common modes phenomena as closely as one wishes.
>
> You also must specify the path. The voltage is only independent of path
> if the curl of the electric field is zero. Making it independent of
> path will violate Faraday's law unless there are no changing magnetic
> fields around. Since the transmission line is filled with a changing
> magnetic field, you absolutely must specify the path to define the
> voltage for your circuit theory model. For example, in my description
> of a standard model I carefully defined the path as along the shield to
> the point z of interest and then across to the center conductor. The
> voltage difference defined by this path between points along the shield
> is zero, since integrating the zero electric field along the
> shield gives zero. Therefore the correct circuit model for this path
> has no inductors in the shield leg. I could have defined the path as
> along the center conductor to the point z and then across to the
> shield. The corresponding circuit model would have the inductors on the
> shield side and the center conductor all at the same voltage. Finally,

> I could have taken the path parallel to the center conductor in the
> space between the conductors to the point z and then either in toward
> the center conductor or out toward the shield. In this model, the
> inductors get split between the two sides and if you choose the path so
> there is equal flux inside and outside, you can make the inductors
> equal. If you read what I wrote, I said "A standard model;" I did not
> write the standard model or the only possible model.
>
> : And without direct recourse to Maxwell's equations in either
differential or
> : integral form.
>
> : In fact this is how a numerical analysts build integration engines
suitable
> : for "integrating" those celebrated partial differential equations of
> : Maxwell's to determine practical solutions to those equations. It's
called
> : numerical integration, or finite element analysis, or method of moments,
or
> : whatever... it requires accurate modeling at the differential level.
After
> : all that is how the equations were/are developed in the first place!
>
> : The problems that you allude to arise only from the inability of
analytical
> : field theorists to build satisfactory circuit models.
>
> : Not from the inadequacy of circuit models...
>
> : Zeno would surely be scoffing at our inadequacies!
>
> : Best Regards,
>
> : -Peter K1PO
>
> I have written many codes to solve Maxwell's equations numerically
> using a variety of techniques. The problem is not that it is difficult
> to build satisfactory circuit models, the problem is that people take
> perfectly good circuit models and apply them incorrectly to situations
> where they were not designed to give the right answer. This happens
> with any solution to Maxwell's equations whether numerical or analytical.
>
> 73 Kevin w9cf
>
>
>

4496. Re: Radials question for my H9 Butternut

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 01:32:38 UTC
From: Wayne and Louise Irwin <the-irwins@home.com>
Message-ID: <WkjO6.16600$v5.1460920@news1.rdc1.ct.home.com>
Source record: 162444

Hi Pete, and others who may be interested.

For an excellent dissertation on how many radials is enough, check out the article by John Stanley, K4ERO, in the December, 1976 edition of QST. As he points out, to a great extent what you want your antenna to do (performance wise) has a lot to do with how many radials you need. Youmay be quite surprised by his answer to the question, "How many radials do I need"?

73,

Wayne, W1KI

==========

"Pete" <pete@etep.com> wrote in message
news:T6YN6.15264$Ji.311261@news1.rdc1.il.home.com...
> Thanks for all your help I've gotten you all in the past. I just
installed
> my H9 vertical with a Gap tilt-over ground mount bracket so I can hide my
> antenna when not in use. I drove an 8 foot ground rod next to the antenna
> bracket. I then used #10 ground wire from the rod to the bracket and then
> connected it to the vertical antenna.
> I then placed 14 radial (#12 gauge) wires 20 to 25 feet long in all
> directions from the ground rod and tied them all together and connected
them
> to the ground rod. The wires have plastic insulation on them. I plan on
> burying them soon. The question I have is did I do all of the above
> correctly, and is 14 radials enough? I am anxious to get the vertical
> adjusted and tuned up. I really don't have much more room for many more
> radials. I welcome constructive criticism and all your suggestions. Thanks
> 73's Pete WD9ALM
>
>

4497. Re: phono cable used for coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 01:33:31 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3B09C1EB.F08E1E94@dialpoint.net>
Source record: 162450

For receiving I would not worry about the impedance but about the losses. There are several sizes of coax. One is about 1/2 inches in diameter, several are about 1/4 inch and there is some that is about 1/8 inch in diameter. I think the smallest size is RG-174 but could be wrong It might be hard to find the connectors for the 1/8 inch but you should be able to run 10 or 20 feet of that without having too a great loss at frequencies below 30 mhz.

Jim wrote:
>
> i am having quite a problem with thick heavy coax wrecking the antenna
> input socket of my portable shortwave receiver. the stuff is just too
> stiff. who can tell me about the possibility of using phono cable or
> microphone cable on various receiving antennas? the stuff looks
> superficially like coax, but its thinner and very supple. what impedance
> value should i expect from this shielded cable? how long can it be
> before the value even begins to matter? any other thoughts on this?

4498. Re: Mobile antenna RF exposure question.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 01:33:56 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3b09c1dd_1@news3.prserv.net>
Source record: 162445

Jeff:
The radiation results from current flow, therefore the base of the quarter wave or a quarter wave down from the tip of the 5/8th. is where the highest current is, and it falls off sinusoidally. The best efficiency given your restrictions will be from a quarter wave mounted in the center of the roof. From what you describe, the max current points will be at the same elevation, but the 5/8 will be partially shadowed by the cab. In a hilly area, the 5/8 will work against you, as often you need the higher angle elevation to go over the tops of the hills.

--
Crazy George

4499. Re: short 2 meter antenna??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 01:37:12 UTC
From: Matt <matt_patt123@yahoo.com>
Message-ID: <9ecf870dcg@enews1.newsguy.com>
Source record: 162451

Thanks for all the good suggestions.. I think I am going to go with AB7SL's suggestion on the Comet B-10M. Its by far the easiest..although I am intrigued by the DDRR but it looks like it would be hard to mount on a truck.

Thanks Again
Matt
KC5YTV

"Matt" <matt_patt123@yahoo.com> wrote in message
news:9e9m3t02ce5@enews4.newsguy.com...
> I was wondering if anyone has any suggestions on what antenna I could use
on
> my 2 meter mobile rig with about a foot of clearance with the top of the
cab
> of my truck and the garage. I am not wanting it to hit the garage if
> possible. I've been looking and can't seem to find anything close to
what
> I am looking for. I am also wondering if anyone has or is using the
> motorized antenna mounts that raise and lower the antenna and if so, where
> did you buy it from? I have been looking at these as a possible solution
to
> my problem but the only ones I can find are either trunk mount or rack
> mount. Non of which will work on a truck. Any advice would be
appreciated.
>
>
> Thanks
> Matt
>
>

4500. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 01:38:37 UTC
From: richardharrison@webtv.net
Message-ID: <23375-3B09C31D-29@storefull-112.iap.bryant.webtv.net>
Source record: 162446

Peter, K1PO wrote:
"----both transmitters themselves are dummy loads."

They could be, and connecting them without caution can result result in overvoltage, overcurrent, or both. This would likely be distructive. Were two similar transmitters connected in series, and in phase, and if the transmitters were capable of delivering twice their normal currents on a sustained basis, 4 times the power of one transmitter alone could result. Transmitters are not designed to deliver twice their rated power. The rating claim would be doubled were they so designed.

Receiver inputs are not designed to take direct r-f transmitter output. Modems are different. The communications circuit limits the sender level to the milliwatt neighborhood. Still, tx ard rx signals need separation to avoid confusion.

The old way to keep modem send and receive channels separated was frequency division multiplex. This is just like full-duplex radio channels. One channel frequency for transmit and another for receive. For data, two separate frequency pairs of closely-spaced frequencies are used to create a send channel and a receive channel. One frequency of a closely-spaced pair is called the mark frequency and the other frequency of the pair is called the space frequency. This is a legacy of telegraphy. In operation, the mark and space switching is a form of FM. AM, SSB, etc. can be used as other forms of "analog" transmission in modems (data sets), either individually or in various combinations.

Then, as in telephone switches, signals can share time on a line instead of space or spectrum frequencies. Digital "modems" (codecs) allot different time slots for tncoming signals from those used for outgoing signals, so both can share the same facilities without conflict. The coming and going signals are sampled so often and interleaved so that gaps are unnoticeable.

I am not familiar with directional couplers on a-f circuits other than the usual hybrid circuits.

I am not aware of all significant advances in recent years, but have no real need to keep up to date anymore and don`t claim to know it all. i never did lknow it all, but I have learned a lot just from monitoring news groups.

Best regards, Richard Harrison, KB5WZI

4501. FS: General Radio 1606-A Impedance Bridge

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 01:48:02 UTC
From: Doug Hall <k4dsp@pobox.com>
Message-ID: <ehgjgtcm0fd61onrcnc52rd9oiumqv3i5p@4ax.com>
Source record: 162447

Forsale: General Radio 1606-A Impedance Bridge
General Radio 1211-C 0.5-50 MHz Generator
General Radio 1269-A Power Supply for generator

Good condition, works well, manual & cables included. $250 + shipping
from 27612. Reply via email if interested.

73,
Doug, K4DSP

4502. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 02:05:09 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9echgb$35u$1@slb5.atl.mindspring.net>
Source record: 162448

Hello Richard:

What about using DC power supplies rather than RF transmitters?

That way we don't have to worry about phase locking. We have a 50:50 chance of getting the phasing correct.

Say if we place two DC power supplies each putting out 100 watts, one on each end of a lossless line, it can be RG-8 if you wish..

What happens?

If they are in "opposition" i.e. put the + terminals of both DC power supplies on the center conductor and the - terminals on the negative conductor, then they both will put out 100 watts. That's what Cecil wants us to believe!

The one on the right end puts out 100 watts of forward power and the one on the left end puts out a 100 watts of reflected power [at least it is going the opposite way, when viewed from the other end!] and the 100 watts from the one on the right exactly cancels the 100 watts from the other one on the left.

Because from one end the other one looks like reflected power, etc... and so we get 100 watts of forward power cancelling 100 watts of reflected power on the line... all the while both continue to put out 100 watts.

Is this right? Have I got it now? Hey I didn't even need to know the internal resistance of my sources...

But somehow I'm putting out 200 Watts and getting nothing? What?

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:23375-3B09C31D-29@storefull-112.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "----both transmitters themselves are dummy loads."
>
> They could be, and connecting them without caution can result result in
> overvoltage, overcurrent, or both. This would likely be distructive.
> Were two similar transmitters connected in series, and in phase, and if
> the transmitters were capable of delivering twice their normal currents
> on a sustained basis, 4 times the power of one transmitter alone could
> result. Transmitters are not designed to deliver twice their rated
> power. The rating claim would be doubled were they so designed.
>
> Receiver inputs are not designed to take direct r-f transmitter output.

> Modems are different. The communications circuit limits the sender level
> to the milliwatt neighborhood. Still, tx ard rx signals need separation
> to avoid confusion.
>
> The old way to keep modem send and receive channels separated was
> frequency division multiplex. This is just like full-duplex radio
> channels. One channel frequency for transmit and another for receive.
> For data, two separate frequency pairs of closely-spaced frequencies are
> used to create a send channel and a receive channel. One frequency of a
> closely-spaced pair is called the mark frequency and the other frequency
> of the pair is called the space frequency. This is a legacy of
> telegraphy. In operation, the mark and space switching is a form of FM.
> AM, SSB, etc. can be used as other forms of "analog" transmission in
> modems (data sets), either individually or in various combinations.
>
> Then, as in telephone switches, signals can share time on a line instead
> of space or spectrum frequencies. Digital "modems" (codecs) allot
> different time slots for tncoming signals from those used for outgoing
> signals, so both can share the same facilities without conflict. The
> coming and going signals are sampled so often and interleaved so that
> gaps are unnoticeable.
>
> I am not familiar with directional couplers on a-f circuits other than
> the usual hybrid circuits.
>
> I am not aware of all significant advances in recent years, but have no
> real need to keep up to date anymore and don`t claim to know it all. i
> never did lknow it all, but I have learned a lot just from monitoring
> news groups.
>
> Best regards, Richard Harrison, KB5WZI
>

4503. Re: Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 02:14:03 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <lgijgt4mm7djiepljlhu5ntug5us32f8ia@4ax.com>
Source record: 162449

This balun is the MFJ-912 designed by W9IIN. I can't tell if it is wound as a voltage or current type. I would suspect that it is a current balun being as the handbook states that current baluns are much more popular than voltage baluns today. Maybe you know.

Why do I need it? How about, I have had the darn thing in my cupboard for several years and now I may have a use for it! :-) I assumed that I would get a better match between the coax and twinlead than just connecting the two together as in the original G5RV. I want to have a good match inside the house as my Henry linear does not have any matching network per se. I will use an MFJ-989C tuner. No snickering please. :-)

Dick

On Mon, 21 May 2001 19:06:31 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Dick Hughes wrote:
>> Although I may lose some power by using the balun vs a
>> choke, will it at least give me reasonable performance? Not looking
>> for DXCC on 75 :-)
>
>Most 4:1 baluns are voltage type baluns and don't balance the currents.
>Why do you think you need a 4:1 balun?

4504. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 03:10:54 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <l4ljgt40ncopj8gn574f7vu8ppmvs7vsq4@4ax.com>
Source record: 162452

On Mon, 21 May 2001 18:27:20 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>Thus, there's absolutely no need for vector addition of voltages and currents
>when analyzing a Z0-matched system.

Hi Cecil,

That is like saying there is no need for the general equation when you
have a special solution.

It is also a tacit admission that these operations are necessary for
the non Z0 matched system in that you have not shown that these
operations lead to an incorrect solution. I don't think that was your
point, but that was what Steve was responding to from Walt's
objections.

After reviewing Bill Klocko's work, I cannot find fault with Steve's
analysis - even with the apparent boost in power. Bill has implored
me to slog through the math, and I have given it my best try. I can't
say that I've mastered it, but I trust the source. His effort is far
more complete than any arguments offered here.

There was an earlier poster who wished to see it online. As soon as I
or Bill gets it into pdf form, that will happen and I will announce
the url.

73's
Richard Clark, KB7QHC

4505. Re: Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 03:19:59 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B09DADF.9012BAC9@IEEE.org>
Source record: 162453

Dick Hughes wrote:
> This balun is the MFJ-912 designed by W9IIN. I can't tell if it is
> wound as a voltage or current type.

I had an MFJ 4:1 balun at one time. It was a voltage balun but I don't
remember the part number.

> Why do I need it? How about, I have had the darn thing in my cupboard
> for several years and now I may have a use for it! :-) I assumed
> that I would get a better match between the coax and twinlead than
> just connecting the two together as in the original G5RV.

If the twinlead is carrying a high SWR, the impedance seen at the input
to the twinlead will be anything except the characteristic impedance.
I simply don't use 4:1 baluns anymore because they rarely see the
200 ohms resistive for which they were designed.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4506. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 03:26:23 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B09DC5F.4BC2AE93@IEEE.org>
Source record: 162455

Richard Clark wrote:
> That is like saying there is no need for the general equation when you
> have a special solution.

It's more like saying use the simplest solution that works.

> It is also a tacit admission that these operations are necessary for
> the non Z0 matched system in that you have not shown that these
> operations lead to an incorrect solution. I don't think that was your
> point, but that was what Steve was responding to from Walt's
> objections.

My arguments and Walt's arguments are not the same. I have never, never
said that the same methods that work on Z0-matched systems will work
on non-Z0-matched systems. The Z0-match shortcuts are made possible
by the fact that at a Z0-match, all phasors are either in phase or
180 degrees out of phase. Thus cos(theta) is either +1 or -1.

> After reviewing Bill Klocko's work, I cannot find fault with Steve's
> analysis - even with the apparent boost in power. Bill has implored
> me to slog through the math, and I have given it my best try. I can't
> say that I've mastered it, but I trust the source. His effort is far
> more complete than any arguments offered here.

Does Bill Klocko allow 75w plus 8.33w to equal 133.33w? That is the only
objection I had to Steve's assertions. He has admitted there is 50 watts
of constructive interference and that balances the energy equation.

> There was an earlier poster who wished to see it online. As soon as I
> or Bill gets it into pdf form, that will happen and I will announce
> the url.

Thanks, Richard.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4507. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 03:27:27 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <z0lO6.35141$t12.2721081@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162454

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B09A458.71B7C2C0@IEEE.org...
> Steve, VE9SRB, says that Z0-matched systems cannot be analyzed without
> resorting to vector addition of voltages and currents. This thread will
> show him how to do it. There is a phasor diagram on my web page at:
>

That's not quite what I said.

Can we please keep this discussion technical.

> http://people.delphi.com/cecilmoore/z0match.gif
>
> that will be referenced during this posting. Since we don't post graphics
> on the newsgroup, that's the best I can do. Here's the analysis:
>
> 100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load
>
> Given Steady-State Values:
> 100 watts forward on the coax, zero watts reflected
> 133.33 watts forward on the 150 ohm line, 33.33 watts reflected
>

Your starting with a known, defined steady state answer.

Anything done from here is simply an interpretation of the known steady
state conditions, not an analysis.

> The 100 watts forward on the coax will break into component values of:
>
> 75 watts not reflected at the 50-150 junction, joins the forward wave
>
> 25 watts reflected at the 50-150 junction but immediately canceled
through
> a destructive interference pattern with the 25 watts below
>
> The 33.33 watts reflected on the 150 ohm line will break into component
values of:
>
> 8.33 watts re-reflected at the 150-50 junction
>
> 25 watts not re-reflected at the 150-50 but immediately canceled
through
> a destructive interference pattern with the 25 watts above
>
> The 50 watts of destructive interference causes 50 watts of constructive

> interference energy which joins the forward wave on the 150 ohm line.
>
> Thus 75 watts not reflected plus 8.33 watts re-reflected plus 50 watts of
> constructive interference equals 133.33 watts of forward power on the 150
> ohm line.
>
> The voltage associated with the 133.33 watts of forward power is
sqrt(133.33*150)
> equals 141.4 volts. The current associated with the 133.33 watts is
sqrt(133.3/150)
> equals 0.943 amps. All the other voltages and currents can likewise be
calculated
> from the powers and Z0 involved. Understanding the nature of reflections
allows
> the phases to be deduced.
>
> Thus, there's absolutely no need for vector addition of voltages and
currents
> when analyzing a Z0-matched system.
> --

That's because you started with the answer and worked backwards. This is an interpretation not an analysis. If you did not know that it was a Zo match and you did not know all of the steady state power levels, you could not "analyze" this example at all.

The "energy loss" occurring in the destructive interference does not reverse direction and "join" with the forward wave. This is an incorrect interpretation. There is no virtual short circuit at the Zo match, there is no total re-reflection of power and there is no reversal of the Poynting.

If you pause for a few moments and don't immediately respond with telling me that this is all BS, I will put together an example that proves that the energy reversal does not occur as you describe. It requires an example that is a bit more complicated but it demonstrates all of the correct concepts. All I ask is a bit of time to put it together. Would you relax for a bit and wait for another post?

Steve VE9SRB

4508. Re: Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 03:37:16 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <7knjgtg3sli17v13f3gpreqkb3tf8mh0sg@4ax.com>
Source record: 162456

OK Cecil. After reading the Louis Varney article on the G5RV I am convinced that I should NOT use a balun. Thanks for making me question my plan.

Dick - W6CCD

On Mon, 21 May 2001 19:06:31 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Dick Hughes wrote:
>> Although I may lose some power by using the balun vs a
>> choke, will it at least give me reasonable performance? Not looking
>> for DXCC on 75 :-)
>
>Most 4:1 baluns are voltage type baluns and don't balance the currents.
>Why do you think you need a 4:1 balun?

4509. Re: Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 03:39:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B09DF89.2BED0D05@IEEE.org>
Source record: 162457

Dick Hughes wrote:
> OK Cecil. After reading the Louis Varney article on the G5RV I am
> convinced that I should NOT use a balun. Thanks for making me
> question my plan.

Are you building a G5RV? I would recommend putting a choke at any
coax to twinlead connection. My G5RV came with a ferrite bead choke.
--
http://www.mindspring.com/~w6rca

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4510. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 03:59:00 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B09E404.5D3E5E38@IEEE.org>
Source record: 162458

VE9SRB wrote:
> Your starting with a known, defined steady state answer.

Here's what I need to know, Steve. I need to know that a Z0-match exists, the reflection coefficient, and the generator power. That's all.

> If you did not know that it was a Zo match and you did not know all of
> the steady state power levels, you could not "analyze" this example at all.

And if there was no antenna system, even you couldn't analyze it. Get real, Steve. What I have presented is a shortcut method for Z0-matched systems, by far the most common antenna system in ham radio.

> The "energy loss" occurring in the destructive interference does not reverse
> direction and "join" with the forward wave. This is an incorrect
> interpretation. There is no virtual short circuit at the Zo match, there is
> no total re-reflection of power and there is no reversal of the Poynting.

Steve, I have already said I could be wrong about the Poynting vector because I haven't done the math. I have never said a virtual short circuit exists. That is a strawman on your part. Why do you feel that spreading falsehoods about what I have said is the only way for you to win an argument?

The energy in the two waves canceled by destructive interference that was flowing toward the source winds up flowing toward the load. If you want to assert that is not a change of direction, feel free to be just as silly as you want to be.

It's apparent that you will say anything to keep all the reflected power from being re-routed back toward the load. So far, you are losing.

> If you pause for a few moments and don't immediately respond with telling me
> that this is all BS, I will put together an example that proves that the
> energy reversal does not occur as you describe. It requires an example that
> is a bit more complicated but it demonstrates all of the correct concepts.
> All I ask is a bit of time to put it together. Would you relax for a bit
> and wait for another post?

Too late. :-) But remember, we are still dealing with Z0-matched systems so make sure your latest example is Z0-matched. And be forewarned - I expect you to obfuscate your example so badly that nobody can understand it.
--
http://www.mindspring.com/~w6rca

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4511. Re: Radials question for my H9 Butternut

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 04:09:29 UTC
From: Pete <pete@etep.com>
Message-ID: <ZDlO6.18333$Ji.392093@news1.rdc1.il.home.com>
Source record: 162459

Wayne thanks for your reply. Where can I get a copy of the Dec '76 Qst article by Mr. Stanley? I'd like very much to see what he has to say. Would the ARRL site have it?
Pete spfdpete@home.com

"Wayne and Louise Irwin" <the-irwins@home.com> wrote in message news:WkjO6.16600$v5.1460920@news1.rdc1.ct.home.com...
> Hi Pete, and others who may be interested.
>
> For an excellent dissertation on how many radials is enough, check out the
> article by John Stanley, K4ERO, in the December, 1976 edition of QST. As he
> points out, to a great extent what you want your antenna to do (performance
> wise) has a lot to do with how many radials you need. Youmay be quite
> surprised by his answer to the question, "How many radials do I need"?
>
> 73,
>
> Wayne, W1KI
>
> ==========
>
> "Pete" <pete@etep.com> wrote in message
> news:T6YN6.15264$Ji.311261@news1.rdc1.il.home.com...
> > Thanks for all your help I've gotten you all in the past. I just
> installed
> > my H9 vertical with a Gap tilt-over ground mount bracket so I can hide my
> > antenna when not in use. I drove an 8 foot ground rod next to the antenna
> > bracket. I then used #10 ground wire from the rod to the bracket and then
> > connected it to the vertical antenna.
> > I then placed 14 radial (#12 gauge) wires 20 to 25 feet long in all
> > directions from the ground rod and tied them all together and connected
> them
> > to the ground rod. The wires have plastic insulation on them. I plan on
> > burying them soon. The question I have is did I do all of the above
> > correctly, and is 14 radials enough? I am anxious to get the vertical
> > adjusted and tuned up. I really don't have much more room for many more
> > radials. I welcome constructive criticism and all your suggestions.
> Thanks
> > 73's Pete WD9ALM

> >
> >
>
>

4512. Re: Energy Quiz

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 04:13:48 UTC
From: richardharrison@webtv.net
Message-ID: <25123-3B09E77C-222@storefull-114.iap.bryant.webtv.net>
Source record: 162462

Peter, K1PO wrote:
"If they are in "opposition" i.e. put the + terminals of of both DC power supplies on the center conductor and the - terminals on the negative conductor (shield?), then they will both put out 100 watts."

Well, that fits a classical idea. Say the supplies are identical batteries. The current from one battery would charge the other, offsetting any drop across internal resistance and any migration through electrolyte.

Think of a balanced resistance bridge. Either there is no current at balance because a voltage standoff leaves no difference of potential, or equal currents through the null indicator offset each other.

Personally, I`m comfortable with the lack of a potential difference across the null indicator which provides no impetuous for current through the indicator.

Transmission lines are not as complicated as described by some. Bird Electronic Corporation publishes application notes which would help some see things simply. They sent them to me free some years ago on request. Bird tries to give a simple explanation of their wattmeter. To do so they must explain operation of the line itself. Their wattmeter works and so does its explanation.

Wiith negligible loss, power from the sender is the same as that eaten by the load. There`s no long-term storage in the transmission line. Power is the convenient variable to follow and measure. Satisfactory solutions to transmission line problems were worked out a long, long time ago. First rule is that the delivered power is the forward power minus the reflected power.

Best regards, Richard Harrison, KB5WZI

4513. Re: phono cable used for coax?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 04:18:21 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9ecpadnbq0@208.206.142.73>
Source record: 162460

It will work. If you want to maximize the signal make up a jumper a few feet long and splice it to the large coax. then run the flexible jumper to the radio. That should solve the mechanical stress problem.

Dick

Jim wrote:
>
> i am having quite a problem with thick heavy coax wrecking the antenna
> input socket of my portable shortwave receiver. the stuff is just too
> stiff. who can tell me about the possibility of using phono cable or
> microphone cable on various receiving antennas? the stuff looks
> superficially like coax, but its thinner and very supple. what impedance
> value should i expect from this shielded cable? how long can it be
> before the value even begins to matter? any other thoughts on this?

4514. Re: Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 04:25:40 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <jhqjgts08qer9603smq3m885pm61803tuv@4ax.com>
Source record: 162461

OK. Thanks.

On Mon, 21 May 2001 22:39:53 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Dick Hughes wrote:
>> OK Cecil. After reading the Louis Varney article on the G5RV I am
>> convinced that I should NOT use a balun. Thanks for making me
>> question my plan.
>
>Are you building a G5RV? I would recommend putting a choke at any
>coax to twinlead connection. My G5RV came with a ferrite bead choke.

4515. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 05:25:05 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9ect7h$448$0@208.206.142.73>
Source record: 162463

VE9SRB wrote:
>
> That's because you started with the answer and worked backwards. This is an
> interpretation not an analysis. If you did not know that it was a Zo match
> and you did not know all of the steady state power levels, you could not
> "analyze" this example at all.
>

Then what's the purpose of this entire exercise? When my antenna tuner
provides a Zo match, the conditions - the "answer"- automatically exist.
If you don't want to analyze them, let Walt do it, without criicism.

Dick

4516. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 10:39:24 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B0A41DC.FFDF046F@berkshire.net>
Source record: 162466

W6RCecilA wrote:
>
> There is 133.33 watts of forward power on the 150 ohm line. What you need to
> say is there is 100 watts of net power at every point between the source and
> the load.

ok, so you acknowledge that there is 100w of net power at every point between the source and the load. and since i can calculate the voltage and current and impedance at every point between the source and the load and it always multiplies out to 100w, where is the power in your reflected waves in steady state?? answer: it is canceled instantly at every point between the source and the load, so i would hardly call it a 'wave'.

>
>This is wrong, David. There is a physical discontinuity at the Z0-match point
>which causes reflections which are immediately canceled. If it weren't for that
>physical discontinuity, a Z0-match wouldn't work. You may not be aware of those
>canceled waves but they are there until canceled.

ok, so the reflections are immediately canceled.. you acknowlege that. now, try this exercise... calculate the impedance seen in the line looking toward the load in steady state and find the discontinuity. look at x-.1", x, and x+.1" and show me the discontinuity that produces a reflection coefficient of .5. remember, in steady state the impedance seen at any point is calculated from the transformed load impedance and either your handy smith chart or the transmission line equations.

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4517. Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 10:39:55 UTC
From: Bill Russell <willy@global2000.net>
Message-ID: <r2gkgt02an128evma9i24g5cnimsmk0ih7@4ax.com>
Source record: 162464

About to put up a wire antenna and not sure if I should use a 130ft
dipole fed with ladder line and a tuner or the Carolina Windom. This
antenna will be used for all bands and full power when needed. I do
not have a lot of space.....the 130 ft dipole will just fit my lot.
Both antennas will be about 35 to 40 ft high. Which antenna would be
the best for my application??????
Thanks in advance,
Bill

4518. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 10:47:49 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B0A43D5.C9C95561@berkshire.net>
Source record: 162467

the same phasor diagram, the same assumptions, the same results, still the wrong explanations.

this is the typical method used by a newsgroup 'self appointed expert' who just wants to keep a thread going so he can be in the middle... start it new with a different name and repeat the same old assertions. hopefully everyone participating will recognize it and drop it before it starts all over again, instead review the 'Back to Basics' thread and the last attempt to rekindle it in the 'Energy Quiz' thread.

W6RCecilA wrote:
>
> Steve, VE9SRB, says that Z0-matched systems cannot be analyzed without
> resorting to vector addition of voltages and currents. This thread will
> show him how to do it. There is a phasor diagram on my web page at:
>
> http://people.delphi.com/cecilmoore/z0match.gif
>
> that will be referenced during this posting. Since we don't post graphics
> on the newsgroup, that's the best I can do. Here's the analysis:
>
> 100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load
>
> Given Steady-State Values:
> 100 watts forward on the coax, zero watts reflected
> 133.33 watts forward on the 150 ohm line, 33.33 watts reflected
>
> The 100 watts forward on the coax will break into component values of:
>
> 75 watts not reflected at the 50-150 junction, joins the forward wave
>
> 25 watts reflected at the 50-150 junction but immediately canceled through
> a destructive interference pattern with the 25 watts below
>
> The 33.33 watts reflected on the 150 ohm line will break into component values of:
>
> 8.33 watts re-reflected at the 150-50 junction
>
> 25 watts not re-reflected at the 150-50 but immediately canceled through
> a destructive interference pattern with the 25 watts above
>
> The 50 watts of destructive interference causes 50 watts of constructive
> interference energy which joins the forward wave on the 150 ohm line.
>
> Thus 75 watts not reflected plus 8.33 watts re-reflected plus 50 watts of

> constructive interference equals 133.33 watts of forward power on the 150
> ohm line.
>
> The voltage associated with the 133.33 watts of forward power is sqrt(133.33*150)
> equals 141.4 volts. The current associated with the 133.33 watts is sqrt(133.3/150)
> equals 0.943 amps. All the other voltages and currents can likewise be calculated
> from the powers and Z0 involved. Understanding the nature of reflections allows
> the phases to be deduced.
>
> Thus, there's absolutely no need for vector addition of voltages and currents
> when analyzing a Z0-matched system.
> --
> http://www.mindspring.com/~w6rca
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--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4519. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 11:02:01 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3B0A4728.818055DE@netdoor.com>
Source record: 162465

Go for the RadioWorks Carolina Windom. I used one of Jim's famous C.Windoms for years (8) and only lost it to a new house with no treez in the right places. I can't tell you what an improvment the windom was over a dipole, even on receive it could hear better. I kept the dipole up for a while after installing the c.windom and the windom was definitely better for listening to by 1-2 s units. I know, I know, but that is what the meter said!

Butch KF5DE

Bill Russell wrote:

> About to put up a wire antenna and not sure if I should use a 130ft
> dipole fed with ladder line and a tuner or the Carolina Windom. This
> antenna will be used for all bands and full power when needed. I do
> not have a lot of space.....the 130 ft dipole will just fit my lot.
> Both antennas will be about 35 to 40 ft high. Which antenna would be
> the best for my application??????
> Thanks in advance,
> Bill

4520. formula stacking two dipoles

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 12:30:13 UTC
From: Michel de Ruiter <info@fluxfm.nl>
Message-ID: <9edm3sehj1@porthos.nl.uu.net>
Source record: 162468

Who gan give me the formula for stacking two dipoles with 75 ohm coax? Is it right to use 3/4 quarter wave?

Regards,

PD1AIW

4521. 10-15-20 Vertical Trap mfd by Taylor Radio Co, Inc

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 13:00:16 UTC
From: ",Ken Frantz, KF4QID" <kf4qid@prodigy.net>
Message-ID: <9edntl$9t9m$1@newssvr05-en0.news.prodigy.com>
Source record: 162370

I have aquired this antenna from an old ham.The parts I have are still
wraped as they were shipped.
1) I do not know if I have all of the parts to put it together.
2) I did get any kind of information for this antenna.
3) I looked on the "yellow pages" on the net, but could not find any
information on the Co.
Taylor Radio Co., Inc
Augusta, Georgia
4) The only information is on the traps other than the company name;
10M TRAP 0507781
15M TRAP 0507783
20M TRAP 0507782
If anyone has any information on this antenna or if the Co. is under a new
name E-mail me at kf4qid@prodigy.nt

THANKS IN ADVANCE, 73's Ken, KF4QID from Central Florida

4522. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 13:03:27 UTC
From: richardharrison@webtv.net
Message-ID: <26054-3B0A639F-239@storefull-111.iap.bryant.webtv.net>
Source record: 162371

David, K1TTT wrote:
"where is the power in your reflected waves in steady state? answer: it is canceled instantly at every point between the source and load,"

I don`t know what you are talking about, but waves don`t cancel each other at every point on a line. That`s why you can map SWR patterns. That`s why your Bird wattmeter can separate the incident and reflected powers. In a low-poss line, the measured powers are nearly the same at every point on the line.

Best regards, Richard Harrison, KB5WZI

4523. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 13:11:29 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0A6581.CC089989@IEEE.org>
Source record: 162372

David Robbins wrote:
> ok, so you acknowledge that there is 100w of net power at every point between
> the source and the load. and since i can calculate the voltage and current and
> impedance at every point between the source and the load and it always
> multiplies out to 100w, where is the power in your reflected waves in steady
> state?? answer: it is canceled instantly at every point between the source and
> the load, so i would hardly call it a 'wave'.

The answer to your question depends on your definition of "power", David. If you accept the IEEE definition of power, then the reflected power is stored in the line which has an SWR greater than 1:1. The reflections that are canceled are on the coax where there is no reflected power, not on the twinlead where there is reflected power. If you don't accept the IEEE definition of power, change it to "reflected energy".

Please grok the following statement. At any time during steady-state, there is more energy that has been generated than has been delivered to the load and is stored in the feedline. Reflections increase the amount of energy that has been stored in the feedline and has not been delivered to the load.

Consider a one second long transmission line, fed by a 100 joule/sec source, that has an SWR of 5.83:1. During steady-state, there will be 300 joules of energy stored in the transmission line. 100 joules is the energy generated over the past second. 200 joules is the result of reflections.

> ok, so the reflections are immediately canceled.. you acknowlege that.

The reflections are immediately canceled on the 50 ohm coax by destructive interference. Reflections still exist on the 150 ohm twinlead.

> now, try
> this exercise... calculate the impedance seen in the line looking toward the
> load in steady state and find the discontinuity. look at x-.1", x, and x+.1"
> and show me the discontinuity that produces a reflection coefficient of .5.
> remember, in steady state the impedance seen at any point is calculated from the
> transformed load impedance and either your handy smith chart or the transmission
> line equations.

That value is a virtual impedance and subject to the superposition rule. There are virtual impedances all up and down the transmission line. Reflections can only occur at a real impedance bump. The virtual impedance is the *RESULT* of reflections and is not the *CAUSE* of anything according to the principle of superposition.
--
http://www.mindspring.com/~w6rca

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4524. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 13:20:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0A6799.F70F8044@IEEE.org>
Source record: 162373

David Robbins wrote:
> the same phasor diagram, the same assumptions, the same results, still the wrong
> explanations.

What explainations are wrong? I went to a lot of trouble to draw that
phasor diagram so it could be discussed in detail.
--
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4525. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 13:22:10 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0A6802.75FB77F8@IEEE.org>
Source record: 162374

Bill Russell wrote:
> About to put up a wire antenna and not sure if I should use a 130ft
> dipole fed with ladder line and a tuner or the Carolina Windom. This
> antenna will be used for all bands and full power when needed. I do
> not have a lot of space.....the 130 ft dipole will just fit my lot.
> Both antennas will be about 35 to 40 ft high. Which antenna would be
> the best for my application??????

The Carolina Windom has more vertical radiation than the dipole and
less horizontal radiation than the dipole. Which do you want?
--
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4526. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 13:27:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0A692F.929F99EE@IEEE.org>
Source record: 162375

Butch Magee wrote:
> Go for the RadioWorks Carolina Windom. I used one of Jim's famous
> C.Windoms for years (8) and only lost it to a new house with no treez in
> the right places. I can't tell you what an improvment the windom was
> over a dipole, even on receive it could hear better. I kept the dipole
> up for a while after installing the c.windom and the windom was
> definitely better for listening to by 1-2 s units. I know, I know, but
> that is what the meter said!

The dipole is superior in certain directions at certain take-off-angles.
The Carolina Windom is superior in other directions and other take-off-
angles. The free demo version of EZNEC will probably model both of them.
In particular, at low heights, the Carolina Windom is a better DX performer
while the dipole is a better NVIS performer.
--
http://www.mindspring.com/~w6rca

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4527. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 13:46:02 UTC
From: w2du@iag.net
Message-ID: <3b0a5f8d.1796703@news.journey.com>
Source record: 162376

On Thu, 17 May 2001 02:53:58 GMT, Richard Clark <kb7qhc@home.com> wrote:

>>>On Wed, 16 May 2001 20:06:01 GMT, w2du@iag.net (Walter Maxwell) wrote:
>>>
>>>>It is thus evident that it is power that adds directly, not voltage.
>>>
>>>Hi Walt,
>>>
>>>This is entirely the problem. You make a bald statement as though it
>>>were fact. I have had correspondence with many who do not wish to
>>>participate in these "debates" and one sent me a treatment on Modeling
>>>the Quarter Wave Transformer (which I promptly re-distributed).
>I will post it to you. I am sure the author would appreciate
>comments.
>>
>snip
>>
>>Are you discussing SWR measurements or forward power?
>
>I responded to exactly ONE line, repeated here:
>>>>It is thus evident that it is power that adds directly, not voltage.
>which statement is in direct contradiction of:
>"Antenna Impedance Matching," Wilfred Caron, ARRL
>"Transmission Lines," Robert Chipman, Schaum's Outline Series
>"Waves on Transmission Lines," HP Application Note 16
>and I cite these only because they are at hand from reviewing other
>correspondence.

Richard, I'll explain below why my statement is NOT in contradiction with any of
the references you list above.

>>>One of the most ferocious brain knots I've encountered is this notion
>>>of virtual shorts that exist through the combination of waves that
>>>finds a solution (the virtual short) at only one point in the
>>>continuum. This absurdity is beyond explanation (too often it has
>>>been offered and defended as another fact not requiring proof). This
>>>may be a problem of your presentation, because I do have experience
>>>with real shorts generated by waves (a classical example is the
>>>waveguide junction with choke joints). You may, or may not,
>>>characterize these as Virtual Shorts, I have experienced them as Real
>>>Shorts. Waveguide literature is rich with such examples, and more,
>>>and their descriptions encompass far less rhetoric (and are far more
>>>approachable).
>>
>You have a willing audience in

>me, Walt; but my critic says you are playing to the wings.
>
>73's
>Richard Clark, KB7QHC

Richard, I'm back from Dayton after having a great time autographing copies of Reflections II that were being sold at five different venues.

Now to return to where we left off before leaving for Dayton.

I reviewed Bill Klocko's paper on the 1/4 wl transformer, which turned out to be the paper he sent me a year or so ago. It is an excellent paper, presenting the voltages and reflection coefficients leading up to the steady state with great clarity. It agrees with my position completely. In addition, Bill's paper confirms my position that 1) a virtual short really exists at the matching point, and 2) total re-reflection occurs at the virtual short.

While it is true that energy is transmitted rearward past point A in Bill's Fig 1, but only during the buildup to the steady state. Once the steady state is reached no energy is transmitted rearward past point A, and all energy reflected from B toward A is re-reflected toward the load. These conditions prove points 1) and 2) above, contrary to your statement above that I've made a bald statement as if it were fact. It is a fact!

Let's now return to the controversy concerning Steve's insistence that powers don't add in forming the forward wave, voltages do.

Richard, after so many posts on this issue you've lost your focus, as indicated by your referring me to Bill's paper. Certainly the voltages add in establishing the forward wave, as Bill clearly explains in his paper. But where you went off track is in losing sight of the specific voltage we're concerned with. Steve's claim is that the STEADY-STATE voltage reflected from the line mismatch adds to the source voltage, which isn't true. And here is his rationale:

He knows that with 150 ohms terminating a 50-ohm line, 133.33 watts is the forward power. It is true that 33.333 watts of steady state power is reflected, and the steady-state reflected voltage is 40.82 v. When 40.82 v is added to the source voltage 70.71 v, the forward voltage would be 111.54 v, which, when squared and divided by Zo (50) yields 248.8 watts of forward power. Wrong value!

So here's the kicker. He says that since 248.8 watts is incorrect the 33.333 watts of reflected power cannot be added to the 100 watts of source power to obtain the 133.33 watts of forward power, because adding the source and steady-state reflected voltages yields the wrong answer. Therefore, he says 8.33 watts reflected added to 75 watts yields 133.33 watts, because now the voltages add correctly. How can a mathematician of his caliber believe that 8.33 + 75 = 133.33? This is what is absurd!

So contrary to your statement above, it is the reflected and source powers that add directly to establish the total forward power, not the source and steady-state reflected voltages.

I hope you can see my point of view.

Walt, W2DU

4528. FS: *Yo-Yo-Tenna Deluxe*

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 14:11:14 UTC
From: ARS--KC8BCR@webtv.net
Message-ID: <9724-3B0A7382-13@storefull-134.iap.bryant.webtv.net>
Source record: 162381
Cross-posted to: rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.swap

We were unable to go to Dayton because of prior family and outpatient medical obligations...but our good friends at WORLDRADIO magazine were very kind enough to "pinch hit" and demonstrate/pass out fliers at Dayton regarding our new *Yo-Yo-Tenna Deluxe* Portable Dipole Antenna System. The fliers and the WORLDRADIO ad don't quite match up...yet. The magazine ad still states that this dual wind-up reel antenna is $29.95...POSTPAID. We typeset that ad back before the post office upped its rates. After we found out that they upped not only Priority Mail...but insurance too...we had to add shipping and handling. But currently...at least for a few more days...we will honor the May and June issues advertising the *Yo-Yo-Tenna Deluxe* for just $29.95...POSTPAID.

If you haven't seen the photos in WORLDRADIO, or didn't get our flier at Dayton, you can get an image of what the Yo-Yo-Tenna Deluxe looks like at our website. Just visit the Yo-Yo-Tenna page...imagine two of these wind-up "fishing reel" antennas connected to a piece of insulated tubing/reducer combination (for strain relief) attached to a PL-259. Can connect directly to your rig or your tuner. Works from 2 thru 40 meters. You can purchase additional individual reels to get coverage for 75/80 & 160 by connecting them in series. Great for traveling, camping, vacations, portable & Field Day. Because of its easy-up/easy-down hook-up, its great for apartments and condos. Also great for SWL's!

If you want to order...or have questions...you can call me at 1.517.563.2613. Or e-mail me.
Our website is - http://qth.com/dwm

73, Bill - WA8MEA

@ Jackson Co., MI QRP Club Station - KC8BCR

4529. Re: formula stacking two dipoles

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 14:16:48 UTC
From: richardharrison@webtv.net
Message-ID: <25123-3B0A74D0-268@storefull-114.iap.bryant.webtv.net>
Source record: 162380

Michel de Ruiter wrote:
"Who can give me the formula for stacking two dipoles with 75 ohm coax?
Is it right to use 3/4 quarter wave?"

There are several "Lazy H" arrays. See page 8-46 in the ARRL Antenna Book or some similar book.

One answer for stacking two 1/2-wave horizontal dipoles is to separate them by about 1/2-wave vertical distance and parallel in the same vertical plane, then hang them at great height.

Coax without a balun may become a radiator too. But, the two dipoles need to be driven in the same phase. Equal lengths of coax will get that right. If these are 1/4-wave or 3/4-wave they can be "Q-sectons" to elevate the dipole element impedance to twice the impedance of the coax impedance of the longer length you want to use to match your radio. When paralleled through a Tee connector you can have the right impedance. The formula for a "Q-section" impedance is its impedance is equal to the square root of the product of the two impedances to be matched.

Another approach is to use equal lengths of coax matching the antenna elements. Then, install a "Q-section" between the Tee and the longer line which matches your radio.

A better solution may be to use ladder-line with your balanced antenna array. You could start by examining the web pages of Cecil Moore, W6RCA. You will find numerous postings by Cecil in this newsgroup which contain his webpage addresses.

Best regards, Richard Harrison, KB5WZI

4530. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 14:19:51 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0A7587.522C3AF@IEEE.org>
Source record: 162379

Walter Maxwell wrote:
> How can a mathematician of his caliber believe that 8.33 + 75 = 133.33?
> This is what is absurd!

Walt, while you were gone, I got Steve to admit that the energy from the destructive interference pattern of the two waves trying to travel back toward the source becomes constructive interference energy flowing toward the load.

Here's what Steve admitted in his own words:

"Destructive interference does occur such that the *net* power flow in the rearward direction becomes zero. To balance the power relationships in this example, there must be a corresponding increase in the *net* power flow in the forward direction. ... The "net energy loss" occurring through destructive interference is balanced by a corresponding "net energy gain" occurring through constructive interference."

The above "corresponding increase in the *net* power flow in the forward direction" is 50 watts, exactly the power required to balance the energy equation and supply the necessary underlying energy.

75w + 8.33w + 50w = 133.33w which we knew all the time.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4531. Re: No AM reception

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 14:21:05 UTC
From: Ryan KC8PMX <kc8pmx@tm.net>
Message-ID: <lBuO6.2539$gA.998172@monger.newsread.com>
Source record: 162377

I also am living temporarily in a trailer home. Unfortunately the only way I can receive anything is to get the antennas outside somehow. The trailer I live in is at least 40 years old and it is like I am living in a lead-lined box. I can't even hit the local repeater about 9 miles away with 40 watts indoors, but can hit it on my HT on low power mode as long as I step outside. Simply, get your antennas outside somehow, even if it is for a AM/FM stereo.

Ryan
KC8PMX

"itten" <itten@home.com> wrote in message
news:20052001191526886%itten@home.com...
> I live in a mobile home and I guess because of all the electronic stuff
> I have been adding, the am reception is almost non existant. I've
> tried a variety of radios in various locations with no luck. I get a
> humming noise with a lot of static instead of a clear tone. I can't
> even get good reception with running battery operated radios. I even
> went so far as to put a radio outside a window and even 5' awqy, the
> reception is lousy. Is there something I can do to remedy the
> situation?

4532. Re: short 2 meter antenna??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 14:21:06 UTC
From: Ryan KC8PMX <kc8pmx@tm.net>
Message-ID: <mBuO6.2540$gA.997899@monger.newsread.com>
Source record: 162378

Try a bumper mount antenna, you can get a full length antenna and still probably not have too much problem hitting the garage ceiling. Also there are some other options, like in the bed of the truck provided you don't have a capper/topper on the bed. Or you can do what I think is called cowl-mounting. Mounting a permanent antenna similar to the AM/FM radio antenna already on the truck. Lastly, I believe it is MFJ that makes a magnet mount antenna designed specifically to fold over under strain. Check QST or CQ magazine ads for more.

Ryan, KC8PMX

"Matt" <matt_patt123@yahoo.com> wrote in message
news:9e9m3t02ce5@enews4.newsguy.com...
> I was wondering if anyone has any suggestions on what antenna I could use
on
> my 2 meter mobile rig with about a foot of clearance with the top of the
cab
> of my truck and the garage. I am not wanting it to hit the garage if
> possible. I've been looking and can't seem to find anything close to
what
> I am looking for. I am also wondering if anyone has or is using the
> motorized antenna mounts that raise and lower the antenna and if so, where
> did you buy it from? I have been looking at these as a possible solution
to
> my problem but the only ones I can find are either trunk mount or rack
> mount. Non of which will work on a truck. Any advice would be
appreciated.
>
>
> Thanks
> Matt
>
>

4533. Re: N connector and 9913

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 15:15:47 UTC
From: "Adam T. Cately" <atcately@bright.net>
Message-ID: <3B0A82A3.27272250@bright.net>
Source record: 162369

Dan Yemiola wrote:
>
> Could anyone direct me to a site that tells, and preferably shows with
> illustrations, how to properly put an N connector on 9913 cable?
>
> Dan
> AI8O

Various connector retailers carry a two-piece N-style specially
made for 9913 - check out the Coax-Man, etc., for a look-see on what's
available...

--

- Adam -

4534. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 15:57:58 UTC
From: kb7qhc@home.com
Message-ID: <3b0a8b34.258694012@news.seanet.com>
Source record: 162383

On Tue, 22 May 2001 13:46:02 GMT, w2du@iag.net (Walter Maxwell) wrote:

>While it is true that energy is transmitted rearward past point A in Bill's Fig
>1, but only during the buildup to the steady state. Once the steady state is
>reached no energy is transmitted rearward past point A, and all energy reflected
>from B toward A is re-reflected toward the load. These conditions prove points
>1) and 2) above, contrary to your statement above that I've made a bald
>statement as if it were fact. It is a fact!
>

Hi Walt,

here again is the statement:
>>>>It is thus evident that it is power that adds directly, not voltage.
>>>
>>>Hi Walt,
>>>
>>>This is entirely the problem. You make a bald statement as though it
>>>were fact.

You have not argued a fact, you have simply repeated a bald statement.

As you accept Bill Klocko's analysis, that is entirely composed of
current and voltage additions, it is exceedingly clear that no powers
were added nor expressed in the sense that you maintain.

73's
Richard Clark, KB7QHC

4535. FA - 60 Amp AC power line RFI filter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 16:00:41 UTC
From: Dave Sien <jeronamo@REMOVEaol.com>
Message-ID: <c2wO6.21$ls5.13691@news.pacbell.net>
Source record: 162382

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1239863305&r=0&t=0&showTutorial=0&ed=991073429&indexURL=0&rd=1

4536. Re: No AM reception

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 16:08:47 UTC
From: richardharrison@webtv.net
Message-ID: <24789-3B0A8F0F-189@storefull-118.iap.bryant.webtv.net>
Source record: 162384

Ryan, KC8PMX wrote:
"Simply, get your antennas outside somehow, even if it is for AM/FM stereo."

It helps to find a "sweet receiving spot" for your outdoor antennas by surveying your area with a portable radio. You want low noise and a good signal. Directional antennas can help, maybe a loop for AM and a dipole for FM. Balanced or shielded antenna leads can help avoid noise pick up between the antenna and the radio.

Best regards, Richard Harrison, KB5WZI

4537. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 16:13:42 UTC
From: kb7qhc@home.com
Message-ID: <3b0c8e89.259547469@news.seanet.com>
Source record: 162385

On Tue, 22 May 2001 13:46:02 GMT, w2du@iag.net (Walter Maxwell) wrote:

>
>So contrary to your statement above, it is the reflected and source powers that
>add directly to establish the total forward power, not the source and
>steady-state reflected voltages.
>
>I hope you can see my point of view.
>
>Walt, W2DU

Hi Walt,

You have not proven nor offered any contrary evidence that supports
the statement:

>>>>It is thus evident that it is power that adds directly, not voltage.
>>>
>>>Hi Walt,
>>>
>>>This is entirely the problem. You make a bald statement as though it
>>>were fact.

Bill Klocko's work shows otherwise and as you accept it, there remains
a conflict between what you say (which is suspect) and this work that
clearly presents Steve's solutions (or so it appears in my
estimation).

You can either make your case with the math that Bill presents, or you
can recant and offer your own complete treatment equal to Bill's
effort - there is clearly no middle ground.

73's
Richard Clark, KB7QHC

4538. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 16:24:24 UTC
From: kb7qhc@home.com
Message-ID: <3b0b8cab.259069882@news.seanet.com>
Source record: 162386

On Tue, 22 May 2001 13:46:02 GMT, w2du@iag.net (Walter Maxwell) wrote:

>But where you went off
>track is in losing sight of the specific voltage we're concerned with. Steve's
>claim is that the STEADY-STATE voltage reflected from the line mismatch adds to
>the source voltage, which isn't true. And here is his rationale:
>

Hi Walt,

I went off track nowhere as I was on no ones' tracks, but merely
responding to the poor quality of discourse. It was only one line:

>>>>It is thus evident that it is power that adds directly, not voltage.
>>>
>>>Hi Walt,
>>>
>>>This is entirely the problem. You make a bald statement as though it
>>>were fact.

Restating another's case as you are, leading into in your last
sentence above ("And here is his rationale:"), is further evidence of
the poor quality. I am not interested in third hand versions of
someone else's version of a now remote argument - be responsive to the
point here.

73's
Richard Clark, KB7QHC

4539. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 16:43:53 UTC
From: kb7qhc@home.com
Message-ID: <3b0d9312.260708809@news.seanet.com>
Source record: 162387

On Tue, 22 May 2001 08:03:27 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>David, K1TTT wrote:
>"where is the power in your reflected waves in steady state? answer: it
>is canceled instantly at every point between the source and load,"
>
>I don`t know what you are talking about, but waves don`t cancel each
>other at every point on a line. That`s why you can map SWR patterns.
>That`s why your Bird wattmeter can separate the incident and reflected
>powers. In a low-poss line, the measured powers are nearly the same at
>every point on the line.
>
>Best regards, Richard Harrison, KB5WZI

Hi Richard,

This is JUST the problem of imprecise expression.

Two waves, 180 degrees out of phase, traveling in the same direction, both impinge upon a load with the net effect of no Power dissipated. If they both fall on the load in full cancellation, then that same load moved ANYWHERE along that same path MUST evidence the same complete cancellation.

They are by definition in the same path, same frequency, fixed phase relationship of 180 degrees - they must cancel everywhere.

Now as to how this condition is contrived (and I use that word deliberately) is part of the imprecision of expression which must lie in the poor expression, not the math.

Steve correlated this very well to the dynamics of the antenna reflector and director sourcing these two waves (and this is not a contrivance) such that there is a null at EVERY point behind the reflector.

73's
Richard Clark, KB7QHC

4540. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 17:09:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0A9D32.E108EA51@IEEE.org>
Source record: 162388

Richard Clark wrote:
> Bill Klocko's work shows otherwise and as you accept it, there remains
> a conflict between what you say (which is suspect) and this work that
> clearly presents Steve's solutions (or so it appears in my
> estimation).

Richard, I haven't seen Bill Klocko's work. Does Bill say that
75w + 8.33w = 133.33w ? That's the only disagreement I have
with Steve's solutions, i.e. a violation of the conservation
of energy principle.
--
http://www.mindspring.com/~w6rca

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4541. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 17:16:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0A9EFC.A6AA61E6@IEEE.org>
Source record: 162389

Richard Clark wrote:
>
> >David, K1TTT wrote:
> >"where is the power in your reflected waves in steady state? answer: it
> >is canceled instantly at every point between the source and load,"

> Two waves, 180 degrees out of phase, traveling in the same direction,
> both impinge upon a load with the net effect of no Power dissipated.
> If they both fall on the load in full cancellation, then that same
> load moved ANYWHERE along that same path MUST evidence the same
> complete cancellation.

Your reply is correct for the coax, Richard, but David was talking
about the 150 ohm line upon which rests an SWR of 3:1. David said
"every point between the source and the load" which includes the
150 ohm line. What would you say different about a transmission
line carrying an SWR greater than 1:1 where there are not two waves,
180 degrees out of phase, traveling in the same direction?

David seems to think his antenna tuner eliminates reflected waves
all the way to the antenna. You're not supporting that idea, are you?
--
http://www.mindspring.com/~w6rca

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4542. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 17:55:01 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0AA7F5.381DF7AD@IEEE.org>
Source record: 162391

Walter Maxwell wrote:
> While it is true that energy is transmitted rearward past point A in Bill's Fig
> 1, but only during the buildup to the steady state. Once the steady state is
> reached no energy is transmitted rearward past point A, and all energy reflected
> from B toward A is re-reflected toward the load. These conditions prove points
> 1) and 2) above, contrary to your statement above that I've made a bald
> statement as if it were fact. It is a fact!

Walt, I have said that the reflected power is technically not all re-reflected. Instead of technically being 100% re-reflected, part of it (1-rho^2 part) is re-routed by destructive/constructive interference. The *cause* is contructive/ constructive interference involving the part of the reflected energy that was not re-reflected outright. The *effect* is that the re-reflected energy and the constructive interference energy join together *as if* all the power had been 100% re-reflected.

I have said this over and over and demonstrated it with a phasor diagram. I don't know how to say it any plainer. To summarize:

Pref(rho^2) is re-reflected outright. Pref(1-rho^2) is re-routed through destructive/constructive interference. They come from the same place and wind up in the same place so it is *as good as* 100% re-reflection but technically, it is NOT 100% re-reflection.

> Steve's
> claim is that the STEADY-STATE voltage reflected from the line mismatch adds to
> the source voltage, which isn't true. And here is his rationale:

Actually, the voltages do add up but the fact that they add up is irrelevant. The thing that allows them to add up to the correct value is the energy in the destructive/constructive interference pattern supporting their values.

> Therefore, he says 8.33
> watts reflected added to 75 watts yields 133.33 watts, because now the voltages
> add correctly. How can a mathematician of his caliber believe that 8.33 + 75 =
> 133.33? This is what is absurd!

I replied to this on the newsgroup. Steve has admitted that addition energy is added to the system by the destructive/constructive interference. So, even though he refuses to admit it, he has allowed the 50w of destructive/constructive interference energy into the energy equation which then becomes:

75w + 8.33w + 50w = 133.33w and normalizing the associated voltages to a 150 ohm environment gives:

Vfor = sqrt(106.1^2 + 35.4^2 + 86.6^2) = 141.4 volts

> So contrary to your statement above, it is the reflected and source powers that
> add directly to establish the total forward power, not the source and
> steady-state reflected voltages.

rho^2 is 1/4 and 1-rho^2 is 3/4 so the components are:

100w * 3/4 = 75w not reflected at the 50-150 junction

100w * 1/4 = 25w reflected at the 50-150 junction

33.33w * 3/4 = 25w not re-reflected at the 150-50 junction

33.33w * 1/4 = 8.33w re-reflected at the 150-50 junction

The two 25w quantities are involved in the 50w destructive interference pattern
as shown on my phasor diagram.

(75w + 25w) + (8.33w + 25w) = forward power in the 150 ohm line

75w + 25w = 100w source power 8.33w + 25w = 33.33w reflected power
--
73, Cecil, W6RCA

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4543. Re: Antenna Height-VS-Take Off Angle

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 17:56:44 UTC
From: dinod@deltanet.com
Message-ID: <wLxO6.7477$CD5.2779717@news2.rdc2.tx.home.com>
Source record: 162390

So, you didn't like your log?!

Dino

>You will love your log periodic. 60' or higher is just dandy. I ran one that
>way for years. Very little heard, no matter what pileup that I couldn't
>work.
>
>73,
>
>hasan

4544. RICOHET INTERNET MOBLIE FREQ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 18:00:38 UTC
From: Bill N0MNB <N0MNB@MINN.NET>
Message-ID: <uOxO6.292$SM.13634@news.corpcomm.net>
Source record: 162392
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.space,rec.radio.amateur.swap

ANYONE KNOW WHAT FREQ THERE ON.
THANKS BILL

4545. Re: Looking for 50 Mhz Halo measures

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 18:04:18 UTC
From: "Leland C. Scott" <no-spam@junk-mail.net>
Message-ID: <tglah44bf07o18@corp.supernews.com>
Source record: 162394

"IW5ANQ Roberto" <iw5anq@rcnet.net> wrote in message
news:2DTN6.18005$iC1.671001@news6.giganews.com...
> Hi,
> please, can you send me the draws and the measures for
> a very efficient 50 Mhz Halo antenna system?
> This antenna are for fixed mount (no vehicle) and I prefer
> a stack 50 MHz antenna array for increase the gain.
> The draws or the photos are for homemade this antenna.

Consider building two stacked Turnstile antennas for 6M. The Turnstile is no
where as touchy to tune as the Loop or Halo type of antennas, and are simple
to build too. Check the reference below for more information on the
Turnstile antenna.

http://www.cebik.com/turns.html

--
--
73 de,

Leland C. Scott
KC8LDO

ARRL member
NCI member

"You ask what Morse Code is good for? I'll tell you. Morse
Code is used exclusively by Electronics Based life forms to
communicate amongst themselves using advanced Organic
Digital Signal Processors, running state of the art Artificial
Intelligence Software, to perform the highly complex
transmit encryption, receive decryption and error correction
functions."

4546. Re: Mobile antenna RF exposure question.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 18:56:48 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <CbYKO=9vDQN4Kxn8UowtKulyWunK@4ax.com>
Source record: 162395

"Jeff Farrar" <jeff@farrar.com> wrote:

>I plan on installing a dual band antenna on my S-10 pickup and am trying to
>determine a location. I either want to install a 1/4 wave with a hole in
>the center of the roof or mount a 5/8 wave somewhere on the bed of the
>truck. I live in a hilly area would really like the gain that a 5/8 would
>have but I also have to pull this thing in and out of a garage and can't use
>a tall (no more than 28") antenna on the roof (not interested in getting in
>and out with a fold over and no good surface for a motorized mount.)
>My concern/question is if I mount a 5/8 on the bed should I be concerned
>with RF? Does the RF come from the base or tip of the antenna? Since the
>cab is only about 16" or so higher than the bed most the antenna will be
>clear. I am thinking of the Diamond 770 or SG series type of antennas.
>
>73'
>

You don't say how much power you're running, but you probably have little to worry about. Check http://www.arrl.org/news/rfsafety/ for info and links on rf exposure.

Bob
k5qwg

4547. F/S Reflections II

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 18:59:16 UTC
From: w0tok <w0tok@email.msn.com>
Message-ID: <ePkHHGv4AHA.302@cpmsnbbsa09>
Source record: 162396

I have Reflections II autographed by author M. Walter Maxwell, W2DU
contact: w0tok@msn.com

4548. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 19:05:57 UTC
From: richardharrison@webtv.net
Message-ID: <25124-3B0AB895-113@storefull-114.iap.bryant.webtv.net>
Source record: 162398

Richard Clark wrote:
"Two waves, 180 degrees out of phase, traveling in the same direction, both impinge upon a load with the net effect of no power dissipated."

We assume that the two waves are of the same magnitude and frequency, then the statement is elegant. The location is unimportant. The waves cancel everywhere on that path.

Waves of the same direction, velocity, and frequency must stay locked into their same phase relationship. That`s why we can use simple vector diagrams.

If the fixed phase relationship between two waves of the same frequency, velocity, path, and direction is 90 degrees, or any other angle, they are locked just the same as Richard Clark`s out of phase waves. The only difference is 90 degrees, or some other angle. These similar waves may be composed into a single wave on the particular path for all purposes.

There is a difference between a wave advanced or retarded by 180 degrees and a reflected wave which has its voltage and current in a 180-degree phase relationship due to a reversal of the voltage or current (but never both) at the reflection point.

Richard Clark made nice explanation of cancellation.

Best regards, Richard Harrison, KB5WZI

4549. Re: F/S Reflections II

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 19:09:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0AB965.4E3C645B@IEEE.org>
Source record: 162397

w0tok wrote:
> I have Reflections II autographed by author M. Walter Maxwell, W2DU

Have you read it?
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4550. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 19:24:05 UTC
From: kb7qhc@home.com
Message-ID: <3b0abbb1.271107361@news.seanet.com>
Source record: 162399

On Tue, 22 May 2001 12:09:06 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> Bill Klocko's work shows otherwise and as you accept it, there remains
>> a conflict between what you say (which is suspect) and this work that
>> clearly presents Steve's solutions (or so it appears in my
>> estimation).
>
>Richard, I haven't seen Bill Klocko's work. Does Bill say that
>75w + 8.33w = 133.33w ? That's the only disagreement I have
>with Steve's solutions, i.e. a violation of the conservation
>of energy principle.

Hi Cecil,

It adds voltage vectors and current vectors. Bill restricts his
treatment to the Z0 match with the classic quarter wave transmission
line. He states that in compliance with other sources and treatments,
the matching line evidences MORE power than is applied or delivered.
However, this is mostly a comment in passing, because the focus is on
the establishment of the steady state conditions and all energy
balances are shown.

73's
Richard Clark, KB7QHC

4551. Re: Mobile antenna RF exposure question.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 19:28:14 UTC
From: Jeff Farrar <jeff@farrar.com>
Message-ID: <i5zO6.724$Oz4.470617@news1.rdc2.pa.home.com>
Source record: 162400

I did that's why I'm a little worried. Its an extended cab pickup so I really didn't want my kids a few feet away from it. (50w on 2m and 35w on 70cm). That's why I was wondering if the energy came off the tip or base. With 2/3 of the antenna being over the cab I would feel safe if it came off the top. I have used both 1/4 and 1/2 antennas on top of this truck on a mag mount just to see the difference in this area and the 1/2 works a ton better. I know that running a 1/4 off a mag does not give a good ground plane so, the test wasn't totally accurate.

"Bob Miller" <bamiller@texas.net> wrote in message
news:CbYKO=9vDQN4Kxn8UowtKulyWunK@4ax.com...
> "Jeff Farrar" <jeff@farrar.com> wrote:
>
> >I plan on installing a dual band antenna on my S-10 pickup and am trying
to
> >determine a location. I either want to install a 1/4 wave with a hole in
> >the center of the roof or mount a 5/8 wave somewhere on the bed of the
> >truck. I live in a hilly area would really like the gain that a 5/8
would
> >have but I also have to pull this thing in and out of a garage and can't
use
> >a tall (no more than 28") antenna on the roof (not interested in getting
in
> >and out with a fold over and no good surface for a motorized mount.)
> >My concern/question is if I mount a 5/8 on the bed should I be concerned
> >with RF? Does the RF come from the base or tip of the antenna? Since
the
> >cab is only about 16" or so higher than the bed most the antenna will be
> >clear. I am thinking of the Diamond 770 or SG series type of antennas.
> >
> >73'
> >
>
> You don't say how much power you're running, but you probably have little
to
> worry about. Check http://www.arrl.org/news/rfsafety/ for info and links
on rf
> exposure.
>
> Bob
> k5qwg
>

4552. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 19:35:10 UTC
From: kb7qhc@home.com
Message-ID: <3b0bbd7c.271566351@news.seanet.com>
Source record: 162401

On Tue, 22 May 2001 12:16:44 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> >David, K1TTT wrote:
>> >"where is the power in your reflected waves in steady state? answer: it
>> >is canceled instantly at every point between the source and load,"
>
>> Two waves, 180 degrees out of phase, traveling in the same direction,
>> both impinge upon a load with the net effect of no Power dissipated.
>> If they both fall on the load in full cancellation, then that same
>> load moved ANYWHERE along that same path MUST evidence the same
>> complete cancellation.
>
>Your reply is correct for the coax, Richard, but David was talking
>about the 150 ohm line upon which rests an SWR of 3:1. David said
>"every point between the source and the load" which includes the
>150 ohm line. What would you say different about a transmission
>line carrying an SWR greater than 1:1 where there are not two waves,
>180 degrees out of phase, traveling in the same direction?
>
>David seems to think his antenna tuner eliminates reflected waves
>all the way to the antenna. You're not supporting that idea, are you?

Hi Cecil,

What would I say? I would say that they combine in the manner already
described in the literature. This is a case (above) of the special
solution, and now you are asking for the general solution. In short,
the answer is a complex equation of currents and voltages that must
include phase.

>David seems to think his antenna tuner eliminates reflected waves
>all the way to the antenna. You're not supporting that idea, are you?

seems to a relic of arguing over the conjugate match. Short of that
as an answer, I am not supporting any ideas - yet.

73's
Richard Clark, KB7QHC

4553. Re: formula stacking two dipoles

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 19:54:49 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B0AC409.76C3@wt.net>
Source record: 162402

Richard Harrison wrote:

>
> Another approach is to use equal lengths of coax matching the antenna
> elements. Then, install a "Q-section" between the Tee and the longer
> line which matches your radio.

This is the method I used when I ran a phased array of two parallel dipoles on 40m. I used equal lines to each antenna, and then switched in added sections to steer the pattern. Mine was very casual as far as the phasing. I just put it up, and played around with different sections until I found the directions I liked the best. The antenna worked quite well. Maybe 20 db or more difference when switching directions to someone 1000 miles away. You can also use L-C phasing units. But the orignal poster really isn't giving enough info on the antenna to tell. Sounds like a vertical array which I think would need a to be fed either from the center of the antenna with a normal feeder, or if fed at the base as he describes would need a transposed feeder between the two elements. I'm not sure how well coax would act as a phasing line if you simply reversed the element connections between the two. Ladder line would be easier to do this than 75 ohm coax, and is usually the norm. I guess you could use ladder line as the phasing line in the center, and feed with 75 ohm coax at the base. Might need a little matching. With 1/2 wl spacing , the impedance around 100 ohms or so. You can use anything from about 3/8 wl to 3/4 wl. 5/8 wl gives the most gain, but 1/2 to 3/4 will do well. An advantage to the ladder line feeder instead of coax would be multiband use. MK
--
http://web.wt.net/~nm5k

4554. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 20:13:30 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9eeh8u$8cc$1@plutonium.btinternet.com>
Source record: 162403

How much more vertical radiation ? How much less horizontal
radiation ?

I suggest that taking one band with another, one point of the
compass and another, one back yard with another, one hour of the
day with another, one time of the year with another, there's
nothing whatever to choose between them.

Me ? I have just an end-fed inverted L. It gets me around very
well. It has two great advantages - the feedline and balun both
have absolutely zero loss.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

4555. Antennas on ice

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 20:18:52 UTC
From: "Brian.Farrelly" <Brian.Farrelly@nho.hydro.com>
Message-ID: <3B0AC9AC.DD350FBC@nho.hydro.com>
Source record: 162411

In the British journal New Scientist 19 May 2001 communication in
the Arctic over a distance of 300 miles using the ice as a natural
waveguide is described. The wavelength used is 600 m,
frequency is stated as 500 kHz, ice thickness is typically 3 m.
The transmit and receive dipoles (300 m long) lie on the ice
and are shown oriented end to end but the artist may well have
done that since it must be the worst possible choice!

a) can ice only 3 m thick guide a wave with such a long wavelength?
b) why doesn't the relationship of wavelength to frequency take
account of the dielectric constant of ice? Underground
antennas have to do that but I'm not sure about on-ground
antennas for in-air transmission.
c) how could one be sure that the transmission is not ordinary
ground wave?

Brian, LA0DG

--
mailto:Brian.Farrelly@nho.hydro.com Norsk Hydro Research Centre
phone +47 55 99 68 74 (((Postboks 7190
fax +47 55 99 69 70 2oooS N-5020 Bergen
home +47 55 13 78 49 HYDRO Norway

4556. Re: Mobile antenna RF exposure question.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 20:29:59 UTC
From: richardharrison@webtv.net
Message-ID: <25997-3B0ACC47-412@storefull-113.iap.bryant.webtv.net>
Source record: 162404

Jeff Ferrar wrote:
"I did, that`s why I`m a little worried."

I worked for years inside a high powered shortwave broadcast plant, as have thousands of others. Never heard of any health detriment.

If you are worried, cover your pickup rear window with copper or aluminum window screen wire, grounded by the window-trim installation screws.

Best regards, Richard Harrison, KB5WZI

4557. Re: Mobile antenna RF exposure question.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 20:52:00 UTC
From: kb7qhc@home.com
Message-ID: <3b0accff.275537872@news.seanet.com>
Source record: 162405

On Tue, 22 May 2001 19:28:14 GMT, "Jeff Farrar" <jeff@farrar.com>
wrote:

>I did that's why I'm a little worried. Its an extended cab pickup so I
>really didn't want my kids a few feet away from it. (50w on 2m and 35w on
>70cm). That's why I was wondering if the energy came off the tip or base.
>With 2/3 of the antenna being over the cab I would feel safe if it came off
>the top. I have used both 1/4 and 1/2 antennas on top of this truck on a
>mag mount just to see the difference in this area and the 1/2 works a ton
>better. I know that running a 1/4 off a mag does not give a good ground
>plane so, the test wasn't totally accurate.
>
>

Hi Jeff,

An antenna is rarely large enough with respect to wavelength to be considered a point source (yes, I know, that seems to be a contradiction). In other words, the fields occupy much more volume than the antenna and exposure is due to the fields and not any particular "point" in the structure.

You can be burnt by casually touching the end of a quarter wave where potential is high, but this is not a field exposure, it is a direct contact risk. At any reasonably close distance to a radiator you will find yourself within a pool of energy and it is not so much a problem of where it comes from as it is a problem of being in over your head (so to speak). The risk comes from the amount of Power put into that pool, and how much you or your children could absorb (which would be a function of coupling which is wavelength driven).

At 10M, a standing man is roughly quarter wave tall and offers good coupling to these fields. Children would make suitable 2M couplings if they present themselves as re-radiators (say a 4 year-old in a seated position). Of course there are other dimensions for the same frequency that would offer good coupling (5/8ths, 1.25 wl and so on). These, also, would present risk on the basis of a haphazard, but effective, coupling to those fields.

Of course, much of this is circumspect and open to wide interpretation. Suffice it to say that the FCC has considered most of these issues for a variety of circumstances to boil down the standards to the lowest common denominator. By and large, most applications we find ourselves in are harmless (or so the FCC would offer - without culpability, there is always that one-knock-off circumstance that changes everything).

73's
Richard Clark, KB7QHC

4558. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 21:02:23 UTC
From: w2du@iag.net
Message-ID: <3b0ad19f.30998323@news.journey.com>
Source record: 162406

On Tue, 22 May 2001 15:57:58 GMT, kb7qhc@home.com (Richard Clark) wrote:

>On Tue, 22 May 2001 13:46:02 GMT, w2du@iag.net (Walter Maxwell) wrote:

>>>>Hi Walt,
>>>>
>>>>This is entirely the problem. You make a bald statement as though it
>>>>were fact.
>
>You have not argued a fact, you have simply repeated a bald statement.
>
>As you accept Bill Klocko's analysis, that is entirely composed of
>current and voltage additions, it is exceedingly clear that no powers
>were added nor expressed in the sense that you maintain.
>
>73's
>Richard Clark, KB7QHC

Richard, perhaps I didn't make it clear that I'm discussing ONLY steady state conditions. Bill's analysis shows the vector voltage and current additions leading up to the steady state. Agreed.

My argument with Steve was only considering the steady-state condition, in which the source voltage and the final reflected voltage do NOT add DIRECTLY to establish the total forward power. I have not stated that the vector voltage and currents don't add in establishing the steady state, because of course they do.

Concerning the powers being added, please show me why 33.333 w of power reflected from a 3:1 mismatch added directly to 100 w of source power doesn't establish a forward power of 133.33 w. This is all I'm saying about the powers adding directly, which is what Steve denies.

Walt

4559. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 21:09:41 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0AD595.8401626E@IEEE.org>
Source record: 162407

Richard Clark wrote:
> It adds voltage vectors and current vectors. Bill restricts his
> treatment to the Z0 match with the classic quarter wave transmission
> line. He states that in compliance with other sources and treatments,
> the matching line evidences MORE power than is applied or delivered.

This is a natural outcome of storing energy in the transmission line
in the form of reflected energy. We know that we can have 200 joules/sec
of forward power and 100 joules/sec of reflected power when the generated
power is 100 joules/sec. That's because the load is rejecting half the
incident power. This follows from the IEEE definition of "power", i.e.
the "transfer of energy per unit time".

> However, this is mostly a comment in passing, because the focus is on
> the establishment of the steady state conditions and all energy
> balances are shown.

The energy equation must balance, the voltages must add up, the currents
must add up, and the phases must add up. In short, *everything* must add
up.

What do you think about this question? Two RF transmitters, each capable
of delivering a maximum of 100 watts into a 50 ohm load, are phase-locked
and matched to deliver their maximum combined power. What is that value
of maximum combined power? Steve would have us believe that the maximum
combined power is: Ptot = 100w + 100w + 2*sqrt(100)*sqrt(100) = 400 watts.
Do you think it is possible to get 400 watts out of two sources each putting
out a maximum of 100 watts?
--
http://www.mindspring.com/~w6rca

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4560. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 21:12:37 UTC
From: w2du@iag.net
Message-ID: <3b0ad48f.31750965@news.journey.com>
Source record: 162408

On Tue, 22 May 2001 16:13:42 GMT, kb7qhc@home.com (Richard Clark) wrote:

>>>>Hi Walt,
>>>>
>>>>This is entirely the problem. You make a bald statement as though it
>>>>were fact.
>
>Bill Klocko's work shows otherwise and as you accept it, there remains
>a conflict between what you say (which is suspect) and this work that
>clearly presents Steve's solutions (or so it appears in my
>estimation).
>
>You can either make your case with the math that Bill presents, or you
>can recant and offer your own complete treatment equal to Bill's
>effort - there is clearly no middle ground.
>
>73's
>Richard Clark, KB7QHC

I have no disagreement with Bill's math, it fits my position precisely. I don't understand where you find disagreement with my statements.

Steve's solutions with the addition of vector voltages agree with your position and with mine, but his addition of voltages are those that lead to the steady state. But his error, that of which I don't seem to make clear to you, is that of adding the final steady-state reflected voltage to the source voltage to establish the forward wave. It's just clearly wrong!

Walt

4561. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 21:13:53 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0AD691.8FB6BB69@IEEE.org>
Source record: 162409

Richard Clark wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >David seems to think his antenna tuner eliminates reflected waves
> >all the way to the antenna. You're not supporting that idea, are you?
>
> seems to a relic of arguing over the conjugate match. Short of that
> as an answer, I am not supporting any ideas - yet.

Yep, exactly right. A conjugate match does not eliminate reflections.
Your statement above sidesteps a lot of issues. Do you believe that
reflected energy exists on a transmission line with an SWR higher
than 1:1? Did you read my postings about a one second long lossless
transmission line with rho=0.707?
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4562. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 21:19:57 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105221319.4238872f@posting.google.com>
Source record: 162410

w2du@iag.net (Walter Maxwell) wrote in message news:<3b0a5f8d.1796703@news.journey.com>...
> On Thu, 17 May 2001 02:53:58 GMT, Richard Clark <kb7qhc@home.com> wrote:
>
> >>>On Wed, 16 May 2001 20:06:01 GMT, w2du@iag.net (Walter Maxwell) wrote:
> >>>
> >>>>It is thus evident that it is power that adds directly, not voltage.
> >>>
> >>>Hi Walt,
> >>>
> >>>This is entirely the problem. You make a bald statement as though it
> >>>were fact. I have had correspondence with many who do not wish to
> >>>participate in these "debates" and one sent me a treatment on Modeling
> >>>the Quarter Wave Transformer (which I promptly re-distributed).
> >I will post it to you. I am sure the author would appreciate
> >comments.
> >>
> snip
> >>
> >>Are you discussing SWR measurements or forward power?
> >
> >I responded to exactly ONE line, repeated here:
> >>>>It is thus evident that it is power that adds directly, not voltage.
> >which statement is in direct contradiction of:
> >"Antenna Impedance Matching," Wilfred Caron, ARRL
> >"Transmission Lines," Robert Chipman, Schaum's Outline Series
> >"Waves on Transmission Lines," HP Application Note 16
> >and I cite these only because they are at hand from reviewing other
> >correspondence.
>
> Richard, I'll explain below why my statement is NOT in contradiction with any of
> the references you list above.
>
> >>>One of the most ferocious brain knots I've encountered is this notion
> >>>of virtual shorts that exist through the combination of waves that
> >>>finds a solution (the virtual short) at only one point in the
> >>>continuum. This absurdity is beyond explanation (too often it has
> >>>been offered and defended as another fact not requiring proof). This
> >>>may be a problem of your presentation, because I do have experience
> >>>with real shorts generated by waves (a classical example is the
> >>>waveguide junction with choke joints). You may, or may not,
> >>>characterize these as Virtual Shorts, I have experienced them as Real
> >>>Shorts. Waveguide literature is rich with such examples, and more,
> >>>and their descriptions encompass far less rhetoric (and are far more
> >>>approachable).

> >>
> >You have a willing audience in
> >me, Walt; but my critic says you are playing to the wings.
> >
> >73's
> >Richard Clark, KB7QHC
>
> Richard, I'm back from Dayton after having a great time autographing copies of
> Reflections II that were being sold at five different venues.
>
> Now to return to where we left off before leaving for Dayton.
>
> I reviewed Bill Klocko's paper on the 1/4 wl transformer, which turned out to be
> the paper he sent me a year or so ago. It is an excellent paper, presenting the
> voltages and reflection coefficients leading up to the steady state with great
> clarity. It agrees with my position completely. In addition, Bill's paper
> confirms my position that 1) a virtual short really exists at the matching
> point, and 2) total re-reflection occurs at the virtual short.

Walt,
If you read that paper carefully, it is the *partial* reflection and *partial*
transmission of wave components on both sides of the match point that do the trick.
Any claim that total reflection occurs or that the virtual short exists in that paper
is *your* extrapolation. I'm glad you like it, but please don't make claims that are
not true. In a few days, Richard will be able to post a copy on his web site for
people to review and make their own judgements. 73,
Bill N3WK

> While it is true that energy is transmitted rearward past point A in Bill's Fig
> 1, but only during the buildup to the steady state. Once the steady state is
> reached no energy is transmitted rearward past point A, and all energy reflected
> from B toward A is re-reflected toward the load. These conditions prove points
> 1) and 2) above, contrary to your statement above that I've made a bald
> statement as if it were fact. It is a fact!
>
> Let's now return to the controversy concerning Steve's insistence that powers
> don't add in forming the forward wave, voltages do.
>
> Richard, after so many posts on this issue you've lost your focus, as indicated
> by your referring me to Bill's paper. Certainly the voltages add in establishing
> the forward wave, as Bill clearly explains in his paper. But where you went off
> track is in losing sight of the specific voltage we're concerned with. Steve's
> claim is that the STEADY-STATE voltage reflected from the line mismatch adds to
> the source voltage, which isn't true. And here is his rationale:
>
> He knows that with 150 ohms terminating a 50-ohm line, 133.33 watts is the
> forward power. It is true that 33.333 watts of steady state power is reflected,
> and the steady-state reflected voltage is 40.82 v. When 40.82 v is added to the
> source voltage 70.71 v, the forward voltage would be 111.54 v, which, when
> squared and divided by Zo (50) yields 248.8 watts of forward power. Wrong value!
>

> So here's the kicker. He says that since 248.8 watts is incorrect the 33.333
> watts of reflected power cannot be added to the 100 watts of source power to
> obtain the 133.33 watts of forward power, because adding the source and
> steady-state reflected voltages yields the wrong answer. Therefore, he says 8.33
> watts reflected added to 75 watts yields 133.33 watts, because now the voltages
> add correctly. How can a mathematician of his caliber believe that 8.33 + 75 =
> 133.33? This is what is absurd!
>
> So contrary to your statement above, it is the reflected and source powers that
> add directly to establish the total forward power, not the source and
> steady-state reflected voltages.
>
> I hope you can see my point of view.
>
> Walt, W2DU

4563. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 21:22:17 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0AD889.5AB10694@IEEE.org>
Source record: 162412

Reg Edwards wrote:
> How much more vertical radiation ? How much less horizontal
> radiation ?

Model it and find out one unique answer. The latest version of EZNEC,
including the free demo version, should do that.

I don't know for sure, but I would guess the balun at the feedpoint
of the horizontal section is a voltage balun which doesn't balance
the currents. Therefore, there are common-mode currents on the
vertical section which radiate. Hopefully, the choke at the bottom
of the vertical section keeps the rest of the feedline from radiating.
It's kind of a neat design, but way over-priced. I can virtually
duplicate a Carolina Windom for about $40 worth of materials.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4564. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 22:13:11 UTC
From: kb7qhc@home.com
Message-ID: <3b0adfaf.280321040@news.seanet.com>
Source record: 162413

On Tue, 22 May 2001 21:12:37 GMT, w2du@iag.net (Walter Maxwell) wrote:

>
>I have no disagreement with Bill's math, it fits my position precisely. I don't
>understand where you find disagreement with my statements.
>

Hi Walt,

But Bill has some problem with your usage of his work. In other words there is some issue of there being characteristics ascribed to the model (or what you might call your position) that Bill does not confirm (and which you say he does).

This problem of ascription is not new and has even been warned (complained) of by other posters - myself amongst them.

If you and Cecil are so dead-set about Steve's error, mark it and move on. This senseless heads-down attitude of no progress until Steve yells uncle is not germane. The two of you are like sharks with the smell of blood in the water, there are others here with issues being dismissed in favor of this tedious, worn out line. As I pointed out long ago, if you have a problem with his math, attack his math and sources, not him. The ad-hominem presents the perception of attack being used to cover poor logic. In other words, I am neither moved nor impressed by the substitute of invective for argument. As long as you and Cecil maintain this level of discussion, it remains, for me, suspect.

73's
Richard Clark, KB7QHC

4565. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 22:34:59 UTC
From: kb7qhc@home.com
Message-ID: <3b0ce8b0.282626275@news.seanet.com>
Source record: 162414

On Tue, 22 May 2001 16:13:53 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>>Richard Clark wrote:

snip

>> I am not supporting any ideas - yet.
>
snip

>Your statement above sidesteps a lot of issues.

Hi Cecil,

Now there's an intuitive observation!

73's
Richard Clark, KB7QHC

4566. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 22:40:15 UTC
From: kb7qhc@home.com
Message-ID: <3b0fea89.283099625@news.seanet.com>
Source record: 162415

On Tue, 22 May 2001 16:09:41 -0500, in rec.radio.amateur.antenna you wrote:

>Richard Clark wrote:
>> It adds voltage vectors and current vectors. Bill restricts his
>> treatment to the Z0 match with the classic quarter wave transmission
>> line. He states that in compliance with other sources and treatments,
>> the matching line evidences MORE power than is applied or delivered.
>
>This is a natural outcome of storing energy in the transmission line
>in the form of reflected energy. We know that we can have 200 joules/sec
>of forward power and 100 joules/sec of reflected power when the generated
>power is 100 joules/sec. That's because the load is rejecting half the
>incident power. This follows from the IEEE definition of "power", i.e.
>the "transfer of energy per unit time".
>
>> However, this is mostly a comment in passing, because the focus is on
>> the establishment of the steady state conditions and all energy
>> balances are shown.
>
>The energy equation must balance, the voltages must add up, the currents
>must add up, and the phases must add up. In short, *everything* must add
>up.
>
>What do you think about this question? Two RF transmitters, each capable
>of delivering a maximum of 100 watts into a 50 ohm load, are phase-locked
>and matched to deliver their maximum combined power. What is that value
>of maximum combined power? Steve would have us believe that the maximum
>combined power is: Ptot = 100w + 100w + 2*sqrt(100)*sqrt(100) = 400 watts.
>Do you think it is possible to get 400 watts out of two sources each putting
>out a maximum of 100 watts?

Hi Cecil,

As to your last question, I have seen rationales both ways. Steve presented a strong analogy in the antenna with reflector and radiator; but as I dislike analogy I would prefer the discussion remain within its pre-established scope.

The problem with your sidebar is that it portrays a very different situation and that you are asking me to side with you to prove a different point. I cannot lend myself to such segues given the nature of so many opportunities of these further elaborations causing further confusion.

One such confusion point is that you allow the quarter wave matching section to violate this balance of powers at a point similar (if not exactly the same) as the problem under consideration.

As Steve is a proponent of Bill's treatment, he follows that paradigm; but he has added his own derived formula of
Ptot = P1 + P2 + sqrt(P1 * P2)
Within the context of Bill's work, it seems consistent and it agrees with the commonly accepted methods of adding vectors of voltage and current (which have been argued against to no seemingly purposeful end). To me it seems to be an iterative power and not a total power as the derived values are all based on cycle-by-cycle states. Given the depth of the problem (and as simple as it is, it is still quite complex), arguing more than one facet is disaster prone.

73's
Richard Clark, KB7QHC

4567. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 23:16:04 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0AF334.8B6F7E8A@IEEE.org>
Source record: 162416

Richard Clark wrote:
> As Steve is a proponent of Bill's treatment, he follows that paradigm;
> but he has added his own derived formula of
> Ptot = P1 + P2 + sqrt(P1 * P2)

You, of course, realize that if P1 and P2 are the only powers existing in the system, it follows from that equation that P1 > P1. Steve is simply playing games with numbers. The 2*sqrt(P1*P2) is the power that originates from the constructive interference action.

In Steve's equation, 75w + 8.33w = 133.33w, the 2*sqrt(75*8.33) equals 50 watts. That's exactly the power involved in the destructive/constructive interference pattern shown on my phasor diagram at:

http://people.delphi.com/cecilmoore/z0match.gif

The actual valid equation is obviously: 75w + 8.33w + 50w = 133.33w

Steve has admitted that power is supplied from the constructive interference but he doesn't dare allow it into the above equation because then his voltages wouldn't add up. Seems to me, Steve has his choice of voltages adding up OR power adding up BUT not both.

> Within the context of Bill's work, it seems consistent and it agrees
> with the commonly accepted methods of adding vectors of voltage and
> current (which have been argued against to no seemingly purposeful
> end).

I have no argument with the values of the voltages and currents. I contend that there is not enough power to support those values unless the power involved in the constructive interference pattern is included which upsets the game that Steve is playing with numbers.

Here's not only what I think but what virtually all physicists think:

In a transmission line, the powers must add up to agree with the conservation of energy principle (Steve's do not). The voltages, currents, and phases must add up to known values. Now given these absolutely necessary boundary conditions:

If we have two *CONSTANT* sources of power, e.g. 75w and 8.33w, they cannot possibly add up to more power than exists. Steve has admitted that power is being sourced into the system by the constructive interference. That power, when normalized into a 150 ohm environment, results in a voltage and current (in-phase in the case of a Z0-match) which upsets his voltage applecart.

So the balanced energy equation is: 75w + 8.33w + 50w = 133.33w

Do you agree? Have you been following the argument? This is Physics 101 and is so clear to me I'm wondering why it isn't clear to you. I considered at one point that you were part of a conspiracy to protect the RF experts from being embarrassed. At the most basic level, what is it that bothers you about the argument?

Clearly, 75w + 8.33w = 133.33w is mathematically incorrect because from that equation, it can be proven that zero equals 50 watts.
--
http://www.mindspring.com/~w6rca

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4568. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 23:18:36 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0AF3CC.3029ED00@IEEE.org>
Source record: 162418

Richard Clark wrote:
> If you and Cecil are so dead-set about Steve's error, mark it and
> move on.

There is just no moving on from a violation of the conservation of
energy principle, Richard. I'm surprised you would accept it.
--
http://www.mindspring.com/~w6rca

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4569. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 23:19:54 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105221519.276382b4@posting.google.com>
Source record: 162417

W6RCecilA <Cecil.A.Moore@IEEE.org> wrote in message news:<3B0A9D32.E108EA51@IEEE.org>...
> Richard Clark wrote:
> > Bill Klocko's work shows otherwise and as you accept it, there remains
> > a conflict between what you say (which is suspect) and this work that
> > clearly presents Steve's solutions (or so it appears in my
> > estimation).
>
> Richard, I haven't seen Bill Klocko's work. Does Bill say that
> 75w + 8.33w = 133.33w ? That's the only disagreement I have
> with Steve's solutions, i.e. a violation of the conservation
> of energy principle.

I really don't fret over that. I work *exclusively* with the voltage and
current wave components and get the steady state values. Once that's done,
just out of curiosity, I check the wave impedance and the power being delivered
on each section of transmission line. All impedances and the powers happen to turn
out to be exactly what everybody would expect. BTW, "my work" is really an expansion
of something Kraus did. Once it gets posted to Richard's site, everyone interested
can check it out. 73,
Bill N3WK

4570. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 23:21:52 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0AF490.AEA567FB@IEEE.org>
Source record: 162319

Richard Clark wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >Your statement above sidesteps a lot of issues.
>
> Now there's an intuitive observation!

Well, allow me to be more direct. Do you think that 75w + 8.33w can possibly equal 133.33w? Before you answer, consider that we can take that equation and prove that 50 watts equals zero watts. Do you think the power company would allow me to use that argument to reduce my power bill?
--
http://www.mindspring.com/~w6rca

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4571. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 23:23:59 UTC
From: kb7qhc@home.com
Message-ID: <3b0af486.285656181@news.seanet.com>
Source record: 162320

On Tue, 22 May 2001 18:16:04 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>Do you agree? Have you been following the argument? This is Physics 101 and
>is so clear to me I'm wondering why it isn't clear to you. I considered at
>one point that you were part of a conspiracy to protect the RF experts from
>being embarrassed. At the most basic level, what is it that bothers you
>about the argument?

Hi Cecil,

What bothers me? The following statements that impart unqualified
support:

>Here's not only what I think but what virtually all physicists think:

There is no need for such inclusion and I do not wish to be tied to
such arguments by association.

73's
Richard Clark, KB7QHC

4572. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 23:30:28 UTC
From: kb7qhc@home.com
Message-ID: <3b0bf543.285845834@news.seanet.com>
Source record: 162321

On Tue, 22 May 2001 18:21:52 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>> >Your statement above sidesteps a lot of issues.
>>
>> Now there's an intuitive observation!
>
>Well, allow me to be more direct. Do you think that 75w + 8.33w can
>possibly equal 133.33w? Before you answer, consider that we can take
>that equation and prove that 50 watts equals zero watts. Do you think
>the power company would allow me to use that argument to reduce my
>power bill?

Hi Cecil,

What has the power company got to do with it? Really, if you wish to
conduct a mannered and well thought out argument, stop drawing in
these off-hand comments.

I find fault with those who propose they CAN do something:
> we can take
>that equation and prove that 50 watts equals zero watts.
without carrying it out!

This is simply the introduction of yet another argument without
attending the original. What it offers is an endless repetition of
offering new issues without settling old ones.

In other words, you have been less than direct. It matters not what I
think about this power addition, my thoughts are not affirmation of
any physics being argued. These appeals give the perception of you
and Walt being uncomfortable with your own logic.

73's
Richard Clark, KB7QHC

4573. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 23:34:57 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0AF7A1.5F568363@IEEE.org>
Source record: 162322

Bill Klocko wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote in message news:<3B0A9D32.E108EA51@IEEE.org>...
> > Richard Clark wrote:
> > > Bill Klocko's work shows otherwise and as you accept it, there remains
> > > a conflict between what you say (which is suspect) and this work that
> > > clearly presents Steve's solutions (or so it appears in my
> > > estimation).
> >
> > Richard, I haven't seen Bill Klocko's work. Does Bill say that
> > 75w + 8.33w = 133.33w ? That's the only disagreement I have
> > with Steve's solutions, i.e. a violation of the conservation
> > of energy principle.
>
> I really don't fret over that. I work *exclusively* with the voltage and
> current wave components and get the steady state values. Once that's done,
> just out of curiosity, I check the wave impedance and the power being delivered
> on each section of transmission line. All impedances and the powers happen to turn
> out to be exactly what everybody would expect. BTW, "my work" is really an expansion
> of something Kraus did. Once it gets posted to Richard's site, everyone interested
> can check it out. 73, Bill N3WK

Hey Bill, have your ears been burning? :-) Nobody else seems to want to answer
my (leading) questions. Would you give it a go?

(1) Can 75 joules/sec plus 8.33 joules/sec ever equal 133.33 joules/sec?

(If you say yes, seems you have admitted that 50 joules/sec equals
zero joules/sec.)

(2) Given two and only two constant power waves, can they be added to obtain
more power than the sum of the two powers? For instance, given power, P1, and
power, P2, is it possible for Ptot to equal P1 + P2 + 2* sqrt(P1*P2)?

(If you say yes, seems you have admitted that P1 > P1.)
--
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4574. Re: No AM reception - QRM

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 23:36:36 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3B0AF804.CDD4641A@bwcc.com>
Source record: 162323

itten wrote:
> I live in a mobile home and I guess because of all the electronic stuff
> I have been adding, the am reception is almost non existant. I've
> tried a variety of radios in various locations with no luck. I get a
> humming noise with a lot of static instead of a clear tone. I can't
> even get good reception with running battery operated radios. I even
> went so far as to put a radio outside a window and even 5' away, the
> reception is lousy. Is there something I can do to remedy the
> situation?

Perhaps so. Somewhere in the vicinity is a generator of RF interference.
You could try killing all the power to your house at your main circuit breaker.
That would rule out anything you added.

Perhaps there is a large transformer, industrial installation, or bad high voltage
connection near you.

If you want to investigate you might find something.

But determining whether it is in your trailer is easy. Just cut off your power.

4575. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 23:43:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0AF98F.CB464EA6@IEEE.org>
Source record: 162324

Richard Clark wrote:
> In other words, you have been less than direct. It matters not what I
> think about this power addition, my thoughts are not affirmation of
> any physics being argued. These appeals give the perception of you
> and Walt being uncomfortable with your own logic.

Are you saying an appeal to the conservation of energy principle
means I'm uncomfortable with my own logic? On the contrary, I am
extremely comfortable with the conservation of energy principle.
Otherwise, I wouldn't continue the argument.
--
http://www.mindspring.com/~w6rca

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4576. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 23:45:16 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0AFA0C.F95B09F2@IEEE.org>
Source record: 162325

Richard Clark wrote:
> What bothers me? The following statements that impart unqualified
> support:
>
> >Here's not only what I think but what virtually all physicists think:
>
> There is no need for such inclusion and I do not wish to be tied to
> such arguments by association.

Egads, Richard, you don't accept the principle of conservation of energy?
--
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4577. Re: Magnetic Loop Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-22 23:53:02 UTC
From: p.mooney@uklinux.net
Message-ID: <3b0afb95.3829692@news.ntlworld.com>
Source record: 162326

On Sat, 19 May 2001 19:09:59 GMT, "N1IQO" <n1iqo@yahoo.com> wrote:

>Hi all,
>
>Well I could use some help
>I was surfing the net and came across Magnetic Loop Antennas (looks like
>fun) so I set out to make myself one.
>
>located the page on homebrewing air caps from JO21FF (looks easy)
>Here: http://www.qsl.net/mnqrp/Loop/Mag_Loops.htm
>
>Now to remote control the cap with a stepping motor
>(Brick wall) I never even herd of a stepping motor before this.
>after some reading I find out that printers have stepping motors(cool I have
>some old printers)
>
>This is what I pulled from one of the printers:
>Stepping Motor
>#PJJQ148ZA-I
>Volt - 4V
>Coil - 5ohm
>DEG/STEP - 1.8
>6 - WIRE
>KYUSHU MATSUSHITA ELECTRIC CO. LTD.
>
>It's big and heavy it should work
>Now for some help
>How in the world do you control this
>
>If you can help me I would be grateful
>Thx
>David
>n1iqo@yahoo.com
>
>
>
>
>

try

http://www.doc.ic.ac.uk/~ih/doc/stepper/

Paul M.

4578. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 00:28:35 UTC
From: kb7qhc@home.com
Message-ID: <3b0c023b.289165057@news.seanet.com>
Source record: 162327

On Tue, 22 May 2001 18:45:16 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> What bothers me? The following statements that impart unqualified
>> support:
>>
>> >Here's not only what I think but what virtually all physicists think:
>>
>> There is no need for such inclusion and I do not wish to be tied to
>> such arguments by association.
>
>Egads, Richard, you don't accept the principle of conservation of energy?

Hi Cecil,

You just added another reason for caution. This spurious statement
does not add anything to your logic and adds to the perception of a
foundering logic.

Consider, you ask for what bothers me and then spend your effort to
challenge that. This initial question appears to be another sucker
punch.

73's
Richard Clark, KB7QHC

4579. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 00:34:03 UTC
From: kb7qhc@home.com
Message-ID: <3b0d044c.289694849@news.seanet.com>
Source record: 162328

On Tue, 22 May 2001 18:18:36 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> If you and Cecil are so dead-set about Steve's error, mark it and
>> move on.
>
>There is just no moving on from a violation of the conservation of
>energy principle, Richard. I'm surprised you would accept it.

Hi Cecil,

So now both you and Peter are surprised now.

You would both be better served trying to understand why you are
surprised (which is wholly subjective and out of my control) rather
than assigning it as blame or as evidence of a proof.

I know myself well enough not to be bothered by your surprise. It is
only when a woman makes a comment like that to me, that I realize I am
deep s**t! :-(

73's
Richard Clark, KB7QHC

4580. 9:1 Balun - 450 ohms balanced to 50 ohms unbalanced (coaxial)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 00:50:42 UTC
From: kf4toh@aol.com
Message-ID: <20010522205042.03849.00000927@ng-cb1.aol.com>
Source record: 162329

```
--------------------------------------------------------------------------
------

9:1 Balun - 450 ohms balanced to 50 ohms unbalanced (coaxial)

For 450 ohms twin lead to replace long runs of coaxial to reduce loss
1.5 MHz to 30 MHz
1 Kw to 2 Kw
Model:
W2FMI-9:1-HB450.....

--------------------------------------------------------------------------
------
brand new never used $105.00 shipped.
```

4581. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 01:48:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ef4sp$gv4$1@slb1.atl.mindspring.net>
Source record: 162330

Bill:

Yes... all you really need are I and V. And the power's look after
themselves.

-Peter K1PO

"Bill Klocko" <klocko@toad.net> wrote in message
news:224d9cd4.0105221519.276382b4@posting.google.com...
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote in message
news:<3B0A9D32.E108EA51@IEEE.org>...
> > Richard Clark wrote:
> > > Bill Klocko's work shows otherwise and as you accept it, there remains
> > > a conflict between what you say (which is suspect) and this work that
> > > clearly presents Steve's solutions (or so it appears in my
> > > estimation).
> >
> > Richard, I haven't seen Bill Klocko's work. Does Bill say that
> > 75w + 8.33w = 133.33w ? That's the only disagreement I have
> > with Steve's solutions, i.e. a violation of the conservation
> > of energy principle.
>
> I really don't fret over that. I work *exclusively* with the voltage and
> current wave components and get the steady state values. Once that's done,
> just out of curiosity, I check the wave impedance and the power being
delivered
> on each section of transmission line. All impedances and the powers happen
to turn
> out to be exactly what everybody would expect. BTW, "my work" is really an
expansion
> of something Kraus did. Once it gets posted to Richard's site, everyone
interested
> can check it out. 73,
> Bill N3WK

4582. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 01:51:52 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0B17B8.59B9941A@IEEE.org>
Source record: 162331

Richard Clark wrote:
> Consider, you ask for what bothers me and then spend your effort to
> challenge that. This initial question appears to be another sucker
> punch.

Well, I'm afraid I'm out of my league if I am required to prove the
conservation of energy principle. I was hoping that everyone would
accept it like they accept the English language.

Given the Z0-matched example that we have been using for days:

100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load

On the Z0 = 150 ohm line we have 106.066v delivered by the source
across the 50-150 ohm junction. We also have 35.355v re-reflected.
These sum up to the known forward voltage on the 150 ohm line.

106.066 volts + 35.355 volts = 141.421 volts equation (1)

The power associated with each of those voltages within the 150 ohm
environment are: (V^2/Z0)

(106.066^2)/150 + (35.355^2)/150 = (141.421^2)/150 equation (2)

75 watts + 8.33 watts = 133.33 watts equation (3)

Equation (3) is the well known equation in question. Consider equation (2).
If we multiply both sides of equation (2) by 150 the resulting equation is:

(106.066^2) + (35.355^2) = (141,421^2) equation (4)

Note that the only change from equation (1) is that we have squared
each of the three terms in the equation. I submit that the following
premise is false and is easily disproved by example.

Premise (1): If A + B = C then A^2 + B^2 = C^2

For the same reason, the following premise is false:

Premise (2): If V1 + V2 = V3 then V1^2/Z0 + V2^2/Z0 = V3^2/Z0

Therefore: equations (2), (3), and (4) are invalid.
--
http://www.mindspring.com/~w6rca

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4583. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 01:55:51 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0B18A7.9608CA05@IEEE.org>
Source record: 162332

Richard Clark wrote:
> I know myself well enough not to be bothered by your surprise. It is
> only when a woman makes a comment like that to me, that I realize I am
> deep s**t! :-(

I attempted a formal proof in another posting. See what you think. I know
I shouldn't care what you think, but I do. :-)

Exactly what do you expect from an unemployed bum? (which I have been for
three years now)
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4584. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 02:09:48 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ef64f$t9h$1@nntp9.atl.mindspring.net>
Source record: 162333

Cecil:

For my edification could you, or someone else reading this thread, in one or two simple sentences and a couple of simple in-line equations as necessary, please describe what a "conjugate match" and what a "Zo" match is and highlight their differences for me.

I admit that I am befuddled by all of these somewhat "high falutin" names for things that seem, at least to me, to not really desereve their elevation to "named" status.

I believe that I understand the "so-called" maximum power transfer theorem, which defines the value of a load impedance required to extract the maximum power from a generator with a prescribed internal impedance to be the complex conjugate of the generator's internal impedance. This theorem is "proved" by a basic application of the complex differential calculus, by simply writing down the expression for the power dissipated in the load and then differentiating that power expression with respect to the load, noting that it is the equation of a unimodal surface, and then setting the resulting differential to zero and solving for the value of the load.

I believe that with respect to loads and generators there are but two imperatives...

1.) As an "optimum load designer", with the guidance of that "theorem", one must design, or adjust, my loads to be the complex conjugate of the generator's internal impedance in order to extract the maximum power from the generator.

2.) As an "optimum generator designer", with the guidance of common sense, one must struggle to remove all internal impedance from my voltage generator and struggle to make the internal resistance of my current generator as high as possible.

Of course one could "prove" a "maximum power generator theorem" using fancy mathematics, to develop imperative 2.), but I feel that common sense suffices here.

These two imperatives are all that's really needed to solve most matching problems.

Otherwise, what other guidelines should we give to load and generator designers?

Am I missing anything more important by not undersanding the terms "Zo Match" or "Conjugate Match"?

i.e. I guess what I am saying, is that I probably don't yet appreciate what
is so important about these two "named matches".

Thanks,

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B09A458.71B7C2C0@IEEE.org...
> Steve, VE9SRB, says that Z0-matched systems cannot be analyzed without
> resorting to vector addition of voltages and currents. This thread will
> show him how to do it. There is a phasor diagram on my web page at:
>
> http://people.delphi.com/cecilmoore/z0match.gif
>
> that will be referenced during this posting. Since we don't post graphics
> on the newsgroup, that's the best I can do. Here's the analysis:
>
> 100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load
>
> Given Steady-State Values:
> 100 watts forward on the coax, zero watts reflected
> 133.33 watts forward on the 150 ohm line, 33.33 watts reflected
>
> The 100 watts forward on the coax will break into component values of:
>
> 75 watts not reflected at the 50-150 junction, joins the forward wave
>
> 25 watts reflected at the 50-150 junction but immediately canceled
through
> a destructive interference pattern with the 25 watts below
>
> The 33.33 watts reflected on the 150 ohm line will break into component
values of:
>
> 8.33 watts re-reflected at the 150-50 junction
>
> 25 watts not re-reflected at the 150-50 but immediately canceled
through
> a destructive interference pattern with the 25 watts above
>
> The 50 watts of destructive interference causes 50 watts of constructive
> interference energy which joins the forward wave on the 150 ohm line.
>
> Thus 75 watts not reflected plus 8.33 watts re-reflected plus 50 watts of
> constructive interference equals 133.33 watts of forward power on the 150
> ohm line.
>
> The voltage associated with the 133.33 watts of forward power is
sqrt(133.33*150)
> equals 141.4 volts. The current associated with the 133.33 watts is
sqrt(133.3/150)

> equals 0.943 amps. All the other voltages and currents can likewise be
calculated
> from the powers and Z0 involved. Understanding the nature of reflections
allows
> the phases to be deduced.
>
> Thus, there's absolutely no need for vector addition of voltages and
currents
> when analyzing a Z0-matched system.
> --
> http://www.mindspring.com/~w6rca
>
>
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4585. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 02:14:08 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0B1CF0.6512058D@IEEE.org>
Source record: 162334

"Peter O. Brackett" wrote:
> Yes... all you really need are I and V. And the power's look after
> themselves.

But you have to understand what your are doing or else you will come
up with a premise like:

IF V1 + V2 = V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0

for which I have offered a disproof in another posting.
--
http://www.mindspring.com/~w6rca

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4586. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 02:36:00 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <kmFO6.45092$p33.891962@news1.sttls1.wa.home.com>
Source record: 162335

Good Afternoon Peter,

You sure know how to ask complicated questions, and I think you know the answers before you ask!!
But if we are to get a better understanding of how coax really works, we need to ask and answer just as you have done.

So let's see if we can think alike. Your questions are similar, and are basically "How can a braid leak or not leak energy?"

The assumption we will begin with is that the inner and outer currents are equal, and 180 degrees out of phase. In other words, the coaxial transmission line is feeding a matched and balanced load.

Now if a twin lead line (a two wire line) was feeding the same load, we would have a slight amount of radiation because the fields carried by the two wires would not perfectly cancel. It would be easy to unbalance the line by bringing another conductor near one of the two wires.

We could reduce the radiation in a two wire line by making it a 3 wire line, with one middle conductor and two wires on the outside. This line would be a little less subject to radiation losses and unbalance by nearby objects.

We could further reduce the radiation by making about 20 wires equally spaced around the center wire. We could keep adding wires until we had a solid conductor all the way around the center conductor. With a solid conductor as the 'shield' surrounding the center conductor, and remembering that the currents are balanced, we should have a 'perfect' reduction in radiation, and should have 'perfect' isolation from nearby objects.

I think you will agree with me so far. We have not talked about unbalanced currents here, and this is not the same situation as my earlier posting dealing with 'fold back current'.

Now to more directly answer your question, leaky cable would be cable with less copper, a more open weave, or more holes punctured in the solid conductor. A third conductor placed close to such cable would receive more energy from the central coaxial conductor than would be received from a tighter or solid conductor.

The role of a balanced current must be emphasized. Any condition which results in one conductor of the coax rising to a higher voltage than the other, better, the shifting of the equal potential surface I described in the earlier posting, or best, the application of a voltage that would cause both conductors to host a different field strength, would cause unbalanced currents.

Obviously, we can not have both balanced, and unbalanced, situations. We either have one or the other. Therefore, we can not say, "Roger, in one posting you talk about perfect shielding, and in the other, the leaky solid conductor. You are contradicting yourself." No, we are not talking about the same circuit conditions.

So there we have it. Does this fit with the way you think about leaky coaxial cable?

73, Roger, W7WKB

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message news:9e9u67$1sf$1@slb4.atl.mindspring.net...
> Roger:
>
> Then why are some coaxial cables more "leaky" than others?
>
> What happens to a perfectly shielded coaxial cable, i.e one wherein there
> are no currents on the outside of the shield due to currents on the insice,
> when rows of "holes" are punctured at regular intervals along the cable?
>
> Why is braid coverage important?
>
> Why do coaxial cable manufacturers rate their cables according to shielding
> effectiveness?
>
> Etc...
>
> -Peter K1PO
>
>
> "Roger Sparks" <sparksrc@home.com> wrote in message
> news:SeTM6.19733$p33.353932@news1.sttls1.wa.home.com...
> > Richard Harrison, KB5WZI , wrote
> > (snip some)
> > We know that at r-f, a braid performs nearly the same as a solid shield.
> > Wires weaving between sides don`t carry the r-f with them as they weave
> > between sides. Skin effect requires the current to remain on the same
> > side of the braid.
> > (snipe more)
> > Certainly, the statement that "there is no voltage difference between
> > the inside of the braid and the outside of the braid" is very unlikely.
> >
> > (snip more)
> >
> > Good Morning Richard,
> >
> > I think it is good that you are keeping this question alive. You will
> > notice that I started a new thread, which I did because I think the topic

> > will receive a better review if it becomes the principal subject.
> >
> > Just to keep the discussion focused, I am thinking about the fold-around
> > current on the braid that is illustrated in the ARRL Antenna Book. This
> is
> > represented as being a second current path which drains power from the
> > antenna. If it drains power, then it must have measurable voltage and
> > current. The Antenna Book teaches that this current (it does not talk
> about
> > voltage) is kept separate from the inner side by skin effect.
> >
> > I think two physical laws actually interplay here. The first is how
> current
> > would flow in braid considering that the wires are not running parallel
to
> > the current, and further, that the wires overlap, one on top of the
other,
> > and then reverse.
> >
> > The second is how current, that is electrical charges, are distributed
in
> a
> > round wire when the distribution is not neutral, or zero energy
situation.
> >
> > To deal with the physical configuration first, we need to carefully look
> at
> > how the braid is laid together. I notice that the braid on RG-8 is
> > configured so that no wires run parallel to the center wire. In
addition,
> a
> > wire will run on the inside surface for about 1/4 inch, then will rise
and
> > run on top of another group of wires for about 1/4 inch thereby becoming
> the
> > outside wire for about 1/4 inch. Because of this interweave, a current
> > running on the inside would have to change wires every 1/4 inch to
remain
> on
> > the inside. Any outside current would also have to change wires every
1/4
> > inch to remain of the outside.
> >
> > The point of contact is on the top and bottom of each wire, and currents
> on
> > the top or bottom (inside or outside of the coax) would have to go
through
> > these contact points (the identical points) in their path to remain on
the
> > top or bottom. Separation would be impossible.

> >
> > The second law of physics to consider is the distribution of charges in
a
> > round conductor. A current is defined as a movement of charges and we
> > usually think of this as negative charges moving away from positive
> charges
> > (which remain fixed). The negative charges are moving as a group which
> > results in a concentration of negative charges in a volume. Because
> > negative charges repel, they will expand in volume to cover the entire
> > surface of the conductor. If a nearby surface (such as the inside
> conductor
> > in a coax line) has negative charges, then the distribution will shift
> > toward that surface, but will not occupy only the bottom half of the
wire
> > for instance, because the concentration of charges in half a wire would
be
> a
> > higher energy situation than would a concentration around the entire
wire
> > surface.
> >
> > This argument disappears for any separate outside current because it
would
> > not be balance by inside charges on the center conductor. Instead, a
> > negative charge on the outside surface would (by capacitive action)
repel
> > negative charges on the inside conductor, and would therefore induce a
> > current on the inner (center) conductor. In this way, any outer current
> > would influence both the inside of the outer conductor and the center
> > conductor of a coax line.
> >
> > I understood Kevin, w9cf, to say in an earlier posting that capacitive
> flux
> > (the voltage field) moves through a conductor at the same speed as
through
> a
> > dielectric and does not diminish with depth. This is contrasted to the
> > magnetic field which does diminish with depth of penetration into the
> > conductor (skin effect).
> >
> > If you disagree with this analysis, please divide the rebuttal into two
> > parts:
> > 1) how the current can pass through identical points and not mix.
> > 2)how the charge distribution can remain concentrated on only one side
of
> > round wires.
> >
> > 73, Roger, W7WKB
> >
> >

>
>

4587. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 02:36:48 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ef7n2rag1@slb1.atl.mindspring.net>
Source record: 162336

Cecil:

Really, what you have stated below is not needed here in this NG is it?...

The fact that:

(V1 + V2)*(V1 + V2) = V1*V1 + 2*V1*V2 + V2*V2

is not equal to:

V1*V1 + V2*V2

is perfectly clear to any American high school algebra student, or in Europe
or Asia, any junior high school algebra student.

Or is it?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0B1CF0.6512058D@IEEE.org...
> "Peter O. Brackett" wrote:
> > Yes... all you really need are I and V. And the power's look after
> > themselves.
>
> But you have to understand what your are doing or else you will come
> up with a premise like:
>
> IF V1 + V2 = V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0
>
> for which I have offered a disproof in another posting.
> --
> http://www.mindspring.com/~w6rca
>
>
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4588. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 02:48:54 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <b58mgt8k52jh660jo4rqtea52j28dbegda@4ax.com>
Source record: 162337

On Tue, 22 May 2001 22:09:48 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Cecil:
>
>For my edification could you, or someone else reading this thread, in one or
>two simple sentences and a couple of simple in-line equations as necessary,
>please describe what a "conjugate match" and what a "Zo" match is and
>highlight their differences for me.

These terms were coined by R.W. Beatty for NBS to distinguish the many
"basis" of matching.

Z0 Match:
The condition in which the impedance seen
looking into a transmission line is equal to
the characteristic impedance of the line.

Conjugate Match:
The condition for maximum power absorption
by the load, in which the impedance seen
looking toward the load at a point in a transmission
line is the complex conjugate of that seen looking
toward the source.
>

snip
>
>Am I missing anything more important by not undersanding the terms "Zo
>Match" or "Conjugate Match"?
>
>i.e. I guess what I am saying, is that I probably don't yet appreciate what
>is so important about these two "named matches".
>
>Thanks,
>
>-Peter K1PO

Hi Peter,

The definitions are simple to provide, appreciation is in the eye of
the beholder. However, mixing the two in one argument leads to real
problems. The difference you should appreciate is that only one
references power.

73's
Richard Clark, KB7QHC

4589. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 02:50:55 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0B258F.2BA86400@IEEE.org>
Source record: 162338

"Peter O. Brackett" wrote:
> For my edification could you, or someone else reading this thread, in one or
> two simple sentences and a couple of simple in-line equations as necessary,
> please describe what a "conjugate match" and what a "Zo" match is and
> highlight their differences for me.

I'm no high-powered RF guy, Peter. I'm actually an unemployed bum. The conjugate matching theorem goes: "In any 4-terminal lossless network, ..." It has to do with the maximum transfer of available energy with which I'm sure you are familiar. I don't use the term myself, because it requires a lossless system where the impedance of the source is known.

A Z0-match is much easier to understand and work with. A Z0-match happens at a point and is the point where any existing reflections are canceled by destructive interference. The direction of the flow of reflected energy is changed by the destructive/constructive interference action since the energy is "attached" to the wire and there are only two possible directions. In short, a Z0-match matches the Z0 of the transmission line.

A Z0-match does not require maximum energy transfer or a lossless system. It happens at a single point, not across the entire system. Some have said that a Z0-match is a special case of a conjugate match but I believe we can have a Z0-match without a conjugate match.
--
http://www.mindspring.com/~w6rca

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4590. Re: RADIO HOST NEEDS A BEATING

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 02:51:10 UTC
From: kelly@nospam.dvol.com
Message-ID: <3b0b251a.250169023@news2.dvol.com>
Source record: 162129
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital

On 21 May 2001 05:39:44 GMT, Dick Carroll <dixie@townsqr.com> wrote:

>
> Gee. You just blessed that dastardly website with some valuable
>advertising. Most of us never before heard of it.
>
You'd have to be a Kim to fall for this asshole's scam.

4591. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 02:54:50 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <_DFO6.45235$p33.896390@news1.sttls1.wa.home.com>
Source record: 162339

I will quote from Walt Maxwell's article "On the Nature of the Source of Power in Class-B and -C RF Amplifiers" in the May/June 2001 QEX.

"To clarify the confusion, the following two axioms, which follow from the maximum power transfer theorem, accurately define a conjugate match:
Axiom 1: There is a conjugate match whenever all of the available power from a source or network is being delivered to the load.
Axiom 2: There is a conjugate match if the delivery of power decreases whenever the impedance of either the source or load is changed in either direction:"

I do not know what a ZO match is.

73, Roger, W7WKB

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message news:9ef64f$t9h$1@nntp9.atl.mindspring.net...
> Cecil:
>
> For my edification could you, or someone else reading this thread, in one or
> two simple sentences and a couple of simple in-line equations as necessary,
> please describe what a "conjugate match" and what a "Zo" match is and
> highlight their differences for me.
>
> I admit that I am befuddled by all of these somewhat "high falutin" names
> for things that seem, at least to me, to not really desereve their elevation
> to "named" status.
>
> I believe that I understand the "so-called" maximum power transfer theorem,
> which defines the value of a load impedance required to extract the maximum
> power from a generator with a prescribed internal impedance to be the
> complex conjugate of the generator's internal impedance. This theorem is
> "proved" by a basic application of the complex differential calculus, by
> simply writing down the expression for the power dissipated in the load and
> then differentiating that power expression with respect to the load, noting
> that it is the equation of a unimodal surface, and then setting the
> resulting differential to zero and solving for the value of the load.
>

> I believe that with respect to loads and generators there are but two
> imperatives...
>
> 1.) As an "optimum load designer", with the guidance of that "theorem",
one
> must design, or adjust, my loads to be the complex conjugate of the
> generator's internal impedance in order to extract the maximum power from
> the generator.
>
> 2.) As an "optimum generator designer", with the guidance of common
sense,
> one must struggle to remove all internal impedance from my voltage
generator
> and struggle to make the internal resistance of my current generator as
high
> as possible.
>
> Of course one could "prove" a "maximum power generator theorem" using
fancy
> mathematics, to develop imperative 2.), but I feel that common sense
> suffices here.
>
> These two imperatives are all that's really needed to solve most matching
> problems.
>
> Otherwise, what other guidelines should we give to load and generator
> designers?
>
> Am I missing anything more important by not undersanding the terms "Zo
> Match" or "Conjugate Match"?
>
> i.e. I guess what I am saying, is that I probably don't yet appreciate
what
> is so important about these two "named matches".
>
> Thanks,
>
> -Peter K1PO
>
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3B09A458.71B7C2C0@IEEE.org...
> > Steve, VE9SRB, says that Z0-matched systems cannot be analyzed without
> > resorting to vector addition of voltages and currents. This thread will
> > show him how to do it. There is a phasor diagram on my web page at:
> >
> > http://people.delphi.com/cecilmoore/z0match.gif
> >
> > that will be referenced during this posting. Since we don't post
graphics

> > on the newsgroup, that's the best I can do. Here's the analysis:
> >
> > 100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load
> >
> > Given Steady-State Values:
> > 100 watts forward on the coax, zero watts reflected
> > 133.33 watts forward on the 150 ohm line, 33.33 watts reflected
> >
> > The 100 watts forward on the coax will break into component values of:
> >
> > 75 watts not reflected at the 50-150 junction, joins the forward
wave
> >
> > 25 watts reflected at the 50-150 junction but immediately canceled
> through
> > a destructive interference pattern with the 25 watts below
> >
> > The 33.33 watts reflected on the 150 ohm line will break into component
> values of:
> >
> > 8.33 watts re-reflected at the 150-50 junction
> >
> > 25 watts not re-reflected at the 150-50 but immediately canceled
> through
> > a destructive interference pattern with the 25 watts above
> >
> > The 50 watts of destructive interference causes 50 watts of constructive
> > interference energy which joins the forward wave on the 150 ohm line.
> >
> > Thus 75 watts not reflected plus 8.33 watts re-reflected plus 50 watts
of
> > constructive interference equals 133.33 watts of forward power on the
150
> > ohm line.
> >
> > The voltage associated with the 133.33 watts of forward power is
> sqrt(133.33*150)
> > equals 141.4 volts. The current associated with the 133.33 watts is
> sqrt(133.3/150)
> > equals 0.943 amps. All the other voltages and currents can likewise be
> calculated
> > from the powers and Z0 involved. Understanding the nature of reflections
> allows
> > the phases to be deduced.
> >
> > Thus, there's absolutely no need for vector addition of voltages and
> currents
> > when analyzing a Z0-matched system.
> > --
> > http://www.mindspring.com/~w6rca

> >
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>
>

4592. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 02:54:59 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ef8p6$8l2$1@nntp9.atl.mindspring.net>
Source record: 162340

Roger:

Yes, that more or less corresponds with the way I visualize leaky cable.

Here's a point that I would like to see discussed. What is the "difference" between unbalance and leaking?

Assume that you are partially blind and cannot see small holes.

How can you tell the difference between a semi-infinite leaky coaxial cable perfectly symmetrically terminated on a Zo dummy load, [i.e. a semi-infinite coaxial cable with holes in its' shield] and an unbalanced coaxial cable imperfectly terminated on a Zo dummy load [i.e. one without holes in its' shield but for which currents appear on the outside of the shield due to an unsymmetric termination condition]?

Both semi-infinite coaxial cables have currents flowing on the outside of the coaxial cable shield.

Both will exhibit a certain, perhaps even equal, level of shielding effectiveness as measured in dB.

Both will exhibit a finite common mode impedance.

Aside from "seeing" the holes is there any way of discriminating between the two?

If one measured the common mode impedance of both cables and ploted it's magnitude and phase over frequency will there be any substantial differences?

Is a leaky coaxial cable the same as an improperly [unsymmetrically] terminated coaxial cable?

Both seem to have currents on the outside of the shield. What's the difference? Are they equivalent?

Thoughts, comments?

-Peter K1PO

"Roger Sparks" <sparksrc@home.com> wrote in message
news:kmFO6.45092$p33.891962@news1.sttls1.wa.home.com...
> Good Afternoon Peter,
>
> You sure know how to ask complicated questions, and I think you know the
> answers before you ask!!
> But if we are to get a better understanding of how coax really works, we
> need to ask and answer just as you have done.

>
> So let's see if we can think alike. Your questions are similar, and are
> basically "How can a braid leak or not leak energy?"
>
> The assumption we will begin with is that the inner and outer currents are
> equal, and 180 degrees out of phase. In other words, the coaxial
> transmission line is feeding a matched and balanced load.
>
> Now if a twin lead line (a two wire line) was feeding the same load, we
> would have a slight amount of radiation because the fields carried by the
> two wires would not perfectly cancel. It would be easy to unbalance the
> line by bringing another conductor near one of the two wires.
>
> We could reduce the radiation in a two wire line by making it a 3 wire
line,
> with one middle conductor and two wires on the outside. This line would
be
> a little less subject to radiation losses and unbalance by nearby objects.
>
> We could further reduce the radiation by making about 20 wires equally
> spaced around the center wire. We could keep adding wires until we had a
> solid conductor all the way around the center conductor. With a solid
> conductor as the 'shield' surrounding the center conductor, and
remembering
> that the currents are balanced, we should have a 'perfect' reduction in
> radiation, and should have 'perfect' isolation from nearby objects.
>
> I think you will agree with me so far. We have not talked about
unbalanced
> currents here, and this is not the same situation as my earlier posting
> dealing with 'fold back current'.
>
> Now to more directly answer your question, leaky cable would be cable with
> less copper, a more open weave, or more holes punctured in the solid
> conductor. A third conductor placed close to such cable would receive
more
> energy from the central coaxial conductor than would be received from a
> tighter or solid conductor.
>
> The role of a balanced current must be emphasized. Any condition which
> results in one conductor of the coax rising to a higher voltage than the
> other, better, the shifting of the equal potential surface I described in
> the earlier posting, or best, the application of a voltage that would
cause
> both conductors to host a different field strength, would cause unbalanced
> currents.
>
> Obviously, we can not have both balanced, and unbalanced, situations. We
> either have one or the other. Therefore, we can not say, "Roger, in one
> posting you talk about perfect shielding, and in the other, the leaky

solid
> conductor. You are contradicting yourself." No, we are not talking
about
> the same circuit conditions.
>
> So there we have it. Does this fit with the way you think about leaky
> coaxial cable?
>
> 73, Roger, W7WKB
>
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> news:9e9u67$1sf$1@slb4.atl.mindspring.net...
> > Roger:
> >
> > Then why are some coaxial cables more "leaky" than others?
> >
> > What happens to a perfectly shielded coaxial cable, i.e one wherein
there
> > are no currents on the outside of the shield due to currents on the
> insice,
> > when rows of "holes" are punctured at regular intervals along the cable?
> >
> > Why is braid coverage important?
> >
> > Why do coaxial cable manufacturers rate their cables according to
> shielding
> > effectiveness?
> >
> > Etc...
> >
> > -Peter K1PO
> >
> >
> > "Roger Sparks" <sparksrc@home.com> wrote in message
> > news:SeTM6.19733$p33.353932@news1.sttls1.wa.home.com...
> > > Richard Harrison, KB5WZI , wrote
> > > (snip some)
> > > We know that at r-f, a braid performs nearly the same as a solid
shield.
> > > Wires weaving between sides don`t carry the r-f with them as they
weave
> > > between sides. Skin effect requires the current to remain on the same
> > > side of the braid.
> > > (snipe more)
> > > Certainly, the statement that "there is no voltage difference between
> > > the inside of the braid and the outside of the braid" is very
unlikely.
> > >
> > > (snip more)
> > >

> > > Good Morning Richard,
> > >
> > > I think it is good that you are keeping this question alive. You will
> > > notice that I started a new thread, which I did because I think the
> topic
> > > will receive a better review if it becomes the principal subject.
> > >
> > > Just to keep the discussion focused, I am thinking about the
fold-around
> > > current on the braid that is illustrated in the ARRL Antenna Book.
This
> > is
> > > represented as being a second current path which drains power from the
> > > antenna. If it drains power, then it must have measurable voltage and
> > > current. The Antenna Book teaches that this current (it does not talk
> > about
> > > voltage) is kept separate from the inner side by skin effect.
> > >
> > > I think two physical laws actually interplay here. The first is how
> > current
> > > would flow in braid considering that the wires are not running
parallel
> to
> > > the current, and further, that the wires overlap, one on top of the
> other,
> > > and then reverse.
> > >
> > > The second is how current, that is electrical charges, are distributed
> in
> > a
> > > round wire when the distribution is not neutral, or zero energy
> situation.
> > >
> > > To deal with the physical configuration first, we need to carefully
look
> > at
> > > how the braid is laid together. I notice that the braid on RG-8 is
> > > configured so that no wires run parallel to the center wire. In
> addition,
> > a
> > > wire will run on the inside surface for about 1/4 inch, then will rise
> and
> > > run on top of another group of wires for about 1/4 inch thereby
becoming
> > the
> > > outside wire for about 1/4 inch. Because of this interweave, a
current
> > > running on the inside would have to change wires every 1/4 inch to
> remain
> > on

> > > the inside. Any outside current would also have to change wires every
> 1/4
> > > inch to remain of the outside.
> > >
> > > The point of contact is on the top and bottom of each wire, and
currents
> > on
> > > the top or bottom (inside or outside of the coax) would have to go
> through
> > > these contact points (the identical points) in their path to remain on
> the
> > > top or bottom. Separation would be impossible.
> > >
> > > The second law of physics to consider is the distribution of charges
in
> a
> > > round conductor. A current is defined as a movement of charges and we
> > > usually think of this as negative charges moving away from positive
> > charges
> > > (which remain fixed). The negative charges are moving as a group
which
> > > results in a concentration of negative charges in a volume. Because
> > > negative charges repel, they will expand in volume to cover the entire
> > > surface of the conductor. If a nearby surface (such as the inside
> > conductor
> > > in a coax line) has negative charges, then the distribution will shift
> > > toward that surface, but will not occupy only the bottom half of the
> wire
> > > for instance, because the concentration of charges in half a wire
would
> be
> > a
> > > higher energy situation than would a concentration around the entire
> wire
> > > surface.
> > >
> > > This argument disappears for any separate outside current because it
> would
> > > not be balance by inside charges on the center conductor. Instead, a
> > > negative charge on the outside surface would (by capacitive action)
> repel
> > > negative charges on the inside conductor, and would therefore induce a
> > > current on the inner (center) conductor. In this way, any outer
current
> > > would influence both the inside of the outer conductor and the center
> > > conductor of a coax line.
> > >
> > > I understood Kevin, w9cf, to say in an earlier posting that capacitive
> > flux
> > > (the voltage field) moves through a conductor at the same speed as

> through
> > a
> > > dielectric and does not diminish with depth. This is contrasted to
the
> > > magnetic field which does diminish with depth of penetration into the
> > > conductor (skin effect).
> > >
> > > If you disagree with this analysis, please divide the rebuttal into
two
> > > parts:
> > > 1) how the current can pass through identical points and not mix.
> > > 2)how the charge distribution can remain concentrated on only one
side
> of
> > > round wires.
> > >
> > > 73, Roger, W7WKB
> > >
> > >
> >
> >
>
>

4593. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 03:04:49 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0B28D1.EA19BE38@IEEE.org>
Source record: 162341

"Peter O. Brackett" wrote:
> Really, what you have stated below is not needed here in this NG is it?...

Sad to say, Peter, but the equation below is exactly what Steve has been
saying for weeks. I have been amazed that Walt and I are the only ones
who have objected.

Steve has said since: 106.066v + 35.355v = 141.421v

then this is also true: 106.066^2/150 + 35.355^2/150 = 141.421^2/150

or: 75 watts + 8.33 watts = 133.33 watts

Haven't you been following that discussion?

> > But you have to understand what your are doing or else you will come
> > up with a premise like:
> >
> > IF V1 + V2 = V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0
> >
> > for which I have offered a disproof in another posting.
--
http://www.mindspring.com/~w6rca

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4594. Re: RICOHET INTERNET MOBLIE FREQ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 03:15:20 UTC
From: John Bradley <k5mwe@austin.rr.com>
Message-ID: <cXFO6.18722$y_3.7121855@typhoon.austin.rr.com>
Source record: 162343
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.space,rec.radio.amateur.swap

Bill,

I think they are 902-928 MHz Part 15 spread spectrum devices (FH).

73, John

"Bill N0MNB" <N0MNB@MINN.NET> wrote in message
news:uOxO6.292$SM.13634@news.corpcomm.net...
> ANYONE KNOW WHAT FREQ THERE ON.
> THANKS BILL
>
>

4595. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 03:16:20 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9efa16$dr2$1@nntp9.atl.mindspring.net>
Source record: 162342

Richard:

Oh, thanks.

I had never seen the definition of Zo match stated before. Thanks for the reference.

Zo matching, seems to be exactly the same concept as what the "old timers" called an "image match" or an "image impedance".

Do you recall the so called "image design" method for designing electric wave filters, with the m-parameters, and the constant k-sections and such... This image impedance method was the basis for filter design before Darlington and others developed the modern so-called "insertion loss design" techniques for filters. Insertion loss design really requires access to great computing power, and did not come into widespread use until digital computers became available. Image parameter filter design was easy to use and although not very accurate, it gave satisfactory results for most purposes. Image parameter filter desigh tables used to be found in early ARRL handbooks. It was an easy to use method, requiring very little mathematics. The stop band approximations could be done with plastic "loss pole" templates calibrated in dB and laid out on a "gamma" scale according to where the stop band loss poles, the so-called "m's" were located on the gamma axis. One could design fairly high order filters using one of these plastic templates, a T-square, a pair of dividers, and good eyeballs..

The problem with the "image match" filter design methods was/is that the "image impedance" is actually unrealizable and can only be closely approximated. This leads to filter designs with imperfections, i.e. in practice the image parameter filters never meet their theoretical specifications because across the band the image impedance is not accurately realized. Insertion loss design was/is exact and resulted in filters that matched the theoretical calculations, but required tremendous computing power to calculate any reasonable order of filter.

Getting a Zo match, is not a problem with "single frequency" analysis and design, since one can always match an impedance at a single frequency, it is simply a value R + jX. Over a band of frequencies it becomes harder to design an image match [Zo match]...

Thanks again for sharing that definition with me.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:b58mgt8k52jh660jo4rqtea52j28dbegda@4ax.com...
> On Tue, 22 May 2001 22:09:48 -0400, "Peter O. Brackett"

> <ab4bc@ix.netcom.com> wrote:
>
> >Cecil:
> >
> >For my edification could you, or someone else reading this thread, in one
or
> >two simple sentences and a couple of simple in-line equations as
necessary,
> >please describe what a "conjugate match" and what a "Zo" match is and
> >highlight their differences for me.
>
> These terms were coined by R.W. Beatty for NBS to distinguish the many
> "basis" of matching.
>
> Z0 Match:
> The condition in which the impedance seen
> looking into a transmission line is equal to
> the characteristic impedance of the line.
>
> Conjugate Match:
> The condition for maximum power absorption
> by the load, in which the impedance seen
> looking toward the load at a point in a transmission
> line is the complex conjugate of that seen looking
> toward the source.
> >
>
> snip
> >
> >Am I missing anything more important by not undersanding the terms "Zo
> >Match" or "Conjugate Match"?
> >
> >i.e. I guess what I am saying, is that I probably don't yet appreciate
what
> >is so important about these two "named matches".
> >
> >Thanks,
> >
> >-Peter K1PO
>
> Hi Peter,
>
> The definitions are simple to provide, appreciation is in the eye of
> the beholder. However, mixing the two in one argument leads to real
> problems. The difference you should appreciate is that only one
> references power.
>
> 73's
> Richard Clark, KB7QHC

4596. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 03:31:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9efar4$i45$1@slb7.atl.mindspring.net>
Source record: 162344

Cecil:

[snip]
. Some have said
> that a Z0-match is a special case of a conjugate match but I believe we
> can have a Z0-match without a conjugate match.
> --
> http://www.mindspring.com/~w6rca
[snip]

Yes, I agree with you, with the aid of Richard's helpful definition, as I now understand it, a Zo match is completely different from a conjugate match.

To have a Zo match, if Zo = R + jX then the Zo matching impedance would be R + jX, i.e. an exact image of Zo.

With a conjugate match, if Zo = R + jX, then the conjugate matching impedance would be R - jX, the complex conjugate of Zo, not equal to Zo.

Have I got it right?

BTW... now that I seem to understand what the Zo match is, I think I see the usefulness of the conjugate match for maximum power transfer problems, but I don't really see the usefulness of the Zo match.

-Peter K1PO

4597. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 03:39:27 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9efbdf$i1d$0@208.206.142.80>
Source record: 162345

Roger Halstead wrote:
>

> Remember that there is a danger of the station ground ending up many volts
> above the house electrical ground during a lightening strike. It only takes
> a few volts to do in a solid state rig.

I o nce read a paper published by GE that said the voltage across a 6
foot steel radio equipment cabinet (top to bottom) can raise to 10,000
volts during a lightning strike.

4598. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 03:46:54 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9efbrj$r5s$1@slb4.atl.mindspring.net>
Source record: 162346

Roger:

I may be nit-picking but I believe there is a flaw in Walt's Axiom 1 as you state it, and his Axiom 2 could be more "explicit".

[snip]
> Axiom 1: There is a conjugate match whenever all of the available power
> from a source or network is being delivered to the load.
[snip]

First what does Walt mean by "all of the available power"? This can only be defined in terms of the loading. For... consider the case when the source or networks has zero resistance, then the available power is unlimited, and no load can absorb it all.

[snip]
> Axiom 2: There is a conjugate match if the delivery of power decreases
> whenever the impedance of either the source or load is changed in either
> direction:"
[snip]

I like Axion 2... for that is the precise definition of maximum available power. But I believe that Walt has "overdone it" somewhat with "in either direction". I would have stated it as: "A conjugate match occurs when the value of the load impedance is such that the derivative of delivered power with respect to the load impedance is zero."

[snip
> I do not know what a ZO match is.
[snip]

Neither did I until this evening.

-Peter K1PO
>
> 73, Roger, W7WKB
>
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> news:9ef64f$t9h$1@nntp9.atl.mindspring.net...
> > Cecil:
> >
> > For my edification could you, or someone else reading this thread, in
one
> or
> > two simple sentences and a couple of simple in-line equations as
> necessary,
> > please describe what a "conjugate match" and what a "Zo" match is and

> > highlight their differences for me.
> >
> > I admit that I am befuddled by all of these somewhat "high falutin"
names
> > for things that seem, at least to me, to not really desereve their
> elevation
> > to "named" status.
> >
> > I believe that I understand the "so-called" maximum power transfer
> theorem,
> > which defines the value of a load impedance required to extract the
> maximum
> > power from a generator with a prescribed internal impedance to be the
> > complex conjugate of the generator's internal impedance. This theorem
is
> > "proved" by a basic application of the complex differential calculus, by
> > simply writing down the expression for the power dissipated in the load
> and
> > then differentiating that power expression with respect to the load,
> noting
> > that it is the equation of a unimodal surface, and then setting the
> > resulting differential to zero and solving for the value of the load.
> >
> > I believe that with respect to loads and generators there are but two
> > imperatives...
> >
> > 1.) As an "optimum load designer", with the guidance of that "theorem",
> one
> > must design, or adjust, my loads to be the complex conjugate of the
> > generator's internal impedance in order to extract the maximum power
from
> > the generator.
> >
> > 2.) As an "optimum generator designer", with the guidance of common
> sense,
> > one must struggle to remove all internal impedance from my voltage
> generator
> > and struggle to make the internal resistance of my current generator as
> high
> > as possible.
> >
> > Of course one could "prove" a "maximum power generator theorem" using
> fancy
> > mathematics, to develop imperative 2.), but I feel that common sense
> > suffices here.
> >
> > These two imperatives are all that's really needed to solve most
matching
> > problems.
> >

> > Otherwise, what other guidelines should we give to load and generator
> > designers?
> >
> > Am I missing anything more important by not undersanding the terms "Zo
> > Match" or "Conjugate Match"?
> >
> > i.e. I guess what I am saying, is that I probably don't yet appreciate
> what
> > is so important about these two "named matches".
> >
> > Thanks,
> >
> > -Peter K1PO
> >
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > news:3B09A458.71B7C2C0@IEEE.org...
> > > Steve, VE9SRB, says that Z0-matched systems cannot be analyzed without
> > > resorting to vector addition of voltages and currents. This thread
will
> > > show him how to do it. There is a phasor diagram on my web page at:
> > >
> > > http://people.delphi.com/cecilmoore/z0match.gif
> > >
> > > that will be referenced during this posting. Since we don't post
> graphics
> > > on the newsgroup, that's the best I can do. Here's the analysis:
> > >
> > > 100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load
> > >
> > > Given Steady-State Values:
> > > 100 watts forward on the coax, zero watts reflected
> > > 133.33 watts forward on the 150 ohm line, 33.33 watts reflected
> > >
> > > The 100 watts forward on the coax will break into component values of:
> > >
> > > 75 watts not reflected at the 50-150 junction, joins the forward
> wave
> > >
> > > 25 watts reflected at the 50-150 junction but immediately
canceled
> > through
> > > a destructive interference pattern with the 25 watts
below
> > >
> > > The 33.33 watts reflected on the 150 ohm line will break into
component
> > values of:
> > >
> > > 8.33 watts re-reflected at the 150-50 junction

> > >
> > > 25 watts not re-reflected at the 150-50 but immediately canceled
> > through
> > > a destructive interference pattern with the 25 watts
above
> > >
> > > The 50 watts of destructive interference causes 50 watts of
constructive
> > > interference energy which joins the forward wave on the 150 ohm line.
> > >
> > > Thus 75 watts not reflected plus 8.33 watts re-reflected plus 50 watts
> of
> > > constructive interference equals 133.33 watts of forward power on the
> 150
> > > ohm line.
> > >
> > > The voltage associated with the 133.33 watts of forward power is
> > sqrt(133.33*150)
> > > equals 141.4 volts. The current associated with the 133.33 watts is
> > sqrt(133.3/150)
> > > equals 0.943 amps. All the other voltages and currents can likewise be
> > calculated
> > > from the powers and Z0 involved. Understanding the nature of
reflections
> > allows
> > > the phases to be deduced.
> > >
> > > Thus, there's absolutely no need for vector addition of voltages and
> > currents
> > > when analyzing a Z0-matched system.
> > > --
> > > http://www.mindspring.com/~w6rca
> > >
> > >
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> > > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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> >
> >
>
>

4599. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 04:11:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0B386C.109E5366@IEEE.org>
Source record: 162347

"Peter O. Brackett" wrote:
> BTW... now that I seem to understand what the Zo match is, I think I see the
> usefulness of the conjugate match for maximum power transfer problems, but I
> don't really see the usefulness of the Zo match.

A Z0-match is what is achieved by an antenna tuner. It's usefulness is that
no reflected energy flows back into the solid state transceiver since it
sees its designed for load of Z0=50 ohms. The main attraction that a Z0-match
holds for me is it saves me from having to talk about a conjugate match. :-)
--
http://www.mindspring.com/~w6rca

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4600. Re: 2M SSB Polarization??

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 04:18:11 UTC
From: nospam.ron.cole@gte.net
Message-ID: <3b0b3886.104669129@news.gte.net>
Source record: 162348

On 18 May 2001 01:23:45 GMT, kg4ggx@aol.com (KG4GGX) wrote:

>Hi all
> I heard a discussion on 75m about 2m ssb antenna polarization. As I know,
>most ops on 2m ssb are horizontal. Why horizontal, and not vertical?What makes
>one better than the other on VHF? The guy's having this discussion seemed not
>to agree. As I understand, horizontal antennas are less prone to picking up man
>made noise. And, it's my understanding that horizontal radio waves have a
>little less ground loss. Is my understanding wrong. I do know that horizontal
>is the choice of VHF contesters. But why?
> Thanks very much for all replys.
>73 Rob
Horizontal has shown to reduce noise as you noted, provide Isolation
from the Vertical polarized FM operation on the band and studies and
experience has shown Horizontal has advantages on long part over the
horizon paths. In addition stacking H-pol antennas, Yagi or Loop, for
Base operation is easy.

Vertical was chosen for FM operation as they adopted the commercial
2-way standards, Vertical antennas are easier to install on vehicles
and Omni Gain antennas are easy to build for Base Station/Repeater
operation.
If you are going to do SSB on 2m you need an H-Pol antenna even a
single Loop will outperform a High Gain Vertical.

Ron
n5hyh

4601. Re: Mobile antenna RF exposure question.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 04:28:38 UTC
From: nospam.ron.cole@gte.net
Message-ID: <3b0b3c97.105710657@news.gte.net>
Source record: 162349

On Mon, 21 May 2001 14:32:32 GMT, "Jeff Farrar" <jeff@farrar.com>
wrote:

>I plan on installing a dual band antenna on my S-10 pickup and am trying to
>determine a location. I either want to install a 1/4 wave with a hole in
>the center of the roof or mount a 5/8 wave somewhere on the bed of the
>truck. I live in a hilly area would really like the gain that a 5/8 would
>have but I also have to pull this thing in and out of a garage and can't use
>a tall (no more than 28") antenna on the roof (not interested in getting in
>and out with a fold over and no good surface for a motorized mount.)
>My concern/question is if I mount a 5/8 on the bed should I be concerned
>with RF? Does the RF come from the base or tip of the antenna? Since the
>cab is only about 16" or so higher than the bed most the antenna will be
>clear. I am thinking of the Diamond 770 or SG series type of antennas.
>
>73'

Don't worry about RF exposure you will not be running enough power to
worry unless you have a Big Power amp.
Remember that if the repeaters are on top of the hill a 1/4 wave may
be a better antenna than 1 5/8 wave because you need to high angle
radiation to reach the repeater.
In my opinion 1/4 on the roof, where it has a ground plane, is better
than a 5/8 on the back of the truck, where you don't have a ground
plane. That's been my experience on 3 pickups over 12 years. Plus I
can pull into the garage without having to fold over the antennas.

Ron
N5HYH

4602. Modeling the Quarter-Wave Transformer

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 04:30:22 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <94fmgtsd1e5ldk5lp7l5khhf6rp89blj8o@4ax.com>
Source record: 162350

Hi All,

the link:

http://members.home.net/kb7qhc/reference/Zmatch/Trnsfrmr.pdf

73's
Richard Clark, KB7QHC

4603. Re: AM/FM reception in Midtown NYC

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 04:33:05 UTC
From: sgtandrew@aol.com
Message-ID: <20010523003305.29895.00000966@ng-bh1.aol.com>
Source record: 162351

Is the radios you are setting up in an office building? If so are there windows in the area the radios are and which direction do they face?
A lot of radio stations in NYC have there ant. in New Jersey. Some of them are on the World Trade Center Tower. I think the National Weather service is in Long Island. So you have everything coming from all over, which usually is not a problem except when your in a concrete office building.
Check the Yellow pages for a CATV outfit and they should be able to help. Also see if the Cable TV outfit in the area (I think it's Time Warner) offers radio service.
Andy

4604. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 04:53:38 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <mnHO6.45612$p33.914722@news1.sttls1.wa.home.com>
Source record: 162352

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0B386C.109E5366@IEEE.org...
>
> A Z0-match is what is achieved by an antenna tuner. It's usefulness is
that
> no reflected energy flows back into the solid state transceiver since it
> sees its designed for load of Z0=50 ohms. The main attraction that a
Z0-match
> holds for me is it saves me from having to talk about a conjugate match.
:-)
> --
Hi Cecil,

I am surprised at the statement that "no reflected energy flows back into the solid state transceiver since it sees its designed for load of ZO=50 ohms."

I always thought an antenna tuner was just a lot more flexible and convient way to transform impedance that would be a series section or stubs located at the transmitter. In other words, they are all just impedance transformation devices.

Because an antenna tuner is just another transformation device, I assume that the reflected power must go all the way back to the source, meaning the tube or final amplifier. Is that incorrect?

73, Roger, W7WKB

4605. Re: formula stacking two dipoles

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 06:47:33 UTC
From: Michel de Ruiter <pd1aiw@amsat.org>
Message-ID: <9efmdg$e0v$1@porthos.nl.uu.net>
Source record: 162353

Sirs,

More info about the situation:

We are testing for a local repeater. As I wrote we like to use two stacked vertical dipoles. As we don`t wanna use commercial antenna systems. It are vertical dipoles with a gamma match feeded in the middle and we gonna use it on two meters.

We wanna stack the dipoles for getting more gain. Now there are farious ways to stack those dipoles. We understood that the easiest way to do it is using 75 ohm coax with 3/4 way length to the dipoles feedeed in the middle. Is this a good way or can we do it better with 5/8 wave for getting more gain?

Looking forward for any reply.

With kind regards,

Michel de Ruiter
PD1AIW / JO21PU

"Mark Keith" <nm5k@wt.net> schreef in bericht news:3B0AC409.76C3@wt.net...
> Richard Harrison wrote:
>
> > >
> > > Another approach is to use equal lengths of coax matching the antenna
> > > elements. Then, install a "Q-section" between the Tee and the longer
> > > line which matches your radio.
>
> This is the method I used when I ran a phased array of two parallel
> dipoles on 40m. I used equal lines to each antenna, and then switched in
> added sections to steer the pattern. Mine was very casual as far as the
> phasing. I just put it up, and played around with different sections
> until I found the directions I liked the best. The antenna worked quite
> well. Maybe 20 db or more difference when switching directions to
> someone 1000 miles away. You can also use L-C phasing units. But the
> orignal poster really isn't giving enough info on the antenna to tell.
> Sounds like a vertical array which I think would need a to be fed either
> from the center of the antenna with a normal feeder, or if fed at the
> base as he describes would need a transposed feeder between the two
> elements. I'm not sure how well coax would act as a phasing line if you
> simply reversed the element connections between the two. Ladder line
> would be easier to do this than 75 ohm coax, and is usually the norm. I
> guess you could use ladder line as the phasing line in the center, and
> feed with 75 ohm coax at the base. Might need a little matching. With
> 1/2 wl spacing , the impedance around 100 ohms or so. You can use

> anything from about 3/8 wl to 3/4 wl. 5/8 wl gives the most gain, but
> 1/2 to 3/4 will do well. An advantage to the ladder line feeder instead
> of coax would be multiband use. MK
> --
> http://web.wt.net/~nm5k

4606. Site updated with new links !

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 07:09:28 UTC
From: F5lcy <f5lcy@wanadoo.fr>
Message-ID: <9efoa0jnm8@wanadoo.fr>
Source record: 162354

```
Updated today :
http://f6keh.free.fr/index_r
```

4607. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 07:38:25 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9efpd2bin1@neptunium.btinternet.com>
Source record: 162356

Folks, Cecil is sure to have the last word.

You know why ? Because of his inexhaustible supply of energy you
are all arguing about. ;o)

Reg

4608. Re: Compendium of Yagi designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 07:39:54 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3B0B694A.E7776184@eznec.com>
Source record: 162355

You'll have to get the information from graphs, but the basic
information you need can be found in _Yagi Antenna Design_ by James
Lawson, published by the ARRL (ISBN 0-87259-041-0).

Roy Lewallen, W7EL

Thomas Bruhns wrote:
>
> Does anyone have a pointer to a compendium of Yagi designs? I'm interested
> in something like tables of designs optimizing gain, minimizing sidelobes
> ("cleanest" pattern), having flat gain over a range of percentage bandwidths
> (for example, 0.5%, 1%, 2%, 5%...maybe even 10%), and for a range of number
> of elements.

4609. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 08:03:22 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9efqrsjdi1@plutonium.btinternet.com>
Source record: 162357

It was probably Cecil who introduced the notion of Zo match to this newsgroup.

I understand it to be the condition, for example, when a transmission line of impedance Zo is terminated in Zo. There are then no standing waves on the line *regardless* of the generator impedance.

This is the normal, obvious and desirable condition for antenna systems.

Unless, of course, the transmission line is used as a transformer as Cecil recommends.

But why a special name had to be invented for something unexceptionally quite normal I can't imagine.

Either there's a conjugate match or there isn't.

Reg

4610. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 11:06:49 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eg5jb$kk5$1@slb6.atl.mindspring.net>
Source record: 162358

Cecil:

[snip]
. The main attraction that a Z0-match
> holds for me is it saves me from having to talk about a conjugate match.
:-)
> --
> http://www.mindspring.com/~w6rca
[snip]

Uh, oh... ok, now I understand your obsession... I like it!

-Peter K1PO

4611. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 11:10:41 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eg5qj$349$1@slb2.atl.mindspring.net>
Source record: 162359

Reg:

So that's where all of that excess reflected power ends up, in Cecil's debating energy reservoir!

;-)

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:9efpd2bin1@neptunium.btinternet.com...
> Folks, Cecil is sure to have the last word.
>
> You know why ? Because of his inexhaustible supply of energy you
> are all arguing about. ;o)
> ----
> Reg
>
>
>

4612. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 11:14:35 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eg61t$4s3$1@slb1.atl.mindspring.net>
Source record: 162360

Cecil:

Oh, so that's what that was all about...

I opened each post along the way, but I entirely missed the point.

I didn't want to interject, mostly because I didn't really understand what was meant by "Zo match".

Well is should be clear...

I learned it in high school algebra...

The sum of the squares is not equal to the square of the sums!

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3B0B28D1.EA19BE38@IEEE.org...
> "Peter O. Brackett" wrote:
> > Really, what you have stated below is not needed here in this NG is it?...
>
> Sad to say, Peter, but the equation below is exactly what Steve has been
> saying for weeks. I have been amazed that Walt and I are the only ones
> who have objected.
>
> Steve has said since: 106.066v + 35.355v = 141.421v
>
> then this is also true: 106.066^2/150 + 35.355^2/150 = 141.421^2/150
>
> or: 75 watts + 8.33 watts = 133.33 watts
>
> Haven't you been following that discussion?
>
> > > But you have to understand what your are doing or else you will come
> > > up with a premise like:
> > >
> > > IF V1 + V2 = V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0
> > >
> > > for which I have offered a disproof in another posting.
> --
> http://www.mindspring.com/~w6rca
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!

> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4613. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 12:32:50 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <S5OO6.38265$t12.3035266@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162361

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0A7587.522C3AF@IEEE.org...
> Walter Maxwell wrote:
> > How can a mathematician of his caliber believe that 8.33 + 75 = 133.33?
> > This is what is absurd!
>
> Walt, while you were gone, I got Steve to admit that the energy from the
> destructive interference pattern of the two waves trying to travel back
> toward the source becomes constructive interference energy flowing toward
> the load.
>
> Here's what Steve admitted in his own words:
>
> "Destructive interference does occur such that the *net* power flow in the
> rearward direction becomes zero. To balance the power relationships in
this
> example, there must be a corresponding increase in the *net* power flow in
> the forward direction. ... The "net energy loss" occurring through
destructive
> interference is balanced by a corresponding "net energy gain" occurring
through
> constructive interference."
>

I did make that statement. But it is not the same as saying that the energy involved in the destructive interference reverses direction and becomes part of the forward traveling energy. There is an energy balance but the total forward energy is *only* a result of the vector combination of the two forward waves.

An energy balance is a much different concept than the reversal of the energy in the destructive interference or the total re-reflection of the reflected power at the Zo match.

You and Walter have both misinterpreted the physics of what happens at the match point. Your perspective is limited by the simple examples that you choose to look at and the fact that you start your analysis knowing the steady state solution.

In a short while, I will start a new thread "Destructive Interference in Impedance Matching" that will demonstrate that the total power re-refection as described by Walter does not occur and that your reversal of the energy in destructive interference does not occur.

Steve VE9SRB

4614. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 12:32:51 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <T5OO6.38266$t12.3035558@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162362

"Walter Maxwell" <w2du@iag.net> wrote in message
news:3b0ad19f.30998323@news.journey.com...
> On Tue, 22 May 2001 15:57:58 GMT, kb7qhc@home.com (Richard Clark) wrote:
>
> >On Tue, 22 May 2001 13:46:02 GMT, w2du@iag.net (Walter Maxwell) wrote:
>
> >>>>Hi Walt,
> >>>>
> >>>>This is entirely the problem. You make a bald statement as though it
> >>>>were fact.
> >>>
> >>You have not argued a fact, you have simply repeated a bald statement.
> >>
> >>As you accept Bill Klocko's analysis, that is entirely composed of
> >>current and voltage additions, it is exceedingly clear that no powers
> >>were added nor expressed in the sense that you maintain.
> >>
> >>73's
> >>Richard Clark, KB7QHC
>
> Richard, perhaps I didn't make it clear that I'm discussing ONLY steady
state
> conditions. Bill's analysis shows the vector voltage and current additions
> leading up to the steady state. Agreed.
>
> My argument with Steve was only considering the steady-state condition, in
which
> the source voltage and the final reflected voltage do NOT add DIRECTLY to
> establish the total forward power. I have not stated that the vector
voltage and
> currents don't add in establishing the steady state, because of course
they do.
>
> Concerning the powers being added, please show me why 33.333 w of power
> reflected from a 3:1 mismatch added directly to 100 w of source power
doesn't
> establish a forward power of 133.33 w. This is all I'm saying about the
powers
> adding directly, which is what Steve denies.
>
> Walt
>

In a short while, I will post an example that proves your concept of total power re-reflection is incorrect and does not even come close to representing the physics of what happens at the Zo match.

Steve

4615. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 12:38:40 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <kbOO6.38279$t12.3036788@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162363

"Walter Maxwell" <w2du@iag.net> wrote in message
news:3b0ad48f.31750965@news.journey.com...
> On Tue, 22 May 2001 16:13:42 GMT, kb7qhc@home.com (Richard Clark) wrote:
>
>
> >>>>Hi Walt,
> >>>>
> >>>>This is entirely the problem. You make a bald statement as though it
> >>>>were fact.
> >>
> >>Bill Klocko's work shows otherwise and as you accept it, there remains
> >>a conflict between what you say (which is suspect) and this work that
> >>clearly presents Steve's solutions (or so it appears in my
> >>estimation).
> >>
> >>You can either make your case with the math that Bill presents, or you
> >>can recant and offer your own complete treatment equal to Bill's
> >>effort - there is clearly no middle ground.
> >>
> >>73's
> >>Richard Clark, KB7QHC
>
> I have no disagreement with Bill's math, it fits my position precisely. I
don't
> understand where you find disagreement with my statements.
>
> Steve's solutions with the addition of vector voltages agree with your
position
> and with mine, but his addition of voltages are those that lead to the
steady
> state. But his error, that of which I don't seem to make clear to you, is
that
> of adding the final steady-state reflected voltage to the source voltage
to
> establish the forward wave. It's just clearly wrong!
>
> Walt
>

Walter.

Your error is that you assume that the *forward* source power is the 100 W
of delivered power. Your math is essentially re-writing the relationship
Pdelivered = Pforward - Preflected. Your concept is that Pforward =
Pdelivered + a totally re-reflected Preflected.

In a transmission line system with no Zo match Pforward = Pdelivered + Preflected. It would be ridiculous for anyone to conclude that the reflected power must be re-reflected and then add to the delivered power to create the forward power. Based on your power math one could make this same argument for a non-Zo match.

Steve VE9SRB

4616. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 12:50:05 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <1mOO6.46738$p33.945427@news1.sttls1.wa.home.com>
Source record: 162364

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:9ef8p6$8l2$1@nntp9.atl.mindspring.net...
> Roger:
>
> Yes, that more or less corresponds with the way I visualize leaky cable.
>
> Here's a point that I would like to see discussed. What is the
"difference"
> between unbalance and leaking?
>
> Assume that you are partially blind and cannot see small holes.
>
> How can you tell the difference between a semi-infinite leaky coaxial
cable
> perfectly symmetrically terminated on a Zo dummy load, [i.e. a
semi-infinite
> coaxial cable with holes in its' shield] and an unbalanced coaxial cable
> imperfectly terminated on a Zo dummy load [i.e. one without holes in its'
> shield but for which currents appear on the outside of the shield due to
an
> unsymmetric termination condition]?
>
> Both semi-infinite coaxial cables have currents flowing on the outside of
> the coaxial cable shield.
>
> Both will exhibit a certain, perhaps even equal, level of shielding
> effectiveness as measured in dB.
>
> Both will exhibit a finite common mode impedance.
>
> Aside from "seeing" the holes is there any way of discriminating between
the
> two?
>
> If one measured the common mode impedance of both cables and ploted it's
> magnitude and phase over frequency will there be any substantial
> differences?
>
> Is a leaky coaxial cable the same as an improperly [unsymmetrically]
> terminated coaxial cable?
>
> Both seem to have currents on the outside of the shield. What's the
> difference? Are they equivalent?
>

> Thoughts, comments?
>
> -Peter K1PO
>
Good Morning Peter,

I had to sleep on this question. This is an excellent question and one of the hardest because of the subtlety of the differences between the two concepts, balance and unbalance.

Here is what I have come up with.

We are considering the two extreme conditions of the same phenomena- an unbalanced transmission line with common mode currents on the line. The symetrically loaded, matched line with leaky coax which does show common mode current on the outside of the coax has been unbalanced in some way but is presumably a very nearly balanced line. Therefore the only difference between it and an intentionaly or obviously unbalanced transmission line, is the magnitude of the current on the outside. Therefore any test of fields or voltages would be identical except for magnitude.

We could tell the difference by comparing methods of construction, substituting materials. If we had 2 transmission lines, each identical except for leakage characteristics, we could measure the common mode current in all its aspects using first one line and then the other. If the measurements were the same on both lines, then the common mode current is due to the external connections of the line. If the measurements are different, then any difference must be due to the differences in the cable and would be a measurement of the leakage characteristics of the two cables.

I would not call the substitution of cables a 'test' but would be an 'experiment'. So my conclusion would be that no test could be performed using instruments on the coax alone that would conclusively determine which condition, leaky coax or unbalanced load, was causing the common mode current.

A very good question Peter. Not easily answered without opening other unwanted lines of questions.

73, Roger, W7WKB

4617. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 12:59:11 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BB41F.24F3DCDB@IEEE.org>
Source record: 162365

VE9SRB wrote:
> I did make that statement. But it is not the same as saying that the energy
> involved in the destructive interference reverses direction and becomes part
> of the forward traveling energy. There is an energy balance but the total
> forward energy is *only* a result of the vector combination of the two
> forward waves.

The destructive interference energy was flowing toward the source just
before it was canceled. The resulting constructive interference energy
flows toward the load. In a wire, there are only two directions possible.
Playing word games will not change the fact that the destructive/constructive
energy has changed direction. It has no other choice.

> An energy balance is a much different concept than the reversal of the
> energy in the destructive interference or the total re-reflection of the
> reflected power at the Zo match.

Strawman Alert: Steve, you are at it again. I do not believe in total re-
reflection of the reflected power at the Z0 match. I have said that at
least a dozen times yet you keep implying the above falsehood. Why must
you attempt to discredit me with falsehoods?

> You and Walter have both misinterpreted the physics of what happens at the
> match point.

Please leave Walt out of this. He and I have our own disagreements. Lumping
us together as if we were joined at the hip is just another of your
diversionary techniques. If you have an argument with Walt, then take it
up with Walt. Don't argue with me about what Walt thinks. I don't speak
for Walt.

> In a short while, I will start a new thread "Destructive Interference in
> Impedance Matching" that will demonstrate that the total power re-refection
> as described by Walter does not occur and that your reversal of the energy
> in destructive interference does not occur.

And I will find your past posting that says the energy involved in the
destructive interference keeps flowing toward the source. You have
changed your mind about that one, haven't you?

I do not believe that the total power re-reflection as described by Walt
actually occurs in reality. I do not believe there is a virtual short.
Please stop erecting that strawman in your and my discussions.
What I think is contained in the phasor diagram on my web page at:

http://people.delphi.com/cecilmoore/z0match.gif

You have agreed with most of that diagram and at your suggestion, I changed "destructive" to "constructive" to more accurately reflect the energy direction reversal from destructive interference energy flowing toward the source to constructive interference energy flowing toward the load. A wire is a one-dimensional object. It only has two directions. If RF energy is canceled in one direction, it has no choice but to change directions.
--
http://www.mindspring.com/~w6rca

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4618. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 13:02:27 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BB4E3.2CFF659@IEEE.org>
Source record: 162366

"Peter O. Brackett" wrote:
> So that's where all of that excess reflected power ends up, in Cecil's
> debating energy reservoir!

I collect it all in my RF battery.
--
http://www.mindspring.com/~w6rca

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4619. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 13:03:38 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BB52A.1AF08B9F@IEEE.org>
Source record: 162367

"Peter O. Brackett" wrote:
> I learned it in high school algebra...
> The sum of the squares is not equal to the square of the sums!

Now, would you please convince Steve of that simple fact?
--
http://www.mindspring.com/~w6rca

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4620. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 13:17:32 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BB86C.7C38BF4E@IEEE.org>
Source record: 162269

Reg Edwards wrote:
> It was probably Cecil who introduced the notion of Zo match to this
> newsgroup.

My use of the term, Z0-match, came from "The ARRL Antenna Book",
15th Edition (1988), page 25-1. I'm pretty sure it was written
by Walter Maxwell.

> I understand it to be the condition, for example, when a
> transmission line of impedance Zo is terminated in Zo. There are
> then no standing waves on the line *regardless* of the generator
> impedance.

And that applies even when the load is a virtual load as in the
case of virtual impedances transformed by transmission lines
with SWRs greater than 1:1.

> This is the normal, obvious and desirable condition for antenna
> systems.
>
> Unless, of course, the transmission line is used as a transformer
> as Cecil recommends.

Reg, are you saying that my methods are abnormal, non-obvious, and
undesirable? :-)

> But why a special name had to be invented for something
> unexceptionally quite normal I can't imagine.

Names are invented for the sake of efficiency so we can use the short
name instead of the long definition. What would you call a Z0-match
if you didn't call it a Z0-match?
--
http://www.mindspring.com/~w6rca

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4621. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 13:17:33 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <NLOO6.38384$t12.3040497@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162368

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0BB41F.24F3DCDB@IEEE.org...

>
> > An energy balance is a much different concept than the reversal of the
> > energy in the destructive interference or the total re-reflection of the
> > reflected power at the Zo match.
>
> Strawman Alert: Steve, you are at it again. I do not believe in total re-
> reflection of the reflected power at the Z0 match. I have said that at
> least a dozen times yet you keep implying the above falsehood. Why must
> you attempt to discredit me with falsehoods?
>

At least read what I said and then get it right. Where did I specifically claim that *you* said a total reflection of power occurs. Your name is not mentioned in the paragraph. This isn't all about you Cecil. I said that an energy balance is much different than the reversal of the energy in the destructive interference or the total re-reflection of power.

Stop twisting my words with your game of smoke and mirrors. If you can't prove your points with a technical discussion stop posting.

>
> And I will find your past posting that says the energy involved in the
> destructive interference keeps flowing toward the source. You have
> changed your mind about that one, haven't you?
>

I really wish you would stop misstating my concepts. If you're going to even try to state my technical position, at least get it right.

I have not changed my mind about anything. There are two rearward waves traveling in the transmission line. They always continue to travel rearward in the transmission line. It just happens that the net combination of these two rearward waves results in a net rearward wave of zero rearward power. There is no reversal of this energy.

You spend more time twisting words and concepts than discussing the issues.

>If RF energy is
> canceled in one direction, it has no choice but to change directions.
> --

I'm really glad you said this because I'm about to prove you wrong in the other thread I'm working on. Everyone reading these posts needs to rememeber this statement because it will be demonstrated shortly that the

cancelled energy does not reverse direction. After I demonstrate that the reflected energy does not reverse direction, I wonder what your response will be. Hopefully not more smoke and mirrors.

Steve VE9SRB

4622. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 13:24:25 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <dSOO6.38399$t12.3039117@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162270

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0BB52A.1AF08B9F@IEEE.org...
> "Peter O. Brackett" wrote:
> > I learned it in high school algebra...
> > The sum of the squares is not equal to the square of the sums!
>
> Now, would you please convince Steve of that simple fact?
> --

What are you talking about Cecil? You're twisting of words and my concepts
is starting to get ridiculous

All I have ever said is that Vtotal = V1 + V2, where V1 and V2 are vectors.

|Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| cos(theta)] theta is the
phase angle between V1 and V2

My vector math works quite fine.

You're the person that is trying to convince everyone that two vectors add
as follows:

|Vtotal| = Sqrt (|V1|^2 + |V2|^2)

This *only* works when the vectors are 90 degrees out of phase.

In my opinion, it is you who needs the lesson in high school algebra.

Steve

4623. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 13:35:19 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BBC97.51296C1B@IEEE.org>
Source record: 162271

Roger Sparks wrote:
> I always thought an antenna tuner was just a lot more flexible and convient
> way to transform impedance that would be a series section or stubs located
> at the transmitter. In other words, they are all just impedance
> transformation devices.

Yes, that's true. The purpose of that impedance transformation is to allow
the transmitter to work into its designed-for load, usually 50 ohms for
a solid-state transmitter. Consider a transmitter driving a piece of coax
terminated by an antenna tuner which is in line in the antenna system. The
tuner's function is to present 50 ohms to the transmitter. The result is
no reflected energy on the coax between the transmitter and the tuner.

> Because an antenna tuner is just another transformation device, I assume
> that the reflected power must go all the way back to the source, meaning the
> tube or final amplifier. Is that incorrect?

Yes, that's incorrect. The differential output currents close the current
loop and energy is lost from the system through RF radiation. The purpose
of the antenna tuner is to change the direction of the reflected energy
so that it joins the forward wave toward the load. That change of direction
of reflected energy is caused by re-reflection PLUS a destructive interference
pattern near the input of the tuner which results in a constructive interference
pattern toward the output of the tuner.

Before You-Know-Who goes up the wall, please note that I didn't say the
reflected energy is 100% re-reflected. I said 100% of the reflected energy
is re-routed back toward the load by the antenna tuner. That re-routing
is a two step process involving re-reflection and destructive/constructive
interference.
--
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4624. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 13:35:42 UTC
From: richardharrison@webtv.net
Message-ID: <28518-3B0BBCAE-4@storefull-117.iap.bryant.webtv.net>
Source record: 162274

Steve, VE9SRB wrote:
"It would be rediculous for anyone to conclude that the reflected power must be re-reflected and then add to the delivered power to create the forward power."

That is exactly what my Bird wattmeter tells me.

To determine delivered power, I simply subtract the reflected power from the forward power. This is because the forward power is the simple sum of the delivered power and the re-reflected power.

Reg said long ago that a near total re-reflection happened at a transmitter`s output because the output impedance of the transmitter is very high indeed. I didn`t believe that then, and I don`t believe it now.

The transmitter`s output impedance is the same whether it is acting as a source or a load. It is reasonably low because it lets the emissions out.

The reflected wave is special. Reflection flips the relationship between volts and amps by 180 degrees. The transmitter, therefore, is not a load for the reflection. But, re-reflection, from what is essentially an open-circuit, corrects the disjointed reflected wave, and its volts and amps are once again in-phase.

The re-reflected wave comfortably merges with with new emmissions as an arithmetic sum of forward power headed for the load.

This is my own theory and I`ve been wrong before, but it works for me.

Best regards, Richard Harrison, KB5WZI

4625. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 13:42:34 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <e7PO6.38452$t12.3042112@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162272

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B09E404.5D3E5E38@IEEE.org...
> Steve, I have already said I could be wrong about the Poynting vector
because
> I haven't done the math. I have never said a virtual short circuit exists.
That
> is a strawman on your part. Why do you feel that spreading falsehoods
about what
> I have said is the only way for you to win an argument?
>

I know that you do not claim that a total re-reflection of power occurs. I know that all you are saying is that the energy involved in the destructive interference reverses direction and adds to the forward source power and the reflected power. I also know that we agree on the levels of forward source power and re-reflected power. I am making very general statements because there are at least three opinions in the discussion. My statements are not all about you specifically. You will not find a post where I specifically state that *you* claim that a virtual short circuit exists or that *you* claim that a total re-reflection of power occurs. Stop reading deeper personal meaning into my statements. You're not the only person in this discussion and this discussion is not just about your opinions.

Lighten up a bit.

Steve

4626. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 13:44:00 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BBEA0.6307074A@IEEE.org>
Source record: 162273

"Peter O. Brackett" wrote:
>
> Cecil: The main attraction that a Z0-match
> > holds for me is it saves me from having to talk about a conjugate match.

> Uh, oh... ok, now I understand your obsession... I like it!

A conjugate match requires knowledge of the source impedance which results
in an infinite series of arguments. No knowledge of the source impedance
is necessary to eliminate reflections on a transmission line.

Consider this: XMTR----50 ohm coax----50 ohm load

The only thing affected by the source impedance is efficiency. This
system is Z0-matched. Except for the cost of energy, who cares if it
is conjugately matched or not?
--
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4627. Re: Modeling the Quarter-Wave Transformer

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 13:46:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BBF1F.7266695@IEEE.org>
Source record: 162275

Richard Clark wrote:
>
> Hi All,
>
> the link:
>
> http://members.home.net/kb7qhc/reference/Zmatch/Trnsfrmr.pdf

Thanks, Richard and Bill.
--
http://www.mindspring.com/~w6rca

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4628. Re: Modeling the Quarter-Wave Transformer

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 14:05:23 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <DsPO6.38505$t12.3045041@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162276

"Richard Clark" <kb7qhc@home.com> wrote in message
news:94fmgtsd1e5ldk5lp7l5khhf6rp89blj8o@4ax.com...
> Hi All,
>
> the link:
>
> http://members.home.net/kb7qhc/reference/Zmatch/Trnsfrmr.pdf
>
> 73's
> Richard Clark, KB7QHC

Thanks,

Bill sent me a copy of the article sometime ago. It is a very good article and treats the 1/4 WL transformer with a voltage and current analysis. Obviously, going through the voltage analysis, the steady state conditions are determined through the combination of the forward and rearward voltages. I would also like to acknowledge and thank Bill for the help he has provided me in the preparation of the articles I submitted to QEX.

Steve

4629. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 14:11:25 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BC50D.651E856C@IEEE.org>
Source record: 162277

VE9SRB wrote:

I'm here to learn, Steve. Please prove the following to me once more:

IF V1 + V2 = V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0

> At least read what I said and then get it right. Where did I specifically
> claim that *you* said a total reflection of power occurs.

You implied that I said it, Steve. That's your attempt at a strawman.
It's like: Have you stopped beating your wife?

> I said that an
> energy balance is much different than the reversal of the energy in the
> destructive interference or the total re-reflection of power.

Which implies that I believe in a total re-reflection, which I don't.
Please stop those implications, Steve, they are simply not true.

> Stop twisting my words with your game of smoke and mirrors. If you can't
> prove your points with a technical discussion stop posting.

It is I who am complaining about you twisting words, Steve. I do not
twist words, except in jest, and I admit it and apologize when I am wrong.

> I really wish you would stop misstating my concepts. If you're going to
> even try to state my technical position, at least get it right.

Are you denying that you once said the energy involved in the destructive
interference keeps flowing toward the source?

> I have not changed my mind about anything.

Yep, since the day you were born.

Destructive/constructive interference in a wire is a reversal of direction,
Steve. There are only two possible directions. If it stops going one
direction, it must then go the other direction.

> You spend more time twisting words and concepts than discussing the issues.

Steve, when it comes to twisting words and concepts, you are the master
and I am but an amateur. However, I believe that the laws of physics
will prevail.

> I'm really glad you said this because I'm about to prove you wrong in the
> other thread I'm working on.

I'm here to learn, Steve. Please prove the following to me once more:

IF V1 + V2 = V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0
--
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4630. Stacking two or more dipoles

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 14:12:07 UTC
From: Michel de Ruiter <pd1aiw@amsat.org>
Message-ID: <9egglc$2he$1@porthos.nl.uu.net>
Source record: 162278

Who gan give me the formula for stacking two or more dipoles with 75 ohm coax? Is it
right to use 3/4 quarter wave?

More info about the situation:

We are testing for a local repeater. As I wrote we like to use two stacked vertical dipoles. As we don`t wanna use commercial antenna systems. It are vertical dipoles with a gamma match feeded in the middle and we gonna use it on two meters.

We wanna stack the dipoles for getting more gain. Now there are farious ways to stack those dipoles. We understood that the easiest way to do it is using 75 ohm coax with 3/4 way length to the dipoles feedeed in the middle. Is this a good way or can we do it better with 5/8 wave for getting more gain?

Looking forward for any reply.

With kind regards,

Michel de Ruiter
PD1AIW / JO21PU

4631. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 14:38:30 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <GXPO6.39859$4f7.2970593@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162279

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0BC50D.651E856C@IEEE.org...

> I'm here to learn, Steve. Please prove the following to me once more:
>
> IF V1 + V2 = V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0
> --

I never claimed that the above relationship, as you have written it, was true. This is an incorrect interpretation of voltage and power addition - see the continued pattern of incorrect interpretations developing.

The total forward voltage in a transmission line is given by Vtotal = V1 + V2 (complex vector addition).

The total forward power in the transmission line is found from |Vtotal|^2

V1 and V2 are complex vectors. If the phase angle difference between the two is given as theta then:

|Vtotal| = Sqrt [|V1|^2 + |V2|^2 + 2 |V1| |V2| Cos(theta)]

When V1 and V2 are in phase:

|Vtotal| = Sqrt [|V1|^2 + |V2|^2 + 2 |V1| |V2|]

|Vtotal|^2 = |V1|^2 + |V2|^2 + 2 |V1| |V2|

Translating this into a power relationship:

Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt (P2)

Steve VE9SRB

4632. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 14:41:22 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <m_PO6.39867$4f7.2973037@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162280

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0BC50D.651E856C@IEEE.org...

Cecil, I am going to stop responding to these pointless posts.

My next post will be in the thread "Destructive Interference in Impedance
Matching"

See you there.

Steve

4633. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 14:46:03 UTC
From: richardharrison@webtv.net
Message-ID: <27370-3B0BCD2B-18@storefull-111.iap.bryant.webtv.net>
Source record: 162283

Peter, K1PO wrote:
"First what does Walt mean by "all of the available power"?"

That irked me the first time I read it from one of Walt`s communications. Thought he should have defined it early and often as it was foreign to me!

Walt, I believe, simply meant the power a conjugate match provides without changing the capabilities of the transmitter by adjusting applied voltages, etc.

Then one fine day , I was reading from one of the ancient authorities who defined and used "all of the available power"!

I don`t remember the author and an index search of a few books didn`t produce the definition. Walt wasn`t the first to use the "all available power power" phrase, so it isn`t unprecedented.

Best regards, Richard Harrison, KB5WZI

4634. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 14:49:57 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BCE15.C04D47D@IEEE.org>
Source record: 162281

VE9SRB wrote:
> All I have ever said is that Vtotal = V1 + V2, where V1 and V2 are vectors.

No, that's not all you have ever said, Steve. You said a lot about power.
I have no problem with your vector math involving phasors. Please stop
implying that I do. You want to discuss only the points where you are
right. I, OTOH, want to discuss the points where you are wrong - you
know, the ones you presently attempting to avoid at all costs?

Please prove the following to me once again:

IF V1 + V2 = V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0

where V1=106.066v, V2=35.355v, V3=141.421v, V1^2/Z0=75w, V2^2/Z0=33.33w
V3^2/Z0=133.33w

> |Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| cos(theta)] theta is the
> phase angle between V1 and V2
>
> My vector math works quite fine.

Until you try to use it on scalar powers. I don't have any argument with your
ability to perform vector addition of voltages and currents. I have a lot of
objections to your use of vector math on scalar energy. Please stop implying
that I have any problems with your vector addition of phasors.

Here's an example of your technique: "You are free to believe whatever you
want, Cecil, but I am against small pox." It's an old trick - won't work here.

> You're the person that is trying to convince everyone that two vectors add
> as follows:
>
> |Vtotal| = Sqrt (|V1|^2 + |V2|^2)
>
> This *only* works when the vectors are 90 degrees out of phase.

That works anytime the power in each of those two vectors is fixed
and limited.

Given two vectors each containing 100 watts, no more and no less, there
is no way to get more than 200 watts out of their combination. Yet you
contend that 400 watts can be obtained from two 100 watt signals.

For instance, adding two 100 watt waves in a 50 ohm environment:

V1 = V2 = sqrt(100w*50ohms) = 70.71 volts

You say the result of adding two 100 watt waves in a 50 ohm environment
is Ptot = 100w + 100w + 2 sqrt(100w*100w) = 400 watts

Steve, the boundary conditions state that there are two and only two
100 watt waves, each fixed at 100 watts, no more and no less. Where
does the extra 200 watts come from in your power equation?

The correct solution is the solution that yields a total of 200 watts,
not a total of 400 watts.

Vtot = sqrt(70.71^2 + 70.71^2) = 100 volts which is the maximum voltage
possible when combining two fixed 100 watt waves in a 50 ohm environment.

100v^2/50 = 200 watts and the conservation of energy principle is honored.

If you could actually demonstrate how two and only two 100 watt signals
can be added to obtain 400 watts, Steve, you wouldn't be wasting your
time on a newsgroup. You would be getting rich by alleviating the California
energy problem. California could use your power vector addition to double
the available energy in the state.
--
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4635. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 15:09:39 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BD2B3.75949A1C@IEEE.org>
Source record: 162282

VE9SRB wrote:
> Your error is that you assume that the *forward* source power is the 100 W
> of delivered power.

Since power is a scalar value, it is true that the generated power joins
the forward power on the 150 ohm line in the following Z0-matched system.

100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load

rho^2 is 0.25 and (1-rho^2) is 0.75. All the existing components of power
will be labeled as A, B, C, and D.

The 100 watts of generated power breaks into two components at the 50-150
ohm junction.

A. 75 watts not reflected at the 50-150 ohm junction

B. 25 watts reflected back toward the source at the 50-150 ohm junction

The 33.33 watts of reflected power from the load, likewise, breaks into two
components at the 150-50 ohm junction.

C. 25 watts not re-reflected

D. 8.33 watts re-reflected back toward the load

You have already agreed that components A and D head toward the load.

Components B and C are involved in a destructive interference pattern that
causes a constructive interference pattern back toward the load. Thus, these
two 25 watt values join the forward wave on the way back to the load. In fact,
because there is no reflected power on the coax, ALL the power in the system
heads for the load.

Thus all the generated power and all the reflected power are directed toward
the load. There is simply no other place for it to go.

Please note that I am only discussing scalar powers above. I have no argument
with your voltages, currents, and phases.

> Based on your power math one could make this same argument for a non-Zo match.

No one is discussing a non-Z0-match, Steve. Please pay attention. We are
discussing the normal, everyday Z0-matched systems that most hams use where
NO REFLECTED POWER IS ALLOWED TO REACH THE TRANSMITTER. So where else can
the power go except toward the load?

In a lossless system, ALL generated power winds up at the load. If you
believe otherwise, please tell us exactly where the power goes that

doesn't go to the load.
--
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4636. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 15:14:59 UTC
From: richardharrison@webtv.net
Message-ID: <27371-3B0BD3F3-8@storefull-111.iap.bryant.webtv.net>
Source record: 162288

Steve wrote:
"This "only" weorks when the vectors are 90 degrees out of phase."

That is why we resolve vectors of any angle into their vertical and horizontal components to compose a new vector sum.

Best regards, Richard Harrison, KB5WZI

4637. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 15:17:01 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BD46D.22BA5A52@IEEE.org>
Source record: 162285

VE9SRB wrote:
> My statements are not all about you specifically.

That's certainly the truth so please stop attempting to make them look like
they are all about me specifically when you reply directly to one of my
postings. You are attempting to effect guilt by association and that's
certainly not a fair way to debate.

> Lighten up a bit.

I will lighten up when you cease your underhanded debating techniques, Steve.
Let me show you how it feels:

Steve, no matter what you say, I refuse to change my belief that smallpox
is an evil disease.

That's what you have been doing to me, Steve. I would much appreciate it
if you would cease and desist. Why do you feel the need to make false
implications?
--
http://www.mindspring.com/~w6rca

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4638. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 15:17:05 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <RvQO6.38719$t12.3051708@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162284

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0BCE15.C04D47D@IEEE.org...

> Please prove the following to me once again:
>
> IF V1 + V2 = V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0
>
> where V1=106.066v, V2=35.355v, V3=141.421v, V1^2/Z0=75w, V2^2/Z0=33.33w
> V3^2/Z0=133.33w
>
> > |Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| cos(theta)] theta is
the
> > phase angle between V1 and V2
> >

Vtotal = V1 + V2 - complex vector voltages

|Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| cos(theta)]

Theta = 0 (in-phase). Note that when V1 and V2 are in phase, |Vtotal|
simplifies to |Vtotal| = |V1| + |V2|.

|V1| = 106.066 V P1 = 106.066^2 / 150 = 75W

|V2| = 35.355 V P2 = 35.355^2 / 150 = 8.33 W

|Vtotal| = Sqrt[106.066^2 + 35.355^2 + 2 106.066 * 35.355]

|Vtotal| = 141.42

Ptotal = |Vtotal|^2 / 150

Ptotal = 133.33 Watts.

When a signal having an associated power of 75 W combines in phase with a
signal having an associated power of 8.33 the resulting signal will have a
total power of 133.33 W. The single fact that makes this power relationship
work is that the signals are applied simultaneously in the same impedance
(Zo).

See you in the other thread.

Steve VE9SRB

4639. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 15:37:48 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9eglgc$8c9$0@208.207.71.173>
Source record: 162286

W6RCecilA wrote:
>
> Eureka! All the generated power joins the forward wave and all the reflected
> power joins the forward wave, acting for all the world the same way it would
> have if the reflected power had been 100% re-reflected.

Just like Walt said.

4640. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 15:41:56 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BDA44.6AEB5722@IEEE.org>
Source record: 162287

VE9SRB wrote:
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3B0BC50D.651E856C@IEEE.org...
>
> > I'm here to learn, Steve. Please prove the following to me once more:
> >
> > IF V1 + V2 = V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0
>
> I never claimed that the above relationship, as you have written it, was
> true.

Of course, you did, Steve, and you are still claiming it in this posting.
From the earlier example:

100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load

> Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt (P2)

P1 is V1^2/Z0 = 106.066^2/150 = 75 watts

P2 is V2^2/Z0 = 35.355^2/150 = 33.33 watts

Ptot is V3^2/Z0 = 141.4^2 = 133.33 watts

You have claimed, over and over, that 75w + 8.33w = 133.33w

That's the same equation as the one above, which you are disclaiming.

Please note that your extra energy, 2 sqrt(P1) sqrt(P2), is the energy
supplied by the destructive/constructive interference pattern and
DOES NOT COME FROM P1 AND P2. It is mathematically equal to what you
say only because of the existence of the Z0-match along with its
inherent destructive/constructive interference pattern.

You cannot get more energy out of P1 and P2 than P1 and P2 contain.
--
http://www.mindspring.com/~w6rca

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4641. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 15:49:02 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0BDBEE.81F1DF96@IEEE.org>
Source record: 162289

VE9SRB wrote:
>
> "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3B0BC50D.651E856C@IEEE.org...
>
> Cecil, I am going to stop responding to these pointless posts.

I've noticed that about you before, Steve. You discover your mistake
and instead of admitting it and proceeding with the discussion, you
leave the thread for awhile and then come back with information
learned from your mistake claiming that you believed it all along.

I don't mind if you have a fragile ego. It really doesn't matter to
me if you admit your mistakes or not. What is important to me is that
you cease posting such silliness as 75w + 8.33w = 133.33w. An
uninitiated reader might take you seriously.
--
http://www.mindspring.com/~w6rca

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4642. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 16:00:56 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9egmro$c2u$0@208.207.71.173>
Source record: 162290

Bill Klocko wrote:
>
> Walt,
> If you read that paper carefully, it is the *partial* reflection and *partial*
> transmission of wave components on both sides of the match point that do the trick.

You scientists can bat this subject around indefinitely to reach
whatever conclusions or agreements that result, but you won't convince
us ordinary hams that Walt is wrong until you satisfactorily explain why
my reflected meter between the transmitter and the antenna tuner reads
NO reflected at match. It shows NO reflected, not even partial.

Dick

4643. Re: Stacking two or more dipoles

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 16:04:52 UTC
From: richardharrison@webtv.net
Message-ID: <27370-3B0BDFA4-28@storefull-111.iap.bryant.webtv.net>
Source record: 162292

Michel De Ruiter wrote:
"As I wrote we would like to use two stacked vertical dipoles."

Two stacked, insulated from each other, and driven out-of-phase at the middle, antenna elements of 1/2-wave or 5/8-wave each, are often called a Franklin array or antenna. It is a two-element collinear array.

As phase reverses each 1/2-wave, only one drive point is enough to drive a dipole at its mid-point with a length overall of one wavelength. It can even be stretched to 5/4 wavelength for a little more gain, but additional lobes start to appear. So, more than 5/4 wavelength is not advisable unless phase inverters are used at 1/2-wave points to keep current in-phase throughout the length of the wire. These inverters often take the form of 1/4-wave shorted stubs.

See page 8-37 of the new ARRL Antenna Book for 3 and 4 element collinear arrays. These are shown as horizontals but work just as well as verticals.

Best regards, Richard Harrison, KB5WZI

4644. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 16:12:22 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9egnh6dfi0@208.207.71.173>
Source record: 162291

W6RCecilA wrote:
>
please note that I didn't say the
> reflected energy is 100% re-reflected. I said 100% of the reflected energy
> is re-routed back toward the load by the antenna tuner. That re-routing
> is a two step process involving re-reflection and destructive/constructive
> interference.

Thankyew. Now I understand why my reflectometer reads zero ahead of the
matched tuner while "not all reflected power is re-reflected". You had
me worried for a bit.

Dick

4645. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 16:16:18 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <mnRO6.40000$4f7.2983333@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162293

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0BDBEE.81F1DF96@IEEE.org...
> VE9SRB wrote:
> >
> > "W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
> > news:3B0BC50D.651E856C@IEEE.org...
> >
> > Cecil, I am going to stop responding to these pointless posts.
>
> I've noticed that about you before, Steve. You discover your mistake
> and instead of admitting it and proceeding with the discussion, you
> leave the thread for awhile and then come back with information
> learned from your mistake claiming that you believed it all along.
>
> I don't mind if you have a fragile ego. It really doesn't matter to
> me if you admit your mistakes or not. What is important to me is that
> you cease posting such silliness as 75w + 8.33w = 133.33w. An
> uninitiated reader might take you seriously.
> --

What mistake?

I am leaving this discussion because we are just moving around in circles.
This discussion is presently going nowhere. You're afraid to discuss
anything outside of the simple Zo match.

I am really interested in how you will respond when I demonstrate that the
energy involved in the destructive interference does not reverse direction.

Steve

4646. Opinions on Austin Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 17:01:30 UTC
From: Jeff Farrar <jeff@farrar.com>
Message-ID: <K1SO6.509$lP5.205427@news1.rdc2.pa.home.com>
Source record: 162295

Anyone using their 500C dual band mobile antenna or any other? They sell an elevated feed 1/4 wave that looked interesting. Here is their description of it.

"The 500C Antennae are also an adaptation of the popular Metropolitan Mobile Multiband Antenna. The UHF function is handled by the upper whip portion of the antennae. The element is operational as a ground independent 1/2 wave radiator. It is isolated from the feed line by the resonant cavity, which also produces a 50-ohm match. This isolation, combined with the elevation of the feed point, produces a superior radiation pattern that is on the horizon for maximum range and efficiency. The VHF operation is provided by the overall length of the antenna, functioning as a 1/4 wave element while using the vehicle as a ground plane. This patented technique substantially lowers the typically high radiation angle of the 1/4 wave antenna. Relatively short, the antenna will not bend over at highway speeds, distorting the radiation pattern. These two factors combine to provide performance when at speeds exceeding the typical 5/8 wave design. The 500C family of antennae includes single, dual, tri, and quad band versions in many popular frequency splits. "

Any thoughts on how this might worked compared to a Larsen dual band 1/4 wave?

4647. Re: Looking for Yagi plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 17:03:33 UTC
From: don_lehman@mail.dor.state.mo.us
Message-ID: <3B0BED64.DCB65102@mail.dor.state.mo.us>
Source record: 162294

I have actually built this antenna (DK7ZB)and it is superb, low vswr between 144-146mhz excellent gain (10.7dbd)and has allowed me to work from central Missouri to northerm Mississippi (very little band enhancement)with the antenna 10ft above the bed of my truck with 50 watts out. I'm going to stack a pair of these at about 50' for weak signal work once I get moved to a new qth. One tip, when making the matching section get yourself a grid dip oscillator or antenna analyser to determine the correct length of matching section.....resonate a 1/2 wave at the desired frequency and cut it in half.....no messing with low power resistors to make a 28 ohm dummy load.

Kevin

KC0JDW

Russ Renaud wrote:

> "Eric Ruuska" (eruuska@netnitco.net) writes:
> > Hey all,
> >
> > Anyone know of a good website or other resource with Yagi plans for the
> > absolute beginner? Specifically I'm looking for 2m and 6m Yagis.
>
> There's a nice short 2 m yagi design at:
>
> http://www.qsl.net/dk7zb/7El-yagi.htm
>
> and I have one at at:
>
> http://www.qsl.net/va3rr
>
> Have fun!
>
> --
> 73 de va3rr/aa8lu
> http://www.qsl.net/va3rr
> Check out the new Ship Station Regs at:
> http://www.tc.gc.ca/Actsregs/csa-lmmc/csa64x.html

4648. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 17:52:09 UTC
From: richardharrison@webtv.net
Message-ID: <24175-3B0BF8C9-37@storefull-116.iap.bryant.webtv.net>
Source record: 162300

Peter, K1PO wrote:
"Is a leaky coaxial coaxial cable the same as an improperly (unsymmetrically) terminated coaxial cable?"

Depends.

In the AM broadcast band, transmitters are often used with unbalanced feedlines which are a sort of skeletal coaxial line. The center conductor is surrounded by parallel wires. Commonly only 4 wires box-in the center conductor. Some, but not much, of the transmitter power leaks from these transmission lines, and they have some susceptibility to weather influences. These effects are usually insignificant.

In 1949 I went to work in a broadcast plant with a 4-tower directional array all fed with this "open-wire coax". In 10 years of off and on employment at that station, we were always able to maintain the proper directional pattern come fog, rain, ice or snow. Loss was insignificant too.

Similar "open-wire coax" has been constructed with 6, 8, and 12 grounded wires (they are grounded at every supporting pole) as a "shield". Additional wires reduce earth current under the transmission lines and lower loss.

On this type of transmission line, the potential on the inside of the shield is very nearly the same as that on the outside. Skin-effect does not prevent penetration. The potential is free to move around the circumferencce of the shield wire surfaces pretty well. But on real coax that is just not so.

A coax line can be porous and usable for most but not all purposes.

Best regards, Richard Harrison, KB5WZI

4649. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 17:52:55 UTC
From: w2du@iag.net
Message-ID: <3b0bf3d9.10097239@news.onemain.com>
Source record: 162296

On 22 May 2001 14:19:57 -0700, klocko@toad.net (Bill Klocko) wrote:

>w2du@iag.net (Walter Maxwell) wrote in message
news:<3b0a5f8d.1796703@news.journey.com>...

>> I reviewed Bill Klocko's paper on the 1/4 wl transformer, which turned out to be
>> the paper he sent me a year or so ago. It is an excellent paper, presenting the
>> voltages and reflection coefficients leading up to the steady state with great
>> clarity. It agrees with my position completely. In addition, Bill's paper
>> confirms my position that 1) a virtual short really exists at the matching
>> point, and 2) total re-reflection occurs at the virtual short.
>
>Walt,
>If you read that paper carefully, it is the *partial* reflection and *partial*
>transmission of wave components on both sides of the match point that do the trick.
>Any claim that total reflection occurs or that the virtual short exists in that paper
>is *your* extrapolation. I'm glad you like it, but please don't make claims that are
>not true. In a few days, Richard will be able to post a copy on his web site for
>people to review and make their own judgements. 73,
>Bill N3WK

Hi Bill,

Your paper clearly shows partial reflection and transmission of reflected waves during buildup to the steady-state condtion. That is well understood. However, after the steady state is reached the condition at point A in your Fig 1 is EFFECTIVELY a short circuit to waves arriving from point B, because all waves arriviing at point A from point B are totally reflected, as indicated by zero power passing rearward from point A, according to your voltage data on Page 7 and your current data on Page 9. If there were not total re-reflection at point A of waves arriving rearward from point B the input impedance at point A would not be 225 ohms, because there would be reflections on the 225-ohm line, but there are not. If there were still a partial transmission rearward at point A during the steady state, instead of an effective short circuit, the input impedance would not be 225 + j0 ohms at point.

If you do not agree, then I believe we have only a semantic difference of opinion, not a technical difference. In other words, it could be only a different viewpoint of the true conditions.

Walt, W2DU

4650. Destructive Interference in Impedance Matching

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 18:05:33 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <NZSO6.39218$t12.3070712@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162297

This is a long Epistle. If your really not interested don't read it. It does however, prove that a total re-reflection of power does not occur as the result of a Zo match. It also proves that the energy in the destructive interference does not reverse direction and then join with the forward source wave.

Anyone that has been following the discussions in the thread "Back to Basics" is aware that there are at least three different opinions on the physics of what happens at a Zo match.

My opinions are simply based on standard transmission line theory and the vector combination of traveling waves. The level of voltage, current and power
re-reflection at any impedance discontinuity is simply a function of the reflection coefficient at the discontinuity. The total forward voltage and current are simply determined through the vector addition of the forward source voltage and current and the re-reflected voltage and current. The total forward power is simply derived from the total forward voltage and current.

Looking at the vector addition of voltages, a corresponding relationship for total forward power can be derived as follows: Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) Cos(theta), where theta is the phase angle difference between the two voltages.

These principles can be applied to any transmission line problem and work regardless of whether or not a Zo match exists or does not exist. No assumptions are required to make these concepts work correctly. They can also be applied independent of whether or not the steady state answer is known. As an example, using these techniques, the forward power can be determined independent of knowing the rearward power. The "energy math" methods described by others in this newsgroup cannot be used to determine the forward power unless either the steady state conditions are known or the total rearward power is known.

As for the Zo match, destructive interference does cause
the total level of rearward power flow at the Zo match to go to zero. However, the waves involved in this destructive interference continue to travel rearward, they just continue to maintain a net rearward power flow of zero. The energy contained in these waves does not reverse direction and then join with the forward source wave.

The power and energy in the total forward wave comes from the combination of the forward source wave and the re-reflected wave. If a re-reflected wave does not exist, the total forward power will not increase even if destructive interference occurs in the rearward direction. This will be

demonstrated with the example here. The energy in the destructive interference does not reverse direction and join with the forward wave.

Several other things will be demonstrated with this example as well. These relate to the conjugate match in impedance matching networks. In any tuner with loss, establishing an impedance match at the tuner input will not establish a conjugate match at the tuner output. It is demonstrated that when a tuner has loss, maximum power delivery to the load connected at the tuner output will occur when an impedance mismatch exists at the network input. However, with a lowloss tuner, the differences in power delivery are marginal.

The example: In order to demonstrate the correct concepts with an example, we must move away from the simple Zo match examples. With the simple Zo match examples, the steady state conditions are known causing the discussion to focus on interpretation rather than solid physics and circuit analysis. The example here is comprised of a lossy tuner, where an impedance match is established at the tuner input. The tuner is designed such that no re-reflections occur at the tuner output.

50 Ohm Source ---- ZO = 50 ohms --- Tuner --- ZO = 150 ohms --- Antenna

The source applies a forward voltage of 70.711 V to the 50 ohm line.

The tuner components (for those wanting to verify the results) are Series Z1 = 5.005 - j125.122 ohms; Parallel Z2 = 9.795 + j97.946 ohms and series Z3 = 5.002 - j125.039 ohms.

The antenna impedance is 127.887 - j137.57 ohms.

The 50 and 150 ohm lines are lossless and 1 WL long.

The forward source voltage arriving at the tuner input is equal to 70.711 V (equivalent forward power of 100 W). At this point, there are no reflections in the 150 ohm line and the effective load impedance at the tuner output is 150 ohms. The forward source voltage delivered to the tuner and to the 150 ohm line are determined from this condition. The effective input impedance to the tuner at this point is 72.778 - j29.287 ohms. The reflection coefficient, rhoT is 0.229 - j0.184. The total voltage developed at the tuner input is equal to the incident voltage plus the reflected voltage. The reflected voltage is 16.219 - j12.998 V (70.711 * rhoT). The reflected power is 8.64 W. The forward source power delivered to the tuner input is 91.36 W. The total voltage applied to the tuner input is 86.93 - j12.998 V. Using simple circuit theory, the forward source voltage applied to the 150 ohm line is found to be -29.030 + j94.706 V. The forward source power applied to the 150 ohm line is 65.413 W (25.947 W of forward power is lost in the tuner).

The forward wave travels to the antenna where a reflection occurs. This reflection arrives back at the tuner output. The reflected voltage arriving back at the tuner output is equal to 36.794 + j25.050 V. The reflected power arriving at the tuner output is equal to 13.209 W. Looking rearward into the tuner, the reflected wave sees a tuner output impedance equal to

150 ohms. As a result, no re-reflection of voltage or power occurs at the tuner output. Using simple circuit theory, one can determine that the rearward voltage delivered to the 50 ohm line is equal to -16.219 + 12.998 V. The rearward power delivered to the 50 ohm line is 8.64 W. This rearward voltage is 180 degrees out of phase with the source reflected wave. As a result, the total rearward voltage, current and power go to zero. The steady state match is achieved. Note that the rearward power loss in the tuner is 4.569 W (this is very important and will be discussed further).

Note that since no re-reflection of power occurs at the tuner output, the forward wave in the 150 ohm line does not change. There is no total re-reflection of power at the Zo match. It simply just does not happen. The only mechanism for power re-reflection is the impedance the reflected wave sees when it arrives at the tuner output. The forward power in the 150 ohm line remains at 65.413 W and the reflected power in the 150 ohm line remains at 13.209 W. The steady state power delivered to the 150 ohm line is 52.204 W. It is very important for the conjugate match discussion to note that for the Zo match situation 52.204 W of power is delivered to the load.

Now, back to the power discussion. Destructive interference in the rearward direction caused the steady state impedance match to occur. But, from the steady state conditions in the 150 ohm line, we can see that the power in this destructive interference did not reverse direction and add to the forward source wave delivered to the tuner input.

Now, I agree with Cecil that the law of conservation of energy must be maintained. Something must occur to balance the energy equation. It is not however, a reversal of the energy in the destructive interference. The energy balancing mechanism in this case is the change in energy loss in the tuner. In the tuner, there are two directional voltages - one is the forward source voltage applied at the tuner input, the other is the rearward reflected voltage applied at the tuner output. The forward source power "loss" in the tuner is 25.947 W. The rearward power "loss" in the tuner is 4.569 W. However, the total steady state power loss in the tuner is not equal to 30.516 W. The total power loss in the tuner is actually equal to 47.796 W. In the steady state, the forward and rearward voltages and currents in the tuner combine such that the total tuner loss is 47.796 W. This can be determined through simple circuit analysis. We could mathematically state (as Cecil does in a similar fashion with the simple Zo match example) that the power loss in the tuner is equal to 25.947 W + 4.569 W + 17.28 W. Mathematically this works (as it does in Cecil's simple Zo match example), however, it would be a real technical stretch to convince anyone that the energy in the destructive interference reverses direction and then gets trapped in and lost in the tuner. The total power loss in the tuner is simply a result of how the forward and rearward voltages combine in the tuner's components. The steady state voltages in the tuner components can be determined from the vector combination of the forward source voltage and the rearward source voltage (reflected voltage) in each component. A steady state analysis would yield the same results - note that the steady state voltage at the tuner input is equal to 70.711 V (70.711 + (16.219 -

j12.998) + (- 16.219 + j12.998))

The conjugate match: Note that with the Zo match at the tuner input, the power delivered to the load connected at the tuner output is 52.204 W. Does a conjugate match exist at the tuner output because of the impedance match at the tuner input? No. The impedance seen looking rearward into the tuner output is 150 ohms. The impedance seen looking forward from the tuner output is 72.778 - j29.287 ohms. A conjugate match does not exist. Change the antenna impedance to 150 ohms and a conjugate match will be established at the tuner output. In this case, the power delivered to the load increases to 65.413 W. The steady state impedance at the tuner input is 72.778 - j29.287 ohms. With a lossy tuner, a conjugate match will not exist at the tuner output when the tuner is matched to Zo at its input. With lowloss tuners, the differences in power delivery are marginal.

Steve VE9SRB

4651. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 18:08:12 UTC
From: "Leland C. Scott" <no-spam@junk-mail.net>
Message-ID: <tgnv4et5ql191d@corp.supernews.com>
Source record: 162298

"W6DKN" <w6dkn@qsl.net> wrote in message
news:hFiN6.1901$Zv1.577793@paloalto-snr1.gtei.net...
>
> The only mode I work on 2 meters is SSB, and everyone I talk to is running
> horizontal. This is not to say that there are not a few stations out there
> running vertical, it's just that you can't hear them unless they are very
> close.
>

I live in a ground floor apartment where I use a 2m vertical on FM (4.5 dbi gain) and a homebrewed 2m Turnstile for SSB. I ran some tests with another station across town that uses a 8 element Quad for 2m SSB. What I found was my signal strength at the other station was higher when running my vertical even if it was crossed polarized compared to the Quad! Also I have monitored several stations on 2m SSB, where switching between the vertical and the Turnstile, resulted in no noticeable change in signal strength. In a few other cases I did see as much as a 2 to 3 "S" unit change in signal strength. The only explanation that I can think of, which makes sense to me, is the signal bounces off some near by metallic structure(s) which causes the polarization to be come randomized. In the cases where polarization seems to make a difference I assume the signal is bypassing the metallic structure(s). Has anybody else noticed this effect? From my experience the choice between vertical or horizontal is not so clear cut when the issue is matching the other station's antenna polarization.

--
--
73 de,

Leland C. Scott
KC8LDO

ARRL member
NCI member

"You ask what Morse Code is good for? I'll tell you. Morse
Code is used exclusively by Electronics Based life forms to
communicate amongst themselves using advanced Organic
Digital Signal Processors, running state of the art Artificial
Intelligence Software, to perform the highly complex
transmit encryption, receive decryption and error correction
functions."

4652. Will amateur radio astronomers be the first to directly detect extrasolar planets?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 18:15:06 UTC
From: rgclark@my-deja.com
Message-ID: <5f181508.0105231015.1e88fc8f@posting.google.com>
Source record: 162299
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.antenna,sci.astro,sci.astro.seti,sci.space.policy

The existence of extrasolar planets has been inferred from the
wobbling seen in some stars. Their actual light still has not been
detected or distinguished from that of their parent stars.
The long wavelength radio bursts that emanate from Jupiter have led
to suggestions that extrasolar planets might be detected by searching
for such bursts in the vicinity of stars:

Opening a New Window on the Universe:
High Resolution, Long Wavelength Radio Astronomy,
2.5.2 Extrasolar Planets,
by Joseph Lazio
http://rsd-www.nrl.navy.mil/7213/lazio/decade_web/node34.html

However, sensitive searches have so far failed to detect them. This
is undoubtedly due to distance attenuation for such planets
light-years away. The distance to Jupiter ranges up to 9 x 10^8 km. A
star 10 light-years away is at 9 x 10^13 km, a factor of 10^5 larger
than the Jupiter distance.
The Jovian radio bursts have been detected by amateurs with simple
dipole antennas:

Radio-Jupiter for Amateur Observers, By Jim Sky
http://web2.thesphere.com/SAS/bulletin/Sas44/page1.html#Jupiter

PROJECT P5-2. JUPITER-IO MAGNETOSPHERE RADIO NOISE
http://www.elmag5.com/jupiter-io.htm

With its Radio JOVE project NASA also distributes low-cost dipole
kits to schools:

How To Hear Radio Signals From Jupiter
http://www.spacetoday.org/SolSys/Jupiter/JupiterRadio.html

Radio JOVE
http://spacescience.com/headlines/y2000/ast22may_1.htm?list

The proposal is for amateur radio astronomers to set up arrays of
such low cost dipole antennas world-wide. The T-shaped dipoles have
the advantage of steerability, but the vertical dipoles have the
advantage of simplicity and low cost for setting up large arrays. An
example of a steerable dipole array is the one that first discovered
the Jovian decametric emissions:

The Discovery of Jupiter's Radio Emissions
How a chance discovery opened up the field of Jovian radio studies

http://radiojove.gsfc.nasa.gov/library/sci_briefs/discovery.html

The signals from the various arrays would be combined digitally to form a world-wide radio telescope. The large-wavelengths being detected simplify the task of combining the signals interferometrically. GPS transmitters are now available that can give locations to within inches:

NASA satellite technology goes down on the farm
http://www.spaceflightnow.com/news/n0105/11farm/

The clocks in such transmitters also provide timing at better than nanosecond resolution.

The signal strength for Jupiter at 10 light-years would decrease as the square of the distance, so would be smaller by a factor of 10^10. However, the extrasolar Jovian planets detected so far have been close in to their primaries and are expected to produce stronger radio emissions than Jupiter, perhaps, 100 to 1000 times more intense. Using the optimistic estimate of 1000 times greater intensity would require 100,000 separate arrays with 100 dipoles or 10,000 arrays with 1,000 dipoles to detect such emissions.

Bob Clark

4653. Butternut HF6V 75 ohm coax length please

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 18:23:10 UTC
From: hf6v <Morse.Key@btinternet.com>
Message-ID: <9egv69$69o$1@plutonium.btinternet.com>
Source record: 162301

Hi,
I'm replacing the coax feeding my HF6V and for the first time am replacing the 75 ohm
coax used as a impedance transformer on 20 Metres.

I bought the antenna secondhand
and am not sure that the 75 ohm line is the correct length, I cannot find any details of the
required length in the instruction handbook. The old length was about 10 feet 6 inches.

The handbook says the length is an electrical quarter wave, so I'd guess at something
of the order of 16 feet dependent on the velocity factor of the particular cable.

I suspect the original length was not right as the minimum SWR I've ever achieved on
20 Metres is 1.8 : 1 and it should have been better. The antenna is run against a
lot of 20 to 30 foot radials.

Info on this would be very gratefully received

Thanks Tony G3ZRJ

4654. Re: Opinions on Austin Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 18:49:18 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <g91ogtge4ldacbjeqfcjtigg5gbpa59rno@4ax.com>
Source record: 162303

I have been using their 2-meter DFQ antenna for years. I live on the coast and the antenna has held up well the salt air and performed as advertised. One thing about the company they quote accurate gain figures. I would certianly buy another if anything happens to the one I have.

Danny, K6MHE

On Wed, 23 May 2001 17:01:30 GMT, "Jeff Farrar" <jeff@farrar.com> wrote:

>Anyone using their 500C dual band mobile antenna or any other? They sell an
>elevated feed 1/4 wave that looked interesting. Here is their description
>of it.
>
>"The 500C Antennae are also an adaptation of the popular Metropolitan Mobile
>Multiband Antenna. The UHF function is handled by the upper whip portion of
>the antennae. The element is operational as a ground independent 1/2 wave
>radiator. It is isolated from the feed line by the resonant cavity, which
>also produces a 50-ohm match. This isolation, combined with the elevation of
>the feed point, produces a superior radiation pattern that is on the horizon
>for maximum range and efficiency. The VHF operation is provided by the
>overall length of the antenna, functioning as a 1/4 wave element while using
>the vehicle as a ground plane. This patented technique substantially lowers
>the typically high radiation angle of the 1/4 wave antenna. Relatively
>short, the antenna will not bend over at highway speeds, distorting the
>radiation pattern. These two factors combine to provide performance when at
>speeds exceeding the typical 5/8 wave design. The 500C family of antennae
>includes single, dual, tri, and quad band versions in many popular frequency
>splits. "
>
>Any thoughts on how this might worked compared to a Larsen dual band 1/4
>wave?
>

4655. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 18:57:56 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <TKTO6.2992$CQ4.320338@paloalto-snr1.gtei.net>
Source record: 162302

"Leland C. Scott" <no-spam@junk-mail.net> wrote in message
news:tgnv4et5ql191d@corp.supernews.com...
>
> "W6DKN" <w6dkn@qsl.net> wrote in message
> news:hFiN6.1901$Zv1.577793@paloalto-snr1.gtei.net...
> >
> > The only mode I work on 2 meters is SSB, and everyone I talk to is
running
> > horizontal. This is not to say that there are not a few stations out
there
> > running vertical, it's just that you can't hear them unless they are
very
> > close.
> >
>
> I live in a ground floor apartment where I use a 2m vertical on FM (4.5
dbi
> gain) and a homebrewed 2m Turnstile for SSB. I ran some tests with
another
> station across town that uses a 8 element Quad for 2m SSB. What I found
was
> my signal strength at the other station was higher when running my
vertical
> even if it was crossed polarized compared to the Quad! Also I have
monitored
> several stations on 2m SSB, where switching between the vertical and the
> Turnstile, resulted in no noticeable change in signal strength. In a few
> other cases I did see as much as a 2 to 3 "S" unit change in signal
> strength. The only explanation that I can think of, which makes sense to
me,
> is the signal bounces off some near by metallic structure(s) which causes
> the polarization to be come randomized. In the cases where polarization
> seems to make a difference I assume the signal is bypassing the metallic
> structure(s). Has anybody else noticed this effect? From my experience
the
> choice between vertical or horizontal is not so clear cut when the issue
is
> matching the other station's antenna polarization.
>

With VHF, I rely on reflections and/or refraction to make distance
contacts. Without some type of signal bounce, I am basically limited to
line of sight.

I live in the Mohave desert, and I regularly talk to friends in the L.A. area - about 100 miles away. There is a large mountain range between my QTH and the L.A. area, so without some type of signal manipulation I could not make the trip. What I have noticed at my QTH is that if I am talking to another station and we are both horizontal the signal reports are 5-8 to 5-9. If we switch to both vertical, communication is still possible but the signal reports drop to 5-5 or 5-6.

However, if there is a round table going on, and there are some L.A. mobile stations running vertical, their signals will come up from barely readable to 5-3 to 5-4. In my case, all of these signals are being effected by the mountain range, but those that are horizontal make it through with 2-3 "S" units better signal.

As a side note, I had both a 13 element vertical as well as a 13 element horizontal mounted on the same tower on a cross boom. The tower fully extended put the antennas at 70 feet. At this height, my signal reports were 5-8 to 5-9. But if I lowered the tower to around 35 feet, my reports increased to 5-9 plus 5 or 10 db.

This effect was so consistent that I ended up putting up a second tower for the HF antennas to keep them at 70 feet. All of the antennas for 2 meters and up are on a separate tower and I keep it at about 35 feet for best results.

I think what it really boils down to with SSB VHF (and up), is location more than anything else. In discussing this topic with several different people, it seems that there is no consistent results with any type of configuration. For some, verticals work well, but for most - as well as myself - horizontal works better 90% of the time.

73 de W6DKN

4656. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 20:17:44 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C1AE8.BE524E08@IEEE.org>
Source record: 162304

VE9SRB wrote:
> What mistake?

IF V1 + V2 = Vtot THEN V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0

That's exactly what you are saying when you say:

75 watts + 8.33 watts = 133.33 watts Reverse engineering that equation:

75 watts = 106.066^2/150 = V1^2/Z0

8.33 watts = 35.355^2/150 = V2^2/Z0

133.33 watts = 141.4^2/150 = Vtot^2/Z0

V1 + V2 = Vtot = 106.066v + 35.355v = 141.4v

V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0 = 75w + 8.33w = 133.33w

> I am leaving this discussion because we are just moving around in circles.
> This discussion is presently going nowhere. You're afraid to discuss
> anything outside of the simple Zo match.

You are afraid to admit your mistakes concerning the Z0-match example.
When you admit those mistakes, we can proceed to the non-Z0-matched
example.

> I am really interested in how you will respond when I demonstrate that the
> energy involved in the destructive interference does not reverse direction.

I'm really interested in how you are going to prove that two waves moving
in the REARWARD direction which cancel because of destructive interference
join the FORWARD energy wave because of constructive interference without
changing direction from REARWARD to FORWARD.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4657. Large Horizontal Loop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 20:28:06 UTC
From: ke6qcx@nidweb.com
Message-ID: <3b0c1bf2.18156818@news.myavista.com>
Source record: 161849

I am planning on setting up a 1005 ft. long wire loop at about
80 ft. I've read many articles about this type of antenna but
generally they are resonant at 160/80/40 meters. And according to what
I've read are operational on ALL harmonics with the second harmonic
having the highest SWR. This being the case I figure a 1Mhz loop
should work the same. I have 5 acres mostly trees so it wont be hard
to string up a near circle, (I use a potato cannon to get the wire to
the tree tops). I'd like to hear from people who have similar
antennas.

4658. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 20:52:05 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C22F5.7324C199@IEEE.org>
Source record: 162305

VE9SRB wrote:
> When a signal having an associated power of 75 W combines in phase with a
> signal having an associated power of 8.33 the resulting signal will have a
> total power of 133.33 W. The single fact that makes this power relationship
> work is that the signals are applied simultaneously in the same impedance
> (Zo).

There is simply not enough "associated" power to add up to the total power. You need help from the constructive interference power. But you cannot afford to admit that because it would mess up your voltage equations. So you settle for the lesser of two evils. You allow the energy equation not to add up because you cannot afford to allow the voltage equation not to add up. You are between the proverbial rock and hard place, Steve.
--
http://www.mindspring.com/~w6rca

4659. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 20:55:35 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B0C23C7.1FD5@wt.net>
Source record: 162306

W6RCecilA wrote:
>
> Reg Edwards wrote:
> > How much more vertical radiation ? How much less horizontal
> > radiation ?
>
> Model it and find out one unique answer. The latest version of EZNEC,
> including the free demo version, should do that.
>
> I don't know for sure, but I would guess the balun at the feedpoint
> of the horizontal section is a voltage balun which doesn't balance
> the currents. Therefore, there are common-mode currents on the
> vertical section which radiate. Hopefully, the choke at the bottom
> of the vertical section keeps the rest of the feedline from radiating.
> It's kind of a neat design, but way over-priced. I can virtually
> duplicate a Carolina Windom for about $40 worth of materials.
> --
> http://www.mindspring.com/~w6rca

I'd still rather run a regular old dipole. I've compared that windom to
a full size dipole at field day. The dipole beat the pants off it in my
case. I never saw the windom win at any angle. And we had the windom
higher than the dipole. MK
--
http://web.wt.net/~nm5k

4660. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 20:56:29 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C23FD.1EF2AA9C@IEEE.org>
Source record: 162307

Bill Klocko wrote:
> If you read that paper carefully, it is the *partial* reflection and *partial*
> transmission of wave components on both sides of the match point that do the trick.

I agree with that, Bill, as demonstrated by my phasor diagram located at:

http://people.delphi.com/cecilmooore/z0match.gif

My example is a 1/2WL matching section while yours is 1/4WL. But exactly
the same principles apply.

What I asked you previously and you didn't answer yet is:

Can 75 watts plus 8.33 watts ever equal 133.33 watts?

Steve says it can. I say it cannot.
--
http://www.mindspring.com/~w6rca

4661. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 21:00:37 UTC
From: kb7qhc@home.com
Message-ID: <3b0c249a.363500966@news.seanet.com>
Source record: 162308

On Wed, 23 May 2001 15:52:05 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>There is simply not enough "associated" power to add up to the total power. You

Hi Cecil,

As I pointed out before, how is this different from Bill's treatment
of the quarter wave transformer who's line contains more power that is
not enough "associated" to add up?

73's
Richard Clark, KB7QHC

4662. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 21:06:07 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <3DVO6.39549$t12.3086883@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162309

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0C1AE8.BE524E08@IEEE.org...
> VE9SRB wrote:
> > What mistake?
>
> IF V1 + V2 = Vtot THEN V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0
>
> That's exactly what you are saying when you say:
>
> 75 watts + 8.33 watts = 133.33 watts Reverse engineering that equation:
>

You know exactly what I mean in stating that 75 W + 8.33 W = 133.33 W. The voltage and current associated with the 75 W wave combines with the voltage and current associated with the 8.33 W wave resulting in a total voltage and current having an associated power of 133.33 W.

> 75 watts = 106.066^2/150 = V1^2/Z0
>

Thats correct.

> 8.33 watts = 35.355^2/150 = V2^2/Z0
>

That's correct

> 133.33 watts = 141.4^2/150 = Vtot^2/Z0
>

That's correct.

> V1 + V2 = Vtot = 106.066v + 35.355v = 141.4v
>

That's correct.

>
> V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0 = 75w + 8.33w = 133.33w
>

This is incorrect.

V1^2/Zo + V2^2/Zo = 75 + 8.33 = 83.33 But you knew that. This would only be the correct power addition if the two voltages were 90 degrees out of phase.

You also know that's not how I add the voltages or determine the resulting power.

Read my post again. Why can't you just accept that when adding two complex voltage vectors the resulting magnitude of the total voltage is

|Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| Cos(theta)]

Terman discusses this in detail and presents the exact same formula - but I'm sure you would argue with him too to suit your agenda.

> > I am leaving this discussion because we are just moving around in circles.
> > This discussion is presently going nowhere. You're afraid to discuss
> > anything outside of the simple Zo match.
>
> You are afraid to admit your mistakes concerning the Z0-match example.
> When you admit those mistakes, we can proceed to the non-Z0-matched
> example.
>

The only mistake in this discussion is your interpretation of the steady state conditions. You won't proceed to the non Zo match example because you know you need to add voltages and currents in series (and you have stated that this is incorrect) and *then* determine the resulting power.

> > I am really interested in how you will respond when I demonstrate that the
> > energy involved in the destructive interference does not reverse direction.
>
> I'm really interested in how you are going to prove that two waves moving
> in the REARWARD direction which cancel because of destructive interference
> join the FORWARD energy wave because of constructive interference without
> changing direction from REARWARD to FORWARD.
> --

The two waves traveling in the rearward direction do not reverse direction.

Cecil, I am really tired of this twisted game of yours. If you want to enter into a competent technical discussion, read through the post: Destructive Interference in Impedance Matching.

If all you want in this thread is the last word, then you can respond to this post with some more of your foolishness and I promise that I will not respond.

4663. Re: formula stacking two dipoles

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 21:10:32 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B0C2748.2351@wt.net>
Source record: 162310

Michel de Ruiter wrote:
>
> Sirs,
>
> More info about the situation:
>
> We are testing for a local repeater. As I wrote we like to use two stacked
> vertical dipoles. As we don`t wanna use commercial antenna systems. It are
> vertical dipoles with a gamma match feeded in the middle and we gonna use it
> on two meters.
>
> We wanna stack the dipoles for getting more gain. Now there are farious ways
> to stack those dipoles. We understood that the easiest way to do it is using
> 75 ohm coax with 3/4 way length to the dipoles feedeed in the middle. Is
> this a good way or can we do it better with 5/8 wave for getting more gain?
>
> Looking forward for any reply.
>
> With kind regards,
>
> Michel de Ruiter
> PD1AIW / JO21PU

I'm not familiar with feeding them with a gamma match, but that doesn't mean it isn't done. If you feed each 1/2 wave from the end the impedance will be very high. Normally you would probably use a low loss coil and cap to match, but like I say, I've never made anything quite like that. The only ones I've used were base fed cushcraft ringo ranger style using a phasing stub between the elements. If this is for a repeater, I would make separate dipoles ala 4 pole array or some such setup. In this manner you center feed dipoles with equal length coax. This type antenna is well suited for a repeater as you can set it up omnidirectional, or for gain in a few different patterns depending on where you mount the elements. Cushcraft used to make these, but quit I'm pretty sure. But I do still have the PDF file for this antenna. And I would think it's still at the cushcraft web site. The pdf file is a manual with all info needed to make one. This type antenna would be a much better bet I think than trying to get a single piece collinear going, which can be prone to many problems. These 4 poles were commonly used for repeaters, so I know they would be well suited. You could also make only a 2 pole. And being they are mounted separate, you can optimize the spacing for the most gain easily. And being center fed, the feed impedance is low and easy to deal with using coax. MK
--

http://web.wt.net/~nm5k

4664. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 21:19:13 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105231319.2f45628f@posting.google.com>
Source record: 162311

W6RCecilA <Cecil.A.Moore@IEEE.org> wrote in message news:<3B0AF7A1.5F568363@IEEE.org>...
> Hey Bill, have your ears been burning? :-) Nobody else seems to want to answer
> my (leading) questions. Would you give it a go?
>
> (1) Can 75 joules/sec plus 8.33 joules/sec ever equal 133.33 joules/sec?
>

Well, Cecil, I'll take a stab at your question. Here goes:

Surprisingly, not many texts have anything on conservation of energy. In one explanation I found (Elements of Linear Circuits by Scott), the author states that the total power in any branch of a network can be obtained simply as the arithmetic sum of the individual branch powers. (A branch is either an element or an element in conjunction with a source of energy). He states, as you have maintained all along, that power is a scalar. An equation is derived for the instantaneous time-dependent power in a simple loop consisting of a single source in series with a generic network load. The voltage and current are phasors with the current having an arbitrary phase lag. The instantaneous power is the sum of the individual branch powers, which are a fixed time-invariant real power, a time-varying real power, and a time-varying reactive power.

Now, if someone wanted to check the power numbers for this circuit, the conservation of energy principle says that the instantaneous power being delivered to the load would have to be equal to the sum of the three components above. If someone wanted to check the power numbers for the loop itself, the sum of the powers would be zero: power out of the source equals power to load. So it seems that all the the conservation of energy principle can say is that the total power delivered is equal to the sum of the power drawn by the different individual elements in a circuit.

Now, I think the example you have been arguing about is different than what is described above. Above, the equation was derived for a simple loop with one source in series with a load. There is only one current term, and only one voltage term. In your method of looking at the match point, there are actually *two* values of power that are attempting to combine by way of constructive interference on the 150-ohm side of the match point. And I think "attempting" and "combine" are the key words here.

What you are attempting to do is superimpose the individual power values and get a "net" power, as in "the response of a network (the line) to a number of excitations (power terms) applied simultaneously is equal to the sum of the responses when each excitation is applied individually." (from Linear Network Analysis by Seshu and Balabanian). However, superposition "is applicable only to linear responses, and the most common nonlinear response - power - is not subject to superposition. For example, consider 2 1-V batteries in series with a 1-ohm resistor. The power delivered to the resistor is obviously 4 watts, but if we

mistakenly try to apply superposition we might say that each battery alone furnished 1 watt and thus the total power is 2 watts. This is incorrect." (from Engineering Circuit Analysis by Hayt and Kennedy. Although the example is for a DC circuit, the point is *clearly* made that 1 watt cannot be added to 1 watt and still get the correct answer. The bottom line: superposition of power is not valid.

Since superposition of power terms is without a doubt not a valid method, if you want to work with the power values, you must break them down into the voltage and current components, individually superimpose the voltages and currents by way of vector addition, and then compute the power from the total voltage and total current.

So, in answer to your question, I guess I'd have to say that 75 joules/sec plus 8.33 joules/sec would equal 133.33 joules/sec, and any other way of combining power is, as given in Hayt and Kennedy, is incorrect.

Part way through this, I actually started this thinking you might be able to make an argument for your method of adding powers. However, it appears that power is a scalar only under certain very limited conditions. This post is a bit formal with quotes and references because you seem to like references. 73,
Bill N3WK

4665. Re: Butternut HF6V 75 ohm coax length please

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 21:27:27 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3b0c2b40_2@news.cybertours.com>
Source record: 162312

Hi You cand download the manuel in PDF format from Bencher at
http://www.bencher.com/pdf_download.html
73 Dave KC1DI

"hf6v" <Morse.Key@btinternet.com> wrote in message
news:9egv69$69o$1@plutonium.btinternet.com...
> Hi,
> I'm replacing the coax feeding my HF6V and for the first time am replacing
> the 75 ohm
> coax used as a impedance transformer on 20 Metres.
>
> I bought the antenna secondhand
> and am not sure that the 75 ohm line is the correct length, I cannot find
> any details of the
> required length in the instruction handbook. The old length was about
10
> feet 6 inches.
>
> The handbook says the length is an electrical quarter wave, so I'd guess
at
> something
> of the order of 16 feet dependent on the velocity factor of the particular
> cable.
>
> I suspect the original length was not right as the minimum SWR I've ever
> achieved on
> 20 Metres is 1.8 : 1 and it should have been better. The antenna is run
> against a
> lot of 20 to 30 foot radials.
>
> Info on this would be very gratefully received
>
> Thanks Tony G3ZRJ
>
>

4666. Looking for tips on a large HF wire loop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 21:47:12 UTC
From: ke6qcx@nidweb.com
Message-ID: <12488ab4.0105231347.1f39fc6d@posting.google.com>
Source record: 162313

I am planning on stringing up 1005' of copper wire from tree top to tree top to form large 1Mhz. resonant loop. I have read about the "sky wire" loops which are generally used on 40/80 even 160 Meters, and most reports say they are useable on ALL harmonics with the highest swr being at the second harmonic. Generally being a cloud burner at the resonant frequency, but when used harmonically the radiation angle comes down as frequency goes up. I have five acres mostly trees and plan on using a potato cannon to string the wire from tree top to tree top, so the height will between 65' and 80'. Has anyone built such a monster loop ?? If so what were the results ??

4667. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 22:02:54 UTC
From: richardharrison@webtv.net
Message-ID: <27285-3B0C338E-67@storefull-114.iap.bryant.webtv.net>
Source record: 162315

Bill Klocko wrote:
"The power delivered to the resistor (1-ohm) is obviuously 4 watts, but if we mistakenly try to apply superposition we might say that each battery furnished 1 watt and thus the actual power is 2 watts."

What a crock!

You have 2A from a 1V battery and two batteries. The power sum is 4 watts by inspection. Why is bill trying to defame superposition?

Best regards, Richard Harrison, KB5WZI

4668. Re: Butternut HF6V 75 ohm coax length please

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 22:10:55 UTC
From: ccom2@socket.net
Message-ID: <3b0c355a.2980187@news.socket.net>
Source record: 162314

Butternut says you can make a matching line from RG-!! 75 ohm coax,
11 ft 4 in (345.4 cm) if solid dielectric, 13 ft 6 in (411.5 cm) if
foam type.

Mike
AB0IV

On Wed, 23 May 2001 19:23:10 +0100, you wrote:

>Hi,
>I'm replacing the coax feeding my HF6V and for the first time am replacing
>the 75 ohm
>coax used as a impedance transformer on 20 Metres.
>
>I bought the antenna secondhand
>and am not sure that the 75 ohm line is the correct length, I cannot find
>any details of the
>required length in the instruction handbook. The old length was about 10
>feet 6 inches.
>
>The handbook says the length is an electrical quarter wave, so I'd guess at
>something
>of the order of 16 feet dependent on the velocity factor of the particular
>cable.
>
>I suspect the original length was not right as the minimum SWR I've ever
>achieved on
>20 Metres is 1.8 : 1 and it should have been better. The antenna is run
>against a
>lot of 20 to 30 foot radials.
>
>Info on this would be very gratefully received
>
>Thanks Tony G3ZRJ
>
>

4669. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 22:25:54 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C38F2.D5843C1D@IEEE.org>
Source record: 162316

VE9SRB wrote:
> You know exactly what I mean in stating that 75 W + 8.33 W = 133.33 W.

Yes, the meaning is clear. Multiplying each side of the equation by one second yields:

75 joules + 8.33 joules = 133.33 joules

Subtracting 83.33 joules from each side of the equation yields:

Zero joules equals 50 joules

That is *EXACTLY* what you are saying, Steve, and it is absolute nonsense.

> > 75 watts = 106.066^2/150 = V1^2/Z0
>
> Thats correct.
>
> > 8.33 watts = 35.355^2/150 = V2^2/Z0
>
> That's correct
>
> > 133.33 watts = 141.4^2/150 = Vtot^2/Z0
>
> That's correct.
>
> > V1 + V2 = Vtot = 106.066v + 35.355v = 141.4v
>
> That's correct.
>
> > V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0 = 75w + 8.33w = 133.33w
>
> This is incorrect.

Glad to see you agree but please note that that is the inescapable conclusion based on the four things you said was correct. There is an undeniable logical path through those four correct things to the one you say is incorrect.

> V1^2/Zo + V2^2/Zo = 75 + 8.33 = 83.33 But you knew that.

Yes, but you keep insisting that 75w + 8.33w = 133.33w and that is incorrect.

How can you say that 75w + 8.33w = 83.33w is correct while maintaining that 75w + 8.33w = 133.33w ??? How can two things added together add up to two different sums ???

> You also know that's not how I add the voltages or determine the resulting
> power.

I have no argument with the way you add voltages. My argument is with the
way you add powers. It violates the conservation of energy principle.

> Read my post again. Why can't you just accept that when adding two complex
> voltage vectors the resulting magnitude of the total voltage is
>
> |Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| Cos(theta)]

I accept that, Steve, and always have. I don't see power mentioned anywhere
in that equation so it is just another of your strawmen.

I don't care what you say, Steve, you will never convince me that smallpox
is a good thing. That's your tactic, Steve. How does it feel?

> Terman discusses this in detail and presents the exact same formula - but
> I'm sure you would argue with him too to suit your agenda.

For the 20th time, I have no argument with your voltage and current vector
addition. Why do you keep implying that I do? It is obviously only a diversion
to direct attention away from your conceptual violation of the conservation
of energy principle which is the only argument I have with you.

> The only mistake in this discussion is your interpretation of the steady
> state conditions.

You agreed with my interpretation of the steady state conditions as posted
on my web page at: http://people.delphi.com/z0match.gif so how can you
say I made a mistake. The only mistake is your conceptual violation of
the conservation of energy principle.

> > > I am really interested in how you will respond when I demonstrate that
> the
> > > energy involved in the destructive interference does not reverse
> direction.
> >
> > I'm really interested in how you are going to prove that two waves moving
> > in the REARWARD direction which cancel because of destructive interference
> > join the FORWARD energy wave because of constructive interference without
> > changing direction from REARWARD to FORWARD.
>
> The two waves traveling in the rearward direction do not reverse direction.

The energy in the two waves traveling in the rearward direction indeed do
reverse direction. Away from the source toward the load is a reverse in
direction for the energy, Steve. To deny that is ridiculous. There are only
two directions in a wire. If the energy in the two REARWARD waves is canceled,
the energy MUST reverse direction and proceed FORWARD to the load. What is
it about a change from REARWARD to FORWARD that you do not understand?

> If all you want in this thread is the last word, then you can respond to
> this post with some more of your foolishness and I promise that I will not
> respond.

I only want you to cease and desist from your conceptual violation of the
conservation of energy principle, Steve. You are doing everyone a dis-service

by clinging to that violation.
--
http://www.mindspring.com/~w6rca

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4670. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 22:33:19 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C3AAF.5F5369B@IEEE.org>
Source record: 162317

Bill Klocko wrote:
> So, in answer to your question, I guess I'd have to say that 75 joules/sec plus
> 8.33 joules/sec would equal 133.33 joules/sec, and any other way of combining power
> is, as given in Hayt and Kennedy, is incorrect.

I am amazed, Bill. Given that equation:

75 joules/sec + 8.33 joules/sec = 133.33 joules/sec

We can multiply each side of the equation by one second to get:

75 joules + 8.33 joules = 133.33 joules

Now we subtract 83.33 joules from each side of the equation to get:

Zero Joules equals fifty joules and Eureka, we seem to have solved California's
energy problem. For every joule that a power company doesn't generate, we will
get 50 joules into the power system. Problem solved. You guys are nuts.
--
http://www.mindspring.com/~w6rca

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4671. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 22:36:24 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C3B67.79D03323@IEEE.org>
Source record: 162318

Richard Clark wrote:
> As I pointed out before, how is this different from Bill's treatment
> of the quarter wave transformer who's line contains more power that is
> not enough "associated" to add up?

This is some sort of conspiracy, Richard. Bill says he believes that
75 joules/sec + 8.33 joules/sec = 133.33 joules/sec

So for every joule that the California power companies don't generate,
they obtain 50 joules into the power system. You guys are all nuts.
--
http://www.mindspring.com/~w6rca

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4672. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 22:40:38 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C3C66.13241851@IEEE.org>
Source record: 162219

Dick Carroll wrote:
> Thankyew. Now I understand why my reflectometer reads zero ahead of the
> matched tuner while "not all reflected power is re-reflected". You had
> me worried for a bit.

Not all reflected power meets the definition of technically being re-reflected.
The reflected energy that is not re-reflected is re-routed by the
destructive/constructive interference process. It winds up in the same
place as the re-reflected energy.
--
http://www.mindspring.com/~w6rca

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4673. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 22:43:38 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C3D1A.E3B59B4D@IEEE.org>
Source record: 162220

Mark Keith wrote:
> I'd still rather run a regular old dipole. I've compared that windom to
> a full size dipole at field day. The dipole beat the pants off it in my
> case. I never saw the windom win at any angle. And we had the windom
> higher than the dipole. MK

The Carolina Windom won't beat the dipole during the day but it will often
beat the dipole at night for DX.
--
http://www.mindspring.com/~w6rca

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4674. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 22:45:49 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ehehvejn1@nntp9.atl.mindspring.net>
Source record: 162221

Cecil:

I need some semantic counselling here...

Now that I understand the concept of a Zo-match, thanks to yourself and others here on the NG, I must admit that I am still puzzled as to why this phenomena or connection should be considered to be so important as to warrant a "name".

Why not just call it a connection or a junction of like impedances, that's what it is. If an impedance being connected to a system is the same as, or an image of, the impedance of the system to which it is being connected, then why name it?

Cecil, I may still have the concept wrong, so please bear with me, I am often slow in these subtle matters.

Here's my current view of a Zo match and probably the reason why I still feel that it is inconsequential in some way.

I just see a "Zo match" as a point, maybe even an imaginary point, along a constant Zo line.

For instance...

If I terminate a 20 foot long Ohm piece of RG-8 with a 50 Ohm resistor on one end, 50 Ohms being the Zo of RG-8, and then I cut the RG-8 at the middle, say at the 10 foot point, then at that junction where I just made the separation at the 10 foot point, I have a Zo match between the cut off section and the rest of the cable leading up to and including the 50 Ohm resistor.

Is this right?

Or am I still missing something?

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0BB86C.7C38BF4E@IEEE.org...
> Reg Edwards wrote:
> > It was probably Cecil who introduced the notion of Zo match to this
> > newsgroup.
>
> My use of the term, Z0-match, came from "The ARRL Antenna Book",
> 15th Edition (1988), page 25-1. I'm pretty sure it was written
> by Walter Maxwell.
>

> > I understand it to be the condition, for example, when a
> > transmission line of impedance Zo is terminated in Zo. There are
> > then no standing waves on the line *regardless* of the generator
> > impedance.
>
> And that applies even when the load is a virtual load as in the
> case of virtual impedances transformed by transmission lines
> with SWRs greater than 1:1.
>
> > This is the normal, obvious and desirable condition for antenna
> > systems.
> >
> > Unless, of course, the transmission line is used as a transformer
> > as Cecil recommends.
>
> Reg, are you saying that my methods are abnormal, non-obvious, and
> undesirable? :-)
>
> > But why a special name had to be invented for something
> > unexceptionally quite normal I can't imagine.
>
> Names are invented for the sake of efficiency so we can use the short
> name instead of the long definition. What would you call a Z0-match
> if you didn't call it a Z0-match?
> --
> http://www.mindspring.com/~w6rca
>
>
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4675. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 22:47:38 UTC
From: w2du@iag.net
Message-ID: <3b0c3d71.28937339@news.onemain.com>
Source record: 162222

On Wed, 23 May 2001 17:36:24 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:

>Richard Clark wrote:
>> As I pointed out before, how is this different from Bill's treatment
>> of the quarter wave transformer who's line contains more power that is
>> not enough "associated" to add up?
>
>This is some sort of conspiracy, Richard. Bill says he believes that
>75 joules/sec + 8.33 joules/sec = 133.33 joules/sec
>
>So for every joule that the California power companies don't generate,
>they obtain 50 joules into the power system. You guys are all nuts.
>--
>http://www.mindspring.com/~w6rca

Amen Cecil, I'm beginning to understand why practically all of my posts are rejected as moronic. I think it's finally time to quit trying.

Walt

4676. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 23:33:24 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105231533.69f430ba@posting.google.com>
Source record: 162223

w2du@iag.net (Walter Maxwell) wrote in message
news:<3b0bf3d9.10097239@news.onemain.com>...
> Hi Bill,
>
> Your paper clearly shows partial reflection and transmission of reflected waves
> during buildup to the steady-state condtion. That is well understood. However,
> after the steady state is reached the condition at point A in your Fig 1 is
> EFFECTIVELY a short circuit to waves arriving from point B, because all waves
> arriviing at point A from point B are totally reflected, as indicated by zero
> power passing rearward from point A, according to your voltage data on Page 7
> and your current data on Page 9. If there were not total re-reflection at point
> A of waves arriving rearward from point B the input impedance at point A would
> not be 225 ohms, because there would be reflections on the 225-ohm line, but
> there are not. If there were still a partial transmission rearward at point A
> during the steady state, instead of an effective short circuit, the input
> impedance would not be 225 + j0 ohms at point.
>
> If you do not agree, then I believe we have only a semantic difference of
> opinion, not a technical difference. In other words, it could be only a
> different viewpoint of the true conditions.
>
> Walt, W2DU

Walt,
There is more than just a semantic difference. That paper on Kraus's model shows
that the wave components partially transmitted thru A at steady state completely
cancel the wave components from the source that are reflected at A. There are no
reflections on the 225-ohm line because of the partial reflection and partial
transmission. It's a completely different model. 73,
Bill N3WK

4677. Re: Destructive Interference in Impedance Matching

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 23:43:55 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ehi02$d2r$1@slb4.atl.mindspring.net>
Source record: 162224

Steve:

Please, for the uninitiated could you eliminate jargon and go back to first principles and first define a Zo match.

Caution... I have asked this question on another thread as well.

I believe that I may have a semantic difficulty, "concept dyslexia" or something close to it, in that the term "Zo match" doesn't quite "make sense" to me.

-Peter K1PO

"VE9SRB" <srbest@att.net> wrote in message news:NZSO6.39218$t12.3070712@bgtnsc05-news.ops.worldnet.att.net...
> This is a long Epistle. If your really not interested don't read it. It
> does however, prove that a total re-reflection of power does not occur as
> the result of a Zo match. It also proves that the energy in the destructive
> interference does not reverse direction and then join with the forward
> source wave.
>
> Anyone that has been following the discussions in the thread "Back to
> Basics" is aware that there are at least three different opinions on the
> physics of what happens at a Zo match.
>
> My opinions are simply based on standard transmission line theory and the
> vector combination of traveling waves. The level of voltage, current and
> power
> re-reflection at any impedance discontinuity is simply a function of the
> reflection coefficient at the discontinuity. The total forward voltage and
> current are simply determined through the vector addition of the forward
> source voltage and current and the re-reflected voltage and current. The
> total forward power is simply derived from the total forward voltage and
> current.
>
> Looking at the vector addition of voltages, a corresponding relationship for
> total forward power can be derived as follows: Ptotal = P1 + P2 + 2 Sqrt(P1)
> Sqrt(P2) Cos(theta), where theta is the phase angle difference between the
> two voltages.
>
> These principles can be applied to any transmission line problem and work
> regardless of whether or not a Zo match exists or does not exist. No

> assumptions are required to make these concepts work correctly. They can
> also be applied independent of whether or not the steady state answer is
> known. As an example, using these techniques, the forward power can be
> determined independent of knowing the rearward power. The "energy math"
> methods described by others in this newsgroup cannot be used to determine
> the forward power unless either the steady state conditions are known or
the
> total rearward power is known.
>
> As for the Zo match, destructive interference does cause
> the total level of rearward power flow at the Zo match to go to zero.
> However, the waves involved in this destructive interference continue to
> travel rearward, they just continue to maintain a net rearward power flow
of
> zero. The energy contained in these waves does not reverse direction and
> then join with the forward source wave.
>
> The power and energy in the total forward wave comes from the combination
of
> the forward source wave and the re-reflected wave. If a re-reflected wave
> does not exist, the total forward power will not increase even if
> destructive interference occurs in the rearward direction. This will be
> demonstrated with the example here. The energy in the destructive
> interference does not reverse direction and join with the forward wave.
>
> Several other things will be demonstrated with this example as well.
These
> relate to the conjugate match in impedance matching networks. In any
tuner
> with loss, establishing an impedance match at the tuner input will not
> establish a conjugate match at the tuner output. It is demonstrated that
> when a tuner has loss, maximum power delivery to the load connected at the
> tuner output will occur when an impedance mismatch exists at the network
> input. However, with a lowloss tuner, the differences in power delivery
are
> marginal.
>
> The example: In order to demonstrate the correct concepts with an
example,
> we must move away from the simple Zo match examples. With the simple Zo
> match examples, the steady state conditions are known causing the
discussion
> to focus on interpretation rather than solid physics and circuit analysis.
> The example here is comprised of a lossy tuner, where an impedance match
is
> established at the tuner input. The tuner is designed such that no
> re-reflections occur at the tuner output.
>
> 50 Ohm Source ---- ZO = 50 ohms --- Tuner --- ZO = 150 ohms --- Antenna
>

> The source applies a forward voltage of 70.711 V to the 50 ohm line.
>
> The tuner components (for those wanting to verify the results) are Series
Z1
> = 5.005 - j125.122 ohms; Parallel Z2 = 9.795 + j97.946 ohms and series Z3
=
> 5.002 - j125.039 ohms.
>
> The antenna impedance is 127.887 - j137.57 ohms.
>
> The 50 and 150 ohm lines are lossless and 1 WL long.
>
> The forward source voltage arriving at the tuner input is equal to 70.711
V
> (equivalent forward power of 100 W). At this point, there are no
> reflections in the 150 ohm line and the effective load impedance at the
> tuner output is 150 ohms. The forward source voltage delivered to the
tuner
> and to the 150 ohm line are determined from this condition. The effective
> input impedance to the tuner at this point is 72.778 - j29.287 ohms. The
> reflection coefficient, rhoT is 0.229 - j0.184. The total voltage
developed
> at the tuner input is equal to the incident voltage plus the reflected
> voltage. The reflected voltage is 16.219 - j12.998 V (70.711 * rhoT).
The
> reflected power is 8.64 W. The forward source power delivered to the
tuner
> input is 91.36 W. The total voltage applied to the tuner input is 86.93 -
> j12.998 V. Using simple circuit theory, the forward source voltage
applied
> to the 150 ohm line is found to be -29.030 + j94.706 V. The forward
source
> power applied to the 150 ohm line is 65.413 W (25.947 W of forward power
is
> lost in the tuner).
>
> The forward wave travels to the antenna where a reflection occurs. This
> reflection arrives back at the tuner output. The reflected voltage
arriving
> back at the tuner output is equal to 36.794 + j25.050 V. The reflected
> power arriving at the tuner output is equal to 13.209 W. Looking rearward
> into the tuner, the reflected wave sees a tuner output impedance equal to
> 150 ohms. As a result, no re-reflection of voltage or power occurs at the
> tuner output. Using simple circuit theory, one can determine that the
> rearward voltage delivered to the 50 ohm line is equal to -16.219 + 12.998
> V. The rearward power delivered to the 50 ohm line is 8.64 W. This
> rearward voltage is 180 degrees out of phase with the source reflected
wave.
> As a result, the total rearward voltage, current and power go to zero.
The

> steady state match is achieved. Note that the rearward power loss in the
> tuner is 4.569 W (this is very important and will be discussed further).
>
> Note that since no re-reflection of power occurs at the tuner output, the
> forward wave in the 150 ohm line does not change. There is no total
> re-reflection of power at the Zo match. It simply just does not happen.
> The only mechanism for power re-reflection is the impedance the reflected
> wave sees when it arrives at the tuner output. The forward power in the
150
> ohm line remains at 65.413 W and the reflected power in the 150 ohm line
> remains at 13.209 W. The steady state power delivered to the 150 ohm line
> is 52.204 W. It is very important for the conjugate match discussion to
> note that for the Zo match situation 52.204 W of power is delivered to the
> load.
>
> Now, back to the power discussion. Destructive interference in the
rearward
> direction caused the steady state impedance match to occur. But, from the
> steady state conditions in the 150 ohm line, we can see that the power in
> this destructive interference did not reverse direction and add to the
> forward source wave delivered to the tuner input.
>
> Now, I agree with Cecil that the law of conservation of energy must be
> maintained. Something must occur to balance the energy equation. It is
not
> however, a reversal of the energy in the destructive interference. The
> energy balancing mechanism in this case is the change in energy loss in
the
> tuner. In the tuner, there are two directional voltages - one is the
> forward source voltage applied at the tuner input, the other is the
rearward
> reflected voltage applied at the tuner output. The forward source power
> "loss" in the tuner is 25.947 W. The rearward power "loss" in the tuner
is
> 4.569 W. However, the total steady state power loss in the tuner is not
> equal to 30.516 W. The total power loss in the tuner is actually equal to
> 47.796 W. In the steady state, the forward and rearward voltages and
> currents in the tuner combine such that the total tuner loss is 47.796 W.
> This can be determined through simple circuit analysis. We could
> mathematically state (as Cecil does in a similar fashion with the simple
Zo
> match example) that the power loss in the tuner is equal to 25.947 W +
4.569
> W + 17.28 W. Mathematically this works (as it does in Cecil's simple Zo
> match example), however, it would be a real technical stretch to convince
> anyone that the energy in the destructive interference reverses direction
> and then gets trapped in and lost in the tuner. The total power loss in
the
> tuner is simply a result of how the forward and rearward voltages combine
in

> the tuner's components. The steady state voltages in the tuner components
> can be determined from the vector combination of the forward source
voltage
> and the rearward source voltage (reflected voltage) in each component. A
> steady state analysis would yield the same results - note that the steady
> state voltage at the tuner input is equal to 70.711 V (70.711 + (16.219 -
> j12.998) + (- 16.219 + j12.998))
>
> The conjugate match: Note that with the Zo match at the tuner input, the
> power delivered to the load connected at the tuner output is 52.204 W.
Does
> a conjugate match exist at the tuner output because of the impedance match
> at the tuner input? No. The impedance seen looking rearward into the
tuner
> output is 150 ohms. The impedance seen looking forward from the tuner
> output is 72.778 - j29.287 ohms. A conjugate match does not exist.
Change
> the antenna impedance to 150 ohms and a conjugate match will be
established
> at the tuner output. In this case, the power delivered to the load
> increases to 65.413 W. The steady state impedance at the tuner input is
> 72.778 - j29.287 ohms. With a lossy tuner, a conjugate match will not
exist
> at the tuner output when the tuner is matched to Zo at its input. With
> lowloss tuners, the differences in power delivery are marginal.
>
> Steve VE9SRB
>
>
>
>
>
>
>
>

4678. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 23:48:58 UTC
From: kb7qhc@home.com
Message-ID: <3b0c4965.372919459@news.seanet.com>
Source record: 162225

On Wed, 23 May 2001 22:47:38 GMT, w2du@iag.net (Walter Maxwell) wrote:

>On Wed, 23 May 2001 17:36:24 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
>
>>Richard Clark wrote:
>>> As I pointed out before, how is this different from Bill's treatment
>>> of the quarter wave transformer who's line contains more power that is
>>> not enough "associated" to add up?
>>
>>This is some sort of conspiracy, Richard. Bill says he believes that
>>75 joules/sec + 8.33 joules/sec = 133.33 joules/sec
>>
>>So for every joule that the California power companies don't generate,
>>they obtain 50 joules into the power system. You guys are all nuts.
>>--
>>http://www.mindspring.com/~w6rca
>
>Amen Cecil, I'm beginning to understand why practically all of my posts are
>rejected as moronic. I think it's finally time to quit trying.
>
>Walt

Hi Walt, Cecil,

OK, so now I'm drawn into the "consipiracy," and I'm nuts, and I have
treated you both as morons. All charges in the space of 4 lines. I'm
glad it didn't come with 400 line proofs. ;-)

Now that I have been painted with the same brush you two reserve for
your demons, do you have a technical answer to the question?

73's
Richard Clark, KB7QHC

4679. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 23:54:30 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105231554.2fb6f8b4@posting.google.com>
Source record: 162226

Dick Carroll <dixie@townsqr.com> wrote in message news:<9egmro$c2u$0@208.207.71.173>...
> Bill Klocko wrote:
> >
> > Walt,
> > If you read that paper carefully, it is the *partial* reflection and *partial*
> > transmission of wave components on both sides of the match point that do the trick.
>
>
>
> You scientists can bat this subject around indefinitely to reach
> whatever conclusions or agreements that result, but you won't convince
> us ordinary hams that Walt is wrong until you satisfactorily explain why
> my reflected meter between the transmitter and the antenna tuner reads
> NO reflected at match. It shows NO reflected, not even partial.
>
> Dick

Hi Dick,
At steady state, the model based on Kraus predicts no net reflections on the line between the transmitter and a quarter wave transformer. I imagine the same process exists when there's an antenna tuner in the line. The reason your meter reads no reflected power is that you're measuring it under steady state conditions, which occur in microseconds or nanoseconds. Walt's model and the model based on Kraus both attempt to explain the same steady state measurable behavior. I prefere Kraus's model because it's easy to visualize the wave components, and there's no need for a junction with extraordinary characteristics. If you prefer Walt's, that's your prerogative. A copy of this paper should be on Richard's web site some time soon, and I would just ask you to read it and slog through the calculations. 73,
Bill N3WK

4680. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 23:55:55 UTC
From: kb7qhc@home.com
Message-ID: <3b0d4c88.373722023@news.seanet.com>
Source record: 162228

On Wed, 23 May 2001 15:56:29 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>Can 75 watts plus 8.33 watts ever equal 133.33 watts?

Hi Cecil,

More to the matter, now that you have the math in front of you, can
you find that it is in fact false (or incorrectly applied)?

Should be a simple matter to revisit Steve's quiz and perform simple
substitution to answer that one way or another within a context
(Bill's work that seems to be universally accepted) that can be used
as a frame work for discussion.

Or on the flip-side, go to Walt's discussion and perform the
substitution from that angle to the same end (does Bill's work support
Walt's premise)?

Or you can wait in the rocks for that ambush and get bit by a snake.

73's
Richard Clark, KB7QHC

4681. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 23:57:16 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <l4YO6.10250$5U.1259045@nntp3.onemain.com>
Source record: 162227

W6RCecilA <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0BB86C.7C38BF4E@IEEE.org...
> Reg Edwards wrote:
> > It was probably Cecil who introduced the notion of Zo match to this
> > newsgroup.
>
> My use of the term, Z0-match, came from "The ARRL Antenna Book",
> 15th Edition (1988), page 25-1. I'm pretty sure it was written
> by Walter Maxwell.
>
> --
> http://www.mindspring.com/~w6rca

Not me, Cecil.

However, quoting from Robert W. Beatty, NIST: in "Microwave Mismatch Analysis", HP Application Note 56, Oct 1967, and in "Insertion Loss Concepts", Proc IEEE Vol 52, No 6, June 1964, p 663:

Conjugate Match--The condition for maximum power absorption by a load, in which the impedance seen looking twoard the load at a point in a transmission line is the complex conjugate of at that seen looking toward the source.

Zo Match--The condition in which the impedance seen looking into a transmission line is equal to the characteristic impedance of the line.

Conjugate Available Power--Maximum available power.

Zo Available Power--The power a source will deliver to a Zo load.

Conjugate Mismatch Loss--The loss is the ratio, expressed in dB, of the available power from the generator to the power absorbed by the load connected to the generator.

These are a few of the definitions quoted in Reflection I and II.

Hope they help.

Walt, W2DU

4682. Re: Destructive Interference in Impedance Matching

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-23 23:58:06 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C4E8E.7D499390@IEEE.org>
Source record: 162229

VE9SRB wrote:
> As for the Zo match, destructive interference does cause
> the total level of rearward power flow at the Zo match to go to zero.
> However, the waves involved in this destructive interference continue to
> travel rearward, they just continue to maintain a net rearward power flow of
> zero. The energy contained in these waves does not reverse direction and
> then join with the forward source wave.

Where does the energy go, Steve? It cannot stand still. If it's not flowing REARWARD, the only direction left is flowing FORWARD. Your word-smithing is truly bizarre. In a wire, at the point where destructive interference occurs, the energy MUST reverse direction. There are *ONLY* two possible directions. If it's not flowing REARWARD, then by the process of elimination, it MUST be flowing FORWARD. (Seems this newsgroup is turning into the Cuckoo's Nest.)

> The power and energy in the total forward wave comes from the combination of
> the forward source wave and the re-reflected wave.

There is not enough energy in those two waves to cause the energy in the forward wave. *Extra* energy MUST come from somewhere. That somewhere is from the destructive/constructive interference energy.

> 50 Ohm Source ---- ZO = 50 ohms --- Tuner --- ZO = 150 ohms --- Antenna

I suspected that you were going to introduce some sort of black box for the purpose of masking the problems with your argument. Why am I not surprised?

> Note that since no re-reflection of power occurs at the tuner output, the
> forward wave in the 150 ohm line does not change. There is no total
> re-reflection of power at the Zo match. It simply just does not happen.

The Z0-match is not at the tuner output. It is at the tuner input. Since there's no reflections on the coax between the tuner and source, the reflected power has changed direction. The tuner acts somewhat like a length of transmission line, maybe tapered. Why must you introduce a tuner for the purpose of obfuscating things when you cannot even balance the energy equation of a Z0-matched system without a tuner?

> The only mechanism for power re-reflection is the impedance the reflected
> wave sees when it arrives at the tuner output.

This is not true, Steve. The superposition principle will not allow a lot of reflections from the output of a tuner because the tuner is not a point impedance. The tuner is a distributed impedance akin to the distributed impedances in a transmission line with reflections. You can easily prove this to yourself by putting an SWR meter in the middle

of a Pi-net coil. The tuner is like a piece of transmission line, maybe
tapered. Reflections are actually occurring all through the tuner and
the operation in reality is much too complicated for a discussion here.

Exactly what is the difference between the following two antenna systems?

100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load

100w XMTR---50 ohm coax---tuner---3/8WL 150 ohm twinlead---50 ohm load

The answer is not much. The Z0-match is at the tuner INPUT. The rest
of the tuner acts very much like 1/8WL of 150 ohm line. The re-reflections
do not occur 100% at the tuner output. The re-reflections are distributed
throughout the tuner making it impossible to analyze in this forum. Exactly
what would be your motive in choosing an example that is impossible to
analyze in this forum?

Consider the following pi-net tuner. Where do the reflections cease?

```
A B C D E F
o-----+----()()()()()()()()()()()()----+---o
| coil |
--- ---
--- cap cap ---
| |
G G
```

The answer is that the reflections cease at point 'A' where the Z0-match is.
There are reflections at B, C, D, E, and F. Your tuner is NOT a point
impedance. The beauty of the previous Z0-matched example was that the Z0-match
occurred at a point where nothing could be masked as it can be in a tuner.
--
http://www.mindspring.com/~w6rca

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4683. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 00:00:32 UTC
From: richardharrison@webtv.net
Message-ID: <27370-3B0C4F20-55@storefull-111.iap.bryant.webtv.net>
Source record: 162234

Steve, VE9SRB wrote:
"You know exactly what I mean in stating that 75W + 8.33W = 133.33W."

Steve, "That old dog won`t hunt!"

Bird Electronic Corporation has an application note titled "VSWR". From "VSWR" is Bird`s quote: "A simple algebraic subtraction (Pfwd - Pref) yields the net power delivered to the load." No equivocation! It is very simple and it works.

All reflected power is completely re-reflected.

If this happens at a 50-ohm transmitter output, it logically happens at the sending end of a 50-ohm / 150-ohm junction where there is no reflection in a 50-ohm line section, such as in Cecil`s example.

I already said what I believe is the cause. Once-reflected power can`t be absorbed by a resistance until it is re-reflected. That is because its voltage and current are 180-degrees out-of-phase. It takes a second reflection to put them back in-phase. Twice reflected power joins the incident power so that its total is: Delivered Power plus Reflected power. Bird`s equation then works.

There is no steady-state reflection in any 50-ohm cable in Cecil`s example. Whatever is reflected at the load end, inside a 1/2-wave of foreign cable is completely re-reflected at the generator end of that foreign cable. The reflected power is just bouncing back and forth in the foreign cable, while the delivered power passes right on through as if the foreign cable weren`t there, except for whatever loss it may extract in the process.

Best regards, Richard Harrison, KB5WZI

4684. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 00:02:00 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ehj0q$t4u$1@slb1.atl.mindspring.net>
Source record: 162230

Cecil:

I think I'm beginning to get it. But I keep getting lost in my interpertation of the word "match" as applied to this scenario.

In your diagram below, where exactly is the "Zo match"?

Is the "Zo match" at the junction of the transmitter output and the 50 Ohm coax?

I presume that you have not specified the transmitter's impedance because you wish to make the point that the transmitter's internal impedance is unspecified and can have any old arbitrary internal impedance, i.e. the impedance looking towards the left into the transmitter output can be anything or nothing.

And the transmitter to 50 Ohm coaxial junction is called a "Zo match" despite the fact that impedances on either side of the "match" don't match!

This is my semantic problem... if the impedances on either side of the junction are completely unrelated, why call it a "match".

It may simply be my problem with words again I suppose. You know me and dictionaries!

But to me the word "match" means "identical" or "the same" or "equal" or something like that... yet on either side of a "Zo match" you seem to indicate that no relationship between impedances is necessary!

So where is the "match"? I would have called that particular point a mismatched junctions or mismatched point.

I'm still perplexed... Maybe it simply doesn't matter.

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message news:3B0BBEA0.6307074A@IEEE.org...
> "Peter O. Brackett" wrote:
> >
> > Cecil: The main attraction that a Z0-match
> > > holds for me is it saves me from having to talk about a conjugate match.
>
> > Uh, oh... ok, now I understand your obsession... I like it!
>
> A conjugate match requires knowledge of the source impedance which results
> in an infinite series of arguments. No knowledge of the source impedance

> is necessary to eliminate reflections on a transmission line.
>
> Consider this: XMTR----50 ohm coax----50 ohm load
>
> The only thing affected by the source impedance is efficiency. This
> system is Z0-matched. Except for the cost of energy, who cares if it
> is conjugately matched or not?
> --
> http://www.mindspring.com/~w6rca
>
>
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4685. Re: 2 meter range???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 00:03:36 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <sdYO6.15123$9D5.1302852@newsread2.prod.itd.earthlink.net>
Source record: 162231

In VHF so much depends on relative elevation.

I have worked 2M simplex 90 miles on an HT from inside my vehicle on battery power with rubber-ducky antenna (HTX-2o2 / 3W) when I was parked at the Arizona Snow Bowl (elev. 9500 ft).

I know of a gent that runs 50W to a pair of 13 element 2M beams and can work repeaters over 250 miles away from Benson , AZ up to north of Phoenix,AZ (Mt. Ord)

I have also worked 2M mobiles located at the north rim of the Grand Canyon (about 140 miles)
with 45W (HTX-212) and an omni-directional Ringo Ranger II at 60 ft.

To address the specifics of your question you would have a very good chance with as little as 5-10W to work a repeater 100 miles away in most cases.

--

73 / DX

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

4686. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 00:05:55 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C5063.26938F16@IEEE.org>
Source record: 162232

Walter Maxwell wrote:
>
> W6RCecilA <Cecil.A.Moore@IEEE.org> wrote:
> >So for every joule that the California power companies don't generate,
> >they obtain 50 joules into the power system. You guys are all nuts.
>
> Amen Cecil, I'm beginning to understand why practically all of my posts are
> rejected as moronic. I think it's finally time to quit trying.

Here's what I suspect, Walt. All of these characters are in email contact
and conspiring to pull our legs. If it's not a joke, I'm going to retire
from this newsgroup and from ham radio because I do not want to be associated
with a bunch of morons who think that zero joules equals 50 joules.
--
http://www.mindspring.com/~w6rca

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4687. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 00:12:31 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ehjkh$2v9$1@slb2.atl.mindspring.net>
Source record: 162233

Cecil:

Batteries should certainly be considered to be RF sources. Why not?

After all they fall halfway between the positive and the negative
frequencies.

Did they not teach you that a battery comprises two RF oscillators operating
simultaneously on two frequencies which are phase locked. One is a positive
frequency and the other is a negative frequency.

It's a trade secret, but I believe, for instance, that all of the "copper
top" line of batteries operate on both + 1.5 MHz and - 1.5 MHz
simultaneously.

Of course the manufacturer has to accurately set the phase relationships
between the positive and negative frequency oscillators inside the battery
to maintain an accurate DC voltage.

;-)

-Peter K1PO

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0BB4E3.2CFF659@IEEE.org...
> "Peter O. Brackett" wrote:
> > So that's where all of that excess reflected power ends up, in Cecil's
> > debating energy reservoir!
>
> I collect it all in my RF battery.
> --
> http://www.mindspring.com/~w6rca
>
>
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4688. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 00:17:35 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C531F.B508B488@IEEE.org>
Source record: 162235

"Peter O. Brackett" wrote:
>
> Cecil:
>
> I need some semantic counselling here...
>
> Now that I understand the concept of a Zo-match, thanks to yourself and
> others here on the NG, I must admit that I am still puzzled as to why this
> phenomena or connection should be considered to be so important as to
> warrant a "name".
>
> Why not just call it a connection or a junction of like impedances, that's
> what it is.

Why not call a 'tree' a tall plant with a brown trunk, brown limbs, and green leaves? We coin words to keep from repeating the entire definition every time we need the concept, Richard. If we forbade you to use the word 'tree', wouldn't we be causing your vocabulary to be less efficient? Put 'Z0-match' into your vocabulary. It will keep you from having to type, "a connection or a junction of like impedance". :-) If I had to type that instead of 'Z0-match', I would still be typing last week's postings.

> I just see a "Zo match" as a point, maybe even an imaginary point, along a
> constant Zo line. ... Or am I still missing something?

Yep, you're missing something. Given any possible characteristic impedance of a transmission line, and given any possible SWR, how many times can the SWR circle cross the 50 ohm point? If Z0 is 50 ohms (as it usually is) there are an almost infinite number of ways to transform impedances to achieve 50 ohms, i.e. a Z0-match.
--
http://www.mindspring.com/~w6rca

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4689. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 00:30:33 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <SAYO6.670$z83.809825@nntp1.onemain.com>
Source record: 162236

Peter O. Brackett <ab4bc@ix.netcom.com> wrote in message
news:9efar4$i45$1@slb7.atl.mindspring.net...
> Cecil:
>
> [snip]
> . Some have said
> > that a Z0-match is a special case of a conjugate match but I believe we
> > can have a Z0-match without a conjugate match.
> > --
> > http://www.mindspring.com/~w6rca
> [snip]
>
> Yes, I agree with you, with the aid of Richard's helpful definition, as I
> now understand it, a Zo match is completely different from a conjugate
> match.
>
> To have a Zo match, if Zo = R + jX then the Zo matching impedance would be
R
> + jX, i.e. an exact image of Zo.
>
> With a conjugate match, if Zo = R + jX, then the conjugate matching
> impedance would be R - jX, the complex conjugate of Zo, not equal to Zo.
>
> Have I got it right?
> -Peter K1PO
>
According to Robert W. Beatty of NIST, a Zo match is a special case of the
conjugate match, the conjugate match being the general matched condition. If
one considers lossless line, where the Zo is purely resistive, the line
input impedance would be 50 + j0 for a 50-ohm line. Thus its conjugate would
necessarily be 50 + j0.

Walt, W2DU
>

4690. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 00:43:52 UTC
From: Dave Shrader <W1MCE@arrl.net>
Message-ID: <3B0C5929.C21DA12C@arrl.net>
Source record: 162237

A 95% inclusive lightning stroke has been modelled by the USAF as having
a 200,000 amperes peak current!! A 0.001 ohm mechanical connection will
have a 200 volt transient across it!!! A coax cable that has 0.010 ohms
per foot for the braid will have 2000 volts peak per foot!!! Now, 100
feet of coax equals ....!!!

Restated, direct strike is VERY tough to deal with!!!

Deacon Dave, W1MCE
Program Chief Engineer
USAF missile programs

Dick Carroll wrote:
>
> Roger Halstead wrote:
> >
>
> > Remember that there is a danger of the station ground ending up many volts
> > above the house electrical ground during a lightening strike. It only takes
> > a few volts to do in a solid state rig.
>
> I o nce read a paper published by GE that said the voltage across a 6
> foot steel radio equipment cabinet (top to bottom) can raise to 10,000
> volts during a lightning strike.

4691. Re: Destructive Interference in Impedance Matching

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 00:46:02 UTC
From: richardharrison@webtv.net
Message-ID: <28516-3B0C59CA-109@storefull-117.iap.bryant.webtv.net>
Source record: 162241

Peter, K1PO wrote:
"Please, for the uninitiated could you eliminate the jargon and go back to first principles and first define a Zo match?"

Richard Clark gave the National Bureau of Standards definition. That`s simply unbeatable.

A Zo match is almost self-explanatory Everything has the impedance of Zo. For Bird Electronic Corporation, that is 50 ohms resistance.

A 50-ohm transmitter drives a 50-ohm coax which feeds a 50-ohm resistive load. Stick your 50-ohm wattmeter in there anywhere you like. This example is a Zo match.

Zo is the square root of Z divided by Y, where Z=R+jomegaL, and Y=G+jomegaC. (Zo is the characteristic impedance of a transmission line).

At r-f and for most transmission lines, the losses are so low that Zo is a pure resistance (the current is in-phase with the voltage on the line) equal to the square root of L/C ohms.

Best regards, Richard Harrison, KB5WZI

4692. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 00:58:28 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <FZYO6.10266$5U.1271623@nntp3.onemain.com>
Source record: 162238

Peter O. Brackett <ab4bc@ix.netcom.com> wrote in message
news:9efbrj$r5s$1@slb4.atl.mindspring.net...
> Roger:
>
> I may be nit-picking but I believe there is a flaw in Walt's Axiom 1 as
you
> state it, and his Axiom 2 could be more "explicit".
>
> [snip]
> > Axiom 1: There is a conjugate match whenever all of the available power
> > from a source or network is being delivered to the load.
> [snip]
>
> First what does Walt mean by "all of the available power"? This can only
be
> defined in terms of the loading. For... consider the case when the source
> or networks has zero resistance, then the available power is unlimited,
and
> no load can absorb it all.

All available power can be explained this way. Assume a source that has a certain amount of power available, and it's output impedance is Zout. When a load equal to the conjugate of Zout is connected to the source, all available power will be delivered to the load.

Another example. Assume the output of tube transceiver with a pi tank output circuit is terminated in a 50--ohm load. The drive is set so that when the loading is adjusted to deliver the maximum power out of 75 watts. When the output is peaked and the output power is 75 watts, 75 watts is all the available power. More power will be available of the drive level is increased or the plate voltage is increased. But under the original conditions, 75 watts is the available power.

> [snip]
> > Axiom 2: There is a conjugate match if the delivery of power decreases
> > whenever the impedance of either the source or load is changed in either
> > direction:"
> [snip]

This axiom means that if all available power is being delivered, and then if the load impedance is either increased or decreased, or any reactance in the load is changed in either direction, the power delivered will decrease. (No longer a conjugate match.)

In addition, if all the available power is being delivered to a given load impednace, and then if the output impedance of the source is changed in eith

er direction, or any reactance in Zout is changed, the power delivered will decrease. (Again, no longer a conjugate match.)

>
> I like Axion 2... for that is the precise definition of maximum available
> power. But I believe that Walt has "overdone it" somewhat with "in either
> direction". I would have stated it as: "A conjugate match occurs when
the
> value of the load impedance is such that the derivative of delivered power
> with respect to the load impedance is zero."

Walt, W2DU

4693. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 01:01:51 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ehmi4$rk4$1@slb4.atl.mindspring.net>
Source record: 162239

Walt:

[snip]
> Zo Match--The condition in which the impedance seen looking into a
> transmission line is equal to the characteristic impedance of the line.
[snip]

That makes it very clear.

I believe that, back in the distant past, say the 1920's - 1930's such a condition was called an "image match" and the impedance seen looking into the line was called an "image impedance".

Maybe I'm getting too old, but I feel that the more "modern" 1960's version is less descriptive.

"Zo match" versus "image match"?

What think? Is old more descriptive than new, or less so?

Thanks again for the definition Walt... I now understand it is not a "match" per se, rather it is a "condition".

At least now I'll be able to follow some of these exciting and convoluted arguments about re-re-re-re-re---- ions. :-)

Best,

-Peter K1PO

> Hope they help.
>
> Walt, W2DU
>
>
>
>
>

4694. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 01:08:59 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ehmud$84n$1@slb0.atl.mindspring.net>
Source record: 162240

Walter:

Now you are going too far afield for me again.

Now you seem to be saying that a Zo match does involve looking at impedances
in both directions and not just one as was explained to me earlier.

i.e. Now I take it that you really mean that at a junction between two
impedances if we look to the left and to the right and we see...

(R + jX) facing (R + jX)

That junction is "Zo matched." (BTW... Back in the 1920's and 1930's this
was called an "image match"! Sort of like a mirror at the junction.)

And if we see...

(R + jX) facing (R - jX)

That junction is "conjugate matched".

Do I have it now?

Is this right?

-Peter K1PO

"Walter Maxwell" <w2du@iag.net> wrote in message
news:SAYO6.670$z83.809825@nntp1.onemain.com...
>
> Peter O. Brackett <ab4bc@ix.netcom.com> wrote in message
> news:9efar4$i45$1@slb7.atl.mindspring.net...
> > Cecil:
> >
> > [snip]
> > . Some have said
> > > that a Z0-match is a special case of a conjugate match but I believe
we
> > > can have a Z0-match without a conjugate match.
> > > --
> > > http://www.mindspring.com/~w6rca
> > [snip]
> >
> > Yes, I agree with you, with the aid of Richard's helpful definition, as
I
> > now understand it, a Zo match is completely different from a conjugate
> > match.
> >

> > To have a Zo match, if Zo = R + jX then the Zo matching impedance would
be
> R
> > + jX, i.e. an exact image of Zo.
> >
> > With a conjugate match, if Zo = R + jX, then the conjugate matching
> > impedance would be R - jX, the complex conjugate of Zo, not equal to Zo.
> >
> > Have I got it right?
> > -Peter K1PO
> >
> According to Robert W. Beatty of NIST, a Zo match is a special case of
the
> conjugate match, the conjugate match being the general matched condition.
If
> one considers lossless line, where the Zo is purely resistive, the line
> input impedance would be 50 + j0 for a 50-ohm line. Thus its conjugate
would
> necessarily be 50 + j0.
>
> Walt, W2DU
> >
>
>

4695. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 01:17:39 UTC
From: Dale Parfitt <parinc@GTE.net>
Message-ID: <3B0C6042.C68D7A06@GTE.net>
Source record: 162242

"Leland C. Scott" wrote:

> "W6DKN" <w6dkn@qsl.net> wrote in message
> news:hFiN6.1901$Zv1.577793@paloalto-snr1.gtei.net...
> >
> > The only mode I work on 2 meters is SSB, and everyone I talk to is running
> > horizontal. This is not to say that there are not a few stations out there
> > running vertical, it's just that you can't hear them unless they are very
> > close.
> >
>
> I live in a ground floor apartment where I use a 2m vertical on FM (4.5 dbi
> gain) and a homebrewed 2m Turnstile for SSB. I ran some tests with another
> station across town that uses a 8 element Quad for 2m SSB. What I found was
> my signal strength at the other station was higher when running my vertical
> even if it was crossed polarized compared to the Quad! Also I have monitored
> several stations on 2m SSB, where switching between the vertical and the
> Turnstile, resulted in no noticeable change in signal strength. In a few
> other cases I did see as much as a 2 to 3 "S" unit change in signal
> strength. The only explanation that I can think of, which makes sense to me,
> is the signal bounces off some near by metallic structure(s) which causes
> the polarization to be come randomized. In the cases where polarization
> seems to make a difference I assume the signal is bypassing the metallic
> structure(s). Has anybody else noticed this effect? From my experience the
> choice between vertical or horizontal is not so clear cut when the issue is
> matching the other station's antenna polarization.
>
> --
> --
> 73 de,
>
> Leland C. Scott
> KC8LDO

Give us a valid e-Mail address for a reply.

4696. Re: Looking for tips on a large HF wire loop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 01:21:34 UTC
From: Joe O <jenjoeo@zianet.com>
Message-ID: <3b0c63a9.0@oracle.zianet.com>
Source record: 162243

I suggest you limit the size of the horizontal loop to one wavelength on 160 Meters. I doubt any benefits will result if the loop is made any larger or raised any higher. Try to keep all legs approximately equal. Feedline SWR losses will be minimum if you use open/ladder line. An ATU and a balun in the shack is a must.

If you want to make a larger antenna try a rhombic pointed at your favorite direction.

I have a 480 ft loop up at 35 ft and enjoy the all band 160-10 M quiet receiving antenna. I use it for TX and RX on 40,17 and 12 meters. On 160 and 75 TX I use a top loaded 45 ft vertical. I use a modest tribander for 20/15/10 TX/RX.

73s K I 5 F J

KE6QCX <ke6qcx@nidweb.com> wrote in message news:12488ab4.0105231347.1f39fc6d@posting.google.com...
> I am planning on stringing up 1005' of copper wire from tree top to
> tree top to form large 1Mhz. resonant loop. I have read about the "sky
> wire" loops which are generally used on 40/80 even 160 Meters, and
> most reports say they are useable on ALL harmonics with the highest
> swr being at the second harmonic. Generally being a cloud burner at
> the resonant frequency, but when used harmonically the radiation angle
> comes down as frequency goes up. I have five acres mostly trees and
> plan on using a potato cannon to string the wire from tree top to tree
> top, so the height will between 65' and 80'. Has anyone built such a
> monster loop ?? If so what were the results ??

4697. Re: DC Power supply question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 01:58:49 UTC
From: dan martin <***dwmartin@idirect.com>
Message-ID: <Y3_O6.85$X6.2896@quark.idirect.com>
Source record: 162247
Cross-posted to: alt.radio.scanner,rec.radio.amateur.antenna,rec.radio.scanner,rec.radio.shortwave

A 10 amp supply should will work, otherwise just get a marine battery and use a wall wart to tricke charge it. (marine batteries have easy to uses terminals.)

Dan

"Sycho_Graphics" <Sycho_Graphics@msn.com> wrote in message news:O6erGbC1AHA.302@cpmsnbbsa07...
> I am tired of all the wall warts and want to power my radios with a DC power

4698. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:04:15 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <JYZO6.709$z83.835927@nntp1.onemain.com>
Source record: 162245

Walter Maxwell <w2du@iag.net> wrote in message
news:SAYO6.670$z83.809825@nntp1.onemain.com...
>
> Peter O. Brackett <ab4bc@ix.netcom.com> wrote in message
> news:9efar4$i45$1@slb7.atl.mindspring.net...
> > Cecil:
> >
> > [snip]
> > . Some have said
> > > that a Z0-match is a special case of a conjugate match but I believe
we
> > > can have a Z0-match without a conjugate match.
> > > --
> > > http://www.mindspring.com/~w6rca
> > [snip]
> >
> > Yes, I agree with you, with the aid of Richard's helpful definition, as
I
> > now understand it, a Zo match is completely different from a conjugate
> > match.
> >
> > To have a Zo match, if Zo = R + jX then the Zo matching impedance would
be
> R
> > + jX, i.e. an exact image of Zo.
> >
> > With a conjugate match, if Zo = R + jX, then the conjugate matching
> > impedance would be R - jX, the complex conjugate of Zo, not equal to Zo.
> >
> > Have I got it right?
> > -Peter K1PO

Not quite. Just because the source Zout = R + j0 and the load is Zl = R +
j0, it doesn't mean that Zout = R + jX and load Zl of R - jX. A Zo match
doesn't have a jX, it's r + j0.

Walt, W2DU

> According to Robert W. Beatty of NIST, a Zo match is a special case of
the
> conjugate match, the conjugate match being the general matched condition.
If
> one considers lossless line, where the Zo is purely resistive, the line
> input impedance would be 50 + j0 for a 50-ohm line. Thus its conjugate
would

> necessarily be 50 + j0.
>
> Walt, W2DU
> >
>
>

4699. Re: Looking for tips on a large HF wire loop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:05:04 UTC
From: k9sqg@aol.com
Message-ID: <20010523220504.29910.00000994@ng-bh1.aol.com>
Source record: 162244

Some observations...

If the loop is made longer on each leg, it will additional low angle lobes. How much longer per leg is something I can't specify.

A balun in the shack, or at the feedpoint is not necessarily a requirement. A link coupled tuner will work on some bands but may not have the matching range on others. A double balanced tuner will handle the impedance problems, and a choke balun can handle the RF on the coax as well as converting the balanced to unbalanced coupling.

Legs of the loop need not be of equal length nor of the same height. The design is quite forgiving with regard to variations.

Enjoy the loop and keep us posted on it's performance.

4700. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:09:07 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C6D43.A4B9DA48@IEEE.org>
Source record: 162248

"Peter O. Brackett" wrote:
> Batteries should certainly be considered to be RF sources. Why not?

Batteries are between 30KHz and 300GHz?
--
http://www.mindspring.com/~w6rca

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-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4701. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:11:13 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C6DC1.6905661@IEEE.org>
Source record: 162249

Richard Clark wrote:
> Now that I have been painted with the same brush you two reserve for
> your demons, do you have a technical answer to the question?

I've got an answer but it's not technical. Goodbye.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4702. Re: Butternut HF6V 75 ohm coax length please

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:11:58 UTC
From: Bill Ogden <wogden@attglobal.net>
Message-ID: <3b0c6fae_1@news1.prserv.net>
Source record: 162246

I use one of these antennas. 20m has always been the worst band for matching and 1:1.8 is about par.

Bill Ogden W2WO

4703. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:13:01 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0C6E2D.7C9CA0E5@IEEE.org>
Source record: 162250

Richard Clark wrote:
> Or you can wait in the rocks for that ambush and get bit by a snake.

Or I can just admit that the sun revolves around a flat earth and say goodbye.
--
http://www.mindspring.com/~w6rca

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4704. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:15:05 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <ih_O6.52$ze.41260@nntp2.onemain.com>
Source record: 162252

```
Walter Maxwell <w2du@iag.net> wrote in message
news:FZYO6.10266$5U.1271623@nntp3.onemain.com...
>
> Peter O. Brackett <ab4bc@ix.netcom.com> wrote in message
> news:9efbrj$r5s$1@slb4.atl.mindspring.net...
> All available power can be explained this way. Assume a source that has a
> certain amount of power available, and it's output impedance is Zout. When
a
> load equal to the conjugate of Zout is connected to the source, all
> available power will be delivered to the load.
>
> Another example. Assume the output of tube transceiver with a pi tank
> output circuit is terminated in a 50--ohm load. The drive is set so that
> when the loading is adjusted to deliver the maximum power out of 75 watts.
> When the output is peaked and the output power is 75 watts, 75 watts is
all
> the available power. More power will be available of the drive level is
> increased or the plate voltage is increased. But under the original
> conditions, 75 watts is the available power.
>
> > [snip]
> > > Axiom 2: There is a conjugate match if the delivery of power decreases
> > > whenever the impedance of either the source or load is changed in
either
> > > direction:"
> > [snip]
>
> This axiom means that if all available power is being delivered, and then
if
> the load impedance is either increased or decreased, or any reactance in
the
> load is changed in either direction, the power delivered will decrease.
(No
> longer a conjugate match.)
>
> In addition, if all the available power is being delivered to a given load
> impednace, and then if the output impedance of the source is changed in
eith
> er direction, or any reactance in Zout is changed, the power delivered
will
> decrease. (Again, no longer a conjugate match.)
>
> >
> > I like Axion 2... for that is the precise definition of maximum
```

available
> > power. But I believe that Walt has "overdone it" somewhat with "in
either
> > direction". I would have stated it as: "A conjugate match occurs when
> the
> > value of the load impedance is such that the derivative of delivered
power
> > with respect to the load impedance is zero."
>
> Walt, W2DU
>
Peter, I forgot to mention above that I defined 'all available power' in the
QEX article you referenced. Did you not see that definition?

Walt, W2DU
>

4705. Re: Will amateur radio astronomers be the first to directly detect extrasolar planets?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:15:12 UTC
From: "William F. Hagen" <whagen@inreach.com>
Message-ID: <3B0C6EAF.654D80A4@inreach.com>
Source record: 162256
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.antenna,sci.astro,sci.astro.seti,sci.space.policy

another ludicrous propoganda proposition,no doubt aimed at "schools",
some salesmen will do anything to keep a client.

Robert Clark wrote:
>
> The existence of extrasolar planets has been inferred from the
> wobbling seen in some stars. Their actual light still has not been
> detected or distinguished from that of their parent stars.
> The long wavelength radio bursts that emanate from Jupiter have led
> to suggestions that extrasolar planets might be detected by searching
> for such bursts in the vicinity of stars:
>
> Opening a New Window on the Universe:
> High Resolution, Long Wavelength Radio Astronomy,
> 2.5.2 Extrasolar Planets,
> by Joseph Lazio
> http://rsd-www.nrl.navy.mil/7213/lazio/decade_web/node34.html
>
> However, sensitive searches have so far failed to detect them. This
> is undoubtedly due to distance attenuation for such planets
> light-years away. The distance to Jupiter ranges up to 9 x 10^8 km. A
> star 10 light-years away is at 9 x 10^13 km, a factor of 10^5 larger
> than the Jupiter distance.
> The Jovian radio bursts have been detected by amateurs with simple
> dipole antennas:
>
> Radio-Jupiter for Amateur Observers, By Jim Sky
> http://web2.thesphere.com/SAS/bulletin/Sas44/page1.html#Jupiter
>
> PROJECT P5-2. JUPITER-IO MAGNETOSPHERE RADIO NOISE
> http://www.elmag5.com/jupiter-io.htm
>
> With its Radio JOVE project NASA also distributes low-cost dipole
> kits to schools:
>
> How To Hear Radio Signals From Jupiter
> http://www.spacetoday.org/SolSys/Jupiter/JupiterRadio.html
>
> Radio JOVE
> http://spacescience.com/headlines/y2000/ast22may_1.htm?list
>
> The proposal is for amateur radio astronomers to set up arrays of

> such low cost dipole antennas world-wide. The T-shaped dipoles have
> the advantage of steerability, but the vertical dipoles have the
> advantage of simplicity and low cost for setting up large arrays. An
> example of a steerable dipole array is the one that first discovered
> the Jovian decametric emissions:
>
> The Discovery of Jupiter's Radio Emissions
> How a chance discovery opened up the field of Jovian radio studies
> http://radiojove.gsfc.nasa.gov/library/sci_briefs/discovery.html
>
> The signals from the various arrays would be combined digitally to
> form a world-wide radio telescope. The large-wavelengths being
> detected simplify the task of combining the signals
> interferometrically. GPS transmitters are now available that can give
> locations to within inches:
>
> NASA satellite technology goes down on the farm
> http://www.spaceflightnow.com/news/n0105/11farm/
>
> The clocks in such transmitters also provide timing at better than
> nanosecond resolution.
>
> The signal strength for Jupiter at 10 light-years would decrease as
> the square of the distance, so would be smaller by a factor of 10^10.
> However, the extrasolar Jovian planets detected so far have been close
> in to their primaries and are expected to produce stronger radio
> emissions than Jupiter, perhaps, 100 to 1000 times more intense. Using
> the optimistic estimate of 1000 times greater intensity would require
> 100,000 separate arrays with 100 dipoles or 10,000 arrays with 1,000
> dipoles to detect such emissions.
>
> Bob Clark

4706. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:26:07 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <reqogt02eug7muv40suiq0rdg32om85f4d@4ax.com>
Source record: 162251

On Wed, 23 May 2001 21:08:59 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Walter:
>
>Now you are going too far afield for me again.
>
>Now you seem to be saying that a Zo match does involve looking at impedances
>in both directions and not just one as was explained to me earlier.
>
C'mon Peter, Walt didn't say that at all.

What you describe is the conjugate match, Walt said the Z0 match is a
special solution, a subset if you will. It already pegs both
reactances at zero which automatically fulfills the requirement for
conjugation AS LONG AS the real resistances are equal.

>i.e. Now I take it that you really mean that at a junction between two
>impedances if we look to the left and to the right and we see...
>
>(R + jX) facing (R + jX)

There is nothing in the definition that allows a reactance or speaks
of phase. In other words a Z0 match is non reactive.
>
>That junction is "Zo matched." (BTW... Back in the 1920's and 1930's this
>was called an "image match"! Sort of like a mirror at the junction.)
>
>And if we see...
>
>(R + jX) facing (R - jX)
>
>That junction is "conjugate matched".
>
>Do I have it now?
>
>Is this right?
>
>-Peter K1PO

Hi Peter,

To quote from HP Application Note 56 which encapsulates many of
Beatty's ideas:

"Basis of Analysis
To analyze a particular case of mismatch an appropriate
basis of calculation must be chosen. If the power actually
delivered to the load is to be compared with the maximum
available from the source, this is on a conjugate basis.
If comparison is made with the power the source will deliver
to a Z0 load, this is on a Z0 basis."

To the greater commercial world, the Z0 basis comes with the system specification. In other words, all components are known and selected to suit a specific purpose.

In the Ham world, the conjugate, if needed, comes with the tuner inserted somewhere into the system. In other words, an ad-hoc solution driven by the variations in design elements, nearby terrain, change in frequency, weather....

And as I've often observed when I ask participants which basis they use, Application Note 56 continues:

"Considerable confusion has arisen over the use of terms
such as "match" and "mismatch" since it is not always
clear just what basis is intended."

Review the postings here and look at how power is treated.

Then look at the arguments posed.

Do they correlate to being confined to the same basis?

73's
Richard Clark, KB7QHC

4707. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:30:20 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <lesogtck603lsb4hvmehuac7genotnhuqt@4ax.com>
Source record: 162253

On Wed, 23 May 2001 09:46:03 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Peter, K1PO wrote:
>"First what does Walt mean by "all of the available power"?"
>
>That irked me the first time I read it from one of Walt`s
>communications. Thought he should have defined it early and often as it
>was foreign to me!
>
>Walt, I believe, simply meant the power a conjugate match provides
>without changing the capabilities of the transmitter by adjusting
>applied voltages, etc.
>
>Then one fine day , I was reading from one of the ancient authorities
>who defined and used "all of the available power"!
>
>I don`t remember the author and an index search of a few books didn`t
>produce the definition. Walt wasn`t the first to use the "all available
>power power" phrase, so it isn`t unprecedented.
>
>Best regards, Richard Harrison, KB5WZI

Hi Richard,

Beatty also covers this, but in a rather different perspective.

"Conjugate Available Power:
Maximum available power.

Z0 Available Power:
The power a source will deliver to a Z0 load."

73's
Richard Clark, KB7QHC

4708. Re: HIGH END ELECTRONICS CHEAPER THAN DIRT!!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:32:28 UTC
From: Nouchmar Emprichieste <gobax@rospol.net>
Message-ID: <0p_O6.32$oF3.5221@news7.onvoy.net>
Source record: 162254

Keep your scam crap off of here!!!

IC wrote in message <9ehnoq$cfg@dispatch.concentric.net>...
>
>,.-:*'''*:-
>,.-:*'''*:-.,_,.-:*''
>,.-:*'''*:-.,_,.-:*'''*:-.,_,.-:
>,.-:*'''*:-.,_,.-:*'''*:-.,_,.-:*'''*:-.,_,.-
>,.-:*'''*:-.,_,.-:*'''*:-.,_,.-:*'''*:-.,_,.-:*'''*:-.,
>,.-:*'''*:-.,_,.-:*'''*:-.,_,.-:*'''*:-.,_,.-:*'''*:-.,
>
>DVD players for $85, Camcorders for $140, Windows 98 for $9.95,
>Computer laptops for $185, Digital cameras for $75, CD recorders
>for $85, 56K modems for $14.95.
>
>Millions of wholesale, liquidation, surplus and closeout sources revealed!
>Millions of wholesale, liquidation, surplus and closeout sources revealed!
>Millions of wholesale, liquidation, surplus and closeout sources revealed!
>
>HIGH END ELECTRONICS CHEAPER THAN DIRT!!
>""The most complete and up to date wholesale directory available.""
>""No other wholesale index listing can come close to this""
>
>Check out this site for more info:
>http://www.wholesalebuyersdirectory.com
>
>,.-:*'''*:-.,_,.-:*'''*:-.,_,.-:*'''*:-.,_,.-:*'''*:-.,
>,.-:*'''*:-.,_,.-:*'''*:-.,_,.-:*'''*:-.,_,.-:*'''*:-.,
>,.-:*'''*:-.,_,.-:*'''*:-.,_,.-:*'''*:-.,_,.-
>,.-:*'''*:-.,_,.-:*'''*:-.,_,.-:
>,.-:*'''*:-.,_,.-:*''
>,.-:*'''*:-
>
>
>closeout,closeouts,salvage,liquidation,overstock,department
store,returns,department,stores,returns,retail,wholesale,discontinued
merchandise,close-outs,duty free
>closeout,closeouts,salvage,liquidation,overstock,department
store,returns,department,stores,returns,retail,wholesale,discontinued
merchandise,close-outs,duty free
>closeout,closeouts,salvage,liquidation,overstock,department
store,returns,department,stores,returns,retail,wholesale,discontinued
merchandise,close-outs,duty free
>closeout,closeouts,salvage,liquidation,overstock,department

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store,returns,department,stores,returns,retail,wholesale,discontinued
merchandise,close-outs,duty free
>closeout,closeouts,salvage,liquidation,overstock,department
store,returns,department,stores,returns,retail,wholesale,discontinued
merchandise,close-outs,duty free
>closeout,closeouts,salvage,liquidation,overstock,department
store,returns,department,stores,returns,retail,wholesale,discontinued
merchandise,close-outs,duty free
>closeout,closeouts,salvage,liquidation,overstock,department
store,returns,department,stores,returns,retail,wholesale,discontinued
merchandise,close-outs,duty free
>
```

4709. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:38:36 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105231838.5a157fe3@posting.google.com>
Source record: 162255

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<27285-3B0C338E-67@storefull-114.iap.bryant.webtv.net>...
> Bill Klocko wrote:
> "The power delivered to the resistor (1-ohm) is obviuously 4 watts, but
> if we mistakenly try to apply superposition we might say that each
> battery furnished 1 watt and thus the actual power is 2 watts."
>
> What a crock!
>
> You have 2A from a 1V battery and two batteries. The power sum is 4
> watts by inspection. Why is bill trying to defame superposition?
>
> Best regards, Richard Harrison, KB5WZI

Defame superposition? How did you you arrive at that conclusion? It applies
to 2 or more voltages, and it applies to 2 or more currents. What the author
is saying is that it does NOT apply to 2 or more powers. You got the right
answer, 4 watts, by inspection. When Cecil applies his method, he adds
1 watt and 1 watt and gets the wrong answer. 73,
Bill N3WK

4710. Yaesu power connectors???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:47:49 UTC
From: Matt <matt_patt123@yahoo.com>
Message-ID: <9ehs3s02arl@enews1.newsguy.com>
Source record: 162259

I just bought a brand new FT-1500M and it came with those heavy duty yaesu power connectors. I haven't called Yaesu yet but does anyone know where I could purchase more of these? Or would I be better off, for compatibility issues, to cut the connectors off and go with the standard molex type connectors you can get from Radio Shack? What does everyone else use?

Thanks for the input.

Matt
KC5YTV

4711. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 02:54:00 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105231853.366e11e@posting.google.com>
Source record: 162257

W6RCecilA <Cecil.A.Moore@IEEE.org> wrote in message news:<3B0C3AAF.5F5369B@IEEE.org>...
> Bill Klocko wrote:
> > So, in answer to your question, I guess I'd have to say that 75 joules/sec plus
> > 8.33 joules/sec would equal 133.33 joules/sec, and any other way of combining power
> > is, as given in Hayt and Kennedy, is incorrect.
>
> I am amazed, Bill. Given that equation:
>
> 75 joules/sec + 8.33 joules/sec = 133.33 joules/sec
>
> We can multiply each side of the equation by one second to get:
>
> 75 joules + 8.33 joules = 133.33 joules
>
> Now we subtract 83.33 joules from each side of the equation to get:
>
> Zero Joules equals fifty joules and Eureka, we seem to have solved California's
> energy problem. For every joule that a power company doesn't generate, we will
> get 50 joules into the power system. Problem solved. You guys are nuts.

Ah, but we compute the sum of two powers correctly. I gave you a
reference that said superposition of powers is incorrect. I even
gave you a simple example showing that it's obviously incorrect.
Maybe you could provide us with a reference that says that
superposition of multiple powers at a point (and not just the sum
of powers around a closed loop) is a valid method. 73,
Bill N3WK

4712. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 03:01:39 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B0C7993.125@wt.net>
Source record: 162258

W6RCecilA wrote:
>
> Mark Keith wrote:
> > I'd still rather run a regular old dipole. I've compared that windom to
> > a full size dipole at field day. The dipole beat the pants off it in my
> > case. I never saw the windom win at any angle. And we had the windom
> > higher than the dipole. MK
>
> The Carolina Windom won't beat the dipole during the day but it will often
> beat the dipole at night for DX.
> --
> http://www.mindspring.com/~w6rca

Maybe, but I'll have to see it to believe it. I don't think the one we used would have. We had quite a variety of contacts being it was field day. Some pretty long haul for 80m. I'm sure the feed radiation does add a bit of vertical polarazation, but I think the losses in the system overall overshadow any such benefit. After all, you would normally have no ground system installed to handle ground losses for one thing, if you have a semi-vertical being fed against the rig. And the whole system they used of ladder line/choke/coax was overly lossy.Of course, there are different type of C. windoms. I think the one we used was a standard version. You can also get the same results to an extent on the dipole by not using a balun. In fact, the one I used that year had no balun. Mainly because I built it on the spot and didn't have one. I had 80 and 40 legs on one coax with no balun. We switched back and forth using a switch I brought, and going to the windom was like switching a resister inline. Everything dropped. Signals, including the overall noise floor dropped 2-3 S units. No joke. And we had used a different one the 2 years before, that seemed even worse. In fact, it was pitiful without a doubt. A dummy load on 80m. Thats the reason I brought wire the next year. I wasn't going to get stuck on one again for the 3rd year in a row. If you all want to use them, be my guest. Just leave me out of it..:) I hate the things overall. They are lame on 80m compared to just a coax fed dipole. Mainly because I don't have all the feed loses and other problems. And I do have a full 1/2 wl ant, which is not major, but doesn't hurt either. I've just gotten to the point that if I'm gonna sit out there all night on the low bands, which I always do, with only a 100w I might add, I want nothing less than the best. I don't really like contesting type operation that much to begin with, and trying to do it on a poor or semi-poor antenna makes me grit my teeth too much. As far as I'm concerned, a coax fed dipole is the best for that type operation. Of course ladder line ok too, but coax will still give you slightly better performance due to the lack of tuner loss. I don't

really use either type antenna to chase dx. I'd use a good vertical if I wanted to do that. On field day on 80/40m you work very little dx. The stateside campers drown em all out or scare them off I think. They probably work all the dx on the higher bands. I work only low band cw at night. I come in when many are going home usually. I make a lot more points that way as it's double for cw. And of course, all my normal dipoles here at the house are coax fed and full size also. I want the best here too. :) MK

--
http://web.wt.net/~nm5k

4713. WTB:Outbacker OB8TRI

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 03:21:31 UTC
From: Steve Massey <N6TT@jps.net>
Message-ID: <J8%O6.59$ze.80885@nntp2.onemain.com>
Source record: 162260

Im looking to buy the Outbacker Tri Split model OB8TRI antenna.
I have the Outbacker Model OB8 to trade or will pay CASH.
email : N6TT@jps.net

Steve Massey
Radio Station: N6TT
http://www.qsl.net/n6tt
N6TT@jps.net

4714. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 03:39:14 UTC
From: richardharrison@webtv.net
Message-ID: <26029-3B0C8262-37@storefull-118.iap.bryant.webtv.net>
Source record: 162261

Bill Klocko wrote:
"What the author is saying is that it does NOT apply to 2 or more powers."

Bird says:
"A simple algebraic subtraction (Pfwd - Pref) yields the net power delivered to the load."

We can rewrite that as: Pfwd = Pdel + Pref.
Would you deny that the forward power measured by the Bird wattmeter consists of two powers, the delivered power and the re-reflected power?

The transmitter only delivers the delivered power. The only source of additional forward power is the reflected power. The re-reflected power is identically the reflected power making its unique additional round trip between source and sink.

The powers add as Bird says. The evidence is that the wattmeter works as advertised.

Best regards, Richard Harrison, KB5WZI

4715. Re: Will amateur radio astronomers be the first to directly detect extrasolar planets?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 03:51:41 UTC
From: aranders@netusa1.net
Message-ID: <aranders-2305012251410001@rash4-168.kokomo.in.hypervine.net>
Source record: 162262
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.antenna,sci.astro,sci.astro.seti,sci.space.policy

rgclark@my-deja.com (Robert Clark) wrote:

> The existence of extrasolar planets has been inferred from the
> wobbling seen in some stars. Their actual light still has not been
> detected or distinguished from that of their parent stars.

Um...last I heard, several such planets indeed had been imaged.

4716. Re: Lightning conductors

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 03:57:25 UTC
From: mike.luther@ziplog.com
Message-ID: <tgp1l56ieeb9df@corp.supernews.com>
Source record: 162263

In <9efbdf$i1d$0@208.206.142.80>, Dick Carroll <dixie@townsqr.com> writes:

>> Remember that there is a danger of the station ground ending up many volts
>> above the house electrical ground during a lightening strike. It only takes
>> a few volts to do in a solid state rig.

> I o nce read a paper published by GE that said the voltage across a 6
>foot steel radio equipment cabinet (top to bottom) can raise to 10,000
>volts during a lightning strike.

Yes and I've had both an Icom push button fancy mic totally blown just
sitting on the desk even though it wasn't even plugged into anything, as
well as a Sony GVM-1510 completely wasted on that same desk even though
it wasn't even plugged into anything either!

OTOH in that same station, nothing in the rack got zonked, but every
swithing power supply device was blasted - My pig iron power supply
FT-1000 and all other pig iron power supply stuff survived. That
included an Interlogic Relay Rack industrial case systen with a full
isolation transformer linear power supply, as well as the entire other
stuff that was the old fashioned game .. including ny hand built KW with
Pete Dahl plate Xfrmer and twin chokes!

And this strike didn't come down the antenna leads. It came in on the
AC mains .. went down them and thence also on the neutral lines back to
the ham shack, and exited the building into the ground arrays and the
isolation panel for the antenna game! It totally ignored the neutral at
the AC entrance to the place .. cheerfully bypassed it, took out my
microwave oven, my stereo set, and proved conclusively that I'd done a
magnificent mitigation job of leading it direct to the best ground it
could find... Wouldn't have, as far as I can see, made a darned bit of
difference if I'd had one of these triac whole-house protectors or not,
unless that ground stake had been a heck of a lot better ground than the
NEMA ground .. pure and simple.

I happened to be at the site for this one, asleep in bed in the room
next to the shack. It hit so hard that I was jolted out of bed pretty
much onto the floor. The place was filled with ozone smell. However, as
in mosts of these things, if you are still left wondering, you're still
alive!

Cheers.

--> Sleep well; OS2's still awake! ;)

Mike @ W5WQN
Mike.Luther@ziplog.com

Mike.Luther@f3000.n117.z1.fidonet.org

4717. Kenwood's TS-50 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 03:59:27 UTC
From: John Cunningham <johngrac@surfsouth.com>
Message-ID: <zG%O6.141762$sP6.7668184@news3.aus1.giganews.com>
Source record: 162264

I'm going to buy my first hf rig, is the TS-50 a good starter rig? What would you buy for under $1000? Why?
KE4QOP John

4718. Re: Destructive Interference in Impedance Matching

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 04:25:23 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <T20P6.40486$t12.3159650@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162265

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0C4E8E.7D499390@IEEE.org...

> I suspected that you were going to introduce some sort of black box for
the
> purpose of masking the problems with your argument. Why am I not
surprised?

Since the tuner example is clearly too complicated for you, let's consider a simpler example with only transmission lines.

50 ohm source --- Zo = 50 ohms --- X ----- Zo = 200 ohms --- Load = 200 ohms
------Zo = 40
ohms --- Load = 66.666 ohms

Two transmission line are connected in parallel at point X. Both the 200 ohm line and the 40 ohm line are lossless and 1 WL long.

We really should analyze with voltages and current but I am going to use power and try to keep this much shorter than the other example.

Initial state - no reflections yet in the 40 ohm line: The forward source power arriving at X is 100 W. The forward source power in the 200 ohm line is 16 W while the forward source power in the 40 ohm line is 80 W. The reflected source power in the 50 ohm line is 4 W.

The 16 W of forward power in the 200 ohm line arrives at the 200 ohm load. No reflection of power occurs.

The 80 W of power in the 40 ohm line arrives at the 66.66 ohm load. 5 W of power is reflected. This 5 W of power arrives back at X and sees an impedance of 40 ohms. There is no re-reflection of power at point X. The forward power in the 40 ohm line remains at 80 W. It does not change.

The 5 W of reflected power arriving at point X is divided between the 200 ohm and 50 ohm lines. 4 W of power is delivered rearward into the 50 ohm line. It is 180 degrees out of phase with the 4 W of reflected source power and therefore a steady state match occurs. The net rearward power flow in the 50 ohm line is 0 W.

1 W of the 5 W of reflected power is delivered forward into the 200 ohm line. This 1 W of power combines in phase with the 16 W of forward source power to become a total forward power of 25 W in the 200 ohm line. The vector addition of the forward voltages in the 200 ohm line would prove this to be the case. One could also verify this with Pforward = 16 + 1 + 2 Sqrt(16) = 25 (it always works). The energy balance occurs through the vector additon of voltage and current.

Now, are you going to tell us that the 8 W of energy involved in the destructive interference somehow magically turns around and adds *only* to the forward wave in the 200 ohm line? What laws of physics or physical mechanism directs this energy to the 200 ohm line? What law of physics or physical mechanism presents it from totally or partially adding to the forward wave in the 40 ohm line? Please explain the physical mechanism that causes all of this to happen consistent with your energy relationships and the reversal of destructive interference energy.

My analysis works and is consistent with all aspects of transmission line theory and the correct vector addition of voltage and current. Prove to me that you are correct with a detailed explaination using your energy math. Telling me I'm wrong won't work anymore. Prove to me that you are correct.

4719. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 04:35:24 UTC
From: richardharrison@webtv.net
Message-ID: <26029-3B0C8F8C-42@storefull-118.iap.bryant.webtv.net>
Source record: 162266

Richard Clark wrote:
"Beatty also covers this, but in a rather different perspective:

"Conjugate Available Power;
Maximum available power."

"Zo Available Power:
The power a source will deliver
to a Zo load."

Thanks Richard.

I knew I`d read it elsewhere but probably not Beatty. So, "All Available Power" may be much commoner than I`d imagined. Anyway, I had no cause to be irked. My ignorance was my own damned fault.

Best regards, Richard Harrison, KB5WZI

4720. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 04:54:06 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <3B0C93E6.2794BFD0@att.net>
Source record: 162267

Hardly relevant here, Richard, but I recall using the notion of and the actual phrase "available power" a number of times in my graduate thesis at MIT in 1957.

As I recall, it is a common concept and expression.

72/73, George W5YR - the Yellow Rose of Texas QRP-L 1373 NETXQRP 6
Fairview, TX 30 mi NE of Dallas in Collin county EM13qe
Amateur Radio W5YR, in the 55th year and it just keeps getting better!
Icom IC-756PRO #02121 Kachina #91900556 IC-765 #02437

Richard Harrison wrote:
>
> Peter, K1PO wrote:
> "First what does Walt mean by "all of the available power"?"
>
> That irked me the first time I read it from one of Walt`s
> communications. Thought he should have defined it early and often as it
> was foreign to me!
>
> Walt, I believe, simply meant the power a conjugate match provides
> without changing the capabilities of the transmitter by adjusting
> applied voltages, etc.
>
> Then one fine day , I was reading from one of the ancient authorities
> who defined and used "all of the available power"!
>
> I don`t remember the author and an index search of a few books didn`t
> produce the definition. Walt wasn`t the first to use the "all available
> power power" phrase, so it isn`t unprecedented.

4721. Re: Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 04:59:48 UTC
From: kelly@nospam.dvol.com
Message-ID: <3b0c947d.344201449@news2.dvol.com>
Source record: 162130

On Mon, 21 May 2001 22:19:59 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>
>If the twinlead is carrying a high SWR, the impedance seen at the input
>to the twinlead will be anything except the characteristic impedance.
>I simply don't use 4:1 baluns anymore because they rarely see the
>200 ohms resistive for which they were designed.
>
Somebody needs to kill "baluns" and the pervasive mythology which
surround them.
>
>--
>http://www.mindspring.com/~w6rca
>
w3rv

4722. Re: Will amateur radio astronomers be the first to directly detect extrasolar planets?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 05:32:26 UTC
From: webmaster <webmaster@livefromspace.tv>
Message-ID: <3b0c9bd5$0$25470$7f31c96c@news01.syd.optusnet.com.au>
Source record: 162268
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.antenna,sci.astro,sci.astro.seti,sci.space.policy

"Alan Anderson" <aranders@netusa1.net> wrote in message
news:aranders-2305012251410001@rash4-168.kokomo.in.hypervine.net...
> rgclark@my-deja.com (Robert Clark) wrote:
>
> > The existence of extrasolar planets has been inferred from the
> > wobbling seen in some stars. Their actual light still has not been
> > detected or distinguished from that of their parent stars.
>
> Um...last I heard, several such planets indeed had been imaged.

No, not yet, although there have been several Brown Dwarfs that have been
imaged. Astronomers are still debating where the line exists between the
two.
Nathan www.livefromspace.tv

4723. Repeat: HIGH END ELECTRONICS CHEAPER THAN DIRT!!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 06:07:36 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3B0CA528.C1181C76@bwcc.com>
Source record: 162169

Nouchmar Emprichieste wrote:
> Keep your scam crap off of here!!!
Re-posting his entire content sure didn't help!!!

4724. Re: Yaesu power connectors???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 06:27:13 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <5R1P6.7109$CQ4.899089@paloalto-snr1.gtei.net>
Source record: 162170

"Matt" <matt_patt123@yahoo.com> wrote in message
news:9ehs3s02arl@enews1.newsguy.com...
> I just bought a brand new FT-1500M and it came with those heavy duty
yaesu
> power connectors. I haven't called Yaesu yet but does anyone know where
I
> could purchase more of these? Or would I be better off, for
compatibility
> issues, to cut the connectors off and go with the standard molex type
> connectors you can get from Radio Shack? What does everyone else use?
>
> Thanks for the input.
>

I have converted all my rigs as well as all my power supplies over to Anderson PowerPole connectors. These things are great, I even installed a panel mount four device connector block in the kick panel of my Chevy Blazer. Now, any rig plugs into any power source - either base or mobile.

Check out http://www.powerwerx.com/

Great prices, and they do sell the factory Yaesu connectors like those used on the FT-100's ...

73 de W6DKN

4725. Re: Repeat: HIGH END ELECTRONICS CHEAPER THAN DIRT!!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 07:37:49 UTC
From: just4fun <just4Xfun@hotmail.com>
Message-ID: <hT2P6.9601$FL1.938418@afrodite.telenet-ops.be>
Source record: 162171

:-))

> Re-posting his entire content sure didn't help!!!

4726. Re: Looking for tips on a large HF wire loop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 10:43:24 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3b0ce5d8_2@news.cybertours.com>
Source record: 162172

"KE6QCX" <ke6qcx@nidweb.com> wrote in message
news:12488ab4.0105231347.1f39fc6d@posting.google.com...
> I am planning on stringing up 1005' of copper wire from tree top to
> tree top to form large 1Mhz. resonant loop. I have read about the "sky
> wire" loops which are generally used on 40/80 even 160 Meters, and
> most reports say they are useable on ALL harmonics with the highest
> swr being at the second harmonic. Generally being a cloud burner at
> the resonant frequency, but when used harmonically the radiation angle
> comes down as frequency goes up. I have five acres mostly trees and
> plan on using a potato cannon to string the wire from tree top to tree
> top, so the height will between 65' and 80'. Has anyone built such a
> monster loop ?? If so what were the results ??

Hi,
The Loop should work well , but put up a vertical or dipole also to fill in
the nulls that will develope.. I would suggest that you take a look at L.B.
Cebik's fine work on big loops at
http://www.cebik.com/atl1.html

Happy haming & 73 Dave KC1DI

4727. Re: Destructive Interference in Impedance Matching

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 11:00:36 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eipkp$94n$1@slb4.atl.mindspring.net>
Source record: 162173

Richard:

Thanks for that confirming feedback, I believe that I now understand it.

Several folks up and down the NG have explained it to me in different ways now... thanks all.

Re-expressing the concept in my own words...

A "Zo match" is the condition that exists at a junction of two ports when the impedance looking into one port (side) of the junction is (R + jX) and the impedance looking into the other port (side) of the junction is also (R + jX).

In other words the with a Zo match the port impedances facing each other at the junction are mirror images of each other.

If I'm not mistaken the "old" name for this condition was "image match". [Old means 1920's - 1940's era...]

This "image match" is in contradistinction to the "conjugate match" wherein looking one way one sees, (R + jX) and in the other way one sees the complex conjugate, (R - jX).

If (R + jX) "faces" (R + jX) there is an "image match", if (R + jX) "faces" (R - jX) there is a "conjugate match".

The conjugate match "supports" maximum power transfer from one side to the other and, the image match does not.

Is this right? Have I got it now?

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:28516-3B0C59CA-109@storefull-117.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "Please, for the uninitiated could you eliminate the jargon and go back
> to first principles and first define a Zo match?"
>
> Richard Clark gave the National Bureau of Standards definition. That`s
> simply unbeatable.
>
> A Zo match is almost self-explanatory Everything has the impedance of
> Zo. For Bird Electronic Corporation, that is 50 ohms resistance.
>
> A 50-ohm transmitter drives a 50-ohm coax which feeds a 50-ohm
> resistive load. Stick your 50-ohm wattmeter in there anywhere you like.

> This example is a Zo match.
>
> Zo is the square root of Z divided by Y, where Z=R+jomegaL, and
> Y=G+jomegaC. (Zo is the characteristic impedance of a transmission
> line).
>
> At r-f and for most transmission lines, the losses are so low that Zo is
> a pure resistance (the current is in-phase with the voltage on the line)
> equal to the square root of L/C ohms.
>
> Best regards, Richard Harrison, KB5WZI
>

4728. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 11:04:11 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eipqcplo1@slb6.atl.mindspring.net>
Source record: 162174

Walt:

Nope, I didn't see that.

Sorry,

-Peter K1PO

"Walter Maxwell" <w2du@iag.net> wrote in message
news:ih_O6.52$ze.41260@nntp2.onemain.com...
>
> Walter Maxwell <w2du@iag.net> wrote in message
> news:FZYO6.10266$5U.1271623@nntp3.onemain.com...
> >
> > Peter O. Brackett <ab4bc@ix.netcom.com> wrote in message
> > news:9efbrj$r5s$1@slb4.atl.mindspring.net...
> > All available power can be explained this way. Assume a source that has
a
> > certain amount of power available, and it's output impedance is Zout.
When
> a
> > load equal to the conjugate of Zout is connected to the source, all
> > available power will be delivered to the load.
> >
> > Another example. Assume the output of tube transceiver with a pi tank
> > output circuit is terminated in a 50--ohm load. The drive is set so that
> > when the loading is adjusted to deliver the maximum power out of 75
watts.
> > When the output is peaked and the output power is 75 watts, 75 watts is
> all
> > the available power. More power will be available of the drive level is
> > increased or the plate voltage is increased. But under the original
> > conditions, 75 watts is the available power.
> >
> > > [snip]
> > > > Axiom 2: There is a conjugate match if the delivery of power
decreases
> > > > whenever the impedance of either the source or load is changed in
> either
> > > > direction:"
> > > [snip]
> >
> > This axiom means that if all available power is being delivered, and
then
> if

> > the load impedance is either increased or decreased, or any reactance in
> the
> > load is changed in either direction, the power delivered will decrease.
> (No
> > longer a conjugate match.)
> >
> > In addition, if all the available power is being delivered to a given
load
> > impednace, and then if the output impedance of the source is changed in
> eith
> > er direction, or any reactance in Zout is changed, the power delivered
> will
> > decrease. (Again, no longer a conjugate match.)
> >
> > >
> > > I like Axion 2... for that is the precise definition of maximum
> available
> > > power. But I believe that Walt has "overdone it" somewhat with "in
> either
> > > direction". I would have stated it as: "A conjugate match occurs
when
> > the
> > > value of the load impedance is such that the derivative of delivered
> power
> > > with respect to the load impedance is zero."
> >
> > Walt, W2DU
> >
> Peter, I forgot to mention above that I defined 'all available power' in
the
> QEX article you referenced. Did you not see that definition?
>
> Walt, W2DU
> >
>
>

4729. WTB-ICOM HT

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 11:18:00 UTC
From: n2ion@aol.com
Message-ID: <20010524071800.13790.00002073@ng-ch1.aol.com>
Source record: 162175

HI
MY BUDDY IS LOOKING FOR AN ICOM IC-4GAT.
IF YOU HAVE ONE, AND AM WILLING TO PART WITH IT, PLEASE E-MAIL WA2MDO@JUNO.COM,
AND LET HIM KNOW.

THANKS IN ADVANCE

4730. Re: Yaesu power connectors???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 12:13:42 UTC
From: Jeff Farrar <jeff@farrar.com>
Message-ID: <WV6P6.1870$lP5.851404@news1.rdc2.pa.home.com>
Source record: 162176

I purchased them direct from Yaesu and the were at a really reasonable
price. Since they were so cheap I got a bunch just in case.

"Matt" <matt_patt123@yahoo.com> wrote in message
news:9ehs3s02arl@enews1.newsguy.com...
> I just bought a brand new FT-1500M and it came with those heavy duty yaesu
> power connectors. I haven't called Yaesu yet but does anyone know where I
> could purchase more of these? Or would I be better off, for compatibility
> issues, to cut the connectors off and go with the standard molex type
> connectors you can get from Radio Shack? What does everyone else use?
>
> Thanks for the input.
>
>
> Matt
> KC5YTV
>
>

4731. Re: SSB and 2m J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 12:42:47 UTC
From: "Leland C. Scott" <no-spam@junk-mail.net>
Message-ID: <tgq0eli952pp0b@corp.supernews.com>
Source record: 162177

"Dale Parfitt" <parinc@GTE.net> wrote in message
news:3B0C6042.C68D7A06@GTE.net...
>
> Give us a valid e-Mail address for a reply.
>
>

kc8ldo@arrl.net

4732. 4-element yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 13:25:44 UTC
From: JD
Message-ID: <9ej24slsk1@dns3.cae.ca>
Source record: 162178

It's possible that this question has been covered here in the past but I'll ask anyway. My radio club is having a competition to build a 4-element yagi antenna, I have a couple of plans for one but was curious if someone here might have a tried tested and true design that they may like to share.preferably something simple using a 50 ohm feed line and readily available materials.
Thanks in advance.
73 de
John, VE2 JDR

4733. Question regarding Radials on vertical HF antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 13:33:51 UTC
From: rmclean@invalid.com
Message-ID: <3B0D0D8D.9659A1F2@invalid.com>
Source record: 162179

I'm looking at investing is the Hy-Gain DX-88 antenna. As this antennas requires radials, I have a few questions. First, can the radials be baired slightly bellow the ground, or will this effect performance? Second the place I have chosen to place the antenna is along my property line. As such I have only use 180 degrees for placing radials. How will this effect performance? Do the radials need to be in a circle pattern??

--
Randy Mclean
Administrator of Novell, UNIX, NT, Network Security, and/or any thing else that users break around here(WHY IS THAT???)!

4734. Re: Destructive Interference in Impedance Matching

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 13:35:45 UTC
From: richardharrison@webtv.net
Message-ID: <7142-3B0D0E31-16@storefull-117.iap.bryant.webtv.net>
Source record: 162180

Peter, K1PO wrote:
"The conjugate match "supports" maximum power transfer from one side to the other, and, the image match does not,"

Terman says:
"A network is said to be operated under image impedance conditions when the internal impedance ZS of the source of power acting on the input terminals of the network, and the load impedance ZL at the output terminals, are so rel;ated to the network that the impedance looking into the network from terminals 1-2 (the input) with the load connected (see Fig. 67) is equal to the generator impedance, and, similarly, so that the impedance looking into terminals 3-4 (the output) with the generator connected equals the load impedance."

Terman`s definition seems to fit an impedance matching transformer with the proper ratio to make the load impedance appear to the source as a matched load, while the source appears to the load as a matched source.

The definition is general and applies to any 4-terminal network and the impedances can be reactive and/or resistive.

Since there is no specification to provide conjugate reactances, I think Peter`s take is correct except support of maximum power transfer is not prevented when no reactance is present in source or load.

Best regards, Richard Harrison, KB5WZI

4735. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 13:58:07 UTC
From: Robert Peters <peters@ems.psu.edu>
Message-ID: <3B0D136F.8E52E7C4@ems.psu.edu>
Source record: 162181

Commenting on Mark Keith:
I disagree on your statement that the coaxial fed dipole will be better than a ladder line fed, because of tuner losses. My 80M doublet is about 150 ft from my house, to isolate it, because homes have all sorts of RF noise producing sources.
The attenuation of even the best coax over that distance is greater than ladder line, especially when you are not on the design frequency of the dipole (high SWR). Unless a balun is used, you will probably have more noise pickup from the house with a long coax feedline. It is still hard to beat the all around performance of a doublet fed with balanced line, when all things are considered. If using a 3KW rated tuner, most of the commercial ones don't show much loss except for 160M, and all I have just stated applies mainly for 80M to 20M. Above about 14 MHz, the ladder line performance degrades when the feedline is wet, that has been my experience. Dry weather, the 80M doublet performs well but you have to consider that the gain will be not be broadside.

> As
> far as I'm concerned, a coax fed dipole is the best for that type
> operation. Of course ladder line ok too, but coax will still give you
> slightly better performance due to the lack of tuner loss. I don't
> really use either type antenna to chase dx. I'd use a good vertical if I
> wanted to do that. On field day on 80/40m you work very little dx. The
> stateside campers drown em all out or scare them off I think. They
> probably work all the dx on the higher bands. I work only low band cw at
> night. I come in when many are going home usually. I make a lot more
> points that way as it's double for cw. And of course, all my normal
> dipoles here at the house are coax fed and full size also. I want the

mailto:rmp1@psu.edu
(Not employed by Penn State University)

http://www.qrz.com/callsign.html?callsign=k3ezs

4736. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 14:07:43 UTC
From: Robert Spooner <rls19@psu.edu>
Message-ID: <3B0D15AF.7E154CBE@psu.edu>
Source record: 162182

Walt,

Where can I get a copy of Reflections II?

73,
Bob AD3K

--
Robert L. Spooner
Registered Professional Engineer
Associate Research Engineer
Intelligent Control Systems Department

Applied Research Laboratory Phone: (814) 863-4120
The Pennsylvania State University FAX: (814) 863-7841
P. O. Box 30
State College, PA 16804-0030 rls19@psu.edu

4737. Re: Mobile antenna RF exposure question.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 14:13:04 UTC
From: richardharrison@webtv.net
Message-ID: <5442-3B0D16F0-37@storefull-118.iap.bryant.webtv.net>
Source record: 162183

Jeff Farrar wrote:
"I plan on installing a dual band antenna on my S-10 pickup and am trying to determine a location. I want to install a 1/4 wave with a hole in the center of the roof or mount a 5/8 wave somewhere on the bed of the truck."

Don`t agonize. Make temporary installations before you cut any holes. Try a 19-inch magnetic mount on your roof and try a 5/8-wave on sheet metal clamped in the bed of your truck.

Pick the type that proves best for permanent mounting. The temporary antennas should be easy to make. You may be able te accept ugly for a short test.

Best regards, Richard Harrison, KB5WZI

4738. Re: Question regarding Radials on vertical HF antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 14:56:19 UTC
From: richardharrison@webtv.net
Message-ID: <3255-3B0D2113-34@storefull-112.iap.bryant.webtv.net>
Source record: 162184

Randy Mc Lean wrote:
"Can radials be buried slightly below the ground---?---I have only 180 degrees for placing radials."

Slight, if any. radial burial is best. Radials are buried for protection and convenience. Radials complete the antenna circuit through their capacitance with the tower. The less loss in this capacitance, the more efficient the antenna. The 180 degrees of ground without radials will be lossier than that with radials. Do it anyway the best you can. More radials is usually better than longer radials. Install the most you can.

Best regards, Richard Harrison, KB5WZI

4739. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 15:12:57 UTC
From: katycat2345@aol.com
Message-ID: <20010524111257.11279.00001205@ng-mp1.aol.com>
Source record: 162185

>What you describe is the conjugate match, Walt said the Z0 match is a
>special solution, a subset if you will. It already pegs both
>reactances at zero which automatically fulfills the requirement for
>conjugation AS LONG AS the real resistances are equal.

But in an earlier post, Walter quoted a reference as saying:
"Zo Match--The condition in which the impedance seen looking into a
transmission line is equal to the characteristic impedance of the line."

So what is the truth when the line Zo is 50 - j2?

Wes Stewart N7WS

ps. Posting via mother-in-law's AOL account Yuch.

4740. Re: Homebuilt 70cm directional antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 15:14:11 UTC
From: Claus Waldraff <DF8GH@t-online.de>
Message-ID: <3B0D2543.BAFBE0FC@t-online.de>
Source record: 162186

"Markus Bï¿½rtschi" wrote:

> Thanks N3VST,
>
> I've found the page of K5OE with an small UHF yagi (referenced on the
> page above). I was able to build a similar antenna tonight in about 3
> hours. My small UHF transmitter should arrive tomorrow and testing can
> begin...

You like the handitenna too ? Great stuff, built also one:

http://home.t-online.de/home/df8gh --> satellite

Sri, french or german don't know if Etoy is located in 'Romandie'...

73 de Claus

4741. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 15:53:54 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <m8aP6.43812$4f7.3174585@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162187

"Richard Clark" <kb7qhc@home.com> wrote in message
news:reqogt02eug7muv40suiq0rdg32om85f4d@4ax.com...

> In the Ham world, the conjugate, if needed, comes with the tuner
> inserted somewhere into the system. In other words, an ad-hoc
> solution driven by the variations in design elements, nearby terrain,
> change in frequency, weather....
>

A tuner is generally used to establish an impedance match (Zo-match) at its input terminals. In this case, all of the initial forward power delivered to the transmission line will be delivered to the Zo match point since there are no steady state reflections. It is important to understand that this is not the same as maximum power delivery. A Zo match in a transmission line will only be a conjugate match when the impedance seen looking back towards the source is also Zo (this is the definition of a conjugate match). A Zo match, in and of itself, is not a subset of the conjugate match. A Zo match is not always a conjugate match. A Zo match does not always result in maximum power delivery to the transmission line system. This is obviously a function of the transmitter characteristics.

Additionally, if the tuner used in establishing an impedance match has any loss, a conjugate match is not established at the load connected at the tuner output. When the tuner has loss, establishing a conjugate match at the load requires that a mismatch be established at the tuner input. In this case, maximum power delivery to the load at the tuner output does not occur when an impedance match is established at the tuner input. This is easy to validate using simple circuit analysis. However, with a lowloss tuner, the differences in power delivery are marginal at best.

Steve VE9SRB

4742. Re: Will amateur radio astronomers be the first to directly detect extrasolar planets?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 16:07:17 UTC
From: jlazio@patriot.net
Message-ID: <m2lmnmg28a.fsf@patriot.net>
Source record: 162188
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.antenna,sci.astro,sci.astro.seti,sci.space.policy

>>>>> "RC" == Robert Clark <rgclark@my-deja.com> writes:

RC> The existence of extrasolar planets has been inferred from the
RC> wobbling seen in some stars. Their actual light still has not been
RC> detected or distinguished from that of their parent stars. The
RC> long wavelength radio bursts that emanate from Jupiter have led to
RC> suggestions that extrasolar planets might be detected by searching
RC> for such bursts in the vicinity of stars:

RC> Opening a New Window on the Universe: High Resolution, Long
RC> Wavelength Radio Astronomy, 2.5.2 Extrasolar Planets, [...]
RC> http://rsd-www.nrl.navy.mil/7213/lazio/decade_web/node34.html

RC> However, sensitive searches have so far failed to detect
RC> them. This is undoubtedly due to distance attenuation for such
RC> planets light-years away. The distance to Jupiter ranges up to 9 x
RC> 10^8 km. A star 10 light-years away is at 9 x 10^13 km, a factor
RC> of 10^5 larger than the Jupiter distance.

The key is to go to low frequencies (low by radio astronomical
standards). Jupiter's emission cuts off quite strongly around 40
MHz. Thus, most professional radio telescopes, which are optimized to
work around 1000 MHz have little chance of detecting any radio
emission from these exoplanets.

As you say, there has been no detection of radio emission from an
exoplanet. I know that Bastian and collaborators looked, using the
VLA, toward many stars. However, most of their observations were at
330 MHz and above; again one might worry that at these high
frequencies the exoplanets produce no emission anyway.

I've got a project going to look at tau Boo. At least according to
one model, there's a slim chance that it would produce detectable
emission at 74 MHz, a frequency at which the VLA does operate. Stay
tuned! :)

--
Lt. Lazio, HTML police | e-mail: jlazio@patriot.net
No means no, stop rape. | http://patriot.net/%7Ejlazio/
sci.astro FAQ at http://sciastro.astronomy.net/sci.astro.html

4743. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 16:24:58 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B0D35DA.79EA@wt.net>
Source record: 162189

Robert Peters wrote:
>
> Commenting on Mark Keith:
> I disagree on your statement that the coaxial fed dipole will be better than
> a ladder line fed, because of tuner losses. My 80M doublet is about 150 ft
> from my house, to isolate it, because homes have all sorts of RF noise producing
> sources.
> The attenuation of even the best coax over that distance is greater than
> ladder line, especially when you are not on the design frequency of the
> dipole (high SWR).

But in my case, I don't intend to multiband the antenna. The losses on
150 ft of coax on 80m is unnoticeable unless you have bad coax.

Unless a balun is used, you will probably have more noise
> pickup from the house with a long coax feedline.

Well, then you use a balun. I use a coax choke usually.

It is still hard to beat
> the all around performance of a doublet fed with balanced line, when all
> things are considered. If using a 3KW rated tuner, most of the commercial
> ones don't show much loss except for 160M, and all I have just stated
> applies mainly for 80M to 20M. Above about 14 MHz, the ladder line
> performance degrades when the feedline is wet, that has been my experience.
> Dry weather, the 80M doublet performs well but you have to consider that the
> gain will be not be broadside.

But again, I'm talking about a single band dipole. Not multiband. I
agree if you use on on all bands, then yes, you are better off with the
ladder line. I have a so called 3 KW tuner. I have made direct
comparisons from 80m dipoles fed with coax, compared to ladder line fed
using the tuner , carefully tuned using the least inductance. The coax
fed dipole won every time by a slight amount. And the amount was
noticable. I'll stick with my coax. MK
--
http://web.wt.net/~nm5k

4744. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 16:32:37 UTC
From: kb7qhc@home.com
Message-ID: <3b0e3717.433769267@news.seanet.com>
Source record: 162190

On Wed, 23 May 2001 21:13:01 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> Or you can wait in the rocks for that ambush and get bit by a snake.
>
>Or I can just admit that the sun revolves around a flat earth and say goodbye.

Hi Cecil,

Don't walk off the edge as you gaze at the sunset. ;-)

73's
Richard Clark, KB7QHC

4745. Re: Butternut HF6V 75 ohm coax length please

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 16:40:55 UTC
From: hf6v <Morse.Key@btinternet.com>
Message-ID: <9ejdij$8lr$1@plutonium.btinternet.com>
Source record: 162191

Thanks for your courtesy Gentlemen,
will cut the 75 ohm coax to 12 feet and nibble it down from there.
will let you know the result.
73 Tony

4746. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 16:45:36 UTC
From: kb7qhc@home.com
Message-ID: <3b0d3181.432339921@news.seanet.com>
Source record: 162192

On Wed, 23 May 2001 21:11:13 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> Now that I have been painted with the same brush you two reserve for
>> your demons, do you have a technical answer to the question?
>
>I've got an answer but it's not technical. Goodbye.

Hi Cecil,

That already seemed evident - it only took 317 postings to secure
your and Walt's confirmation; down from 600+ ;-)

73's
Richard Clark, KB7QHC

4747. Re: Homebuilt 70cm directional antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 16:51:14 UTC
From: Markus B�rtschi <markus@markus.org>
Message-ID: <MPG.15775a6cae2270ae9896cf@localhost>
Source record: 162195

>
> You like the handitenna too ? Great stuff, built also one:
>
> http://home.t-online.de/home/df8gh --> satellite
>
> Sri, french or german don't know if Etoy is located in 'Romandie'...
>
> 73 de Claus
>

Claus,

Etoy is actually in the 'Suisse Romande'. People around here speaks
French. I grew up on the other side of the 'R�stigraben' and speak
German too.

Back to Antennas, I found another site with a series of Yagi designs:
http://members.aol.com/n2kbk/quagi.html. One of those might be my next
build.

What I'm still missing is a pointer to information about a HB9 design
for a small directional antenna. I've held one my hands, but can not
remember the exact name for it.

73 Markus
--
Markus Baertschi
Rue de la Gare 7b
CH-1163, Etoy, Switzerland
markus@markus.org

4748. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 16:51:29 UTC
From: kb7qhc@home.com
Message-ID: <3b0f3afc.434766360@news.seanet.com>
Source record: 162193

On 24 May 2001 15:12:57 GMT, katycat2345@aol.com (Katycat2345) wrote:

>>What you describe is the conjugate match, Walt said the Z0 match is a
>>special solution, a subset if you will. It already pegs both
>>reactances at zero which automatically fulfills the requirement for
>>conjugation AS LONG AS the real resistances are equal.
>
>But in an earlier post, Walter quoted a reference as saying:
>"Zo Match--The condition in which the impedance seen looking into a
>transmission line is equal to the characteristic impedance of the line."
>
>So what is the truth when the line Zo is 50 - j2?
>
>Wes Stewart N7WS
>
>ps. Posting via mother-in-law's AOL account Yuch.

Hi katycat2345, ;-)

You might as well go whole hog and add in the ohmic loss too.

We do too many things by parts and then add those parts incorrectly as
it is!

And to ask for truth - truth is unknowable and any attempt to describe
it becomes a lie through lack of completeness.

73's
Richard Clark, KB7QHC

4749. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 16:54:26 UTC
From: kb7qhc@home.com
Message-ID: <3b103c2d.435071329@news.seanet.com>
Source record: 162194

On Thu, 24 May 2001 15:53:54 GMT, "VE9SRB" <srbest@att.net> wrote:

> A Zo match does not always result in
>maximum power delivery to the transmission line system. This is obviously a
>function of the transmitter characteristics.

Hi Steve,

This is JUST the point I was making about establishing your BASIS.

Please refer to that portion you neglected to quote because you are
mixing two arguments.

73's
Richard Clark, KB7QHC

4750. Re: Kenwood's TS-50 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 17:20:32 UTC
From: KA9CAR <nospam@nospam.usa>
Message-ID: <9ejfriqov1@news.tribune.com>
Source record: 162196

If you don't mind an "orphaned" rig, Kachina is closing out their DSP radio
for $1100. I just moved "up" to one. www.kachina-az.com

KA9CAR

John Cunningham <johngrac@surfsouth.com> wrote in message
news:zG%O6.141762$sP6.7668184@news3.aus1.giganews.com...
> I'm going to buy my first hf rig, is the TS-50 a good starter rig? What
> would you buy for under $1000? Why?
> KE4QOP John
>
>

4751. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 17:26:13 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <VubP6.44078$4f7.3181435@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162197

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b103c2d.435071329@news.seanet.com...
> On Thu, 24 May 2001 15:53:54 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> > A Zo match does not always result in
> >maximum power delivery to the transmission line system. This is
obviously a
> >function of the transmitter characteristics.
>
>
> Hi Steve,
>
> This is JUST the point I was making about establishing your BASIS.
>
> Please refer to that portion you neglected to quote because you are
> mixing two arguments.
>
> 73's
> Richard Clark, KB7QHC

Huh?

Help me out. What are you talking about?

I may misunderstand your point in this response. In any examples discussed
I have always assumed that the source impedance was 50 ohms and that
no-reflections are developed at the source. Is this related to anything you
are talking about?

Steve

4752. Yagi design sw needed.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 17:40:01 UTC
From: tibbert <tibbert@ntlworld.com>
Message-ID: <NHbP6.23921$m93.2676774@news6-win.server.ntlworld.com>
Source record: 162198

I have downloaded the shareware "QuickYagi" and found it to be an excellent utility for Yago design, however for some reason there is a "cut-off" point of 999 Mhz.

Does anyone know if there is any other software that will allow for designs upto about 2.5Ghz? If not, is there a simple "rule of thumb" in calculating the distance between directors? My other idea (possibly horribly wrong) is to "scale down" a design for a lower frequency. Would this be completely wrong, more or less "ok" or pretty much spot-on?

Any constructive - or constructional - comments (or link to software) would be very much appreciated.

73's

G6RPH

4753. Tri-Ex Towers

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 18:14:54 UTC
From: Daniel Calzaretta and Alison Kirby <danandalison@bmi.net>
Message-ID: <3B0D4F9E.53D5AB40@bmi.net>
Source record: 162213

Does anyone have experience with Tri-Ex crank up towers? I am looking
at the 50 ft. model and wonder if anyone has one and how well it works.

Thanks,

Dan
NX9C

4754. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 18:28:49 UTC
From: kb7qhc@home.com
Message-ID: <3b0d4f23.439925359@news.seanet.com>
Source record: 162199

On Thu, 24 May 2001 17:26:13 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"Richard Clark" <kb7qhc@home.com> wrote in message
>news:3b103c2d.435071329@news.seanet.com...
>> On Thu, 24 May 2001 15:53:54 GMT, "VE9SRB" <srbest@att.net> wrote:
>>
>> > A Zo match does not always result in
>> >maximum power delivery to the transmission line system. This is
>obviously a
>> >function of the transmitter characteristics.
>>
>>
>> Hi Steve,
>>
>> This is JUST the point I was making about establishing your BASIS.
>>
>> Please refer to that portion you neglected to quote because you are
>> mixing two arguments.
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Huh?
>
>Help me out. What are you talking about?
>
>I may misunderstand your point in this response. In any examples discussed
>I have always assumed that the source impedance was 50 ohms and that
>no-reflections are developed at the source. Is this related to anything you
>are talking about?
>
>Steve
>

Hi Steve,

your omission follows:

>To quote from HP Application Note 56 which encapsulates many of
>Beatty's ideas:
>
> "Basis of Analysis
> To analyze a particular case of mismatch an appropriate
> basis of calculation must be chosen. If the power actually

> delivered to the load is to be compared with the maximum
> available from the source, this is on a conjugate basis.
> If comparison is made with the power the source will deliver
> to a Z0 load, this is on a Z0 basis."
>

Please give us the Basis by which you make the statement:
>> > A Zo match does not always result in
>> >maximum power delivery to the transmission line system. This is
>obviously a
>> >function of the transmitter characteristics.

If it is Z0 Basis, the discussion of "maximum power delivery" is a Conjugate Basis argument. If it is Z0 Basis, then that same statement has no need to be expressed as it cannot be the focus of discussion (except through mixing two arguments). Further, the Z0 Basis already has a definition for matching:

> Z0 Match:
> The condition in which the impedance seen
> looking into a transmission line is equal to
> the characteristic impedance of the line.

which has no appeal to the source's capability (much less other characteristics) but:

>
> Z0 Available Power:
> The power a source will deliver to a Z0 load."

more closely relates to your discussion BUT is load defined, not source defined. Even if there is a poor source, it MUST deliver some power that necessarily satisfies the definition of Z0 Available Power (which contains no appeal to maximum power).

Such are the problems that ALL players here have brought to the table.

I have been watching these points of confusion and surreal inventions of theory to cover for it for several years now.

73's
Richard Clark, KB7QHC

4755. Re: Good ham logging program?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 19:12:46 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <O2dP6.29366$BN6.1501492@newsread1.prod.itd.earthlink.net>
Source record: 162200
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment

Guess I'll chime in after trying most of the major logging programs such as LogPlus , Log Windows , DX4WIN , and Logic 5 I have settled on DXBase 2002. Here is a snippet about the product....

<snip>

Designed for those who demand the best, DXbase 2002 by Scientific Solutions, Inc. is the premiere amateur radio logging software for 32bit Windows. One look and you'll wonder how you ever managed without it. Whether you want to custom design your own QSL cards and labels, operate PSK mode and log directly into DXbase, perfect CW output with the direct interface to the W5XD external keyer, automatically create award submission forms, create your own reports, monitor VHF Packet and Internet Packet letting DXbase tell you when you need one, or just log a QSO with the greatest of ease, DXbase 2002 is the software for you.

<snip>

I have used this product since DXBase 2000 and it is a reliable and extremely high-performance logging program
That can do everything the other loggers do plus much more.....

Download the informational demo at http://www.dxbase.com

--

73 / DX

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

4756. Re: No AM reception - QRM

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 19:15:00 UTC
From: itten <itten@home.com>
Message-ID: <240520011514347507%itten@home.com>
Source record: 162201

[[This message was both posted and mailed: see
the "To," "Cc," and "Newsgroups" headers for details.]]

What a simple solution. I never thought of that, except I can't cut
off the power just to listen to Rush Limbaugh. I do hear some
interference when I drive in my car about a block away. Again, the AM
reception fades to silence for a few seconds. I just there is some
work around this problem.

4757. Re: Will amateur radio astronomers be the first to directly detect extrasolar planets?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 19:27:19 UTC
From: Chosp <chosp@home.com>
Message-ID: <rgdP6.29313$vf6.2939214@news1.rdc1.sdca.home.com>
Source record: 162202
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.antenna,sci.astro,sci.astro.seti,sci.space.policy

"Alan Anderson" <aranders@netusa1.net> wrote in message
news:aranders-2305012251410001@rash4-168.kokomo.in.hypervine.net...
> rgclark@my-deja.com (Robert Clark) wrote:
>
> > The existence of extrasolar planets has been inferred from the
> > wobbling seen in some stars. Their actual light still has not been
> > detected or distinguished from that of their parent stars.
>
> Um...last I heard, several such planets indeed had been imaged.

Where did you hear this?

4758. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 19:30:51 UTC
From: DGB <dgbcms@bayland.net>
Message-ID: <4ndP6.5$_j3.422@homer.alpha.net>
Source record: 162203

You must have had a Lemon!

I'm on my 4th year with the big 160m Carolina windom up 60
feet. In those 4 years I've ran it against several big
dipoles, big skyloops, and most recently an EDZ, all with
ladder-line feeders.

My findings of comparison is similar to Cecil's statement of
the CW being better at night. As a matter of fact, most of
the time (note: not all the time), the CW is better!

73 Dwight W9YQ

"Mark Keith" <nm5k@wt.net> wrote in message
news:3B0C7993.125@wt.net...
> W6RCecilA wrote:
> >
> > Mark Keith wrote:
> > > I'd still rather run a regular old dipole. I've
compared that windom to
> > > a full size dipole at field day. The dipole beat the
pants off it in my
> > > case. I never saw the windom win at any angle. And we
had the windom
> > > higher than the dipole. MK
> >
> > The Carolina Windom won't beat the dipole during the day
but it will often
> > beat the dipole at night for DX.
> > --
> > http://www.mindspring.com/~w6rca
>
> Maybe, but I'll have to see it to believe it. I don't
think the one we
> used would have. We had quite a variety of contacts being
it was field
> day. Some pretty long haul for 80m. I'm sure the feed
radiation does add
> a bit of vertical polarazation, but I think the losses in
the system
> overall overshadow any such benefit. After all, you would
normally have
> no ground system installed to handle ground losses for one
thing, if you
> have a semi-vertical being fed against the rig. And the

whole system
> they used of ladder line/choke/coax was overly lossy.Of
course, there
> are different type of C. windoms. I think the one we used
was a standard
> version. You can also get the same results to an extent on
the dipole by
> not using a balun. In fact, the one I used that year had
no balun.
> Mainly because I built it on the spot and didn't have one.
I had 80 and
> 40 legs on one coax with no balun. We switched back and
forth using a
> switch I brought, and going to the windom was like
switching a resister
> inline. Everything dropped. Signals, including the overall
noise floor
> dropped 2-3 S units. No joke. And we had used a different
one the 2
> years before, that seemed even worse. In fact, it was
pitiful without a
> doubt. A dummy load on 80m. Thats the reason I brought
wire the next
> year. I wasn't going to get stuck on one again for the 3rd
year in a
> row. If you all want to use them, be my guest. Just leave
me out of
> it..:) I hate the things overall. They are lame on 80m
compared to just
> a coax fed dipole. Mainly because I don't have all the
feed loses and
> other problems. And I do have a full 1/2 wl ant, which is
not major, but
> doesn't hurt either. I've just gotten to the point that if
I'm gonna sit
> out there all night on the low bands, which I always do,
with only a
> 100w I might add, I want nothing less than the best. I
don't really
> like contesting type operation that much to begin with,
and trying to do
> it on a poor or semi-poor antenna makes me grit my teeth
too much. As
> far as I'm concerned, a coax fed dipole is the best for
that type
> operation. Of course ladder line ok too, but coax will
still give you
> slightly better performance due to the lack of tuner loss.
I don't
> really use either type antenna to chase dx. I'd use a good

vertical if I
> wanted to do that. On field day on 80/40m you work very
little dx. The
> stateside campers drown em all out or scare them off I
think. They
> probably work all the dx on the higher bands. I work only
low band cw at
> night. I come in when many are going home usually. I make
a lot more
> points that way as it's double for cw. And of course, all
my normal
> dipoles here at the house are coax fed and full size also.
I want the
> best here too. :) MK
>
> --
> http://web.wt.net/~nm5k

4759. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 19:54:02 UTC
From: w2du@iag.net
Message-ID: <3b0d64bb.4644598@news.onemain.com>
Source record: 162204

On Thu, 24 May 2001 10:07:43 -0400, Robert Spooner <rls19@psu.edu> wrote:

>Walt,
>
>Where can I get a copy of Reflections II?
>
>73,
>Bob AD3K
>
>--
> Robert L. Spooner
> Registered Professional Engineer
> Associate Research Engineer
> Intelligent Control Systems Department
>
> Applied Research Laboratory Phone: (814) 863-4120
> The Pennsylvania State University FAX: (814) 863-7841
> P. O. Box 30
> State College, PA 16804-0030 rls19@psu.edu

Hi Bob,

Thanks for the interest in Reflections II. Probably the closest supplier to you is 'The Wireman', N8UG, in Landrum, SC. His phone is 800-727-9473.

I spent some time with him at Dayton, and I'm sure he has plenty of copies available.

In case he's sold out you can get them from Worldradio Books, (Armond Noble, N6WR) at their website: www.wr6wr.com, or 916-457-3655.

It contains a lot of new material, Bob, that I think you'll find of interest--hope so.

Walt, W2DU

4760. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 20:09:55 UTC
From: w2du@iag.net
Message-ID: <3b0d6a51.6074084@news.onemain.com>
Source record: 162205

On Thu, 24 May 2001 15:53:54 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"Richard Clark" <kb7qhc@home.com> wrote in message
>news:reqogt02eug7muv40suiq0rdg32om85f4d@4ax.com...
>
>> In the Ham world, the conjugate, if needed, comes with the tuner
>> inserted somewhere into the system. In other words, an ad-hoc
>> solution driven by the variations in design elements, nearby terrain,
>> change in frequency, weather....
>>
>
>A tuner is generally used to establish an impedance match (Zo-match) at its
>input terminals. In this case, all of the initial forward power delivered
>to the transmission line will be delivered to the Zo match point since there
>are no steady state reflections. It is important to understand that this is
>not the same as maximum power delivery. A Zo match in a transmission line
>will only be a conjugate match when the impedance seen looking back towards
>the source is also Zo (this is the definition of a conjugate match). A Zo
>match, in and of itself, is not a subset of the conjugate match. A Zo match
>is not always a conjugate match. A Zo match does not always result in
>maximum power delivery to the transmission line system. This is obviously a
>function of the transmitter characteristics.
>
>Additionally, if the tuner used in establishing an impedance match has any
>loss, a conjugate match is not established at the load connected at the
>tuner output. When the tuner has loss, establishing a conjugate match at
>the load requires that a mismatch be established at the tuner input. In
>this case, maximum power delivery to the load at the tuner output does not
>occur when an impedance match is established at the tuner input. This is
>easy to validate using simple circuit analysis. However, with a lowloss
>tuner, the differences in power delivery are marginal at best.
>
>Steve VE9SRB
>
This is pure, unadulterated horse manure.

Walt, W2DU
>
>

4761. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 20:30:04 UTC
From: Robert Peters <peters@ems.psu.edu>
Message-ID: <3B0D6F4C.BF7138D8@ems.psu.edu>
Source record: 162206

Mark,
I guess we are comparing apples and oranges. Most of my activity is on 40M, the gain of two halfwaves in phase of the 80M doublet on 40M is really noticable. I also used to get a lot of digital noise on 40M ever since our cable system went digital. I was using an end fed wire for many years which is a poor comparison (house noise) to any other antenna. I am glad to see that people are using wire antennas of all types. I also considered the Carolina windom but it did not work out physically with all of the obstacles I have. The other antenna that I almost used was parallel 80 and 40M dipoles fed in the middle with a balun, but I always wanted a tuner anyway. 73, BOb K3EZS

Mark Keith wrote:
>

> But in my case, I don't intend to multiband the antenna. The losses on
> 150 ft of coax on 80m is unnoticeable unless you have bad coax.
>
> Unless a balun is used, you will probably have more noise
> > pickup from the house with a long coax feedline.
>
> Well, then you use a balun. I use a coax choke usually.
>
>
> But again, I'm talking about a single band dipole. Not multiband. I
> agree if you use on on all bands, then yes, you are better off with the
> ladder line. I have a so called 3 KW tuner. I have made direct
> comparisons from 80m dipoles fed with coax, compared to ladder line fed
> using the tuner , carefully tuned using the least inductance. The coax
> fed dipole won every time by a slight amount. And the amount was
> noticable. I'll stick with my coax. MK
> --
> http://web.wt.net/~nm5k

mailto:rmp1@psu.edu
(Not employed by Penn State University)

http://www.qrz.com/callsign.html?callsign=k3ezs

4762. Re: F/S Reflections II

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 20:47:16 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <ipeP6.852$z83.1018146@nntp1.onemain.com>
Source record: 162207

W6RCecilA <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0AB965.4E3C645B@IEEE.org...
> w0tok wrote:
> > I have Reflections II autographed by author M. Walter Maxwell, W2DU
>
> Have you read it?
> --
> http://www.mindspring.com/~w6rca
>
>
What w0tok means is that he has copies for sale. I autographed nearly 100
for him at Dayton.

Walt, W2DU

4763. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 21:04:26 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <uHeP6.42523$t12.3266253@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162208

"Walter Maxwell" <w2du@iag.net> wrote in message
news:3b0d6a51.6074084@news.onemain.com...
> On Thu, 24 May 2001 15:53:54 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >"Richard Clark" <kb7qhc@home.com> wrote in message
> >news:reqogt02eug7muv40suiq0rdg32om85f4d@4ax.com...
> >
> >> In the Ham world, the conjugate, if needed, comes with the tuner
> >> inserted somewhere into the system. In other words, an ad-hoc
> >> solution driven by the variations in design elements, nearby terrain,
> >> change in frequency, weather....
> >>
> >
> >A tuner is generally used to establish an impedance match (Zo-match) at
its
> >input terminals. In this case, all of the initial forward power
delivered
> >to the transmission line will be delivered to the Zo match point since
there
> >are no steady state reflections. It is important to understand that this
is
> >not the same as maximum power delivery. A Zo match in a transmission
line
> >will only be a conjugate match when the impedance seen looking back
towards
> >the source is also Zo (this is the definition of a conjugate match). A
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> >match, in and of itself, is not a subset of the conjugate match. A Zo
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> >is not always a conjugate match. A Zo match does not always result in
> >maximum power delivery to the transmission line system. This is
obviously a
> >function of the transmitter characteristics.
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> >Additionally, if the tuner used in establishing an impedance match has
any
> >loss, a conjugate match is not established at the load connected at the
> >tuner output. When the tuner has loss, establishing a conjugate match at
> >the load requires that a mismatch be established at the tuner input. In
> >this case, maximum power delivery to the load at the tuner output does
not
> >occur when an impedance match is established at the tuner input. This is
> >easy to validate using simple circuit analysis. However, with a lowloss

> >tuner, the differences in power delivery are marginal at best.
> >
> >Steve VE9SRB
> >
> This is pure, unadulterated horse manure.
>
> Walt, W2DU
> >

I expected this type of response from you. Want to back up your statement? I'm willing to back up mine.

Are you willing to publicly bet your technical reputation on my statements really being pure horse manure?

Prove to everyone on this newsgroup that my statements are incorrect.

Let's start with a known load impedance, say 200 + j200 ohms.

You design a T-network circuit comprised of a series capacitor, parallel inductor and series capacitor. Assume that the inductor Q is 25 and that the capacitor Q is 50. Unrealistic values perhaps but they will illustrate the my points. Design the T-network so that an impedance match exists at the T-network input. Zo = 50 ohms. We'll also assume that the source has an impedance of 50 ohms (no re-reflections at the source). The forward source power arriving at the T-network input is 1000 W. Calculate the power delivered to the 200 + j200 ohm load. Also, calculate the impedance seen looking rearward into the T-network - see if it is the conjugate of 200 + j200 ohms.

If my statements above are pure horse manure, then in your opinion, a conjugate match exists at the T-network output and the 200 + j200 ohm load is the conjugate match load. In this case, this is the load to which maximum power is delivered.

I guarantee you that I will come up with the correct conjugate match load for your T-network design and have more power delivered to this load even though an impedance match does not exist at the network input.

Steve VE9SRB

4764. Re: Will amateur radio astronomers be the first to directly detect extrasolar planets?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 21:15:18 UTC
From: jan@panteltje.demon.nl
Message-ID: <990739156.19222.1.pluto.d4ee0662@news.demon.nl>
Source record: 162209
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.antenna,sci.astro,sci.astro.seti,sci.space.policy

On a sunny day (23 May 2001 11:15:06 -0700) it happened rgclark@my-deja.com
(Robert Clark) wrote in <5f181508.0105231015.1e88fc8f@posting.google.com>:
I think it is a cool idea.
Not sure about where to buy an atomic clock..
Timing may really become a problem.
(Did not read all the links yet, tonight perhaps).
Regards
Jan

4765. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 21:21:29 UTC
From: kb7qhc@home.com
Message-ID: <3b0d7999.450795059@news.seanet.com>
Source record: 162210

```
On Thu, 24 May 2001 21:04:26 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"Walter Maxwell" <w2du@iag.net> wrote in message
>news:3b0d6a51.6074084@news.onemain.com...
>> On Thu, 24 May 2001 15:53:54 GMT, "VE9SRB" <srbest@att.net> wrote:
>>
>> >
>> >"Richard Clark" <kb7qhc@home.com> wrote in message
>> >news:reqogt02eug7muv40suiq0rdg32om85f4d@4ax.com...
>> >
>> >> In the Ham world, the conjugate, if needed, comes with the tuner
>> >> inserted somewhere into the system. In other words, an ad-hoc
>> >> solution driven by the variations in design elements, nearby terrain,
>> >> change in frequency, weather....
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>> >input terminals. In this case, all of the initial forward power
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>> >to the transmission line will be delivered to the Zo match point since
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>> >are no steady state reflections. It is important to understand that this
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>> >not the same as maximum power delivery. A Zo match in a transmission
>line
>> >will only be a conjugate match when the impedance seen looking back
>towards
>> >the source is also Zo (this is the definition of a conjugate match). A
>Zo
>> >match, in and of itself, is not a subset of the conjugate match. A Zo
>match
>> >is not always a conjugate match. A Zo match does not always result in
>> >maximum power delivery to the transmission line system. This is
>obviously a
>> >function of the transmitter characteristics.
>> >
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>any
>> >loss, a conjugate match is not established at the load connected at the
>> >tuner output. When the tuner has loss, establishing a conjugate match at
>> >the load requires that a mismatch be established at the tuner input. In
>> >this case, maximum power delivery to the load at the tuner output does
```

>not
>> >occur when an impedance match is established at the tuner input. This is
>> >easy to validate using simple circuit analysis. However, with a lowloss
>> >tuner, the differences in power delivery are marginal at best.
>> >
>> >Steve VE9SRB
>> >
>> This is pure, unadulterated horse manure.
>>
>> Walt, W2DU
>> >
>
>I expected this type of response from you. Want to back up your statement?
>I'm willing to back up mine.
>
>Are you willing to publicly bet your technical reputation on my statements
>really being pure horse manure?
>
>Prove to everyone on this newsgroup that my statements are incorrect.
>
>Let's start with a known load impedance, say 200 + j200 ohms.
>
>You design a T-network circuit comprised of a series capacitor, parallel
>inductor and series capacitor. Assume that the inductor Q is 25 and that
>the capacitor Q is 50. Unrealistic values perhaps but they will illustrate
>the my points. Design the T-network so that an impedance match exists at
>the T-network input. Zo = 50 ohms. We'll also assume that the source has
>an impedance of 50 ohms (no re-reflections at the source). The forward
>source power arriving at the T-network input is 1000 W. Calculate the power
>delivered to the 200 + j200 ohm load. Also, calculate the impedance seen
>looking rearward into the T-network - see if it is the conjugate of 200 +
>j200 ohms.
>
>If my statements above are pure horse manure, then in your opinion, a
>conjugate match exists at the T-network output and the 200 + j200 ohm load
>is the conjugate match load. In this case, this is the load to which
>maximum power is delivered.
>
>I guarantee you that I will come up with the correct conjugate match load
>for your T-network design and have more power delivered to this load even
>though an impedance match does not exist at the network input.
>
>Steve VE9SRB

Hi Steve,

Please clean this up and submit as a new Quiz (in a new thread that
is). (And that paralleled transmission lines problem too.)

Your problems are both interesting and insightful. They offer far
more than these infinite regresses of tedious repetition.

73's
Richard Clark, KB7QHC

4766. Re: No AM reception - QRM

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 21:26:10 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3B0D7C72.5AA13DFA@bwcc.com>
Source record: 162211

itten wrote:
> I never thought of that, except I can't cut
> off the power just to listen to Rush Limbaugh.

I mean that you cut the power to your trailer one time to verify that the interference is still present, that is, not caused by your own facilities.

(If by chance, the interference were gone, then you could proceed to track it down within your trailer.)

> I do hear some interference when I drive in my car about a block away.
What facilities are in the vicinity?

> Again, the AM reception fades to silence for a few seconds.
You can probably get a better fix on the source by walking the perimeter with a portable radio.

> I just [hope] there is some work around to this problem.
Really you need to find the source of the objectionable interference and mitigate or eliminate it.
It could be as simple as a loose and arcing wire that the owner will be glad that you brought to his attention.

4767. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 21:31:17 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B0D7DA5.86CC80BE@berkshire.net>
Source record: 162215

Richard Harrison wrote:
> There is no steady-state reflection in any 50-ohm cable in Cecil`s
> example. Whatever is reflected at the load end, inside a 1/2-wave of
> foreign cable is completely re-reflected at the generator end of that
> foreign cable. The reflected power is just bouncing back and forth in
> the foreign cable, while the delivered power passes right on through as
> if the foreign cable weren`t there, except for whatever loss it may
> extract in the process.

where is the equation for a total re-reflection? by anything i have seen, including cecil's phasor diagram, the reflection coefficient at that 50/150 junction is only .5, so 1/2 the current or voltage is re-reflected or only 1/4 of the power.

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4768. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 21:35:52 UTC
From: w2du@iag.net
Message-ID: <3b0d7cfb.10852074@news.onemain.com>
Source record: 162212

On Thu, 24 May 2001 21:04:26 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"Walter Maxwell" <w2du@iag.net> wrote in message
>news:3b0d6a51.6074084@news.onemain.com...
>> On Thu, 24 May 2001 15:53:54 GMT, "VE9SRB" <srbest@att.net> wrote:
>>
>> >
>> >"Richard Clark" <kb7qhc@home.com> wrote in message
>> >news:reqogt02eug7muv40suiq0rdg32om85f4d@4ax.com...
>> >
>> >> In the Ham world, the conjugate, if needed, comes with the tuner
>> >> inserted somewhere into the system. In other words, an ad-hoc
>> >> solution driven by the variations in design elements, nearby terrain,
>> >> change in frequency, weather....
>> >>
>> >
>> >A tuner is generally used to establish an impedance match (Zo-match) at
>its
>> >input terminals. In this case, all of the initial forward power
>delivered
>> >to the transmission line will be delivered to the Zo match point since
>there
>> >are no steady state reflections. It is important to understand that this
>is
>> >not the same as maximum power delivery. A Zo match in a transmission
>line
>> >will only be a conjugate match when the impedance seen looking back
>towards
>> >the source is also Zo (this is the definition of a conjugate match). A
>Zo
>> >match, in and of itself, is not a subset of the conjugate match. A Zo
>match
>> >is not always a conjugate match. A Zo match does not always result in
>> >maximum power delivery to the transmission line system. This is
>obviously a
>> >function of the transmitter characteristics.
>> >
>> >Additionally, if the tuner used in establishing an impedance match has
>any
>> >loss, a conjugate match is not established at the load connected at the
>> >tuner output. When the tuner has loss, establishing a conjugate match at
>> >the load requires that a mismatch be established at the tuner input. In
>> >this case, maximum power delivery to the load at the tuner output does

>not
>> >occur when an impedance match is established at the tuner input. This is
>> >easy to validate using simple circuit analysis. However, with a lowloss
>> >tuner, the differences in power delivery are marginal at best.
>> >
>> >Steve VE9SRB
>> >
>> This is pure, unadulterated horse manure.
>>
>> Walt, W2DU
>> >
>
>
>Let's start with a known load impedance, say 200 + j200 ohms.
>
>You design a T-network circuit comprised of a series capacitor, parallel
>inductor and series capacitor. Assume that the inductor Q is 25 and that
>the capacitor Q is 50. Unrealistic values perhaps but they will illustrate
>the my points. Design the T-network so that an impedance match exists at
>the T-network input. Zo = 50 ohms. We'll also assume that the source has
>an impedance of 50 ohms (no re-reflections at the source). The forward
>source power arriving at the T-network input is 1000 W. Calculate the power
>delivered to the 200 + j200 ohm load. Also, calculate the impedance seen
>looking rearward into the T-network - see if it is the conjugate of 200 +
>j200 ohms.

If you calculate the impedance looking rearward into the T-network correctly it will be 200 - j200 ohms. If you calculate it using the same algorithm you used in smearing me in your CommQuart article, then you'll get a meaningless answer, as I've explained to you before, and in my letter to the editor in QEX. With the correct algorithm you'll also have a match at the input.

Walt, W2DU

4769. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 22:22:03 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B0D898B.4EEF@wt.net>
Source record: 162214

DGB wrote:
>
> You must have had a Lemon!

It obviously was being as it didn't work for us. But being I see some people have good luck, and then I see people have bad luck, there must be a reason that this is the case. The only reason I can think of is differences in the performance of the feedline and overall "system" for each QTH. The antenna seems inconsistant to me. But the other thing that makes me wonder how people could have good luck was the overall loss in the feeder system. The feedline on the ones we used were very lossy. This was the main problem, not wire length or vertical radiation from the feedline. What is the difference that apparantly lets some see low losses? There was no way to avoid it on ours. Or at least in it's stock form. There was a heck of lot of loss in ours, and I thought it was most likely the choke. But I didn't spend much time worrying about it at that time. I just used the dipole. How in heck are you not seeing these high losses? Something must be different.
>
> I'm on my 4th year with the big 160m Carolina windom up 60
> feet. In those 4 years I've ran it against several big
> dipoles, big skyloops, and most recently an EDZ, all with
> ladder-line feeders.
>
> My findings of comparison is similar to Cecil's statement of
> the CW being better at night. As a matter of fact, most of
> the time (note: not all the time), the CW is better!

I don't really doubt that as 160m likes to see vertical polarization unless on close regional stuff. But like I've said, if I wanted a low angle , I'd use a vertical. I want my low band dipoles to work the best for close,med, and semi-long distences. Sure, you may have a better DX signal on the windom in some cases, but it will be at an expense of other higher angles. But it's not the wire length or really even the use of ladder line etc. that bothered me with that antenna. It was the lossyness of the overall feed system. What is causing all this loss in some , but not others? I'm not trying to mount a crusade against windoms, I just trying to find out why the ones we used were so lousy. There must be differences in these windoms. Ours acted like it had a resister inline. And all were "Caroline windoms" that were storebought.
MK
--
http://web.wt.net/~nm5k

4770. Re: F/S Reflections II

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 22:36:39 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <u03rgtg96tdjqdlkiol1f0fcr9qtcmshke@4ax.com>
Source record: 162121

On Thu, 24 May 2001 16:47:16 -0400, "Walter Maxwell" <w2du@iag.net>
wrote:

>
>W6RCecilA <Cecil.A.Moore@IEEE.org> wrote in message
>news:3B0AB965.4E3C645B@IEEE.org...
>> w0tok wrote:
>> > I have Reflections II autographed by author M. Walter Maxwell, W2DU
>>
>> Have you read it?
>> --
>> http://www.mindspring.com/~w6rca
>>
>>
>What w0tok means is that he has copies for sale. I autographed nearly 100
>for him at Dayton.
>
>Walt, W2DU
>
Hi Walt,

Sure hope he PAID you for the time and effort. After all I bet he
would like a little "something extra" for a signed copy :-)

Oh, buy the way glad you finally got it (Reflections II) out and on
the street - its been long over due.

73
Danny, K6MHE

4771. Re: Will amateur radio astronomers be the first to directly detect extrasolar planets?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 22:56:39 UTC
From: aranders@netusa1.net
Message-ID: <aranders-2405011756390001@rash3-122.kokomo.in.hypervine.net>
Source record: 162216
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.antenna,sci.astro,sci.astro.seti,sci.space.policy

"webmaster" <webmaster@livefromspace.tv> wrote:

> > Um...last I heard, several such planets indeed had been imaged.
>
> No, not yet, although there have been several Brown Dwarfs that have been
> imaged. Astronomers are still debating where the line exists between the
> two.

Then what was all the hubbub a couple of years ago with the Hubble and the first direct view of a planet around another star? I remember it distinctly, with it described as a planet several times larger than Jupiter at about a thousand AU from a binary star almost hidden by a dust cloud. Was it just hype?

4772. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 23:13:07 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <7AgP6.42970$t12.3283192@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162217

"Walter Maxwell" <w2du@iag.net> wrote in message
news:3b0d7cfb.10852074@news.onemain.com...
>
> If you calculate the impedance looking rearward into the T-network
correctly it
> will be 200 - j200 ohms. If you calculate it using the same algorithm you
used
> in smearing me in your CommQuart article, then you'll get a meaningless
answer,
> as I've explained to you before, and in my letter to the editor in QEX.
With the
> correct algorithm you'll also have a match at the input.
>
> Walt, W2DU
>

What kind of an technical answer is this?

The method I used is simple circuit theory. That's the beauty of this type of an example. 99.99% of the people on this NG can follow this discussion because the answer is either right or wrong. There is no room for anybody's interpretation of power flow or wave reflection mechanics (except for the forward wave at the T-network input). With a T-network there is a steady state voltage and current developed at the network input. After that the analysis to find the power delivered to the load is easy.

I don't mind that you disagree with me. But if you're going to claim that my statements are all horse manure you should be willing to back it up with proof rather than opinion. Work an example with me instead of posting these ambiguous responses.

If my analysis is wrong, I'll apologize on the NG and in QEX, then move on. If you're wrong, I want an autographed copy of your new book.

I'll take Richard's suggestions and post the lossy T-network match example in a new thread later. Hopefully tonight, otherwise I'm gone for a few days. I'll also repost the parallel transmission line example.

If you think you're right, work through the circuit calculations.

Steve

4773. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 23:15:37 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <tCgP6.42971$t12.3284371@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162218

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b0d7999.450795059@news.seanet.com...
>
>
> Hi Steve,
>
> Please clean this up and submit as a new Quiz (in a new thread that
> is). (And that paralleled transmission lines problem too.)
>
> Your problems are both interesting and insightful. They offer far
> more than these infinite regresses of tedious repetition.
>
> 73's
> Richard Clark, KB7QHC

Thanks Richard,

Will do later tonight I hope, otherwise, next week.

Steve

4774. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 23:24:41 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ek56r$j3s$1@slb7.atl.mindspring.net>
Source record: 162119

Wes:

The thing that gets me confused about this Zo match is trying to figure out what's useful about it! It just seems so trivial, that it doesn't deserve a special name. Now some are saying it's not really a Z at all, it's really just and R, since the jX is always zero. Jeesh.... how trivial can you get, no reactance? What?

I like the name the filter and network specialists from the 20's and 30's applied to the situation when (R + jX) faced (R + jX), they simply called it an "image match", and forgot about it.

Now it seems some 60's era self-important "hippie" named Beatie has named it the "Zo match". So much for studying the past, let's just invent it all over again, heh, heh... And apparently if what folks here are telling me, he trivialized it to the case R faces R rather than R + jX faces R + jX to boot!!!

What? . ;-)

Am I getting too old?

I just don't get it, what's the use of a Zo match? It's certainly no help to me in either analysis or design. What?

It seems that most of the folks on this NG work with transmission lines that are a very close approximation to a lossless line with a purely resistive Zo = sqrt(L/C) in the band of interest for their application. Their application being HF ham radio on a single frequency.. i.e. the typical ham radio application of a short line of maybe 100 feet at most and operated essentially at a single RF frequency at any given time.

But most of the real world professional transmission line problems that non-hams deal with are just not like that...

Unfortunately for years I have had to work with thousands of transmission lines which are very lossy, and don't have a pure constant resistive Zo in the band of interest. The danged lines that I have to deal with are twisted pairs bundled together closely with up to 49 other nearby pairs carrying interfering signals of up to 40,000 feet or more in length. I have to drive them with signals having spectral support from DC to several MHzwith very severe power limitations to limit near end and far end crosstalk. These lines, and there are 190 million of them in the USA alone, have Zo's that vary all over the map from several kOhms of capacitive reactance with very high series resistance at one end down to about 100 Ohms at the other with substantial frequency depended losses... etc..

And so... to me that simple Zo match, where R faces R, is so trivial as to be completely unimportant in the overall scheme of things. I say... what use is it?

I'm not jumping on your case here Wes... just trying to make the point that for those who seek to increase knowledge of transmission, one has to consider situations other than simple and trivial cases.

Thoughts, comments,

Incidently Wes... please send me, by private email, your USPS address and I'll mail you some circulator schematics just for fun.

-Peter K1PO

"Katycat2345" <katycat2345@aol.com> wrote in message news:20010524111257.11279.00001205@ng-mp1.aol.com...
> >What you describe is the conjugate match, Walt said the Z0 match is a
> >special solution, a subset if you will. It already pegs both
> >reactances at zero which automatically fulfills the requirement for
> >conjugation AS LONG AS the real resistances are equal.
>
> But in an earlier post, Walter quoted a reference as saying:
> "Zo Match--The condition in which the impedance seen looking into a
> transmission line is equal to the characteristic impedance of the line."
>
> So what is the truth when the line Zo is 50 - j2?
>
> Wes Stewart N7WS
>
> ps. Posting via mother-in-law's AOL account Yuch.

4775. Re: Tri-Ex Towers

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 23:25:01 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <hLgP6.1131$Oh4.242109@dfiatx1-snr1.gtei.net>
Source record: 162122

"Daniel Calzaretta and Alison Kirby" <danandalison@bmi.net> wrote in
message news:3B0D4F9E.53D5AB40@bmi.net...
> Does anyone have experience with Tri-Ex crank up towers? I am looking
> at the 50 ft. model and wonder if anyone has one and how well it works.
>
> Thanks,
>
> Dan
> NX9C
>

I have two WT-51's up at my QTH. Both have been up for over 3 years in the Mohave desert. As you know, the wind blows 20-30 mph frequently, and 60-80 mph every now and then. When I put them up, I planned ahead for the heavy winds that I knew they would have to deal with.

My main tower has a 20 foot 2" .250 wall chrome moly mast and it supports seven antennas, the largest being a KT-34 yagi. The other tower has a 15 foot steel mast and it supports 5 large VHF/UHF yagi's.Neither of these towers has given me any trouble at all. I leave them fully extended in all but the heaviest winds (more than 50 mph).

However, I did not go with the standard Tri-Ex base. I made a much stronger "fold over" base plate from 4" x .525 thick "U channel" structural steel. Additionally, I increased the cement foundation dimensions to 4' x 4' x 8', and had three 7 foot J-bolts made from 1.5" structural steel rod. The J-bolts were framed together with .5" steel re-bar, and this sub assembly then went into the hole and the cement was poured in.

The cost for these enhancements was less than the price that Tri-Ex gets for their standard non-fold over 3/8" re-bar base. It may seem like a bit of overkill, but once you pour the cement you can't change your mind. It's been cheap peace of mind when the wind blows, and if I ever upgrade to a larger tower, the existing base will handle it without any problems.

Since I was planning on running a 20 foot mast and loading the tower to close to it's max wind load rating, another enhancement I made to the tower was to drop the rotor mounting plate down to about 5' from the top mast thrust bearing. I then made a second rotor plate and mounted it at about 3' from the top thrust bearing and put a second mast thrust bearing on this plate. This traps any lateral mast movement inside the tower between the two thrust bearings, and isolates the rotor from these stresses.

The end result of these extra steps is that the tower/mast/rotor combo is rock solid. I have watched it in 50+ mph winds, and the structure barely flexes (the antennas are another story... :>)

73 de W6DKN

4776. Re: Question regarding Radials on vertical HF antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 23:27:01 UTC
From: k9sqg@aol.com
Message-ID: <20010524192701.02640.00001157@ng-fa1.aol.com>
Source record: 162120

Invalid email address...

4777. Army ANT.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 23:33:51 UTC
From: Tazanator <tazanator1@NOSPAMhome.com>
Message-ID: <zTgP6.79591$V5.13858750@news1.rdc1.mi.home.com>
Source record: 162123

Okay I have an army OE-254 ANT, does 6 meters and has a low (less than 2:1)SWR on 2 meters. What's it worth?

4778. Re: Destructive Interference in Impedance Matching

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 23:44:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ek6c8rhj1@slb0.atl.mindspring.net>
Source record: 162124

Richard:

Of course the "trivial" case is that of no reactance. For with R and X, if X is zero, then...

(R + jX) = (R - jX), if and only if, X equals zero.

Zero reactance is the trivial case.

Sorry to "trivialize" such an elegant sounding name as "Zo match"!

But it all seems to come down to R facing R if X is zero...

Of course to get maximum power across the junction in the absence of X one needs to have R equal to R.

If one has some finite non-zero X, then one needs to cancel out that X with some X of the opposite sign in order to maximize power transfer... by golly I believe that makes the conjugate match much more interesting than the image match.

I think it's just because I'm getting older, but I hate it when a new generation takes a perfectly good word or phrase and perverts it... for example "gay" used to be a word that everyone took for granted and understood, then a modern generation usurped it's meaning and now us old timers can no longer have a "gay time". Heh, heh.

I figure it's the same with "image match", a fine but perhaps old fashioned, descriptive phrase, now the modern generation has "jargonized" (Is that a word? Heh, heh) it into "Zo match".

I tried to follow a long thread down the NG where several folks were debating back and forth about properties and analysis of a Zo match, and I just didn't get it, cuz I couldn't find out or figure out what a Zo match was.

Am I fussin to much?

Best Regards,

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:7142-3B0D0E31-16@storefull-117.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "The conjugate match "supports" maximum power transfer from one side to
> the other, and, the image match does not,"
>
> Terman says:

> "A network is said to be operated under image impedance conditions when
> the internal impedance ZS of the source of power acting on the input
> terminals of the network, and the load impedance ZL at the output
> terminals, are so rel;ated to the network that the impedance looking
> into the network from terminals 1-2 (the input) with the load connected
> (see Fig. 67) is equal to the generator impedance, and, similarly, so
> that the impedance looking into terminals 3-4 (the output) with the
> generator connected equals the load impedance."
>
> Terman`s definition seems to fit an impedance matching transformer with
> the proper ratio to make the load impedance appear to the source as a
> matched load, while the source appears to the load as a matched source.
>
> The definition is general and applies to any 4-terminal network and the
> impedances can be reactive and/or resistive.
>
> Since there is no specification to provide conjugate reactances, I think
> Peter`s take is correct except support of maximum power transfer is not
> prevented when no reactance is present in source or load.
>
> Best regards, Richard Harrison, KB5WZI
>

4779. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-24 23:53:00 UTC
From: kb7qhc@home.com
Message-ID: <3b0d9db1.460035115@news.seanet.com>
Source record: 162125

On Thu, 24 May 2001 19:24:41 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Now some are saying it's not really a Z at all, it's really
>just and R, since the jX is always zero

Hi Peter,

Your capacity for surprise is boundless. R is not a Z, hmm?

Why don't you take up fractals if you want a real challenge? ;-)

73's
Richard Clark, KB7qHC

4780. Coax and antenna for 2-meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 00:06:14 UTC
From: KD7MTM@webtv.net
Message-ID: <23204-3B0DA1F6-114@storefull-125.iap.bryant.webtv.net>
Source record: 162126

I would like to know the correct formula for figuring out how long my coax needs to be to get a correct reading on an swr meter. I am using the cheap Radio Shack RG-58. Is the velocity factor .66?
I would also like the formula for figuring out how long my mobile antenna(stainless steel if it makes a difference) needs to be to be a 5/8 wave using 146.000 Mhz as the center frequency. The only formulas that I have are for 1/4 wave and for 1/2 wave. Any help would be greatly appreciated. Please respond to my e-mail address. I only get a chance to check the NG about once a week. Thanks, Jeremy

4781. Re: Army ANT.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 00:17:04 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <129rgtclhg37k1f78jjckbos1t44vjcaa9@4ax.com>
Source record: 162128

Telling me was the SWR is asking how much a car is worth by telling me
the air pressure in the tires..

Danny

On Thu, 24 May 2001 23:33:51 GMT, "Tazanator"
<tazanator1@NOSPAMhome.com> wrote:

>Okay I have an army OE-254 ANT, does 6 meters and has a low (less than
>2:1)SWR on 2 meters. What's it worth?
>

4782. Re: Looking for Yagi plans

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 00:32:23 UTC
From: Claus Waldraff <DF8GH@t-online.de>
Message-ID: <3B0DA817.51F52DBF@t-online.de>
Source record: 162127

don_lehman@mail.dor.state.mo.us wrote:

> I have actually built this antenna (DK7ZB)and it is superb, low vswr between
> 144-146mhz excellent gain (10.7dbd)and has allowed me to work from central

Good choice I can only agree with...
See some pattern plots at:

http://home.t-online.de/home/df8gh --> VHF/UHF DXing --> 1.6 lambda

> qth. One tip, when making the matching section get yourself a grid dip
> oscillator or antenna analyser to determine the correct length of matching
> section.....resonate a 1/2 wave at the desired frequency and cut it in
> half.....no messing with low power resistors to make a 28 ohm dummy load.

Well for me it was a lot easier to obtain those resistors than an
expensive analyser. I substituted the 2 56 Ohm resit. with 8x220 Ohm/2W
so you can drive more power...
And yes, at the first trial I had a lot of trouble finding the
resonance. Keep attention to the lenght of the coax ends --> short as
possible.
A MFJ, Vectronics,AES... is of course very comfortable....

But to encourage you Chris, DC6GF (http://www.qsl.net/dc6gf)who never
ever built an antenna himself, realized the balun and the antenna at the
first trial.

73 de Claus

4783. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 01:45:43 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105241745.27e8b688@posting.google.com>
Source record: 162131

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<26029-3B0C8262-37@storefull-118.iap.bryant.webtv.net>...
> Bird says:
> "A simple algebraic subtraction (Pfwd - Pref) yields the net power
> delivered to the load."
>
> We can rewrite that as: Pfwd = Pdel + Pref.
> Would you deny that the forward power measured by the Bird wattmeter
> consists of two powers, the delivered power and the re-reflected power?

Hi Richard,
Well, I don't have a Bird wattmeter, but I've heard they're quality instruments,
I couldn't download any of their application notes, so I don't know if
the above equation is exact or is an estimate. Of course, the *only* way
to get Pdel is by 2 separate measurements with the slug reversed, right?
So the equation could be only an estimate.

You say the it works, but how do you actually know it works? Unless you
have some independent method, like theory, to verify the measurements,
you never really know.

I checked with a number of other texts, and they all say basically the
same: that superposition of multiple sources is only valid for linear
quantities like voltage and current. What can I say? It appears that
superposition of multiple power sources by simple addition is a no-no. 73,
Bill N3WK

4784. Re: Coax and antenna for 2-meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 02:14:10 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <tsfrgtgavgaqgfljb7i8tv5l42748hsd86@4ax.com>
Source record: 162136

If you are only measuring SWR and not impedance the proper length to use the amount necessary to make it from you antenna to the radio. No more no less.

Danny, K6MHE

On Thu, 24 May 2001 17:06:14 -0700 (PDT), KD7MTM@webtv.net (Jeremy) wrote:

>I would like to know the correct formula for figuring out how long my
>coax needs to be to get a correct reading on an swr meter. I am using
>the cheap Radio Shack RG-58. Is the velocity factor .66?
>I would also like the formula for figuring out how long my mobile
>antenna(stainless steel if it makes a difference) needs to be to be a
>5/8 wave using 146.000 Mhz as the center frequency. The only formulas
>that I have are for 1/4 wave and for 1/2 wave. Any help would be greatly
>appreciated. Please respond to my e-mail address. I only get a chance to
>check the NG about once a week. Thanks, Jeremy

4785. Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 02:25:05 UTC
From: fractenna@aol.com
Message-ID: <20010524222505.13279.00000883@ng-mn1.aol.com>
Source record: 162132

In a recent public letter and statement on this forum, Roy Lewallen, W7EL, d/b/a EZNEC, made incorrect and directed comments regarding patents on fractal antennas held by Fractal Antenna Systems Inc., and Dr. Nathan Cohen. I have elected to convey public comments in partial response to this.

1) Dr. Cohen's patent applications--which include international filings--subsume a very broad context of fractal antennas, fractal resonators, fractal counterpoises, and other related ilk. He, I, and others have always been extremely clear that other --potential--users need to be aware that issued AND pending patents exist. It would be naive to assume that claims on issued patents are the ONLY claims that will apply. Any unauthorized user TAKES IMPRUDENT RISKS if they assume that aspects of the PTO published patent applications will not produce patentable claims. Unauthorized use constitutes infringement, which the firm does not and will not tolerate.

2) the existing patents possess claims which cover a vast majority of practical fractal antennas that have drawn interest in this and other public forums

3) No one has requested to our knowledge "reexamination" of Fractal Antenna Systems, Inc. patents. The imposition of this speculation, and the context in which other comments have been publicly made by Mr. Lewallen and others, are considered viable evidence within the context of a 'discovery phase' in exploring malicious intent and other claims. There is compelling public statements on this web, presented in a concerted way, which support the evidence of targeting of Dr. Cohen, this firm, and the fractal antenna technology which it has developed, by these few individuals.

4) Mr. Lewallen's claim that anyone using a fractal antenna "which does not meet all the claims" of a given patent is a primae facie 'AOK' to do as one wishes is very poor advise, in addition to being incorrect. N8TT should have corrected this remarkable statement.

5) Fractal Antenna Systems, Inc. has made recent press releases which document, in small part, its efforts to stop infringers. This --INCLUDES-- those violating copyright. Pursuing infringers is an ongoing, active, and omnibus activity of the firm's IP position. The firm has the resources, and future committed resources, to enforce the stopping of infringement. The "founder will [not] flounder" as Mr. Littlefield wished to speculate. Indeed the firm is doing well and will continue to do so despite the directed efforts of a few individuals who have elected to use this public forum to attack it , Dr. Cohen, and the remarkable technology of fractal antennas.

It is assumed that this public statement can be used in a court of law as evidence of Fractal Antenna Systems, Inc.'s efforts to make fair, public, and prudent information available with regard to its IP as a response to other statements previously made by others.

73
Phil
de N1ZKT

4786. Power antenna on desk radio

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 02:26:39 UTC
From: Paul Heylman <pheylman@worldnet.att.net>
Message-ID: <3B0DC268.62181AA@worldnet.att.net>
Source record: 162133

I have a desk radio/CD with a single strand FM antenna. I live in near a very strong FM broadcast tower, which bleeds into weak stations. I solved the problem for my stereo receiver by attaching a radio shack power antenna to the two input lugs for the FM antenna. However, the desk radio just has a single wire antenna (insulated) - can I just strip a bit of insulation off this and attach it to the 75 ohm or 300 ohm connection for a powered antenna?

4787. Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 02:38:29 UTC
From: Campone <info@mantenna.net>
Message-ID: <MPG.1578e3589c093ad39896b0@news.earthlink.net>
Source record: 162135
Cross-posted to: alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.shortwave

An amazing new product will be released in the near future.

The Mantenna!!

The Mantenna is a special 3 layer 1 peice suit that contains copper
strands and copper threading strategical1y placed at key areas within
the interior wall of the second layer of the suit.

The suit layers are a special blend of nylon and rayon. This blend is
coated with a non-reflective conductive spray (The spray maintains the
natural beauty of the fabric and is non-toxic).

The belt line contains high grade BNC and PL style connectors to attach
to your radio antenna connection.

The suit will be availabe in 7 differents colors to keep everyone happy!

The receive range shows remarkable results from 7Mhz - 1400Mhz.

An optional hat is available:

Hat model MAN-H1 is a cone style hat with built in Low Noise Amp (LNA)
for those that enjoy satellite monitoring. The cone contains all
the electronics and a high capacity rechargable power supply.
Free during our official introduction will be an addon solar cell
for constant recharging and constant power to the LNA.

Stay Tuned For The Official Release!!

4788. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 02:38:54 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B0DC5BE.F2B78694@spam.me.not>
Source record: 162134

10-9?

Fractenna wrote:
>
> In a recent public letter and statement on this forum, Roy Lewallen, W7EL,
> d/b/a EZNEC, made incorrect and directed comments regarding patents on fractal
> antennas held by Fractal Antenna Systems Inc., and Dr. Nathan Cohen. I have
> elected to convey public comments in partial response to this.
>
> 1) Dr. Cohen's patent applications--which include international filings--
> subsume a very broad context of fractal antennas, fractal resonators, fractal
> counterpoises, and other related ilk. He, I, and others have always been
> extremely clear that other --potential--users need to be aware that issued AND
> pending patents exist. It would be naive to assume that claims on issued
> patents are the ONLY claims that will apply. Any unauthorized user TAKES
> IMPRUDENT RISKS if they assume that aspects of the PTO published patent
> applications will not produce patentable claims. Unauthorized use constitutes
> infringement, which the firm does not and will not tolerate.
>
> 2) the existing patents possess claims which cover a vast majority of practical
> fractal antennas that have drawn interest in this and other public forums
>
> 3) No one has requested to our knowledge "reexamination" of Fractal Antenna
> Systems, Inc. patents. The imposition of this speculation, and the context in
> which other comments have been publicly made by Mr. Lewallen and others, are
> considered viable evidence within the context of a 'discovery phase' in
> exploring malicious intent and other claims. There is compelling public
> statements on this web, presented in a concerted way, which support the
> evidence of targeting of Dr. Cohen, this firm, and the fractal antenna
> technology which it has developed, by these few individuals.
>
> 4) Mr. Lewallen's claim that anyone using a fractal antenna "which does not
> meet all the claims" of a given patent is a primae facie 'AOK' to do as one
> wishes is very poor advise, in addition to being incorrect. N8TT should have
> corrected this remarkable statement.
>
> 5) Fractal Antenna Systems, Inc. has made recent press releases which document,
> in small part, its efforts to stop infringers. This --INCLUDES-- those
> violating copyright. Pursuing infringers is an ongoing, active, and omnibus
> activity of the firm's IP position. The firm has the resources, and future
> committed resources, to enforce the stopping of infringement. The "founder will
> [not] flounder" as Mr. Littlefield wished to speculate. Indeed the firm is
> doing well and will continue to do so despite the directed efforts of a few
> individuals who have elected to use this public forum to attack it , Dr. Cohen,

> and the remarkable technology of fractal antennas.
>
> It is assumed that this public statement can be used in a court of law as
> evidence of Fractal Antenna Systems, Inc.'s efforts to make fair, public, and
> prudent information available with regard to its IP as a response to other
> statements previously made by others.
>
> 73
> Phil
> de N1ZKT

4789. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 02:56:41 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <JRjP6.43408$t12.3326317@bgtnsc05-news.ops.worldnet.att.net>
Source record: 162137

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:26029-3B0C8262-37@storefull-118.iap.bryant.webtv.net...
> Bill Klocko wrote:
> "What the author is saying is that it does NOT apply to 2 or more
> powers."
>
> Bird says:
> "A simple algebraic subtraction (Pfwd - Pref) yields the net power
> delivered to the load."
>

This is a valid relationship, so long as the Zo of the line is a pure resistance. Just an aside, if the Zo of the line is complex, the delivered power will not equal Pfwd - Pref.

> We can rewrite that as: Pfwd = Pdel + Pref.
> Would you deny that the forward power measured by the Bird wattmeter
> consists of two powers, the delivered power and the re-reflected power?
>
> The transmitter only delivers the delivered power. The only source of
> additional forward power is the reflected power. The re-reflected power
> is identically the reflected power making its unique additional round
> trip between source and sink.
>

In any transmission line system, the delivered power is equal to the forward power minus the reflected power. To rewrite this relationship as Pfwd = Pdel + Pref imples that a total re-reflection of the reflected power always occurs. This is not the case. When the source impedance is Zo and no re-reflection of power occurs at the source, there will still be forward and reflected power in the line. While it is true that Pdel = Pfwd - Pref, this does not imply that any re-reflection of power occurs at the source, or anywhere else in the line.

> The powers add as Bird says. The evidence is that the wattmeter works as
> advertised.
>

The wattmeter indicates forward and reflected power from which delivered power can be determined. Nothing else is implied.

> Best regards, Richard Harrison, KB5WZI
>

Steve

4790. Re: Destructive Interference in Impedance Matching

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 03:03:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0DCB67.66E69028@IEEE.org>
Source record: 162138

VE9SRB wrote:
> Since the tuner example is clearly too complicated for you, let's consider a
> simpler example with only transmission lines.

Sorry Steve, I refuse to contribute anything while you assert that

75 joules plus 8.33 joules equals 133.33 joules.

Of course, you will never admit that is a violation of the conservation of
energy principle so you and all the metaphysicists who support you can feel
secure in your religion. As for me, it is obvious that metaphysical charlatans
have taken over ham radio and I choose not to be a part of your charade. This
is my last posting and 'W6RCA' will shortly be available. Like Galileo, standing
before the Pope, I bow to Your Eminence and promise to live out my life in quiet isolation
and not
bother you with scientific facts anymore.

But if you really are right about your assertion that 75 joules plus 8.33 joules
equals 133.33 joules, you sure could help out the state of California.

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

4791. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 03:23:19 UTC
From: richardharrison@webtv.net
Message-ID: <7142-3B0DD027-69@storefull-117.iap.bryant.webtv.net>
Source record: 162139

David Robbins, K1TTT wrote:
"Where is the equation for a total re-reflection?"

Short answer: The forward power is equal to the delivered power plus the reflected power.
This comes from the maker of the famous Bird wattmeter. It is true because total reflection happens at the sending end of a transmission line. If re-reflection were not complete, Bird`s wattmeter would not work. For Bird`s meter to work, the re-reflected power has to be equal to the reflected power.

Bird states the equation a different way:
"The delivered power is equal to the forward power minus the reflected power." You can see that it is the same equation, just re-written.

Proof is conclusive. Bird`s wattmeter works.

Why is the reflection total? The generator impedance could be anything. It simply makes no difference. The only once reflected wave becomes impotent as a result of its reflection. Its volts and amps are 180-degrees out-of-phase. That is the basis upon which Bird relies to determine which is the incident and which is the reflected wave to start its measurement process.

Since the sending-end impedance can`t absorb any of the crippled reflected wave, it is all re-reflected. That re-reflection restores the in-phase condition between volts and amps in the re-reflected wave. Now they add to the newly emerging delivered wave produced by the transmitter. Bird says the addition is simple arithmetic. Delivered power plus reflected power equals forward power.

You could set up Cecil`s example if you are skeptical. For most it would be a waste of time because they don`t doubt that there are no reflections in either piece of 50-ohm coax, and all credible texts agree on the reflection coefficient produced by the mismatch proposed.

The question has been: Do the powers add? The Bird wattmeter proves that they do every time you use it.

This whole thread has been much ado about nothing.

Best regards, Richard Harrison, KB5WZI

4792. Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 04:15:14 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <m%kP6.44983$4f7.3288528@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162140

>If the tuner used in establishing an impedance match has any
>loss, a conjugate match is not established at the load connected at the
>tuner output. When the tuner has loss, establishing a conjugate match at
>the load requires that a mismatch be established at the tuner input. In
>this case, maximum power delivery to the load at the tuner output does not
>occur when an impedance match is established at the tuner input. This is
>easy to validate using simple circuit analysis. However, with a lowloss
>tuner, the differences in power delivery are marginal at best.
>
>Steve VE9SRB
>

This is pure, unadulterated horse manure.

Walt, W2DU
>

To prove the validity of my statements above, let's consider a simple
example.

In this case, a load of 200 + j200 ohms is connected at the output of a
T-network comprised of a series capacitor C1, a parallel inductor L, and a
series capacitor C2. To introduce loss into the T-network, the capacitor Q
is set at 50 and the inductor Q is set at 25. The operating frequency is
21.2 MHz.

To establish an impedance match at the T-network input, the following
component values were used:

Series C1: 90 pF, ZC1 = 1.668 - j83.415 ohms

Parallel L: 0.78367 uH, ZL = 4.176 + j104.388 ohms

Series C2: 33.364 pF, ZC2 = 4.5 - j225.012 ohms

Using simple circuit theory we can determine the steady state impedance at
the T-network input. This is done by transforming the load impedance
through the network to its input. Looking forward into the network, the
network input impedance is determined to be 50 ohms. Assuming that Zo is 50
ohms, a steady state impedance match occurs at the network input. The issue
to consider now is the following: does a conjugate match simultaneously
exist at the network output.

If a conjugate match exists at the network output, maximum power would be
delivered to the load. There would be no other impedance to which more
power could be delivered. Additionally, the impedance looking rearward into
the network output would be the conjugate of the load impedance. Let's

determine the impedance looking rearward into the network.

To determine the impedance looking rearward into the network, we transform the impedance "terminating" the network input from the perspective of the rearward view. If the T-network input is connected to a 50 ohm line which is then connected to a source with a 50 ohm impedance, the impedance "terminating" the T-network input from the rearward view is 50 ohms. To determine the impedance looking rearward into the network, we transform this impedance forward through the network to the network output. This is the impedance that a network analyzer would measure when connected to the network's output terminals. Using simple circuit theory, this rearward impedance is determined to be 174.273 - j198.428 ohms. A conjugate match does not exist at the network output.

Lets also consider this issue from the perspective of power delivery. Let's assume that the forward power arriving at the network input is 1000 Watts. In a 50 ohm system this is a forward voltage of 223.607 V. Applying 223.607 V to the network when it is impedance matched, there will be no reflected voltage. The total voltage applied at the network input is 223.607 V. Using simple circuit theory, the total power delivered to the load is found to be 875.82 Watts.

Let's now replace the load impedance with the true conjugate load of 174.273 + j198.428 ohms. In this case, the steady state impedance at the network input becomes 54.487 - j4.478 ohms. A steady state impedance match no longer exists at the network input. With 223.607 V arriving at the network input a reflected voltage will be developed at the network input such that the total applied voltage at the network input becomes 233.601 - j9.156 V. Using simple circuit theory the total power delivered to the conjugate load is found to be 880 W.

Its not much of a difference in power delivery but it does correctly illustrate the fact that in a network with loss, a conjugate match does not exist at the network output when an impedance match exists at the network input. The greater the loss in the network, the greater the difference in power delivery. Clearly in most practical systems with a lowloss tuner, the differences in power delivery are marginal and I would agree that for all practical purposes, a conjugate match essentially occurs. It is absolutely necessary that the source output impedance also be equal to Zo for this to be true. In any event, the concepts and analysis as I stated them are correct.

Steve VE9SRB

4793. Re: Destructive Interference in Impedance Matching

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 04:21:16 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <05lP6.44991$4f7.3289460@bgtnsc06-news.ops.worldnet.att.net>
Source record: 162141

"W6RCecilA" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B0DCB67.66E69028@IEEE.org...
>
>
> Sorry Steve, I refuse to contribute anything while you assert that
>
> 75 joules plus 8.33 joules equals 133.33 joules.
>
> Of course, you will never admit that is a violation of the conservation of
> energy principle so you and all the metaphysicists who support you can
feel
> secure in your religion. As for me, it is obvious that metaphysical
charlatans
> have taken over ham radio and I choose not to be a part of your charade.
This
> is my last posting and 'W6RCA' will shortly be available. >

It is quite acceptable that you disagree with me at this point. I really have no problem with that. Our disagreement is insignificant to ham radio, so I don't think that should be an issue for you. In any event, thank you for enduring the discussion and I apologize if anything I said to you was offensive.

Take care,
73
Steve VE9SRB

4794. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 04:32:43 UTC
From: Denver Braughler <Braughler@bwcc.com>
Message-ID: <3B0DE06B.306A3D3E@bwcc.com>
Source record: 162142

Campone wrote:
> An amazing new product will be released in the near future.
> An optional hat is available:

Will it work as well as an aluminum foil deflector beanie for keeping out government mind control waves?

http://zapatopi.net/afdb.html

4795. Re: Destructive Interference in Impedance Matching

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 04:45:03 UTC
From: W6RCecilA <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0DE34F.84E986DA@IEEE.org>
Source record: 162143

VE9SRB wrote:
> ... I apologize if anything I said to you was offensive.

What is most offensive, Steve, is your conceptual violation of the conservation of energy principle when you say that 75 joules/sec plus 8.33 joules/sec equals 133.33 joules/sec. You are obviously wrong about that so what you have had to say since then is irrelevant. Given that your methods are built upon a violation of the conservation of energy principle, they are useless as tits on a boar hog. But have a good time with your voodoo metaphysics anyway. Barbarians sometimes win.
--
http://www.mindspring.com/~w6rca

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4796. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 05:07:57 UTC
From: richardharrison@webtv.net
Message-ID: <1997-3B0DE8AD-106@storefull-111.iap.bryant.webtv.net>
Source record: 162144

David Robbins, K1TTT wrote:
"Where is the equation for a total re-reflection?"

Short answer: The forward power is equal to the delivered power plus the reflected power.
This comes from the maker of the famous Bird wattmeter. It is true because total reflection happens at the sending end of a transmission line. If re-reflection were not complete, Bird`s wattmeter would not work. For Bird`s meter to work, the re-reflected power has to be equal to the reflected power.

Bird states the equation a different way:
"The delivered power is equal to the forward power minus the reflected power." You can see that it is the same equation, just re-written.

Proof is conclusive. Bird`s wattmeter works.

Why is the reflection total? The generator impedance could be anything. It simply makes no difference. The only once reflected wave becomes impotent as a result of its reflection. Its volts and amps are 180-degrees out-of-phase. That is the basis upon which Bird relies to determine which is the incident and which is the reflected wave to start its measurement process.

Since the sending-end impedance can`t absorb any of the crippled reflected wave, it is all re-reflected. That re-reflection restores the in-phase condition between volts and amps in the re-reflected wave. Now they add to the newly emerging delivered wave produced by the transmitter. Bird says the addition is simple arithmetic. Delivered power plus reflected power equals forward power.

You could set up Cecil`s example if you are skeptical. For most it would be a waste of time because they don`t doubt that there are no reflections in either piece of 50-ohm coax, and all credible texts agree on the reflection coefficient produced by the mismatch proposed.

The question has been: Do the powers add? The Bird wattmeter proves that they do every time you use it.

This whole thread has been much ado about nothing.

Best regards, Richard Harrison, KB5WZI

4797. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 05:39:50 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B0DF026.5DE6@wt.net>
Source record: 162145

Fractenna wrote:
>
> In a recent public letter and statement on this forum, Roy Lewallen, W7EL,
> d/b/a EZNEC, made incorrect and directed comments regarding patents on fractal
> antennas held by Fractal Antenna Systems Inc., and Dr. Nathan Cohen. I have
> elected to convey public comments in partial response to this.

Who says they are wrong? You? Dr. Nathan Cohen? Perry Mason? The
tooth fairy? Howard Stern?
>
> 1) Dr. Cohen's patent applications--which include international filings--
> subsume a very broad context of fractal antennas, fractal resonators, fractal
> counterpoises, and other related ilk. He, I, and others have always been
> extremely clear that other --potential--users need to be aware that issued AND
> pending patents exist. It would be naive to assume that claims on issued
> patents are the ONLY claims that will apply. Any unauthorized user TAKES
> IMPRUDENT RISKS if they assume that aspects of the PTO published patent
> applications will not produce patentable claims. Unauthorized use constitutes
> infringement, which the firm does not and will not tolerate.

In other words if the antenna show any form of kinkyness at all, it's
covered? What is an Ilk? An elk that gives milk?
>
> 2) the existing patents possess claims which cover a vast majority of practical
> fractal antennas that have drawn interest in this and other public forums

I'll alert the media...Oh, I forgot , you already have...
>
> 3) No one has requested to our knowledge "reexamination" of Fractal Antenna
> Systems, Inc. patents.

I guess no one cares. Yawn.....

The imposition of this speculation, and the context in
> which other comments have been publicly made by Mr. Lewallen and others, are
> considered viable evidence within the context of a 'discovery phase' in
> exploring malicious intent and other claims.

His speculation is an imposition on you? How do you know it's
speculation? What imposition has been foisted upon you? We want details
if we are going to have to read this whiny ass crap every 4 weeks. At
least make it interesting. Where's the beef?

There is compelling public
> statements on this web, presented in a concerted way, which support the
> evidence of targeting of Dr. Cohen, this firm, and the fractal antenna

> technology which it has developed, by these few individuals.

Oh, the twisted web we weave on the web...
>
> 4) Mr. Lewallen's claim that anyone using a fractal antenna "which does not
> meet all the claims" of a given patent is a primae facie 'AOK' to do as one
> wishes is very poor advise, in addition to being incorrect. N8TT should have
> corrected this remarkable statement.

Who says so? Where is this storehouse of legal information hiding at?
How come we never hear from him? Is he a scaredy cat? If the reason for
this lack of our personal interaction with your legal storehouse of info
is due to him being dead, IE: Perry Mason, I can understand. If it's
because you are too cheap to hire a real "live" lawyer, I can't.
>
> 5) Fractal Antenna Systems, Inc. has made recent press releases which document,
> in small part, its efforts to stop infringers.

It's efforts? Doesn't ANYONE get results around there? Hell, if I was a
spokesperson for a whiny ass group like frackytenna, I'd be wanting to
brag about results, not efforts. I suggest you hire a "live" breathing
lawyer that takes money from you.

This --INCLUDES-- those
> violating copyright. Pursuing infringers is an ongoing, active, and omnibus
> activity of the firm's IP position.

Oomï¿½niï¿½bus (mn-bs, -bs)
n.

A long motor vehicle for passengers; a bus.
A printed anthology of the works of one author or of writings on related
subjects.
adj.
Including or covering many things or classes: an omnibus trade bill.

[French from Latin for all, dative pl. of omnis, all; see op- in
Indo-European Roots.]

You've got us scared now. I think the hidden meaning behind this
statement really means you'd like to line up all of your perceived
enemies and run them over with a long motor vehicle of fracky
passengers.

The firm has the resources, and future
> committed resources, to enforce the stopping of infringement.

I take that to mean that any frackytenna employee that is committed to
future mental health care will still send in money to the "save the
frackyness" defense fund?

The "founder will
> [not] flounder" as Mr. Littlefield wished to speculate. Indeed the firm is

> doing well and will continue to do so despite the directed efforts of a few
> individuals who have elected to use this public forum to attack it , Dr. Cohen,
> and the remarkable technology of fractal antennas.

Thats good to hear. It's good to know if you took me to lunch at jack n
the box, you could afford to buy me two jumbo jacks instead of just one.
Or one jumbo jack and two tacos. Or four tacos. Dang, ain't we rich.

>
> It is assumed that this public statement can be used in a court of law as
> evidence of Fractal Antenna Systems, Inc.'s efforts to make fair, public, and
> prudent information available with regard to its IP as a response to other
> statements previously made by others.

If you assume that, you and Perry Mason need to have a good long talk.
Oh, crap, I forgot. He's dead...MK

--
http://web.wt.net/~nm5k

4798. Re: Will amateur radio astronomers be the first to directly detect extrasolar planets?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 06:13:43 UTC
From: Mike Williams <mike@nospam.please>
Message-ID: <s93QCAAXgfD7Ew7z@econym.demon.co.uk>
Source record: 162146
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.antenna,sci.astro,sci.astro.seti,sci.space.policy

Wasn't it Alan Anderson who wrote:

>Then what was all the hubbub a couple of years ago with the Hubble and the
>first direct view of a planet around another star? I remember it
>distinctly, with it described as a planet several times larger than
>Jupiter at about a thousand AU from a binary star almost hidden by a dust
>cloud. Was it just hype?

There was a famous case called TMR-1C of something that looked like it might possibly be a planet in a Hubble image. The only reason for thinking that it was a planet rather than a background star was that there was a dust filament that sort of spiralled out from the star and ended exactly at the "planet", and the theory was that the dust and planet had been flung out from the star. It turns out that the object is far too bright to be a planet illuminated only by reflected starlight. The best guess is that it's a more remote star that just happens to be in the same line of sight as the end of the filament.

A websearch for TMR-1C still throws up a lot of sites announcing the detection of a possible image of a planet, and remarkably few that mention that it turned out not to be a planet.

--
Mike Williams
Gentleman of Leisure

4799. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 06:57:47 UTC
From: Jeff Maass <jmaass@columbus.rr.com>
Message-ID: <LnnP6.161062$BB5.2580299@typhoon.columbus.rr.com>
Source record: 162147

Oh no - they appear to have gone off of their medication again!

--
Jeff Maass jmaass@columbus.rr.com Located near Columbus Ohio
USPSA # L-1192 NROI/CRO Amateur Radio K8ND
Maass' IPSC Resources Page: http://home.columbus.rr.com/jmaass

"Fractenna" <fractenna@aol.com> wrote in message
news:20010524222505.13279.00000883@ng-mn1.aol.com...
> In a recent public letter and statement on this forum, Roy Lewallen,
W7EL,
> d/b/a EZNEC, made incorrect and directed comments regarding patents on
fractal
> antennas held by Fractal Antenna Systems Inc., and Dr. Nathan Cohen. I
have
> elected to convey public comments in partial response to this.
>
> 1) Dr. Cohen's patent applications--which include international filings--
> subsume a very broad context of fractal antennas, fractal resonators,
fractal
> counterpoises, and other related ilk. He, I, and others have always been
> extremely clear that other --potential--users need to be aware that issued
AND
> pending patents exist. It would be naive to assume that claims on issued
> patents are the ONLY claims that will apply. Any unauthorized user TAKES
> IMPRUDENT RISKS if they assume that aspects of the PTO published patent
> applications will not produce patentable claims. Unauthorized use
constitutes
> infringement, which the firm does not and will not tolerate.
>
> 2) the existing patents possess claims which cover a vast majority of
practical
> fractal antennas that have drawn interest in this and other public forums
>
> 3) No one has requested to our knowledge "reexamination" of Fractal
Antenna
> Systems, Inc. patents. The imposition of this speculation, and the context
in
> which other comments have been publicly made by Mr. Lewallen and others,
are
> considered viable evidence within the context of a 'discovery phase' in
> exploring malicious intent and other claims. There is compelling public
> statements on this web, presented in a concerted way, which support the
> evidence of targeting of Dr. Cohen, this firm, and the fractal antenna
> technology which it has developed, by these few individuals.

>
> 4) Mr. Lewallen's claim that anyone using a fractal antenna "which does
not
> meet all the claims" of a given patent is a primae facie 'AOK' to do as
one
> wishes is very poor advise, in addition to being incorrect. N8TT should
have
> corrected this remarkable statement.
>
> 5) Fractal Antenna Systems, Inc. has made recent press releases which
document,
> in small part, its efforts to stop infringers. This --INCLUDES-- those
> violating copyright. Pursuing infringers is an ongoing, active, and
omnibus
> activity of the firm's IP position. The firm has the resources, and future
> committed resources, to enforce the stopping of infringement. The "founder
will
> [not] flounder" as Mr. Littlefield wished to speculate. Indeed the firm is
> doing well and will continue to do so despite the directed efforts of a
few
> individuals who have elected to use this public forum to attack it , Dr.
Cohen,
> and the remarkable technology of fractal antennas.
>
> It is assumed that this public statement can be used in a court of law as
> evidence of Fractal Antenna Systems, Inc.'s efforts to make fair, public,
and
> prudent information available with regard to its IP as a response to other
> statements previously made by others.
>
> 73
> Phil
> de N1ZKT

4800. Who IS this beauty?? teen48.jpg 9595 [1/7]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 08:43:13 UTC
From: allison@allison19.REMOVE.com
Message-ID: <BWoP6.532$4q2.523107@news2.mia>
Source record: 162148

smptwdfobnzpwcfotssyuubsqjmf

4801. FA: Dual paddle iambic keyer by Ham-Key

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 10:10:38 UTC
From: abuse@hotmail.com
Message-ID: <abuse-2505010010500001@192.168.1.4>
Source record: 162149
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.space

For auction on eBay, Dual paddle iambic keyer. See URL

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?MfcISAPICommand=ViewItem&item=1240022897

4802. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 10:44:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eld1l$1ak$1@slb3.atl.mindspring.net>
Source record: 162150

Richard:

Yes, R is contained in the Z set.

But R is not Z! For...

Compared to the whole set of Zs, the set of Rs is but a pale imitation, with almost no interesting aspects.

:-)

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:3b0d9db1.460035115@news.seanet.com...
> On Thu, 24 May 2001 19:24:41 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Now some are saying it's not really a Z at all, it's really
> >just and R, since the jX is always zero
>
> Hi Peter,
>
> Your capacity for surprise is boundless. R is not a Z, hmm?
>
> Why don't you take up fractals if you want a real challenge? ;-)
>
> 73's
> Richard Clark, KB7qHC

4803. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 11:54:26 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <SJrP6.36847$425.8811659@news3.rdc1.on.home.com>
Source record: 162151

> Will it work as well as an aluminum foil deflector beanie for keeping out government mind control waves?

SHHHHHHHHHHHHHHHHHH Don't tell them we know how to protect ourselves from those.

4804. Re: Good ham logging program?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 12:28:09 UTC
From: Dennis Kaylor <k4oxg@tampabay.rr.com>
Message-ID: <3B0E4FC0.9D633D39@tampabay.rr.com>
Source record: 162152
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment

hey charles
that software looking really good on there website
but i am not paying $100 for software with out getting to try it first there are
to many variables in computers and radios and such that would render the thing
usless
i wish they would offer a trail program for 2 weeks to a month like everyone
else does to give you a chance to see if it will work on your system and that if
the software is what your looking for
i am glad you find it useful happy hamming
73

Charles Johnston wrote:

> Guess I'll chime in after trying most of the major logging programs such as
> LogPlus , Log Windows , DX4WIN , and Logic 5 I have settled on DXBase 2002.
> Here is a snippet about the product....
>
> <snip>
>
> Designed for those who demand the best, DXbase 2002 by Scientific Solutions,
> Inc. is the premiere amateur radio logging software for 32bit Windows. One
> look and you'll wonder how you ever managed without it. Whether you want to
> custom design your own QSL cards and labels, operate PSK mode and log
> directly into DXbase, perfect CW output with the direct interface to the
> W5XD external keyer, automatically create award submission forms, create
> your own reports, monitor VHF Packet and Internet Packet letting DXbase tell
> you when you need one, or just log a QSO with the greatest of ease, DXbase
> 2002 is the software for you.
>
> <snip>
>
> I have used this product since DXBase 2000 and it is a reliable and
> extremely high-performance logging program
> That can do everything the other loggers do plus much more.....
>
> Download the informational demo at http://www.dxbase.com
>
> --
>
> 73 / DX
>
> Charles Johnston
> charles@ab7sl.com
>

> AB7SL - Ham Radio Pages
> http://www.ab7sl.com

4805. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 13:17:55 UTC
From: k3bu@aol.com
Message-ID: <20010525091755.18636.00002349@ng-mq1.aol.com>
Source record: 162153

>
>Oh no - they appear to have gone off of their medication again!
>
>--
>Jeff Maass

The side effect is that them can't remeber whos them are, Chip? Phil? etc?
and we thought that crap went down the toilet, seems to be still floating
around :-((((((((((((((((((((

4806. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 13:22:15 UTC
From: richardharrison@webtv.net
Message-ID: <10373-3B0E5C87-23@storefull-116.iap.bryant.webtv.net>
Source record: 162154

Steve, VE9SRB wrote:
"If the tuner used in establishing an impedance match has any loss, a conjugate match is not established at the load connected at the tuner output."

With a capable tuner we can have a conjugate match if we want a conjugate match.

The loss of the tuner can be characterized by a single resistor in series with the source. For analysis, the resistance representing the tuner loss can be combined with the internal resistance of the source.

We adjust the tuner`s transformation ratio to provide a resistance match between source and load which accounts for all the resistance in the source, including the tuner`s loss.

We adjust the tuner for zero reactance.

A conjugate match results from simply adjusting the tuner. Emphatically, this is true!

Best regards, Richard Harrison, KB5WZI

4807. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 13:56:33 UTC
From: richardharrison@webtv.net
Message-ID: <10374-3B0E6491-8@storefull-116.iap.bryant.webtv.net>
Source record: 162155

Steve, VE9SRB wrote:
"This is a valid relationship (Pdel=Pfwd-Pref), so long as the Zo of the line is a pure resistance."

Terman says:
"At all radio frequencies, and at all but the lowest audio frequencies, the ratio of R/omegaL and G/omegaC are so small that the characteristic impedance can be taken as a pure resistance of sq. rt. of L/C ohms.
(p.173 edition of 1943

Best regards, Richard Harrison, KB5WZI

4808. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 14:12:49 UTC
From: w2du@iag.net
Message-ID: <3b0e5dd7.590869@news.onemain.com>
Source record: 162071

On Thu, 24 May 2001 23:13:07 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>"Walter Maxwell" <w2du@iag.net> wrote in message
>news:3b0d7cfb.10852074@news.onemain.com...
>>
>> If you calculate the impedance looking rearward into the T-network
>correctly it
>> will be 200 - j200 ohms. If you calculate it using the same algorithm you
>used
>> in smearing me in your CommQuart article, then you'll get a meaningless
>answer,
>> as I've explained to you before, and in my letter to the editor in QEX.
>With the
>> correct algorithm you'll also have a match at the input.
>>
>> Walt, W2DU
>>
>
>What kind of an technical answer is this?

I'll explain below what kind of a technical answer this is.
>
>The method I used is simple circuit theory. That's the beauty of this type
>of an example. 99.99% of the people on this NG can follow this discussion
>because the answer is either right or wrong. There is no room for anybody's
>interpretation of power flow or wave reflection mechanics (except for the
>forward wave at the T-network input). With a T-network there is a steady
>state voltage and current developed at the network input. After that the
>analysis to find the power delivered to the load is easy.
>
>I don't mind that you disagree with me. But if you're going to claim that
>my statements are all horse manure you should be willing to back it up with
>proof rather than opinion. Work an example with me instead of posting these
>ambiguous responses.
>
>If my analysis is wrong, I'll apologize on the NG and in QEX, then move on.
>If you're wrong, I want an autographed copy of your new book.
>snip

>Steve

First, Steve, the fact that you feel the need to 'calculate' anything to
determine the output impedance of the network when the load impedance is a given
is proof that you still havn't learned how to calculate impedance

transformations through networks correctly.

When the network is designed to transfer to the load all the power delivered at the input minus that lost in attenuation, the output impedance of the network is the conjugate of the load impedance by definition. Therefore the output impedance in your example is 200 + j200 without any calculation.

Obviously you're going to use the same method of calculation for your example that you used in your CommQuart article that smeared me, because that method is wrong as you well know from the Mathcad proof that I showed you a year ago, using your own network parameters. And everyone who read our QEX letters to the editor also know your method is wrong. So let's go through it once again.

In designing your network you started with the load of 200 - j200 ohms and selected real components having attenuation to transform the load impedance to some desired input impedance. The combined attenuation in all the components defines a specific attenuation factor considered when transforming impedances from load to input.

The point you have failed to recognize is that when transforming from the input to the load, which is what you're asking us to do to calculate the output impedance of the network, the RECIPROCAL of the attenuation factor must be used to obtain the correct answer. You CANNOT use the same attenuation factor in both directions as you did in your erroneous calculations in your CommQuart article.

Because you made me look like an idiot in that article, I wrote a new section for Reflections II to explain this concept in defense of your incorrect statements in that article. I had the draft of the new sectio peer reviewed by several highly competent RF engineers who pronounced it correct, and were dismayed at the erroneous statements you made. Our own Richard Clark was one of those reviewers. He didn't comment on your article, but he did say that my statements concerning the proper use of the attenuation factor, depending on the direction of the impedance transformation, were "good as gold". His only criticism was that it's too long, and should be shortened to only include the proof shown on the Smith Chart.

So you can go right ahead and 'calculate' the output impedance of the network example you posed above, and if the result you achieve is not 200 + j200 ohms you have performed the calculation incorrectly.

Steve, I urge you to read the section "Appendix 9A" in Reflections II to understand the correct way to calculate impedance transformation through networks so that you can arrive at the correct answer.

Your obtaining the wrong answer for the output impedance of networks is the reason you believe that no conjugate match can be obtained if the network has attenuation. This is not true. You formed this wrong opinion simply because the answer you obtained is not the conjugate of the load impedance. As I said before, if you use the reciprocal of the attenuation factor when transforming the input impedance to the output impedance in your Mathcad calculation you'll get the conjugate of the load impedance, the correct answer. I showed you this a year ago but you didn't believe me. Try it again after reading my Appendix 9A.

Steve, if you'll write a letter to the editor of QEX stating that the material you published in the final issue of Communications Quarterly that defamed me is incorrect I'll gladly send you a complementary autographed copy of Reflections II.

Deal?

Walt, W2DU

4809. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 14:37:25 UTC
From: Bart Rowlett <bart@wb6hqk.ampr.org>
Message-ID: <3B0E6E25.D338A1D1@wb6hqk.ampr.org>
Source record: 162156

Walter Maxwell wrote:
>
> On Thu, 24 May 2001 15:53:54 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>
> >
> >A tuner is generally used to establish an impedance match (Zo-match) at its
> >input terminals. In this case, all of the initial forward power delivered
> >to the transmission line will be delivered to the Zo match point since there
> >are no steady state reflections. It is important to understand that this is
> >not the same as maximum power delivery. A Zo match in a transmission line
> >will only be a conjugate match when the impedance seen looking back towards
> >the source is also Zo (this is the definition of a conjugate match). A Zo
> >match, in and of itself, is not a subset of the conjugate match. A Zo match
> >is not always a conjugate match. A Zo match does not always result in
> >maximum power delivery to the transmission line system. This is obviously a
> >function of the transmitter characteristics.
> >
> >Additionally, if the tuner used in establishing an impedance match has any
> >loss, a conjugate match is not established at the load connected at the
> >tuner output. When the tuner has loss, establishing a conjugate match at
> >the load requires that a mismatch be established at the tuner input. In
> >this case, maximum power delivery to the load at the tuner output does not
> >occur when an impedance match is established at the tuner input. This is
> >easy to validate using simple circuit analysis. However, with a lowloss
> >tuner, the differences in power delivery are marginal at best.
> >
> >Steve VE9SRB
> >
> This is pure, unadulterated horse manure.

Looks correct to me. What do you find so offensive?

bart
wb6hqk

4810. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 14:54:30 UTC
From: w2du@iag.net
Message-ID: <3b0e7173.5610387@news.onemain.com>
Source record: 162072

On Fri, 25 May 2001 14:12:49 GMT, w2du@iag.net (Walter Maxwell) wrote:

>On Thu, 24 May 2001 23:13:07 GMT, "VE9SRB" <srbest@att.net> wrote:
>
>>
>>"Walter Maxwell" <w2du@iag.net> wrote in message
>>news:3b0d7cfb.10852074@news.onemain.com...
snip
>When the network is designed to transfer to the load all the power delivered at
>the input minus that lost in attenuation, the output impedance of the network is
>the conjugate of the load impedance by definition. Therefore the output
>impedance in your example is 200 + j200 without any calculation.

Sorry, typo error above, should be 200 - j200.
>
>Obviously you're going to use the same method of calculation for your example
>that you used in your CommQuart article that smeared me, because that method is
>wrong as you well know from the Mathcad proof that I showed you a year ago,
>using your own network parameters. And everyone who read our QEX letters to the
>editor also know your method is wrong. So let's go through it once again.
>
>In designing your network you started with the load of 200 - j200 ohms and
>selected real components having attenuation to transform the load impedance to
>some desired input impedance. The combined attenuation in all the components
>defines a specific attenuation factor considered when transforming impedances
>from load to input.

Sorry, another typo above, should be 200 + j200 ohms.
>
>The point you have failed to recognize is that when transforming from the input
>to the load, which is what you're asking us to do to calculate the output
>impedance of the network, the RECIPROCAL of the attenuation factor must be used
>to obtain the correct answer. You CANNOT use the same attenuation factor in both
>directions as you did in your erroneous calculations in your CommQuart article.
>
>Because you made me look like an idiot in that article, I wrote a new section
>for Reflections II to explain this concept in defense of your incorrect
>statements in that article. I had the draft of the new sectio peer reviewed by
>several highly competent RF engineers who pronounced it correct, and were
>dismayed at the erroneous statements you made. Our own Richard Clark was one of
>those reviewers. He didn't comment on your article, but he did say that my
>statements concerning the proper use of the attenuation factor, depending on the
>direction of the impedance transformation, were "good as gold". His only
>criticism was that it's too long, and should be shortened to only include the
>proof shown on the Smith Chart.

>
>So you can go right ahead and 'calculate' the output impedance of the network
>example you posed above, and if the result you achieve is not 200 + j200 ohms
>you have performed the calculation incorrectly.

Again, a typo reversal, above should be 200 - j200 ohms.
>
>Steve, I urge you to read the section "Appendix 9A" in Reflections II to
>understand the correct way to calculate impedance transformation through
>networks so that you can arrive at the correct answer.
>
>Your obtaining the wrong answer for the output impedance of networks is the
>reason you believe that no conjugate match can be obtained if the network has
>attenuation. This is not true. You formed this wrong opinion simply because the
>answer you obtained is not the conjugate of the load impedance. As I said
>before, if you use the reciprocal of the attenuation factor when transforming
>the input impedance to the output impedance in your Mathcad calculation you'll
>get the conjugate of the load impedance, the correct answer. I showed you this a
>year ago but you didn't believe me. Try it again after reading my Appendix 9A.
>
>Steve, if you'll write a letter to the editor of QEX stating that the material
>you published in the final issue of Communications Quarterly that defamed me is
>incorrect I'll gladly send you a complementary autographed copy of Reflections
>II.
>
>Deal?
>
>Walt, W2DU
>
>
>
>

4811. Re: 4-element yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 15:10:48 UTC
From: jason creamer <jason1@nbnet.nb.ca>
Message-ID: <3B0E7604.66EE5AC8@nbnet.nb.ca>
Source record: 162157

just make a 7ele yagi using a regular dipole as your driven element... i have made one like this and am using it at the present time with exellent reports(2m use) then you can feed it with regular 50 coaxil cable

JD wrote:

> It's possible that this question has been covered here in the past but I'll
> ask anyway. My radio club is having a competition to build a 4-element yagi
> antenna, I have a couple of plans for one but was curious if someone here
> might have a tried tested and true design that they may like to
> share.preferably something simple using a 50 ohm feed line and readily
> available materials.
> Thanks in advance.
> 73 de
> John, VE2 JDR

4812. Re: Coax and antenna for 2-meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 15:12:38 UTC
From: jason creamer <jason1@nbnet.nb.ca>
Message-ID: <3B0E7672.9D8DBC92@nbnet.nb.ca>
Source record: 162158

i would not use any more than what you need to get from the antenna to the radio..... try to keep it as short as possible to avoid any unnecessary loss
VE9JMC

Dan Richardson wrote:

> If you are only measuring SWR and not impedance the proper length to
> use the amount necessary to make it from you antenna to the radio. No
> more no less.
>
> Danny, K6MHE
>
> On Thu, 24 May 2001 17:06:14 -0700 (PDT), KD7MTM@webtv.net (Jeremy)
> wrote:
>
> >I would like to know the correct formula for figuring out how long my
> >coax needs to be to get a correct reading on an swr meter. I am using
> >the cheap Radio Shack RG-58. Is the velocity factor .66?
> >I would also like the formula for figuring out how long my mobile
> >antenna(stainless steel if it makes a difference) needs to be to be a
> >5/8 wave using 146.000 Mhz as the center frequency. The only formulas
> >that I have are for 1/4 wave and for 1/2 wave. Any help would be greatly
> >appreciated. Please respond to my e-mail address. I only get a chance to
> >check the NG about once a week. Thanks, Jeremy

4813. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 15:34:53 UTC
From: richardharrison@webtv.net
Message-ID: <10373-3B0E7B9D-31@storefull-116.iap.bryant.webtv.net>
Source record: 162159

Bart, WB6HQK wrote:
"Looks correct to me."

Steve `s quote which Bart seems to endorse includes:
"Additionally, if the tuner used in establishing an impedance has any loss, a conjugate match is not established at the load connected at the tuner output."

A tuner can`t prevent SWR on a line connected to its output, but Steve said "a conjugate match is not established at the load connected at the tuner output".

Bart agrees with that?????

Best regards, Richard Harrison, KB5WZI

4814. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 15:46:37 UTC
From: kb7qhc@home.com
Message-ID: <3b0e7dd7.517417967@news.seanet.com>
Source record: 162160

On Fri, 25 May 2001 07:37:25 -0700, Bart Rowlett
<bart@wb6hqk.ampr.org> wrote:

>Walter Maxwell wrote:
>>
>> On Thu, 24 May 2001 15:53:54 GMT, "VE9SRB" <srbest@att.net> wrote:
>>
>>
>> >
>> >A tuner is generally used to establish an impedance match (Zo-match) at its
>> >input terminals. In this case, all of the initial forward power delivered
>> >to the transmission line will be delivered to the Zo match point since there
>> >are no steady state reflections. It is important to understand that this is
>> >not the same as maximum power delivery. A Zo match in a transmission line
>> >will only be a conjugate match when the impedance seen looking back towards
>> >the source is also Zo (this is the definition of a conjugate match). A Zo
>> >match, in and of itself, is not a subset of the conjugate match. A Zo match
>> >is not always a conjugate match. A Zo match does not always result in
>> >maximum power delivery to the transmission line system. This is obviously a
>> >function of the transmitter characteristics.
>> >
>> >Additionally, if the tuner used in establishing an impedance match has any
>> >loss, a conjugate match is not established at the load connected at the
>> >tuner output. When the tuner has loss, establishing a conjugate match at
>> >the load requires that a mismatch be established at the tuner input. In
>> >this case, maximum power delivery to the load at the tuner output does not
>> >occur when an impedance match is established at the tuner input. This is
>> >easy to validate using simple circuit analysis. However, with a lowloss
>> >tuner, the differences in power delivery are marginal at best.
>> >
>> >Steve VE9SRB
>> >
>> This is pure, unadulterated horse manure.
>
>Looks correct to me. What do you find so offensive?
>
>bart
>wb6hqk

Hi Bart,

The offense appears to be one of resistance - in one form or another.

Off hand I would say that Steve is injecting too fine a point and
Walt, like the princess and the pea, cannot find comfort with even 20

mattresses to cover his comment.

73's
Richard Clark, KB7QHC

4815. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 16:02:22 UTC
From: w2du@iag.net
Message-ID: <3b0e8118.9615516@news.onemain.com>
Source record: 162073

On Fri, 25 May 2001 15:46:37 GMT, kb7qhc@home.com (Richard Clark) wrote:

>On Fri, 25 May 2001 07:37:25 -0700, Bart Rowlett
><bart@wb6hqk.ampr.org> wrote:

>>Looks correct to me. What do you find so offensive?
>>
>>bart
>>wb6hqk
>
>Hi Bart,
>
>The offense appears to be one of resistance - in one form or another.
>
>Off hand I would say that Steve is injecting too fine a point and
>Walt, like the princess and the pea, cannot find comfort with even 20
>mattresses to cover his comment.
>
>73's
>Richard Clark, KB7QHC

Richard, if you'll view my last two posts you'll see why Steve will never find comfort with any number of mattresses untll he learns the correct method for transforming impedances through a network. His problem is much larger than the pea.

Walt.

4816. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 16:14:10 UTC
From: katycat2345@aol.com
Message-ID: <20010525121410.06434.00001469@ng-ct1.aol.com>
Source record: 162161

I'm away from home and don't have access to even a four function calculator so let me throw out a simple example that I can do in my head, just as food for thought:

Assume a perfect 50 ohm source and a load of 50 -j50. My 'matching network' is an inductor of +j50 with a Q of 50.

If I use Steve's view of things, I cannot have everywhere a conjugate match. From the source perspective it looks like a load of 51+ j0 and from the load end it looks like 51 + j50.

But what if I cut the indoctor in half and look both ways from the 'middle' of the network. Toward the load it looks like 50.5 - j25 and toward the souce it looks like 50.5 + j25. A conjugate match exists in the middle of the lossy network.

I guess it all depends on your point of view.

Wes Stewart N7WS

4817. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 16:14:44 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B0E84F4.E24E4AD9@berkshire.net>
Source record: 162165

DON'T READ THIS IF YOU HAVE A PET CRUTCH THAT LETS YOU EXPLAIN THE Z0-MATCH!
YOU WILL BE TOTALLY BLOWN AWAY BY THE SIMPLICITY OF IT IN THE END AND I WILL NOT ACCEPT RESPONSIBILITY FOR THE CONSEQUENCES OF THAT.

OK, lets do both analysis, steady state and transient from scratch and see just where the voltages and powers go.

Anywhere I use a reference its from "Fields and Waves in Communications Electronics" by Ramo, Whinnery, and Van Duzer 2nd printing 1967. however most of the formulas used are simple applications of Kirchoff's and Ohm's laws.

First, a couple basics.
1. it is only necessary to analyze the voltage OR the current in either case as they are always related by the impedance. and since any combination of 2 of the 3(voltage, current, impedance) can be used to compute power it is not necessary to compute powers at every step(though you may if you want and i will throw in the important ones so you can follow along).

2. voltages and currents must add up at each junction (kirchoff's laws)

3. the complete solution of the wave equations only needs one wave traveling each direction on a line.(section 1.14) my convention will be Vf and If travel from source toward the load(forward) and Vb and Ib travel from the load toward the source(backward). (i would use V+,I+ and V-,I- as used in the reference but in text that would get confusing)

4. i assume lossless lines.

for the following be sure to select a fixed width font in your reader or things won't line up and you will stay confused.

S=source = 70.7v into 50ohm load
X=junction
L=load = 50 ohm

Z0=50 Zh=150, length=1/2wave
S-----------------------X----------------------------------L

==========
In steady state:

at point L lets solve for the voltages:

Vf+Vb=Vl (1) (kirchoff's law)
If+Ib=Il (2) (kirchoff's law)

rewrite (2) using I=V/Z for each
Vf/Zh + Vb/Zh = Vl/Rl (3) note, Zh=150 in the half wave line

I won't go through all the steps, but by substituting (1) into (3) for Vl and solving for Vf and Vb you get:

Vf=2*Vl (4)
Vb=-Vl (5)

now, do they make sense?

well, assuming that all the power gets to the load, we have 100w into 50 ohms which gives a voltage of 70.7v. that must result in Vf=141.4v and Vb=-70.7v. this of course satisfies (1). if you look at the powers in the half wave line that gives Pf=141.4^2/150 = 133w and Pb=70.7^2/150=33w. so as expected 133-33=100w for the load.

i won't re-solve the set of equations for currents here, you can get them either from restating (3) in currents and solving again for If and Ib or use Ohm's law to convert voltage to current: If=.943a and Ib=-.471a to give Il=1.414a.

at X we can do a similar exercise, yielding, of course, identical results since all the impedances are the same and the line is lossless. but just so we are all on the same page, at X Vf=141.4, Vb=-70.7, which of course add up to the expected source voltage of Vs=70.7. So the 100w delivered to X from the source is balanced by the two waves in the 150 ohm line, 133w forward wave and a 33w backward wave.

I don't think there is any room for confusion here. we can make several checks to see that this is what would be expected from other equations. and of course the foward power agrees with cecil's 'total forward power' at http://people.delphi.com/cecilmoore/z0match.gif, and the backward's wave power agrees with his 'reflected' power. however you should note, there is no need to break it down any further in the steady state analysis, the simple balancing of voltages OR currents at each junction is enough to explain everything. and because the complete solution of the wave equation only needs 2 parts there is no need to keep track of 8 different pieces as cecil does.

==========
transient analysis:

now we get messy. first, lets calculate the various reflection and transmission coefficients we will need.

S-----------------------X-----------------------------------L
----> REFL_50=.5
TRAN_50=1.5

from Refl=(Rload-Z0)/(Rload+Z0) (eqn 4 in section 1.16 in the reference) in the 50 ohm line with a 150 ohm 'load'. this is a bit odd since you normally think of the steady state values here which would have this be REFL_50=0 and TRAN_50=1 so that all of the source wave gets past. but remember, this is transient analysis, look at the instant the first wave arrives from the source, all it can see is the 150 ohm characteristic impedance of the other side of X. and since

we are going to be looking at each wave as it arrives separate from the reflections from L we must do this.

```
S------------------------X-----------------------------------L
<----- REFL=-.5 REFL=-.5 --->
TRAN=.5 TRAN=.5
```

these are both the same as would be expected since each end of the 150 ohm line sees a 50 ohm load. to simplify this we must assume that the impedance of S is also 50 ohms, or that the 50 ohm line is infinitely long so reflections from S of a wave traveling to the left between S and X can be ignored.

now, why can i do this? ONLY because i am going to track each reflection separately and not compute the effective impedance seen at X by the wave arriving from the source. As we have seen above in the steady state conditions the voltages add up at X without a backward wave on the 50 ohm line. I will manually do the superposition of the waves to show how the components add up to a steady state solution by adding the voltages at X and L. this is an extension of the analysis done in section 1.16 and 1.17 of the reference.

now we begin:

step 1, first wave from source arrives at X. since the source voltage is 70.7v as we calculated in the steady state case for 100w. we get the following:

```
70.7v
----------------------> X
<------------------- ------->
70.7*REFL_50=35.3v 70.7*TRAN_50=106v
```

look at this carefully. we have 70.7v from the incident wave, 35.3v in the reflected wave, which totals to the 106v in the forward wave in the 150 ohm line. as stated above we will assume that the 35.3v backward wave in the 50 ohm line is absorbed by the source impedance and is lost.

step 2, travel to the load:

```
106v
--------------> L
<------------- -------->
106*REFL=-53v 106v*TRAN = 53v
```

now, look at these. again, the voltages add up. 106v foward plus -53v backward=53v left for the load. i won't bother adding them up again in the following steps, but if you do, they always will. (minus rounding error maybe)

step 3, take the -53 reflection back to X:

first, the source is still applying the same wave so we have:

```
70.7v
----------------------> X
<------------------- ------->
70.7*REFL_50=35.3v 70.7*TRAN_50=106v
```

but now we have this one also:

```
-53v
X <-------
<------------------- ---------------------->
-53*TRAN=-26.5 -53*REFL=26.5
```

now adding the voltages in the various components gives:

```
70.7v -53v
----------------------> X <-------------
<------------------- ----------------->
35.3v-26.5v=8.8v 106v+26.5v=132.5v
```

step 4, take the 132.5v forward wave back to the load end:

```
132.5v
--------------> L
<---------------- -------------------->
132.5*REFL=-66.25v 132.5v*TRAN = 66.25v
```

step 5, take the -66.25v backward wave back to X (don't worry, i'm almost done)

first, the source is still applying the same wave so we have:

```
70.7v
----------------------> X
<------------------- ------->
70.7*REFL_50=35.3v 70.7*TRAN_50=106v
```

but now we have this one also:

```
-66.25v
X <-------
<------------------- ---------------------->
-66.25*TRAN=-33.1 -66.25*REFL=33.1
```

now adding the voltages in the various components gives:

```
70.7v -66.25v
----------------------> X <-------------
<------------------- ----------------->
35.3v-33.1v=2.2v 106v+33.1v=139.1v
```

now, if you continue this ad nauseum the values will converge on the ones we already know from the steady state analysis above:

```
70.7v -70.7v
----------------------> X <-------------
<------------------- ------------->
0v 141.4v
```

---

let me break here since i'm going to start all over. if you add up the voltages above of course they all total up. i have specifically ignored the powers since

that would just add more to the clutter. so here are the simple power computations to go with the above voltages:

step 1

```
100w
----------------------> X
<------------------- ------->
25w 75w
```

step 2

```
75w
--------------> L
<------------- -------->
18.7w 56.3w
```

step 3

```
100w
----------------------> X
<------------------- ------->
25w 75w
```

but now we have this one also:

```
18.7w
X <-------
<------------------- ---------------------->
14w 4.7w
```

now adding the voltages in the various components gives:

```
100w 18.7w
----------------------> X <-------------
<------------------- ----------------->
1.5w 117w
```

step 4,

```
117w
--------------> L
<---------------- -------------------->
29.3w 87.8w
```

step 5,

```
100w
----------------------> X
<------------------- ------->
25w 75w
```

but now we have this one also:

```
29.3w
X <-------
<------------------- ---------------------->
21.9w 7.3w
```

now adding the voltages in the various components gives:

```
100w 29.3w
----------------------> X <-------------
<------------------- ----------------->
.1w 129w
```

now, if you continue this ad nauseum the values will converge on the ones we already know from the steady state analysis above:

```
100w 33.3w
----------------------> X <-------------
<------------------- ------------->
0w 133.3w
```

so, to answer cecil's repetitive question about how does 75w + 8.33w = 133.33w....

its not 75w+8.33w that ads up to 133.33w its actually 100w+33w=133w ! amazing how that works when you add apples to apples and carry through all the steps!

now wait a minute, you may say... how does 33w coming back from the load get 'totally reflected' at X??? well just look at the voltages add up above. note that each successive reflection from the load end comes back and subtracts (destructive interference if you must use that term) from what would have been in the backwards wave on the 50 ohm line. the part of it that is then reflected from X back toward the load then adds to the portion of the incident wave that gets past X (constructive intereference if you must). just add up the voltages and it all works out in the end. no need for the crutches of 'interference', 're-reflection', 'virtual shorts', 'total rereflections', 'z0 matches' or any of that stuff... REALLY get back to the basics and it all works! absolutely amazing!

so where does cecil get 8.33w from anyway??? well, that is the value that the re-reflection converges on in steps 3 and 5 where it goes from 4.7w to 7.3w, it would eventual converge on 8.33w, but that is just part of the 133.33w forward wave that is the sum of the 100w and 33w waves in the steady state. his 50w 'interference' accounts for the 25w that doesn't get reflected from the incident 100w from the source, plus the 25w from the 33.33w that he shows as 'not re-reflected'.

now if you really want to get into it you can do the same reflection analysis for currents (just watch the signs!) and then compute the effective impedance seen at X when looking from the source side and see that it looks like 50 ohms, so of course all the power gets transfered past X without reflections toward the source.

IN SUMMARY: (finally you say???)

EVERYONE WAS RIGHT! but we all knew that didn't we?

There are many different viewpoints that can be used in analyzing problems of this type. In my analysis i chose to track voltages, i could just as easily tracked currents. but watch out, you can not always track powers and understand what is going on... in computing power you lose important information about the phase angle that is needed in the general case...unless of course you include 'reactive power' as is usually done in power system analysis.

Also, there are many different shortcuts that can be applied in specific cases as long as you are careful to only use them in the right cases. i.e. this analysis WOULD NOT WORK if the source impedance was not 50 ohms. if the source impedance was not 50 ohms then it would be necessary to consider the length of the 50 ohm cable and added reflections on it. it would also fail if the load impedance was not 50 ohms or the length of the 150 ohm line was not exactly 1/2 wave. it also wouldn't work if there were 2 sources combined to feed the one line as has been discussed in offshoots of this thread as a counter example. so beware of generalizing from a simple case like this.

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4818. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 16:24:58 UTC
From: kb7qhc@home.com
Message-ID: <3b108559.519339600@news.seanet.com>
Source record: 162162

On Fri, 25 May 2001 08:22:15 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Steve, VE9SRB wrote:
>"If the tuner used in establishing an impedance match has any loss, a
>conjugate match is not established at the load connected at the tuner
>output."
>
>With a capable tuner we can have a conjugate match if we want a
>conjugate match.
>
>The loss of the tuner can be characterized by a single resistor in
>series with the source. For analysis, the resistance representing the
>tuner loss can be combined with the internal resistance of the source.
>
>We adjust the tuner`s transformation ratio to provide a resistance match
>between source and load which accounts for all the resistance in the
>source, including the tuner`s loss.
>
>We adjust the tuner for zero reactance.
>
>A conjugate match results from simply adjusting the tuner. Emphatically,
>this is true!
>
>Best regards, Richard Harrison, KB5WZI

Hi Richard,

As you point out, for the discussion of a conjugate match, one must necessarily partition the design into source and load, and one or the other (or possibly both) must absorb the characteristics of what would be characterized here as an "external" loss.

That is to say, if at any point you choose to discuss conjugation within the real world you must be prepared to tolerate the inaccuracy forced into the pure equations by the nature of real loss.

To dismiss the notion of conjugation based upon the evidence of its failure in the face of reality holds a standard that no theory can withstand. There are no absolutes in this vale of tears. Even the Primary Standards at my Metrologist's bench were defined by their limits, not their purity (which is wholly acknowledged to be unobtainable).

73's
Richard Clark, KB7QHC

4819. Lots of antennas FOR Sale

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 16:41:31 UTC
From: kj6y@aol.com
Message-ID: <20010525124131.08010.00001245@ng-ce1.aol.com>
Source record: 162163

After many years of tower and antenna installations and repairs, I have a yard full. Here is a list of antennas for sale. They range from almost new in excellent condition to some needing to be repaired. Some just require new hardware, nuts and bolts. These are just asking prices, and negotiable. All are for pick only. Shipping would require additional cost to disassemble and box. Let me know what you are interested in.
Skip, KJ6Y, 818-887-3569

KLM:
5 KT34Xas 6 El tribanders. $200.00-300.00
1-KT34A 4 el tribander. $125.00
1-40M-3 3 el 40 meter with balun and matching section. $300.00
2-40M-2 3 el 40 meter with balun and matching section. #100.00-125.00
1- 20M-6 6 el 20 meter 58 ft boom with balun. $350.00
1-15M-6 6 el 15 meter with balun. $275.00
2-10M6 6 el 10 meter. One needs new element mounting hardware. $75.00-125.00.

Hygain:
2- 204BA 20 meter with balun. $150.00
2- TH6DXX for 10-15 meters. $100.00

Cushcraft:
1- A4S w/40m kit 10-15-20-40. $175.00
1- A3S 1`0-15-20 meter. Needs a little repair. $100.00
1- A50-5S 5 el 6 meter. Almost new. $125.00
1- 13B2 13 el 2 meter Boomer. Almost new. $75.00
1-11 el 2 meter. $40.00

M2:
1- 16 el 2 meter Long boom. $150.00
1- 7 el 6 meter $150.00

Mosley:
1- CL-33 Classic 3 el tribander. $125.00
1- TA-33 3 el tribander. $100.00
1- TA-33JR 3 el tribander. $75.00 Sold

Telrex:
1- 20M-5 5 el 20 meter 46 ft boom. Very big and heavy. $500.00
1- 15M5 5 el 15 meter. About a 36 ft boom. Needs some minor repair. $300.00

Thanks for reading this.

Skip, KJ6Y
Communications Service Co.
http://members.aol.com/kj6y/skip.html

818-887-3569

4820. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 16:42:45 UTC
From: Bart Rowlett <bart@wb6hqk.ampr.org>
Message-ID: <3B0E8B85.919ADE25@wb6hqk.ampr.org>
Source record: 162164

Richard Harrison wrote:
>
> Bart, WB6HQK wrote:
> "Looks correct to me."
>
> Steve `s quote which Bart seems to endorse includes:
> "Additionally, if the tuner used in establishing an impedance has any
> loss, a conjugate match is not established at the load connected at the
> tuner output."

That's correct. At the tuner output port, the impedance looking into
the tuner will not be the complex conjugate of the load impedance under
the conditions described in Steve's post.

> A tuner can`t prevent SWR on a line connected to its output, but Steve
> said "a conjugate match is not established at the load connected at the
> tuner output".
>
> Bart agrees with that?????

Yes, under the conditions stated in Steves post.

bart
wb6hqk

4821. Re: Yaesu power connectors???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 17:24:02 UTC
From: Eric Ruuska <eruuska@netnitco.net>
Message-ID: <3b0e94a0@news.netnitco.net>
Source record: 162166

I checked out the Anderson site, and it looks really cool. Any tricks to using them, or is it pretty much self-explanatory? Do I need the crimping tool, or can I use something I already have in my toolbox?

Thanks and 73,
Eric Ruuska
KB9ZHN

>I have converted all my rigs as well as all my power supplies over to
>Anderson PowerPole connectors. These things are great, I even installed a
>panel mount four device connector block in the kick panel of my Chevy
>Blazer. Now, any rig plugs into any power source - either base or mobile.
>
>Check out http://www.powerwerx.com/
>
>Great prices, and they do sell the factory Yaesu connectors like those used
>on the FT-100's ...
>
>73 de W6DKN
>
>

4822. Re: Question regarding Radials on vertical HF antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 17:33:50 UTC
From: rmclean@invalid.com
Message-ID: <3B0E9744.78E049F9@invalid.com>
Source record: 162167

Yep, hence the invalid.com :-). At one time I did use my email adress, but with all the spam robots out there I had to remove it. Sorry. My QRZ address is correct, however as I didn't port my call in the first message, that dosen't help much. Sorry de WO5M(I will not forget this time)!

K9SQG wrote:

> Invalid email address...

--
Randy Mclean
Administrator of Novell, UNIX, NT, Network Security, and/or any thing else that users break around here(WHY IS THAT???)!

4823. Re: Question regarding Radials on vertical HF antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 17:38:44 UTC
From: rmclean@invalid.com
Message-ID: <3B0E9857.4B048297@invalid.com>
Source record: 162168

Richard Harrison wrote:

> Randy Mc Lean wrote:
> "Can radials be buried slightly below the ground---?---I have only 180
> degrees for placing radials."
>
> Slight, if any. radial burial is best. Radials are buried for
> protection and convenience. Radials complete the antenna circuit through
> their capacitance with the tower. The less loss in this capacitance, the
> more efficient the antenna. The 180 degrees of ground without radials
> will be lossier than that with radials. Do it anyway the best you can.
> More radials is usually better than longer radials. Install the most you
> can.
>
> Best regards, Richard Harrison, KB5WZI

Well thanks for the reply, I have found it most helpful. All I need now is
the antenna. 73's de WO5M

--
Randy Mclean
Administrator of Novell, UNIX, NT, Network Security, and/or any thing else
that users break around here(WHY IS THAT???)!

4824. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 17:51:48 UTC
From: w2du@iag.net
Message-ID: <3b0e99e0.15959508@news.onemain.com>
Source record: 162084

On Fri, 25 May 2001 17:14:44 +0100, David Robbins <k1ttt@berkshire.net> wrote:

>DON'T READ THIS IF YOU HAVE A PET CRUTCH THAT LETS YOU EXPLAIN THE Z0-MATCH!
>YOU WILL BE TOTALLY BLOWN AWAY BY THE SIMPLICITY OF IT IN THE END AND I WILL NOT
>ACCEPT RESPONSIBILITY FOR THE CONSEQUENCES OF THAT.
>
>OK, lets do both analysis, steady state and transient from scratch and see just
>where the voltages and powers go.
>snip
>so where does cecil get 8.33w from anyway???--
>David Robbins K1TTT

Well David, it isn't 'where did Cecil get 8.33w', it's that Cecil tried to get Steve to account for the missing power when he kept insisting that 8.33w + 75w = 133.33w with no further explanation except that the forward and steady-state reflected voltages added up with those values of power..

But anyway, thanks for the detailed analysis.

Walt, W2DU

4825. J-Pole Design

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 17:54:38 UTC
From: S & S Mackay <smofny@netsync.net>
Message-ID: <3B0E9C5E.BE5A47FE@netsync.net>
Source record: 162069

Request a site or info on the design of J-Pole antennae for VHF.
Cheked the archives; NL
TIA
Scott W7GSM
--
ï¿½ï¿½à¡±ï¿½

4826. Re: Yaesu power connectors???

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 18:00:37 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B0E9DC4.7C0F@wt.net>
Source record: 162070

Eric Ruuska wrote:
>
> I checked out the Anderson site, and it looks really cool. Any tricks to
> using them, or is it pretty much self-explanatory? Do I need the crimping
> tool, or can I use something I already have in my toolbox?
>
> Thanks and 73,
> Eric Ruuska
> KB9ZHN

I've never used any special tools using mine. I use the grey one piece anderson connectors. If you have a crimper, it needs to be a strong one for those as they are pretty tough to crimp. Many times I solder only without crimping so I can easily use them over again on something else. On the ones I use, the silver plated "connectors come seperate from the plastic part. You hook up the wires to them, and then push them into the plastic connector until they lock. I use nothing but these connectors on all my 12v gear. The great part about them is any one piece will hook to another. So you can hook anything to anything. And you can get the polarity wrong as they only fit together one way. If I have my 2nd btty in the car, I can jump start myself without getting out. Or recharge the 2nd btty off the car. Real handy. I'll never use anything else. The one piece grey ones I use handle 50 amps at 600v. MK
--
http://web.wt.net/~nm5k

4827. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 18:36:32 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <5BxP6.1072$z83.1280647@nntp1.onemain.com>
Source record: 162086

VE9SRB <srbest@att.net> wrote in message
news:m%kP6.44983$4f7.3288528@bgtnsc06-news.ops.worldnet.att.net...
> >If the tuner used in establishing an impedance match has any
> >loss, a conjugate match is not established at the load connected at the
> >tuner output. When the tuner has loss, establishing a conjugate match at
> >the load requires that a mismatch be established at the tuner input. In
> >this case, maximum power delivery to the load at the tuner output does
not
> >occur when an impedance match is established at the tuner input. This is
> >easy to validate using simple circuit analysis. However, with a lowloss
> >tuner, the differences in power delivery are marginal at best.
> >
> >Steve VE9SRB
> >
>

> To prove the validity of my statements above, let's consider a simple
> example.
>
> In this case, a load of 200 + j200 ohms is connected at the output of a
> T-network comprised of a series capacitor C1, a parallel inductor L, and a
> series capacitor C2. To introduce loss into the T-network, the capacitor
Q
> is set at 50 and the inductor Q is set at 25. The operating frequency is
> 21.2 MHz.
>
> To establish an impedance match at the T-network input, the following
> component values were used:
>
> Series C1: 90 pF, ZC1 = 1.668 - j83.415 ohms
>
> Parallel L: 0.78367 uH, ZL = 4.176 + j104.388 ohms
>
> Series C2: 33.364 pF, ZC2 = 4.5 - j225.012 ohms
>
> Using simple circuit theory we can determine the steady state impedance at
> the T-network input. This is done by transforming the load impedance
> through the network to its input. Looking forward into the network, the
> network input impedance is determined to be 50 ohms. Assuming that Zo is
50
> ohms, a steady state impedance match occurs at the network input. The
issue
> to consider now is the following: does a conjugate match simultaneously
> exist at the network output.

Indeed it does!

> If a conjugate match exists at the network output, maximum power would be
> delivered to the load. There would be no other impedance to which more
> power could be delivered. Additionally, the impedance looking rearward
into
> the network output would be the conjugate of the load impedance. Let's
> determine the impedance looking rearward into the network.
>
> To determine the impedance looking rearward into the network, we transform
> the impedance "terminating" the network input from the perspective of the
> rearward view. If the T-network input is connected to a 50 ohm line which
> is then connected to a source with a 50 ohm impedance, the impedance
> "terminating" the T-network input from the rearward view is 50 ohms. To
> determine the impedance looking rearward into the network, we transform
this
> impedance forward through the network to the network output. This is the
> impedance that a network analyzer would measure when connected to the
> network's output terminals. Using simple circuit theory, this rearward
> impedance is determined to be 174.273 - j198.428 ohms. A conjugate match
> does not exist at the network output.

This is not true, because a conjugate match does exist at the network output. It is true that the network analyzer shows 174.273 - j198.428 ohms, but this is NOT the impedance at the network output when in normal operation.

What I've tried to explain to Steve unsuccessfuly is that with the network turned around, as it is when the input is terminated in 50 ohms and measured at the output, what was the input is now the load, with the result that the network attenuation is working in reverse. The attenuation was used once in going from output to input. Now in going from the input to the output to determine the output impedance the reciprocal of the attenuation factor must be used, else you're double dipping the attenuation.

Visualize it on the Smith Chart. Starting at the load the impedance curve spirals inward in going toward the input, due to the attenuation. Going back to the load from the input the curve spirals outward to return to the point of origin as a result of considering the attenuation as the reciprocal of that going from load to input. On the contrary, if the attenuation is going from load to input twice, as iis done in the analyzer measurement, we're going on around the Smith Chart a second time, with the impedance curve spiraling inward a second time, rather than going back to the origin. This is why Steve gets the wrong answer when calculating from input to load, and this is why he obtained the wrong answer in his article in the final issue of Communications Quarterly that impugned my credibility in asserting my statements in Reflections are erroneous.

A calculation of the correct network output impedance can be made starting with the input impedance, but the attenuation factor MUST be reversed to obtain the correct answer in returning to the starting point--the load. But BEWARE of the MEASUREMENT looking into the output with the input terminated--the answer is wrong unless the network is lossless. With

attenuation the difference in the value measured with he analyzer and the true output impedance increases in proportion to the amount of attenuation.

Walt, W2DU

PS--an entire Appendix in Reflections II explains this concept, with a Smith Chart presentation.

4828. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 18:52:17 UTC
From: kb7qhc@home.com
Message-ID: <3b11a87c.528334154@news.seanet.com>
Source record: 162075

On Fri, 25 May 2001 17:14:44 +0100, David Robbins
<k1ttt@berkshire.net> wrote:

>DON'T READ THIS IF YOU HAVE A PET CRUTCH THAT LETS YOU EXPLAIN THE Z0-MATCH!
>YOU WILL BE TOTALLY BLOWN AWAY BY THE SIMPLICITY OF IT IN THE END AND I WILL NOT
>ACCEPT RESPONSIBILITY FOR THE CONSEQUENCES OF THAT.
>

Hi Dave,

I see you have picked up the talent of explaining the complete laws of
physics within the gasp of one breath.

359 lines, hmmm? That in itself defeats any careful consideration.
In other words, simple it is NOT.

73's
Richard Clark, KB7QHC

4829. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 18:52:23 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0EA9E7.22FFFBF5@IEEE.org>
Source record: 162074

David Robbins wrote:
> so, to answer cecil's repetitive question about how does 75w + 8.33w =
> 133.33w....
>
> its not 75w+8.33w that ads up to 133.33w its actually 100w+33w=133w ! amazing
> how that works when you add apples to apples and carry through all the steps!

Or even finer tuning: (75w + 25w) + (8.33w + 25w) = 133.33w

where the two 25w quantities are the ones involved in the constructive/destructive interference.

> now wait a minute, you may say... how does 33w coming back from the load get
> 'totally reflected' at X??? well just look at the voltages add up above. note
> that each successive reflection from the load end comes back and subtracts
> (destructive interference if you must use that term) from what would have been
> in the backwards wave on the 50 ohm line. the part of it that is then reflected
> from X back toward the load then adds to the portion of the incident wave that
> gets past X (constructive intereference if you must).

The argument at this point of one of semantics. Purists would argue that the powers involved in the destructive/constructive interference pattern does not technically meet the definition of "re-reflected" and I agree with that. However, it is splitting hairs since the energy involved in the destructive/constructive interference pattern joins the forward energy right along with the re-reflected energy and becomes indistinguishable from the rest of the forward energy.

One of the conservation of energy mistakes that Steve is making is considering powers, which are scalar values, to be vectors and using vector math on them. I assume Peter is appalled by this since he allegedly thinks that not only is it not a vector, it is not even power. :-)

> so where does cecil get 8.33w from anyway??? well, that is the value that the
> re-reflection converges on in steps 3 and 5 where it goes from 4.7w to 7.3w, it
> would eventual converge on 8.33w, but that is just part of the 133.33w forward
> wave that is the sum of the 100w and 33w waves in the steady state. his 50w
> 'interference' accounts for the 25w that doesn't get reflected from the incident
> 100w from the source, plus the 25w from the 33.33w that he shows as 'not
> re-reflected'.

All just an exercise to satisfy the purists.

> EVERYONE WAS RIGHT!

Nope, the people who assert that 75 joules/sec + 8.33 joules/sec = 133.33 joules/sec are obviously wrong. The conservation of energy principle still applied last time I looked.

I have been harassed by Steve's supporters who seem to agree with him that it is OK to willy-nilly violate the conservation of energy principle. I challenge any of them to prove that:

IF V1 + V2 = Vtot THEN V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0 = 75w + 8.33w = 133.33w

> ... you can not always track powers and understand what is going on...

I agree that one must be super careful when tracking powers. The task is simplified when a typical ham antenna system is considered. The fact that there are no reflections on the coax going to the transmitter means that the transmitter is seeing it's designed-for impedance in the case of solid-state transmitters. That fact simplifies the math model because all voltages and all currents are at phase angles of either zero degrees or 180 degrees, i.e. there are no VARS at the match point. In fact, it becomes a no-brainer. If there is no reflected power reaching the transmitter, then, in a lossless system, all power is dissipated (or radiated) by the load. There is simply no other place for it to go.

The basic problem is some people believe you can count power twice. They believe that V^2/Z0 and I^2*Z0 are different powers but, in reality, they are the same power. The total power in a wave, at any one time, divides between the electric field and the magnetic field. Steve tries to put all the power in the electric field and thus arrives at his erroneous conclusions by dealing only with voltages. It is not his voltage values that are erroneous, it is his conclusions that P1 + P2 can equal more than P1 + P2. I am astounded at just how far Steve's friends will go to support his violation of the conservation of energy principle. This includes some people I once respected.

> Also, there are many different shortcuts that can be applied in specific cases
> as long as you are careful to only use them in the right cases. i.e. this
> analysis WOULD NOT WORK if the source impedance was not 50 ohms. if the source
> impedance was not 50 ohms then it would be necessary to consider the length of
> the 50 ohm cable and added reflections on it.

The source impedance has nothing to do with the reflections on the feedline. The load is what determines reflections on the feedline. If 50 ohm coax is feeding a 50 ohm load, then the only effect that the source impedance has is efficiency and that will-of-the-wisp concept, the conjugate match.
--
73, Cecil

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4830. Re: Twin-Lead Standoffs - What To Use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 18:58:44 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0EAB64.55877E6E@IEEE.org>
Source record: 162076

"Brian Kelly, w3rv" wrote:
>
> On Mon, 21 May 2001 22:19:59 -0500, W6RCecilA <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >
> > >If the twinlead is carrying a high SWR, the impedance seen at the input
> > >to the twinlead will be anything except the characteristic impedance.
> > >I simply don't use 4:1 baluns anymore because they rarely see the
> > >200 ohms resistive for which they were designed.
> > >
> > Somebody needs to kill "baluns" and the pervasive mythology which
> > surround them.

Well, baluns have their place. One should be used at every balanced/unbalanced
junction *IF* the balun is designed for that particular input and output impedance.
--
73, Cecil

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4831. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 19:00:42 UTC
From: kb7qhc@home.com
Message-ID: <3b12aa21.528755740@news.seanet.com>
Source record: 162077

On Fri, 25 May 2001 14:12:49 GMT, w2du@iag.net (Walter Maxwell) wrote:

>because that method is
>wrong as you well know from the Mathcad proof that I showed you a year ago

Hi Walt,

This is the classic problem of "show or tell," and it is an example of poor writing when you offer not the evidence, but instead the charge (over and over and over...).

That is, you and only you have access to this special knowledge that proves your point, and yet you show at every opportunity that you prefer to withhold this evidence in preference to making yet another tedious charge.

All you offer us is the outrage of the righteous, not the acts of charity that made you righteous.

73's
Richard Clark, KB7QHC

4832. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 19:06:48 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0EAD48.2780627C@IEEE.org>
Source record: 162078

Richard Harrison wrote:
> With a capable tuner we can have a conjugate match if we want a
> conjugate match.

Watch out, Richard, you are about to be caught in a semantic trap.
The conjugate matching theorem apparently requires a four-terminal
network containing only reactances. When's the last time you encountered
a lossless inductance?
--
73, Cecil

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4833. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 19:08:46 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0EADBE.C5A4346C@IEEE.org>
Source record: 162080

Richard Clark wrote:
> To dismiss the notion of conjugation based upon the evidence of its
> failure in the face of reality holds a standard that no theory can
> withstand. There are no absolutes in this vale of tears. Even the
> Primary Standards at my Metrologist's bench were defined by their
> limits, not their purity (which is wholly acknowledged to be
> unobtainable).

Yep, do infinite series actually exist in reality?
--
73, Cecil

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4834. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 19:10:02 UTC
From: kld68@my-deja.com
Message-ID: <d1523471.0105251110.c274c81@posting.google.com>
Source record: 162079

Terrific! And the suit holds the juices in while cooking. Does it come with a basting brush?

Campone <info@mantenna.net> wrote in message
news:<MPG.1578e3589c093ad39896b0@news.earthlink.net>...
> An amazing new product will be released in the near future.
>
> The Mantenna!!
>
> The Mantenna is a special 3 layer 1 peice suit that contains copper
> strands and copper threading strategical1y placed at key areas within
> the interior wall of the second layer of the suit.
>
> The suit layers are a special blend of nylon and rayon. This blend is
> coated with a non-reflective conductive spray (The spray maintains the
> natural beauty of the fabric and is non-toxic).
>
> The belt line contains high grade BNC and PL style connectors to attach
> to your radio antenna connection.
>
> The suit will be availabe in 7 differents colors to keep everyone happy!
>
> The receive range shows remarkable results from 7Mhz - 1400Mhz.
>
> An optional hat is available:
>
> Hat model MAN-H1 is a cone style hat with built in Low Noise Amp (LNA)
> for those that enjoy satellite monitoring. The cone contains all
> the electronics and a high capacity rechargable power supply.
> Free during our official introduction will be an addon solar cell
> for constant recharging and constant power to the LNA.
>
> Stay Tuned For The Official Release!!

4835. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 19:10:03 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0EAE0B.DD6669C3@IEEE.org>
Source record: 162081

Katycat2345 wrote:
> I guess it all depends on your point of view.

Wes, that seems to be the only 100% true statement I've seen all week.
--
73, Cecil

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4836. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 19:21:01 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105251121.51aa8b83@posting.google.com>
Source record: 162082

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<26029-3B0C8262-37@storefull-118.iap.bryant.webtv.net>...
> Bird says:
> "A simple algebraic subtraction (Pfwd - Pref) yields the net power
> delivered to the load."
>
> We can rewrite that as: Pfwd = Pdel + Pref.
> Would you deny that the forward power measured by the Bird wattmeter
> consists of two powers, the delivered power and the re-reflected power?
>
> The transmitter only delivers the delivered power. The only source of
> additional forward power is the reflected power. The re-reflected power
> is identically the reflected power making its unique additional round
> trip between source and sink.
>
> The powers add as Bird says. The evidence is that the wattmeter works as
> advertised.
>
> Best regards, Richard Harrison, KB5WZI

Richard,
The latest replies from you and Steve sent me back to Johnson, and
now I see where that equation comes from.

If E = (E+) + (E-) and I = (I+) + (I-) at a point,

and if (I+) = (E+)/Z0 and (I-) = -(E-)/Z0, then the power at the point is

EI = [(E+) + (E-)] [(I+) + (I-)]

= [(E+) + (E-)][(E+)/Z0 - (E-)/Z0]

= (E+)^2/Z0 - (E-)^2/Z0 + (E+)(E-)/Z0 - (E+)(E-)/Z0

And since the last 2 terms cancel,

EI = (E+)^2/Z0 - (E-)^2/Z0 or

Pdel = Pfwd - Pref, just as given in the Bird note.

Now, for that infamaous matched-Z0 example, there are 2 forward voltages E1 and E2
(106.066v and 35.355v). There are also 2 forward currents I1 and I2. Using
superposition, E = E1 and E2 and I = I1 and I2

In this case (I1) = (E1)/Z0 and (I2) = (E2)/Z0. They are in phase with each other
since they combine on the load side of the match point. The power/energy flow toward
the load is

EI = [(E1) + (E2)] [(I1) + (I2)]

= [(E1) + (E1)][(E1)/Z0 + (E2)/Z0]

= (E1)^2/Z0 + (E2)^2/Z0 + (E1)(E2)/Z0 + (E2)(E1)/Z0

P = P1 + P2 + (E1)(E2)/Z0 + (E2)(E1)/Z0

What's the bottom line? In the matched-Z0 case, those 2 pesky terms
at the end of the equation won't cancel, and P is not equal to P1 + P2.

For the Bird equation, superposition of 2 power terms is OK because
of the relation (I-) = -(E-)/Z0. For the match point example, the
relation between E and I is different, and superposition of power doesn't
work. Sorry about the equations, but sometimes that's the best way to
make a point. 73,
Bill N3WK

4837. Re: J-Pole Design

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 19:22:26 UTC
From: jimmy john <jj@sandwitch.org>
Message-ID: <4A8A59F2BDCDD311BFC800508BA36AC808D8B496@www.premiersi.com>
Source record: 162083

Look at www.arrowantenna.com. They give dimensions on their for-sale items.
For $39 bucks, tho', it's hardly worth the time and trouble to fab your own
if you need the standard 144/440 bands.

"S & S Mackay" <smofny@netsync.net> wrote in message
news:3B0E9C5E.BE5A47FE@netsync.net...
> Request a site or info on the design of J-Pole antennae for VHF.
> Cheked the archives; NL
> TIA
> Scott W7GSM
> --
> ��□�

4838. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 19:30:56 UTC
From: kb7qhc@home.com
Message-ID: <3b0eb211.530787552@news.seanet.com>
Source record: 162085

On Fri, 25 May 2001 16:02:22 GMT, w2du@iag.net (Walter Maxwell) wrote:

>On Fri, 25 May 2001 15:46:37 GMT, kb7qhc@home.com (Richard Clark) wrote:
>
>>On Fri, 25 May 2001 07:37:25 -0700, Bart Rowlett
>><bart@wb6hqk.ampr.org> wrote:
>
>>>Looks correct to me. What do you find so offensive?
>>>
>>>bart
>>>wb6hqk
>>
>>Hi Bart,
>>
>>The offense appears to be one of resistance - in one form or another.
>>
>>Off hand I would say that Steve is injecting too fine a point and
>>Walt, like the princess and the pea, cannot find comfort with even 20
>>mattresses to cover his comment.
>>
>>73's
>>Richard Clark, KB7QHC
>
>Richard, if you'll view my last two posts you'll see why Steve will never find
>comfort with any number of mattresses untll he learns the correct method for
>transforming impedances through a network. His problem is much larger than the
>pea.
>
>Walt.
>

Hi Walt,

Perhaps. Can you elaborate in the space of 5 lines instead of 100's?

I am not interested in exhaustive, conclusive proofs, just give me the
nut of the problem. Boiled down to that restriction, I would presume
that it offers the same observation I have already made elsewhere
responding to Richard Harrison.

73's
Richard Clark, KB7QHC

4839. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 19:53:49 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0EB84D.116ADD75@IEEE.org>
Source record: 162087

Walter Maxwell wrote:
> Well David, it isn't 'where did Cecil get 8.33w', it's that Cecil tried to get
> Steve to account for the missing power when he kept insisting that 8.33w + 75w =
> 133.33w with no further explanation except that the forward and steady-state
> reflected voltages added up with those values of power..

If one uses a strict interpretation of the superposition principle, one will conclude that nothing out of the ordinary happens at a virtual impedance point. I gave Steve that much. 75w = 100w(10rho^2) and 8.33w = 33w(rho^2) where rho=0.5. However, since we know that no reflected energy reaches the transmitter, that leaves 50 joules/sec unaccounted for. It's not flowing toward the source because of destructive interference. Therefore, it *MUST* be flowing toward the load because of constructive interference. (For the uninitiated, a wire only has two directions. Since RF energy cannot stand still, if it's not flowing one direction, it must be flowing in the opposite direction.) Although the destructive/constructive interference energy doesn't meet the purist technical definition of being "re-reflected", it joins the forward energy in the same manner as it would if it had been totally re-reflected so the final outcome is the same in either case.

Walt, you and I have agreed to disagree on this point but the disagreement doesn't change the source and destination of the energies involved. In a matched system, the generated power plus the reflected power equals the forward power. Given that these powers are scalars and must obey the conservation of energy principle (plus we already know the final result) everything else seems to be, as Richard put it, a tempest in a teapot.
--
73, Cecil

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4840. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 20:07:59 UTC
From: kb7qhc@home.com
Message-ID: <3b0eb935.532615560@news.seanet.com>
Source record: 162088

On Fri, 25 May 2001 14:36:32 -0400, "Walter Maxwell" <w2du@iag.net>
wrote:

>
>VE9SRB <srbest@att.net> wrote in message
>news:m%kP6.44983$4f7.3288528@bgtnsc06-news.ops.worldnet.att.net...
>> >If the tuner used in establishing an impedance match has any
>> >loss, a conjugate match is not established at the load connected at the
>> >tuner output. When the tuner has loss, establishing a conjugate match at
>> >the load requires that a mismatch be established at the tuner input. In
>> >this case, maximum power delivery to the load at the tuner output does
>not
>> >occur when an impedance match is established at the tuner input. This is
>> >easy to validate using simple circuit analysis. However, with a lowloss
>> >tuner, the differences in power delivery are marginal at best.
>> >
>> >Steve VE9SRB
>> >
>>
>
>> To prove the validity of my statements above, let's consider a simple
>> example.
>>
>> In this case, a load of 200 + j200 ohms is connected at the output of a
>> T-network comprised of a series capacitor C1, a parallel inductor L, and a
>> series capacitor C2. To introduce loss into the T-network, the capacitor
>Q
>> is set at 50 and the inductor Q is set at 25. The operating frequency is
>> 21.2 MHz.
>>
>> To establish an impedance match at the T-network input, the following
>> component values were used:
>>
>> Series C1: 90 pF, ZC1 = 1.668 - j83.415 ohms
>>
>> Parallel L: 0.78367 uH, ZL = 4.176 + j104.388 ohms
>>
>> Series C2: 33.364 pF, ZC2 = 4.5 - j225.012 ohms
>>
>> Using simple circuit theory we can determine the steady state impedance at
>> the T-network input. This is done by transforming the load impedance
>> through the network to its input. Looking forward into the network, the
>> network input impedance is determined to be 50 ohms. Assuming that Zo is
>50

>> ohms, a steady state impedance match occurs at the network input. The
>issue
>> to consider now is the following: does a conjugate match simultaneously
>> exist at the network output.
>
>Indeed it does!
>
>> If a conjugate match exists at the network output, maximum power would be
>> delivered to the load. There would be no other impedance to which more
>> power could be delivered. Additionally, the impedance looking rearward
>into
>> the network output would be the conjugate of the load impedance. Let's
>> determine the impedance looking rearward into the network.
>>
>> To determine the impedance looking rearward into the network, we transform
>> the impedance "terminating" the network input from the perspective of the
>> rearward view. If the T-network input is connected to a 50 ohm line which
>> is then connected to a source with a 50 ohm impedance, the impedance
>> "terminating" the T-network input from the rearward view is 50 ohms. To
>> determine the impedance looking rearward into the network, we transform
>this
>> impedance forward through the network to the network output. This is the
>> impedance that a network analyzer would measure when connected to the
>> network's output terminals. Using simple circuit theory, this rearward
>> impedance is determined to be 174.273 - j198.428 ohms. A conjugate match
>> does not exist at the network output.
>
>This is not true, because a conjugate match does exist at the network
>output. It is true that the network analyzer shows 174.273 - j198.428 ohms,
>but this is NOT the impedance at the network output when in normal
>operation.
>
>What I've tried to explain to Steve unsuccessfuly is that with the network
>turned around, as it is when the input is terminated in 50 ohms and measured
>at the output, what was the input is now the load, with the result that the
>network attenuation is working in reverse. The attenuation was used once in
>going from output to input. Now in going from the input to the output to
>determine the output impedance the reciprocal of the attenuation factor must
>be used, else you're double dipping the attenuation.
>
>Visualize it on the Smith Chart. Starting at the load the impedance curve
>spirals inward in going toward the input, due to the attenuation. Going back
>to the load from the input the curve spirals outward to return to the point
>of origin as a result of considering the attenuation as the reciprocal of
>that going from load to input. On the contrary, if the attenuation is going
>from load to input twice, as iis done in the analyzer measurement, we're
>going on around the Smith Chart a second time, with the impedance curve
>spiraling inward a second time, rather than going back to the origin. This
>is why Steve gets the wrong answer when calculating from input to load, and
>this is why he obtained the wrong answer in his article in the final issue

>of Communications Quarterly that impugned my credibility in asserting my
>statements in Reflections are erroneous.
>
>A calculation of the correct network output impedance can be made starting
>with the input impedance, but the attenuation factor MUST be reversed to
>obtain the correct answer in returning to the starting point--the load. But
>BEWARE of the MEASUREMENT looking into the output with the input
>terminated--the answer is wrong unless the network is lossless. With
>attenuation the difference in the value measured with he analyzer and the
>true output impedance increases in proportion to the amount of attenuation.
>
>Walt, W2DU
>
>PS--an entire Appendix in Reflections II explains this concept, with a Smith
>Chart presentation.
>

Hi Walt,

This is an example of the kind of writing that does service to your reputation and is in marked contrast to that which went before it for the past month. I can understand the nature of your objections as you have obtained a focus that is confined to a single issue and is not hammered to death or littered with invective.

Basically you have boiled down the problem to the classic example of Smith Chart usage in a real (lossy) environment, and is immediately brought to recollection in that you have used this argument in the past. I recall this because we have visited this once before and my response then was tentative (as it remains now, but simply because I cannot recall the issues then, or their context).

From here, it seems that the argument must revolve around exactly where the loss resides. But still and all, I consider this to be a real issue, but an artificial distinction on Steve's part as I've already expressed in a response to Richard Harrison's observations in this thread.

73's
Richard Clark, KB7QHC

4841. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 20:11:10 UTC
From: kb7qhc@home.com
Message-ID: <3b0fbc1a.533356105@news.seanet.com>
Source record: 162089

On Fri, 25 May 2001 14:53:49 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>However, since we know that no reflected energy reaches
>the transmitter

Hi Cecil,

How do you explain this in the context of Bill's paper that both you
and Walt accept as being a valid representation of the math involved?

73's
Richard Clark, KB7QHC

4842. Re: Kenwood's TS-50 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 20:16:12 UTC
From: Jon M0BQQ <jon.m0bqq@ntlworld.com>
Message-ID: <w4zP6.1677$CT1.335077@news6-win.server.ntlworld.com>
Source record: 162090

John

I would recommend either the TS50 which I own at present or the Yaesu FT840 which is in my opinion slightly better and slightly larger. I have worked loads of DX mobile with the TS50 and am constantly complemented on the excellent audio.
Good luck whatever you choose.

Jon M0BQQ

John Cunningham <johngrac@surfsouth.com> wrote in message news:zG%O6.141762$sP6.7668184@news3.aus1.giganews.com...
> I'm going to buy my first hf rig, is the TS-50 a good starter rig? What
> would you buy for under $1000? Why?
> KE4QOP John
>
>

4843. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 20:46:43 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0EC4B3.A93FE993@IEEE.org>
Source record: 162091

Richard Clark wrote:
> How do you explain this in the context of Bill's paper that both you
> and Walt accept as being a valid representation of the math involved?

The Z0-match in Bill's paper guarantees that a 50 ohm SWR meter will
read zero reflected power on the coax. Walt and I disagree on the
actual mechanics. Walt allegedly thinks there is a virtual short/open that
causes 100% reflection. I think that the ordinary reflection coefficient
at the junction causes the ordinary rho^2 re-reflection and the 1-rho^2
part is involved in destructive interference. The destructive interference
cancels the reflections going toward the source and the resulting constructive
interference energy joins the forward energy wave toward the load.

Bottom line: Since power is a scalar quantity, in a matched system the energy
in the reflected wave joins the generated energy to form the forward wave.
Whether it is 100% re-reflected or (rho^2 re-reflected plus destructive
interference) seems to me to be a nit.

I haven't read Bill's paper in detail but it looks similar to my previous
phasor diagram involving a 1/2WL matching section. What I find appalling is
the number of otherwise rational engineers who think that 75w+8.33w=133.33w
is a valid equation.
--
73, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4844. Re: Good ham logging program?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 20:56:38 UTC
From: Tom Wagner - N1MM <tomwagner@mindspring.com>
Message-ID: <9emgu9$9e8$1@nntp9.atl.mindspring.net>
Source record: 162092
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment

Sig says it all.

Tom Wagner - N1MM
Check out the N1MM Free Contest Logger at
http://tomwagner.home.mindspring.com/n1mm.htm
http://groups.yahoo.com/group/N1MMLogger
to join: http://groups.yahoo.com/group/N1MMLogger/join
After you join, you'll find the download link in the "Bookmarks" section.

4845. Re: Army ANT.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 21:17:06 UTC
From: Tazanator <tazanator1@NOSPAMhome.com>
Message-ID: <mZzP6.84277$V5.14478931@news1.rdc1.mi.home.com>
Source record: 162093

okay the design is a 3 elements going up (each about 8-9 feet long) over 3
elements going down (same length).
Picture a 3 legged stool upside down ontop of another 3 legged stool.

"Dan Richardson" <k6mhe@arrl.net> wrote in message
news:129rgtclhg37k1f78jjckbos1t44vjcaa9@4ax.com...
> Telling me was the SWR is asking how much a car is worth by telling me
> the air pressure in the tires..
>
> Danny
>
> On Thu, 24 May 2001 23:33:51 GMT, "Tazanator"
> <tazanator1@NOSPAMhome.com> wrote:
>
> >Okay I have an army OE-254 ANT, does 6 meters and has a low (less than
> >2:1)SWR on 2 meters. What's it worth?
> >
>

4846. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 21:19:46 UTC
From: "jamesm.stewart" <jamesm.stewart@ntlworld.com>
Message-ID: <U3AP6.2189$Tj4.626783@news2-win.server.ntlworld.com>
Source record: 162094
Cross-posted to: alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.shortwave

> Stay Tuned For The Official Release!!
>
>
no.what about womantenna...the one with dual discones

4847. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 21:44:41 UTC
From: kb7qhc@home.com
Message-ID: <3b0ece9b.538093807@news.seanet.com>
Source record: 162095

On Fri, 25 May 2001 15:46:43 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> How do you explain this in the context of Bill's paper that both you
>> and Walt accept as being a valid representation of the math involved?
>
>The Z0-match in Bill's paper guarantees that a 50 ohm SWR meter will
>read zero reflected power on the coax. Walt and I disagree on the
>actual mechanics. Walt allegedly thinks there is a virtual short/open that
>causes 100% reflection. I think that the ordinary reflection coefficient
>at the junction causes the ordinary rho^2 re-reflection and the 1-rho^2
>part is involved in destructive interference. The destructive interference
>cancels the reflections going toward the source and the resulting constructive
>interference energy joins the forward energy wave toward the load.
>
>Bottom line: Since power is a scalar quantity, in a matched system the energy
>in the reflected wave joins the generated energy to form the forward wave.
>Whether it is 100% re-reflected or (rho^2 re-reflected plus destructive
>interference) seems to me to be a nit.
>
>I haven't read Bill's paper in detail but it looks similar to my previous
>phasor diagram involving a 1/2WL matching section. What I find appalling is
>the number of otherwise rational engineers who think that 75w+8.33w=133.33w
>is a valid equation.

Hi Cecil,

I was more interested in your statement:
>
>>However, since we know that no reflected energy reaches
>>the transmitter

Which Bill's paper clearly reveals happens. I gather by your context
above that you may find your statement is true insofar as this
destructive interference, but you did not respond to my query
directly. Hence I remain at a loss as to what exactly you had in mind
with this statement, and being left to my own devices I draw this
inference.

Now, as you have been careful to distinguish energy from power, I
would allow that no reflected power is ever loaded by the source, but
the mechanics revealed by Bill's paper would lead me to believe that
the energy does and always will as it must to maintain the match
condition. That it may be balanced out by another mechanism does not
render it zero (the combination of the two do that, and thus they must

exist distinctly and separately in the first AND last place).

Hence, barring corrections from Bill in this regard, I would say that reflected energy always reaches the transmitter. The same thing can be found in the analysis of the Hybrid bridge (for which I asked if anyone here had any understanding and to which there was no reply).

The Hybrid Bridge cannot work without a resistive load on one port, but no power is ever dissipated in it (except as a consequence of loose tolerances or failure). A strange condition if we view it in isolation, but within the scope of the entire circuit it is necessary.

73's
Richard Clark, KB7QHC

4848. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 21:49:08 UTC
From: NoSpam Gary <bit.bucket@virgin.net>
Message-ID: <mLAP6.2287$Tj4.670955@news2-win.server.ntlworld.com>
Source record: 162098
Cross-posted to: alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.shortwave

```
--
Regards,
Gary
*If you want to mail me back you must put 'filterme' without quotes in the
subject line or your mail will be deleted.*
"jamesm.stewart" <jamesm.stewart@ntlworld.com> wrote in message
news:U3AP6.2189$Tj4.626783@news2-win.server.ntlworld.com...
>
> > Stay Tuned For The Official Release!!
> >
> >
> no.what about womantenna...the one with dual discones
>
>
And the trimmed gamma match.
```

4849. Re: Tri-Ex Towers

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 21:55:37 UTC
From: dinod@deltanet.com
Message-ID: <txAP6.21521$CD5.11182405@news2.rdc2.tx.home.com>
Source record: 162096

If it was MY money, I would buy a Tri-Ex! As a matter of fact,
I'm going to!

Dino

>Does anyone have experience with Tri-Ex crank up towers? I am looking
>at the 50 ft. model and wonder if anyone has one and how well it works.
>
>Thanks,
>
>Dan
>NX9C
>

4850. Re: Good ham logging program?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 21:57:20 UTC
From: dinod@deltanet.com
Message-ID: <4zAP6.21528$CD5.11186924@news2.rdc2.tx.home.com>
Source record: 162097
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment

DXBASE 2002 demo can be downloaded here...

http://www.dxbase.com/demowin.htm

Dino

>hey charles
>that software looking really good on there website
>but i am not paying $100 for software with out getting to try it first there
are
>to many variables in computers and radios and such that would render the
thing
>usless
>i wish they would offer a trail program for 2 weeks to a month like everyone
>else does to give you a chance to see if it will work on your system and
that if
>the software is what your looking for
>i am glad you find it useful happy hamming
>73
>
>Charles Johnston wrote:
>
>> Guess I'll chime in after trying most of the major logging programs such
as
>> LogPlus , Log Windows , DX4WIN , and Logic 5 I have settled on DXBase
2002.
>> Here is a snippet about the product....
>>
>> <snip>
>>
>> Designed for those who demand the best, DXbase 2002 by Scientific
Solutions,
>> Inc. is the premiere amateur radio logging software for 32bit Windows.
One
>> look and you'll wonder how you ever managed without it. Whether you want
to
>> custom design your own QSL cards and labels, operate PSK mode and log
>> directly into DXbase, perfect CW output with the direct interface to the
>> W5XD external keyer, automatically create award submission forms, create
>> your own reports, monitor VHF Packet and Internet Packet letting DXbase
tell
>> you when you need one, or just log a QSO with the greatest of ease, DXbase
>> 2002 is the software for you.
>>

>> <snip>
>>
>> I have used this product since DXBase 2000 and it is a reliable and
>> extremely high-performance logging program
>> That can do everything the other loggers do plus much more.....
>>
>> Download the informational demo at http://www.dxbase.com
>>
>> --
>>
>> 73 / DX
>>
>> Charles Johnston
>> charles@ab7sl.com
>>
>> AB7SL - Ham Radio Pages
>> http://www.ab7sl.com
>

4851. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 23:00:08 UTC
From: k1bqt@aol.com
Message-ID: <20010525190008.10064.00001166@ng-fl1.aol.com>
Source record: 162099

>...we thought that crap went down the toilet<

Poor Lambchop--got someone's hand so far up his butt, his mouth moves when they talk!

Rick K!BQT

4852. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 23:01:04 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0EE430.8104AAD9@IEEE.org>
Source record: 162100

Richard Clark wrote:
> Which Bill's paper clearly reveals happens.

Can you give me that URL again, Richard. My ISP is acting up.
thanks, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4853. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 23:10:38 UTC
From: kb7qhc@home.com
Message-ID: <3b0ee10d.542815887@news.seanet.com>
Source record: 162101

On 25 May 2001 02:25:05 GMT, fractenna@aol.com (Fractenna) wrote:

> In a recent public letter and statement on this forum, Roy Lewallen, W7EL,
>d/b/a EZNEC, made incorrect and directed comments regarding patents on fractal
>antennas held by Fractal Antenna Systems Inc

Ah herr doktor,

The opportunities for satire and irony are boundless! Thank U.

Still suffering the ignoble decimation of your application at the hands of the PTO? Or is it the problems of the defamation of character that possibly landed on your head? Really, accusing a stranger of murder in public has possibly given you a new perspective of the courts that has depressed you. Or possibly there were legal entanglements with that silly fraudulent lottery? Where did that money go by the way? I doubt a judge would allow an answer of "your legal defense fund" besides, I don't think it would begin to cover your possible expenses generated from the accumulation of these - uh - events of the last winter.

You should follow the board more often to have observed the comments of a trained and licensed patent attorney responding to these very issues. Seems Roy followed your advice, much to your chagrin as evidenced by this posturing you dash at his feet (ho-hum, no, actually chuckle is more apropos).

The single most smile provoking observation that he offered was that the text of your patent award (pitiful as it was) contains "teachings" (there's that smile again) that now preclude you from EVER getting broad coverage (but then that was already established years ago, and the reason for the dismissal of your claims in the first place, n'est pas?).

Still and all, we dearly love the entertainment value you bring to these proceedings. Have you been taking your aspirin for the upcoming event?

I look forward to each and every opportunity you have to offer for our amusement. I especially admire the way you play to these opportunities too, by giving me such delicious topics to explore. Keep up the good work! ;-)

73's
Richard Clark, KB7QHC

4854. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 23:16:10 UTC
From: kb7qhc@home.com
Message-ID: <3b0fe6ec.544318758@news.seanet.com>
Source record: 162102

On Fri, 25 May 2001 18:01:04 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> Which Bill's paper clearly reveals happens.
>
>Can you give me that URL again, Richard. My ISP is acting up.
>thanks, Cecil
>

Hi Cecil, and Others,

Sure.

Bill Klocko's treatment, "Modeling the Quarter Wave Transformer" may
be found as a pdf document at:
http://members.home.net/kb7qhc/reference/Zmatch/Trnsfrmr.pdf

73's
Richard Clark, KB7QHC

4855. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 23:25:46 UTC
From: Phoebes <friends@central-perk.com>
Message-ID: <0RBP6.11020$8Z5.464457@monolith.news.easynet.net>
Source record: 162103
Cross-posted to: alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.shortwave

April 1st was 2 months ago!
Phoebes (happy now with NEW yupi)
Campone <info@mantenna.net> wrote in message
news:MPG.1578e3589c093ad39896b0@news.earthlink.net...
> An amazing new product will be released in the near future.
>
> The Mantenna!!
>
> The Mantenna is a special 3 layer 1 peice suit that contains copper
> strands and copper threading strategical1y placed at key areas within
> the interior wall of the second layer of the suit.
>
> The suit layers are a special blend of nylon and rayon. This blend is
> coated with a non-reflective conductive spray (The spray maintains the
> natural beauty of the fabric and is non-toxic).
>
> The belt line contains high grade BNC and PL style connectors to attach
> to your radio antenna connection.
>
> The suit will be availabe in 7 differents colors to keep everyone happy!
>
> The receive range shows remarkable results from 7Mhz - 1400Mhz.
>
> An optional hat is available:
>
> Hat model MAN-H1 is a cone style hat with built in Low Noise Amp (LNA)
> for those that enjoy satellite monitoring. The cone contains all
> the electronics and a high capacity rechargable power supply.
> Free during our official introduction will be an addon solar cell
> for constant recharging and constant power to the LNA.
>
> Stay Tuned For The Official Release!!
>
>

4856. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-25 23:38:17 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0EECE9.3F7888DA@IEEE.org>
Source record: 162104

Richard Clark wrote:
> Hence, barring corrections from Bill in this regard, I would say that
> reflected energy always reaches the transmitter.

Are you saying there is reflected power when the SWR meter indicates
that the reflected power is zero?

I'm not sure I understand your question, Richard. Could you repeat it?
--
73, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

4857. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 00:11:01 UTC
From: kb7qhc@home.com
Message-ID: <3b0eef8d.546527164@news.seanet.com>
Source record: 162105

On Fri, 25 May 2001 18:38:17 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> Hence, barring corrections from Bill in this regard, I would say that
>> reflected energy always reaches the transmitter.
>
>Are you saying there is reflected power when the SWR meter indicates
>that the reflected power is zero?
>
>I'm not sure I understand your question, Richard. Could you repeat it?

Hi Cecil,

Well it wasn't so much a question as a inference based on a less than
direct response to my question from you:

>
>Now, as you have been careful to distinguish energy from power, I
>would allow that no reflected power is ever loaded by the source, but
>the mechanics revealed by Bill's paper would lead me to believe that
>the energy does and always will as it must to maintain the match
>condition. That it may be balanced out by another mechanism does not
>render it zero (the combination of the two do that, and thus they must
>exist distinctly and separately in the first AND last place).
>
>Hence, barring corrections from Bill in this regard, I would say that
>reflected energy always reaches the transmitter. The same thing can
>be found in the analysis of the Hybrid bridge (for which I asked if
>anyone here had any understanding and to which there was no reply).
>
>The Hybrid Bridge cannot work without a resistive load on one port,
>but no power is ever dissipated in it (except as a consequence of
>loose tolerances or failure). A strange condition if we view it in
>isolation, but within the scope of the entire circuit it is necessary.

and you will note that I have not expressed that power is returned to
the source. I was explicit to that as you will note above and for the
Hybrid Bridge as well as an example of incontrovertible evidence.

Take care, your Bird will still measure forward All, reverse Nada;
which, of course, expresses the intent of this "virtual short."

At some level you have been snared by your own separation of power and
energy. I responded in kind and to the manner of your expression and
that leaves us here. This is not a technical criticism, but it

reveals how slight a difference in terms can render confusion - even in the originator of these distinctions. Hence MY original question related to your statement:
>However, since we know that no reflected energy reaches
>the transmitter
which has been shown to be wrong in Bill's work that both you and Walt accept as authoritative. Please note, per your distinctions of power and energy, no Power is dissipated by the source; but energy does flow toward it in much the same manner as it does to the Hybrid Bridge load (which also does not dissipate any Power).

73's
Richard Clark, KB7QHC

4858. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 00:45:48 UTC
From: Matt <matt_patt123@yahoo.com>
Message-ID: <9emtmh0g6n@enews4.newsguy.com>
Source record: 162108
Cross-posted to: alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.shortwave

ROFL

"NoSpam Gary" <bit.bucket@virgin.net> wrote in message
news:mLAP6.2287$Tj4.670955@news2-win.server.ntlworld.com...
>
>
> --
> Regards,
> Gary
> *If you want to mail me back you must put 'filterme' without quotes in the
> subject line or your mail will be deleted.*
> "jamesm.stewart" <jamesm.stewart@ntlworld.com> wrote in message
> news:U3AP6.2189$Tj4.626783@news2-win.server.ntlworld.com...
> >
> > > Stay Tuned For The Official Release!!
> > >
> > >
> > no.what about womantenna...the one with dual discones
> >
> >
> And the trimmed gamma match.
>
>

4859. Ant switch:Daiwa or AlphaDelta?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 01:13:06 UTC
From: Greg LaHaie <greglh@gte.net>
Message-ID: <3B0F02EF.E7D65DBC@gte.net>
Source record: 162106

For minimum insertion losses at 440Mhz, which antenna switch would be
better:
The Daiwa CS-401 (4 pos N connectors) ... or the
Alpha Delta 'Delta 4N' (4 pos N connectors)?

The asking price of the Daiwa is over twice the Alpha Delta!

Any first hand observations?

de K7YDL

4860. Re: Tri-Ex Towers

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 01:26:43 UTC
From: KC2BCG <kc2bcg@blazenet.net>
Message-ID: <tgu191t1apkm0e@corp.supernews.com>
Source record: 162107

Good Luck getting Tri-Ex. stated lead times are 15 weeks.
I saw joel at dayton,,he wouldn't even advertise the towers there.
QST has dropped their ads as well, contract manufacturing now,,,quality is
in question. I bought from US Towers instead
--
73,
N3GH
George
"Dino" <dinod@deltanet.com> wrote in message
news:txAP6.21521$CD5.11182405@news2.rdc2.tx.home.com...
> If it was MY money, I would buy a Tri-Ex! As a matter of fact,
> I'm going to!
>
> Dino
>
> >Does anyone have experience with Tri-Ex crank up towers? I am looking
> >at the 50 ft. model and wonder if anyone has one and how well it works.
> >
> >Thanks,
> >
> >Dan
> >NX9C
> >
>

4861. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 01:58:58 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <pe3ugtc51g9do95u6kcq3lo82g4fc9ssgc@4ax.com>
Source record: 162109

On Fri, 25 May 2001 14:08:46 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> To dismiss the notion of conjugation based upon the evidence of its
>> failure in the face of reality holds a standard that no theory can
>> withstand. There are no absolutes in this vale of tears. Even the
>> Primary Standards at my Metrologist's bench were defined by their
>> limits, not their purity (which is wholly acknowledged to be
>> unobtainable).
>
>Yep, do infinite series actually exist in reality?

Hi Cecil,

If you believe in the Pythagoran principle that mathematics is
prescriptive of nature (reality), sure.

73's
Richard Clark, KB7QHC

4862. Re: Stabilizing beam elements?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 02:01:18 UTC
From: DJ <kb5ylg@attglobal.net>
Message-ID: <3b0f10c1_1@news1.prserv.net>
Source record: 162110

Well, I have the antenna back in the air now. I tried the hose clamps, that didn't work. I tried abrasive stuff to increase the friction, that didn't work. I tried gronking the ubolts tighter after reinforcing the tubes internally, but had no faith in it though it seemed to help. Ultimately, I drilled a hole through element and boom, slight angle to miss the ubolt, and put a #10 bolt through each. That worked. I furter reinforced by coating ubolt and metal surface with epoxy. More than a week, all looks great.

David KB5YLG

4863. Re: Ant switch:Daiwa or AlphaDelta?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 02:06:19 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <vcEP6.4668$FS5.654262@paloalto-snr1.gtei.net>
Source record: 162111

I have no problems or complaints with Alpha Delta switches. I run six of the 4 position units. The highest band I use them on is 440 mhz. I have checked output power from my TS-790 straight into my Bird 4410, as well as routed through the switch - and terminated into a Bird dummy load. The difference (if any) was not measurable (at least with a Bird 4410).

73 de W6DKN

"Greg LaHaie" <greglh@gte.net> wrote in message
news:3B0F02EF.E7D65DBC@gte.net...
> For minimum insertion losses at 440Mhz, which antenna switch would be
> better:
> The Daiwa CS-401 (4 pos N connectors) ... or the
> Alpha Delta 'Delta 4N' (4 pos N connectors)?
>
> The asking price of the Daiwa is over twice the Alpha Delta!
>
> Any first hand observations?
>
> de K7YDL
>

4864. Re: J-Pole Design

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 02:25:38 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <xBMPO7vTcvBZH5HHomNmTEfBGx=g@4ax.com>
Source record: 162112

S & S Mackay <smofny@netsync.net> wrote:

>Request a site or info on the design of J-Pole antennae for VHF.
>Cheked the archives; NL
>TIA
>Scott W7GSM

Go to http://www.google.com and enter a search for J-pole antenna.

You'll get 10 or 12 pages of listings, at least.

Bob
k5qwg

4865. Re: Army ANT.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 02:32:08 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <QBUPO0Ygoi8m=wrlv8BDPR5ya9l6@4ax.com>
Source record: 162113

"Tazanator" <tazanator1@NOSPAMhome.com> wrote:

>okay the design is a 3 elements going up (each about 8-9 feet long) over 3
>elements going down (same length).
>Picture a 3 legged stool upside down ontop of another 3 legged stool.

As ugly as it sounds, it may not be worth much to city hams :-(

Bob
k5qwg
>
>"Dan Richardson" <k6mhe@arrl.net> wrote in message
>news:129rgtclhg37k1f78jjckbos1t44vjcaa9@4ax.com...
>> Telling me was the SWR is asking how much a car is worth by telling me
>> the air pressure in the tires..
>>
>> Danny
>>
>> On Thu, 24 May 2001 23:33:51 GMT, "Tazanator"
>> <tazanator1@NOSPAMhome.com> wrote:
>>
>> >Okay I have an army OE-254 ANT, does 6 meters and has a low (less than
>> >2:1)SWR on 2 meters. What's it worth?
>> >
>>
>

4866. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 02:51:28 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105251851.4ef722da@posting.google.com>
Source record: 162114

David Robbins <k1ttt@berkshire.net> wrote in message
news:<3B0E84F4.E24E4AD9@berkshire.net>...
> First, a couple basics.
> 1. it is only necessary to analyze the voltage OR the current in either case as
> they are always related by the impedance. and since any combination of 2 of the
> 3(voltage, current, impedance) can be used to compute power it is not necessary
> to compute powers at every step(though you may if you want and i will throw in
> the important ones so you can follow along).

Hi Dave,
Any time your problem has one or more impedance junctions, and if you may want to compute power, I think it's better to work with both the voltages and the currents because those nasty little "-1" factors come into play with the current reflection coefficient. I suspect (haven't proven this yet) that the -1's don't show up if the voltage is squared.
For instance, see my reply to Richard Harrison where I go into the Bird equation for delivered power. 73,
Bill N3WK

4867. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 02:59:04 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0F1BF8.B84101E3@IEEE.org>
Source record: 162115

Richard Clark wrote:
> At some level you have been snared by your own separation of power and
> energy. I responded in kind and to the manner of your expression and
> that leaves us here. This is not a technical criticism, but it
> reveals how slight a difference in terms can render confusion - even
> in the originator of these distinctions. Hence MY original question
> related to your statement:

> >However, since we know that no reflected energy reaches
> >the transmitter

> which has been shown to be wrong in Bill's work that both you and Walt
> accept as authoritative.

I don't think it's shown to be wrong in Bill's work, Richard. Please see
the quote below.

> Please note, per your distinctions of power
> and energy, no Power is dissipated by the source; but energy does flow
> toward it in much the same manner as it does to the Hybrid Bridge load
> (which also does not dissipate any Power).

Well, I'm still confused, Richard. I'm somewhat handicapped by not being
able to cut and paste from a PDF file but here is a quote from Bill Klocko's
paper from the conclusions section: "Under Steady-State conditions, all
voltage and current waves preceding backwards toward the source from the
input of the (1/4WL) transformer are essentially eliminated due to wave
cancellation."

The 75 ohm 1/4WL transformer transforms the 25 ohm load to the Z0 of the
225 ohm line. The SWR on the 75 ohm line is 3:1 and the SWR on the 225 ohm
line is 1:1. An SWR meter calibrated for 225 ohms will read zero reflected
power on the 225 ohm line. Since there are no reflections on the 225 ohm
line, we know that no reflections reach the transmitter. For transfer of
maximum available power, we obviously need to match the transmitter to
225 ohms but I don't think Bill talks about the source impedance. So I'm
still confused about you questioning my statement.

I would say reflected energy on the 225 ohm line is canceled by a
destructive/constructive interference pattern at the 225-75 ohm junction
where there exists a 225 ohm Z0-match.

Just as in my previous 50-150 ohm example, rho^2 is 1/4, so if we have
the source generating 100w, we will have 25w trying to be reflected at
the 225-75 ohm junction. The phase will be exactly the opposite of the
phase in the 50-150 1/2WL example but so will the phase of the waves
that are not re-reflected, so a cancellation involving 50 watts will

occur. Bill's example is so much like my 50-150 1/2WL example, that I glossed over his article. Did I miss something?
--
73, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4868. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 03:01:16 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0F1C7C.6808127F@IEEE.org>
Source record: 162116

Richard Clark wrote:
>
> CAM <Cecil.A.Moore@IEEE.org> wrote:
> >Yep, do infinite series actually exist in reality?
>
> If you believe in the Pythagoran principle that mathematics is
> prescriptive of nature (reality), sure.

How fast does each individual term need to be evaluated for an
infinite series to exist in reality?
--
73, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4869. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 04:36:01 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <jicugtoec1njad15e3f4gairq91pmhtb4e@4ax.com>
Source record: 162117

On Fri, 25 May 2001 22:01:16 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> CAM <Cecil.A.Moore@IEEE.org> wrote:
>> >Yep, do infinite series actually exist in reality?
>>
>> If you believe in the Pythagoran principle that mathematics is
>> prescriptive of nature (reality), sure.
>
>How fast does each individual term need to be evaluated for an
>infinite series to exist in reality?

Hi Cecil,

In an infinite reality, it doesn't matter.

73's
Richard Clark, KB7QHC

4870. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 04:55:33 UTC
From: KK7HO <KK7HO@worldnet.att.net>
Message-ID: <3B0F3AB5.7619D335@worldnet.att.net>
Source record: 162118
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

Boy, this is a good example of why one has to "study" to get a ham license. :-)

HelmutSweenie wrote:

> A 2 watt carrier? do you just sit there and throw dead keys or do you talk.
> If you do talk I am sure it is more than 2 watts so your deadkey figure is
> irrelavent.
>
> "Sideband" <sideband@spam.me.not> wrote in message
> news:3AF25F37.669914B6@spam.me.not...
> > Well, I'm heard with a 2 watt carrier over 20 miles away straight shot,
> > so I must have done something right.
> >
> > ::shrug::
> >
> > -SSB
> >
> > "David G. Nagel" wrote:
> > >
> > > No. Two 5/8 wave loaded antenna's do not make a 1 1/4 wave dipole. They
> > > make a dipole composed of two 5/8 wave loaded antenna's. This
> > > configuration will not make a truly efficient antenna. Read up on
> > > collinear antenna's and dipole antenna's. You will see that what you
> > > have is nothing. However for you sake I do hope it works to your
> > > satisfaction. I prefer something else...
> > >
> > > Dave WD9BDZ
> > >
> > > Sideband wrote:
> > > >
> > > > Doug:
> > > >
> > > > Hit Wilson's site and read up on what a Wilson Silver Load is....
> > > >
> > > > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
> > > > top loaded coil antenna. Two of them make 1 1/4 wave. Maybe I should
> > > > have said 1 1/4 wave dipole?
> > > >
> > > > -SSB
> > > >
> > > > Doug Smith wrote:
> > > > >
> > > > > On Thu, 03 May 2001 09:31:36 -0400, Sideband <sideband@spam.me.not>
> > wrote:

> > > > > >them as well. Granted, I run a 5/8 dipole on the car (two 4' Wilson
> > > > > >
> > > > > > Uh, 8 feet is not 5/8 wave on 11 meters. A 102" (8-1/2') whip is
> 1/4 wave,
> > > > > > so a 5/8 wave would be a bit more than 17 feet long.
> > > > > >
> > > > > > (you should try a 102" whip, I think you're likely to find it more
> effective
> > > > > > than the twin four-footers. Because you won't have loading-coil
> losses.
> > > > > > Mine worked *fantastically* well on 10 meters with a converted SSB
> CB.)
> > > > > > --
> > > > > > Doug Smith W9WI
> > > > > > Pleasant View (Nashville), TN EM66
> > > > > > http://www.w9wi.com

4871. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 06:48:15 UTC
From: richardharrison@webtv.net
Message-ID: <13884-3B0F51AF-162@storefull-113.iap.bryant.webtv.net>
Source record: 162019

Bill Klocko wrote:
"For the match point example, the relation between E and I is different and superposition of power doesn`t work."

The Bird wattnmeter uses the 180-degree out-of-phase relationship between volts and amps in a once-reflected wave to distinguish that wave from the forward wave. The volts and amps are in-phase in the forward wave.

To sense power, Bird uses a tiny sampling loop coupled to the center conductor in a 50-ohm line section. Capacitance coupling gives a voltage sample. Magnetic coupling gives a current sample. By design and careful adjustment, the magnitude of the two samples is exactly the same.

In the forward wave from the generator, the in-phase volts and amps produce samples which are in-phase and equal in magnitude in the Bird wattmeter. These are rectified and added to produce double the deflection of a d-c meter that either sample would produce alone. The meter is calibrated in watts.

Reflected power traveling toward the generator has its volts and amps 180-degrees out-of-phase, as a result of the single reflection, so the net effect of these volts and amps as sensed by the sampling loop is zero.

To measure the magnitude of the reflected wave, Bird switches the polarity of the sampling loop`s magnetic (amps) sample, and In the switched position, samples from the reflected wave are in-phase, and samples from the forward wave are now out-of-phase. Sample parity now causes a net effect of zero on the meter deflection as produced by the forward wave in this now switched position.

This design and construction works very well.

The out-of-phase relationship between volts and amps in the reflected wave also has an effect when the wave arrives at the generator. When the volts are max, the amps are min. The energy magnitudes in the electric and magnetic fields are exactly equal. The net effect on the generator`s internal impedance is zero. No energy is absorbed. It is all reflected. This re-reflection restores the in-phase relation between volts and amps. Re-reflected energy joins the newly produced energy delivered from the generator to produce the total forward power.

Out-of-phase voltage and current at the end of a transmission line seem reasonable candidates for rejection and rebound to me.

Best regards, Richard Harrison, KB5WZI

4872. Re: Respect For Freebanders

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 08:20:56 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B0F6768.3D1A8FC7@spam.me.not>
Source record: 162020
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.antenna,rec.radio.amateur.policy

And this is a good example of why one shouldn't jump the gun and come to
a conclusion before he's read the rest of the thread.

73 de KC8RKQ

KK7HO wrote:
>
> Boy, this is a good example of why one has to "study" to get a ham license. :-)
>
> HelmutSweenie wrote:
>
> > A 2 watt carrier? do you just sit there and throw dead keys or do you talk.
> > If you do talk I am sure it is more than 2 watts so your deadkey figure is
> > irrelavent.
> >
> > "Sideband" <sideband@spam.me.not> wrote in message
> > news:3AF25F37.669914B6@spam.me.not...
> > > Well, I'm heard with a 2 watt carrier over 20 miles away straight shot,
> > > so I must have done something right.
> > >
> > > ::shrug::
> > >
> > > -SSB
> > >
> > > "David G. Nagel" wrote:
> > > >
> > > > No. Two 5/8 wave loaded antenna's do not make a 1 1/4 wave dipole. They
> > > > make a dipole composed of two 5/8 wave loaded antenna's. This
> > > > configuration will not make a truly efficient antenna. Read up on
> > > > collinear antenna's and dipole antenna's. You will see that what you
> > > > have is nothing. However for you sake I do hope it works to your
> > > > satisfaction. I prefer something else...
> > > >
> > > > Dave WD9BDZ
> > > >
> > > > Sideband wrote:
> > > > >
> > > > > Doug:
> > > > >
> > > > > Hit Wilson's site and read up on what a Wilson Silver Load is....
> > > > >
> > > > > Better yet, I'll explain it. a 4' Wilson Silver Load is a 5/8 (on 11M)
> > > > > top loaded coil antenna. Two of them make 1 1/4 wave. Maybe I should
> > > > > have said 1 1/4 wave dipole?

> > > > >
> > > > > -SSB
> > > > >
> > > > > Doug Smith wrote:
> > > > > >
> > > > > > On Thu, 03 May 2001 09:31:36 -0400, Sideband <sideband@spam.me.not>
> > wrote:
> > > > > > >them as well. Granted, I run a 5/8 dipole on the car (two 4' Wilson
> > > > > >
> > > > > > Uh, 8 feet is not 5/8 wave on 11 meters. A 102" (8-1/2') whip is
> > 1/4 wave,
> > > > > > so a 5/8 wave would be a bit more than 17 feet long.
> > > > > >
> > > > > > (you should try a 102" whip, I think you're likely to find it more
> > effective
> > > > > > than the twin four-footers. Because you won't have loading-coil
> > losses.
> > > > > > Mine worked *fantastically* well on 10 meters with a converted SSB
> > CB.)
> > > > > > --
> > > > > > Doug Smith W9WI
> > > > > > Pleasant View (Nashville), TN EM66
> > > > > > http://www.w9wi.com

4873. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 09:18:06 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9ensbq$t10$1@plutonium.btinternet.com>
Source record: 162021

Reg Edwards wrote -

> I understand it to be the condition, for example, when a
> transmission line of impedance Zo is terminated in Zo. There are
> then no standing waves on the line *regardless* of the generator
> impedance.
==========
Further comment - when Zo = R-jX, as it always is -

When the line is terminated in the conjugate of Zo in order to
extract maximum power, there WILL BE a reflection and standing
waves.

Is it not very peculiar that when maximum possible power is
developed in the load there is still some power left over to be
reflected back ?

Reg.

4874. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 10:27:06 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B0F84FA.1F2B36DF@berkshire.net>
Source record: 162022

Bill Klocko wrote:
>
> David Robbins <k1ttt@berkshire.net> wrote in message
news:<3B0E84F4.E24E4AD9@berkshire.net>...
> > First, a couple basics.
> > 1. it is only necessary to analyze the voltage OR the current in either case as
> > they are always related by the impedance. and since any combination of 2 of the
> > 3(voltage, current, impedance) can be used to compute power it is not necessary
> > to compute powers at every step(though you may if you want and i will throw in
> > the important ones so you can follow along).
>
> Hi Dave,
> Any time your problem has one or more impedance junctions, and if you may want to compute
> power, I think it's better to work with both the voltages and the currents because those
> nasty little "-1" factors come into play with the current reflection coefficient. I
suspect
> (haven't proven this yet) that the -1's don't show up if the voltage is squared.
> For instance, see my reply to Richard Harrison where I go into the Bird equation
> for delivered power. 73,
> Bill N3WK

the only reason to do both is to double check your computations. i like using
voltages because you don't have to worry about direction changing the sign like
you do with currents.

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

4875. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 11:53:07 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eo5ehfta1@slb2.atl.mindspring.net>
Source record: 162023

Reg:

I don't find that phenomena to be peculiar, for it it natural. And from your comment I make the assumption that it seems that you are of the same mind.

I take it that your assertion was meant as a comment on the view of others.

Everyone in the world views things differently than me and thee, and sometimes, I suspect thee! Hee...

Of course "peculiar" is in the eye of the beholder!

Nonetheless, as you so succinctly stated, that "peculiar" phenomena happens regularily.

Best,

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:9ensbq$t10$1@plutonium.btinternet.com...
>
> Reg Edwards wrote -
>
> > I understand it to be the condition, for example, when a
> > transmission line of impedance Zo is terminated in Zo. There are
> > then no standing waves on the line *regardless* of the generator
> > impedance.
> ========================
> Further comment - when Zo = R-jX, as it always is -
>
> When the line is terminated in the conjugate of Zo in order to
> extract maximum power, there WILL BE a reflection and standing
> waves.
>
> Is it not very peculiar that when maximum possible power is
> developed in the load there is still some power left over to be
> reflected back ?
> ---
> Reg.
>
>

4876. Re: 4-element yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 12:59:42 UTC
From: "J.D." <ve2jdr@rac.ca>
Message-ID: <3B0FA8BE.A2C5BAE7@rac.ca>
Source record: 162025

Sorry I forgot to mention that it is a 2 meter yagi
that I require.

JD wrote:
>
> It's possible that this question has been covered here in the past but I'll
> ask anyway. My radio club is having a competition to build a 4-element yagi
> antenna, I have a couple of plans for one but was curious if someone here
> might have a tried tested and true design that they may like to
> share.preferably something simple using a 50 ohm feed line and readily
> available materials.
> Thanks in advance.
> 73 de
> John, VE2 JDR

--
cheers!
73 de J.D.a.c.
VE2JDR (FN35aj) - in heaven there is no beer, Thats
why we drink it here. -trappist
monks-.
visit my webpage http://www.geocities.com/jdacamper/

4877. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 13:00:11 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <vNNP6.29210$v5.2304104@news1.rdc1.ct.home.com>
Source record: 162024
Cross-posted to: alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.shortwave

Wonder if it is patented?

4878. Re: Good ham logging program?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 13:30:17 UTC
From: Keith Beebe <keith.beebe@verizon.net>
Message-ID: <JdOP6.7650$xM2.3115588@typhoon2.ba-dsg.net>
Source record: 162026
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment

Check out DX4WIN at www.dx4win.com

A demo version is available in the downloads section.

Keith Beebe W3KB

"Dino" <dinod@deltanet.com> wrote in message
news:4zAP6.21528$CD5.11186924@news2.rdc2.tx.home.com...
> DXBASE 2002 demo can be downloaded here...
>
> http://www.dxbase.com/demowin.htm
>
> Dino
>
>
> >hey charles
> >that software looking really good on there website
> >but i am not paying $100 for software with out getting to try it first
there
> are
> >to many variables in computers and radios and such that would render the
> thing
> >usless
> >i wish they would offer a trail program for 2 weeks to a month like
everyone
> >else does to give you a chance to see if it will work on your system and
> that if
> >the software is what your looking for
> >i am glad you find it useful happy hamming
> >73
> >
> >Charles Johnston wrote:
> >
> >> Guess I'll chime in after trying most of the major logging programs
such
> as
> >> LogPlus , Log Windows , DX4WIN , and Logic 5 I have settled on DXBase
> 2002.
> >> Here is a snippet about the product....
> >>
> >> <snip>
> >>
> >> Designed for those who demand the best, DXbase 2002 by Scientific
> Solutions,

> >> Inc. is the premiere amateur radio logging software for 32bit Windows.
> One
> >> look and you'll wonder how you ever managed without it. Whether you
want
> to
> >> custom design your own QSL cards and labels, operate PSK mode and log
> >> directly into DXbase, perfect CW output with the direct interface to
the
> >> W5XD external keyer, automatically create award submission forms,
create
> >> your own reports, monitor VHF Packet and Internet Packet letting DXbase
> tell
> >> you when you need one, or just log a QSO with the greatest of ease,
DXbase
> >> 2002 is the software for you.
> >>
> >> <snip>
> >>
> >> I have used this product since DXBase 2000 and it is a reliable and
> >> extremely high-performance logging program
> >> That can do everything the other loggers do plus much more.....
> >>
> >> Download the informational demo at http://www.dxbase.com
> >>
> >> --
> >>
> >> 73 / DX
> >>
> >> Charles Johnston
> >> charles@ab7sl.com
> >>
> >> AB7SL - Ham Radio Pages
> >> http://www.ab7sl.com
> >
>

4879. Re: Tri-Ex Towers

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 14:00:49 UTC
From: dinod@deltanet.com
Message-ID: <IGOP6.24115$CD5.12942820@news2.rdc2.tx.home.com>
Source record: 162027

Tri-Ex has never had a quality issue. They also use the better
steel in the legs.

But, thank you for your information! I will stop by their plant and see
whats up.

Dino

>quality is in question. I bought from US Towers instead

4880. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 14:05:25 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0FB825.3E99C42A@IEEE.org>
Source record: 162028

Bill Klocko wrote:
> P = P1 + P2 + (E1)(E2)/Z0 + (E2)(E1)/Z0
>
> What's the bottom line? In the matched-Z0 case, those 2 pesky terms
> at the end of the equation won't cancel, and P is not equal to P1 + P2.

This is akin to Steve's equation that Ptot = P1 + P2 + 2sqrt(P1*P2)

These equations all give the correct answer but also give the impression that P1 > P1, i.e. there is more power in P1 than exists in P1. Let's do some detective work and find that missing power. Let Pgen be the generated power, Pref be the reflected power on the matching section, And Pfor be the total forward power on the matching section in a Z0-matched system. Pgen from the generator and Pref reflected from the load are the two sources of power incident upon the Z0-match point coming from opposite directions.

Pgen consists of two components

A. Pgen(1-rho^2) is P1 in the equation above and is the power delivered across the Z0-match toward the load.

B. Pgen(rho^2) is the generated power involved in the destructive/constructive interference pattern that undergoes wave cancellation.

Pref consists of two components

C. Pref(1-rho^2) is the reflected power involved in the destructive/constructive interference pattern that undergoes wave cancellation.

D. Pref(rho^2) is P2 in the equation above and is the power re-reflected at the Z0-match

In this earlier example of a lossless system with a Z0-match at 'x':

100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load

A. Pgen(1-rho^2) = 75 watts = P1 (delivered across the Z0-match)

B. Pgen(rho^2) = 25 watts (involved in wave cancellation)

C. Pref(1-rho^2) = 25 watts (involved in wave cancellation)

D. Pref(rho^2) = 8.33 watts = P2 (re-reflected at the Z0-match.

Now the picture is much clearer. The equation,

Ptot = P1 + P2 + 2sqrt(P1*P2) becomes

Pfor = Pgen(1-rho^2) + Pref(rho^2) + Pgen(rho^2) + Pref(1-rho^2)

133.33 watts = 75 watts + 8.33 watts + 25 watts + 25 watts

Grouping like terms yields: Pfor = Pgen + Pref Look familiar?

133.33 watts = (75 watts + 25 watts) + (8.33 watts + 25 watts)

133.33 watts = 100 watts + 33.33 watts = Pfor = Pgen + Pref

All this Ptot, P1, P2 stuff has just muddied the waters. Looking at
the component powers gives us the correct picture for a Z0-matched
system. All energy is accounted for. There's no need to assert that:

IF V1+V2=V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0 i.e. 75w+8.33w=133.33w

where all the energy is NOT accounted for and the equation violates
the conservation of energy principle. Note, the above shortcut works for
Z0-matched systems, the most common system encountered in ham radio
applications. It has worked for 100 years and continues to work for
Z0-matched systems.

The concept of finding all the power also works for non-Z0-matched
systems but the destructive/constructive interference power is a
bit harder to locate since the wave cancellation is incomplete.
--
73, Cecil

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4881. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 14:08:48 UTC
From: richardharrison@webtv.net
Message-ID: <13557-3B0FB8F0-72@storefull-118.iap.bryant.webtv.net>
Source record: 162029

Reg wrote:
"Is it not very peculiar that when maximum possible power is developed
in the load there is still some power left over to be reflected back?"

It`s a paradox, but things aren`t what they seem. With a perfectly
matched load no reflection happens. That`s a trivial but desirable
condition of maximum power transfer.

With a mismatch, the reflected power isn`t being continuously supplied
in the indicated quantity. Reflected power is previously supplied power
in circulation.

To determine power delivered to the load, the reflected power must be
subtracted from the indicated forward power. With no large storage
capability, the transmission line must accept and deliver the same power
to the load. The generator power is the load power.

Best regards, Richard Harrison, KB5WZI

4882. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 14:34:43 UTC
From: richardharrison@webtv.net
Message-ID: <13556-3B0FBF03-200@storefull-118.iap.bryant.webtv.net>
Source record: 162030

Cecil, WE6RCA wrote:
"When`s the last time you encountered a lossless inductance?"

Ah, yes. That is a rub. We would like extreme "Q" but must take close enough for practical purposes. Recall the all-day efficiency of the pole transformer. It suffers iron loss even when unloaded but still manages perfection "close enough for practical purposes".

Best regards, Richard Harrison, KB5WZI

4883. Re: Tri-Ex Towers

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 15:10:43 UTC
From: JerryL <jlockett@onemain.com>
Message-ID: <9eoh1d$e23o$1@ID-55752.news.dfncis.de>
Source record: 162031

As part of a group who had 'severe' problems with Firstcall regarding Tri-Ex towers, please let us all know what you find out. I presume you are talking about going over to 'Will-Burt' tower manufactuering?

thanks, Jerry -n6jp

"Dino" <dinod@deltanet.com> wrote in message news:lGOP6.24115$CD5.12942820@news2.rdc2.tx.home.com...
> Tri-Ex has never had a quality issue. They also use the better
> steel in the legs.
>
> But, thank you for your information! I will stop by their plant and see
> whats up.
>
> Dino
>
> >quality is in question. I bought from US Towers instead
>

4884. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 15:15:25 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0FC88D.88036627@IEEE.org>
Source record: 162032

Richard Harrison wrote:
>
> Cecil, WE6RCA wrote:
> "When`s the last time you encountered a lossless inductance?"
>
> Ah, yes. That is a rub. We would like extreme "Q" but must take close
> enough for practical purposes. Recall the all-day efficiency of the pole
> transformer. It suffers iron loss even when unloaded but still manages
> perfection "close enough for practical purposes".

The point is, whether a conjugate match can even exist in reality depends upon the definition of a conjugate match. The anti-conjugate-match folk can always hide behind the requirement that the four-terminal network must contain nothing but lossless reactance. That's why I gave up discussing the system-wide conjugate match and started discussing the point Z0-match which has no such requirements.
--
73, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4885. Re: Ant switch:Daiwa or AlphaDelta?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 15:32:08 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B0FCC78.3E7@wt.net>
Source record: 162033

Greg LaHaie wrote:
>
> For minimum insertion losses at 440Mhz, which antenna switch would be
> better:
> The Daiwa CS-401 (4 pos N connectors) ... or the
> Alpha Delta 'Delta 4N' (4 pos N connectors)?
>
> The asking price of the Daiwa is over twice the Alpha Delta!
>
> Any first hand observations?
>
> de K7YDL

Don't know ..Never tested at that freq. But I believe they are both
rated appx to 500??mhz so I would think either one is fairly low loss. I
have a cs-201 and an A/D 2n. Either one is a good switch. I have a load
of different ones, also the most all the B@W's. Of all of them, the
daiwa is probably my favorite switch. It's the smallest, and is built
well. But the A/D is good too, but it's fairly large. I like the small
size of the daiwa, and use it portable a lot. MK
--
http://web.wt.net/~nm5k

4886. Re: 4-element yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 15:36:47 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B0FCD8F.72EF@wt.net>
Source record: 162034

JD wrote:
>
> It's possible that this question has been covered here in the past but I'll
> ask anyway. My radio club is having a competition to build a 4-element yagi
> antenna, I have a couple of plans for one but was curious if someone here
> might have a tried tested and true design that they may like to
> share.preferably something simple using a 50 ohm feed line and readily
> available materials.
> Thanks in advance.
> 73 de
> John, VE2 JDR

Whats the competition about? Performamce? You can adjust the spacing to
have pretty close to a 50 ohm feedpoint and the antenna will do ok. But
if you adjust the spacing for maximum performance you will likely need
matching such as a gamma match etc. Myself, I prefer to space for
maximum bang, and use a matching device.
You can use modeling to fine tune spacing performance such as forward
gain, and F/B. MK
--
http://web.wt.net/~nm5k

4887. FS Force12 EF-320x/240s

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 16:00:23 UTC
From: Jeff kb2wqm <kb2wqm@dandy.net>
Message-ID: <3b0f8c8e_7@news.dandy.net>
Source record: 162035
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.swap,rec.radio.swap

I have for sale a used Force12 EF-320x/240s. 28' boom, 3 el on 20m, 2 el on 40m, dual feed. Antenna has only been up for about 2 years, has been stored since then. I just re-did
all the hardware, antenna is in excellent shape. Was going to put up but is too big for present tower. Asking $450 plus shipping. I also have a Cushcraft A3S that I retuned to 10/15/17m, can be tuned back to 10/15/20m. I'm asking $200 plus shipping. Both antennas' for $600 plus shipping. I'm in the Atlantic City New Jersey area.

73 Jeff kb2wqm

4888. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 16:52:43 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105260852.3e86f7d2@posting.google.com>
Source record: 162036

David Robbins <k1ttt@berkshire.net> wrote in message
news:<3B0F84FA.1F2B36DF@berkshire.net>...
> Bill Klocko wrote:
> >
> > David Robbins <k1ttt@berkshire.net> wrote in message
news:<3B0E84F4.E24E4AD9@berkshire.net>...
> the only reason to do both is to double check your computations. i like using
> voltages because you don't have to worry about direction changing the sign like
> you do with currents.

Hi Dave,
OK, let's try getting Richard Harrison's equation Pdel = Pfwd - Prefl using
only the voltages

E = (E+) + (E-) at a point, then

Pdel = E^2/Z0 = [(E+) + (E-)] [(E+) + (E-)]/Z0

= [(E+)^2 + (E-)^2 + (E+)(E-) + (E-)(E+)]/Z0

Pdel = Pfwd - Prefl + other terms

So those last 2 terms don't cancel unless you're doing something extra. 73,
Bill N3WK

4889. Re: 4-element yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 17:04:02 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <6mRP6.30029$v5.2348060@news1.rdc1.ct.home.com>
Source record: 162037

For what band? That would make a difference.

73

Peter

"Mark Keith" <nm5k@wt.net> wrote in message news:3B0FCD8F.72EF@wt.net...
> JD wrote:
> >
> > It's possible that this question has been covered here in the past but
I'll
> > ask anyway. My radio club is having a competition to build a 4-element
yagi
> > antenna, I have a couple of plans for one but was curious if someone
here
> > might have a tried tested and true design that they may like to
> > share.preferably something simple using a 50 ohm feed line and readily
> > available materials.
> > Thanks in advance.
> > 73 de
> > John, VE2 JDR
>
> Whats the competition about? Performamce? You can adjust the spacing to
> have pretty close to a 50 ohm feedpoint and the antenna will do ok. But
> if you adjust the spacing for maximum performance you will likely need
> matching such as a gamma match etc. Myself, I prefer to space for
> maximum bang, and use a matching device.
> You can use modeling to fine tune spacing performance such as forward
> gain, and F/B. MK
> --
> http://web.wt.net/~nm5k

4890. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 17:06:40 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B0FE2A0.91F108C7@IEEE.org>
Source record: 162038

Bill Klocko wrote:
>
> David Robbins <k1ttt@berkshire.net> wrote in message
news:<3B0F84FA.1F2B36DF@berkshire.net>...
> > Bill Klocko wrote:
> > >
> > > David Robbins <k1ttt@berkshire.net> wrote in message
news:<3B0E84F4.E24E4AD9@berkshire.net>...
> > the only reason to do both is to double check your computations. i like using
> > voltages because you don't have to worry about direction changing the sign like
> > you do with currents.
>
> Hi Dave,
> OK, let's try getting Richard Harrison's equation Pdel = Pfwd - Prefl using
> only the voltages
>
> E = (E+) + (E-) at a point, then
>
> Pdel = E^2/Z0 = [(E+) + (E-)] [(E+) + (E-)]/Z0
>
> = [(E+)^2 + (E-)^2 + (E+)(E-) + (E-)(E+)]/Z0
>
> Pdel = Pfwd - Prefl + other terms
>
> So those last 2 terms don't cancel unless you're doing something extra. 73,

The thing we are doing extra, Bill, is tuning our antenna systems - you know
the thing that virtually every ham does everytime he turns on his transmitter?
Virtually all ham antenna systems are Z0-matched. Seems a shortcut that works
for virtually all ham antenna systems would be a good thing, not a bad thing.
--
73, Cecil

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4891. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 17:09:48 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105260909.2fe727da@posting.google.com>
Source record: 162039

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<13884-3B0F51AF-162@storefull-113.iap.bryant.webtv.net>...
> Bill Klocko wrote:
> "For the match point example, the relation between E and I is different
> and superposition of power doesn`t work."
>
> The Bird wattnmeter uses the 180-degree out-of-phase relationship
> between volts and amps in a once-reflected wave to distinguish that wave
> from the forward wave. The volts and amps are in-phase in the forward
> wave.
>
> To sense power, Bird uses a tiny sampling loop coupled to the center
> conductor in a 50-ohm line section. Capacitance coupling gives a voltage
> sample. Magnetic coupling gives a current sample. By design and careful
> adjustment, the magnitude of the two samples is exactly the same.
>
> In the forward wave from the generator, the in-phase volts and amps
> produce samples which are in-phase and equal in magnitude in the Bird
> wattmeter. These are rectified and added to produce double the
> deflection of a d-c meter that either sample would produce alone. The
> meter is calibrated in watts.
>
> Reflected power traveling toward the generator has its volts and amps
> 180-degrees out-of-phase, as a result of the single reflection, so the
> net effect of these volts and amps as sensed by the sampling loop is
> zero.
>
> To measure the magnitude of the reflected wave, Bird switches the
> polarity of the sampling loop`s magnetic (amps) sample, and In the
> switched position, samples from the reflected wave are in-phase, and
> samples from the forward wave are now out-of-phase. Sample parity now
> causes a net effect of zero on the meter deflection as produced by the
> forward wave in this now switched position.
>
> This design and construction works very well.
>
> The out-of-phase relationship between volts and amps in the reflected
> wave also has an effect when the wave arrives at the generator. When the
> volts are max, the amps are min. The energy magnitudes in the electric
> and magnetic fields are exactly equal. The net effect on the generator`s
> internal impedance is zero. No energy is absorbed. It is all reflected.
> This re-reflection restores the in-phase relation between volts and
> amps. Re-reflected energy joins the newly produced energy delivered from
> the generator to produce the total forward power.

>
> Out-of-phase voltage and current at the end of a transmission line seem
> reasonable candidates for rejection and rebound to me.
>
> Best regards, Richard Harrison, KB5WZI

Richard,
Thanks for the info on the Bird meter operation. It appears that the meter
is obtaining samples of total E = [(E1) + (E2)] and total I = [(I1) + (I2)] in
the forward wave, so based on that it's getting the forward power Pfwd. My comment about
superposition had to do with taking 2 power values P1 and P2 (not voltage &
and current samples) and trying to get Pfwd from them alone like some people try to do.
I'd also disagree about the total reflection part, but that's your prerogative. 73,
Bill N3WK

4892. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 18:27:36 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105261027.668108cd@posting.google.com>
Source record: 162040

CAM <Cecil.A.Moore@IEEE.org> wrote in message news:<3B0FB825.3E99C42A@IEEE.org>...
> Bill Klocko wrote:
> > P = P1 + P2 + (E1)(E2)/Z0 + (E2)(E1)/Z0
> >
> > What's the bottom line? In the matched-Z0 case, those 2 pesky terms
> > at the end of the equation won't cancel, and P is not equal to P1 + P2.
>
> This is akin to Steve's equation that Ptot = P1 + P2 + 2sqrt(P1*P2)
>
> These equations all give the correct answer but also give the impression
> that P1 > P1, i.e. there is more power in P1 than exists in P1. Let's do some
> detective work and find that missing power. Let Pgen be the generated power,
> Pref be the reflected power on the matching section, And Pfor be the total forward
> power on the matching section in a Z0-matched system. Pgen from the generator
> and Pref reflected from the load are the two sources of power incident upon
> the Z0-match point coming from opposite directions.
>

> The equation,
>
> Ptot = P1 + P2 + 2sqrt(P1*P2) becomes
>
> Pfor = Pgen(1-rho^2) + Pref(rho^2) + Pgen(rho^2) + Pref(1-rho^2)
>
> 133.33 watts = 75 watts + 8.33 watts + 25 watts + 25 watts
>
> Grouping like terms yields: Pfor = Pgen + Pref Look familiar?
>
> 133.33 watts = (75 watts + 25 watts) + (8.33 watts + 25 watts)
>
> 133.33 watts = 100 watts + 33.33 watts = Pfor = Pgen + Pref
>
> All this Ptot, P1, P2 stuff has just muddied the waters.

This is the example that you and Steve have been debating for several
weeks now. I haven't followed it from the start, but it appears that the
power equation balances. I don't think Steve's equation gives the impression
that there's more power in P1 than exists in P1, that's just the way the
equation turns out to be. You found the missing power. Now, how does dealing
with Ptot, P1, and P2 muddy the waters?

Looking at
> the component powers gives us the correct picture for a Z0-matched
> system. All energy is accounted for. There's no need to assert that:
>

> IF V1+V2=V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0 i.e. 75w+8.33w=133.33w

I certainly didn't assert that. Are you saying that Steve asserted that squaring both sides of V1+V2=V3 results in V1^2 + V2^2 = V3^2? I don't think even a high school kid would make that mistake. Squaring both sides and dividing by Z0 results in an equation like the one at the top of this post. All I've been saying is that you just can't add powers willy nilly and expect to get the right answer. I'd rather resolve power into voltage and current components, superpose them, and then get power. 73,
Bill N3WK

4893. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 18:58:22 UTC
From: w2du@iag.net
Message-ID: <3b0ff507.16388154@news.onemain.com>
Source record: 162041

On 25 May 2001 12:21:01 -0700, klocko@toad.net (Bill Klocko) wrote:

>Richard,
>The latest replies from you and Steve sent me back to Johnson, and
>now I see where that equation comes from.
>
>If E = (E+) + (E-) and I = (I+) + (I-) at a point,

The point here is where the voltages and currents are at either 0 degrees and
180 degrees or 180 degrees and 0 degrees, respectively, points on the line where
the currents and voltages are non-reactive.
>
>and if (I+) = (E+)/Z0 and (I-) = -(E-)/Z0, then the power at the point is
>
>EI = [(E+) + (E-)] [(I+) + (I-)]
>
> = [(E+) + (E-)][(E+)/Z0 - (E-)/Z0]
>
> = (E+)^2/Z0 - (E-)^2/Z0 + (E+)(E-)/Z0 - (E+)(E-)/Z0
>
>And since the last 2 terms cancel,
>
>EI = (E+)^2/Z0 - (E-)^2/Z0 or
>
>Pdel = Pfwd - Pref, just as given in the Bird note.
>
>Now, for that infamaous matched-Z0 example, there are 2 forward voltages E1 and E2
>(106.066v and 35.355v). There are also 2 forward currents I1 and I2. Using
>superposition, E = E1 and E2 and I = I1 and I2
>
>In this case (I1) = (E1)/Z0 and (I2) = (E2)/Z0. They are in phase with each other
>since they combine on the load side of the match point. The power/energy flow toward
>the load is
>
>EI = [(E1) + (E2)] [(I1) + (I2)]

Sorry Bill, I can't agree that the equation above yields the power flow toward
the load. Let's see why:

E1 + E2 = Et = 141.2 v. and I1 + I2 = It = 2.828 a.

The product of Et and It = 400 watts This is an impossible solution.

Therefore, your following equations are also incorrect.

According to Cecil's phasor diagram there are three forward voltages, 106.066 v. 86.6 v. and 35.355 v.

Now let's look at Johnson's equation: Pdel = |E1|^2/Zo - |E12|^2/Zo. By the same reasoning Ptotal = |E1|^2/Zo + |E|^2/Zo, simple algebraic manipulation.

Using the manipulated Johnson equation and inserting the three forward voltages listed above from Cecil's diagram, we get

106.066^2/150 = 75 w. 86.6^2/150 = 50 w. 35.355^2/150 = 8.33 watts.

Now let's add the powers: 75 + 50 + 8.33 = 133.33 watts exactly, proving that the powers add correctly to obtain the total forward power.

Consequently, the individual powers (that Johnson shows as E^2/Zo) must be added, not the reflected voltages resulting from the steady state. Proof is shown above where adding voltages, adding currents and taking their product yields the wrong value.

I can show, but not here and now, that it is the energy in the respective electric and magnetic fields that add, not the voltages and currents of the final steady-state values. Since it is the field energies that add directly, so must the powers.

Again Bill, as I said above, the equations below are incorrect for the purpose intended.

> = [(E1) + (E1)][(E1)/Z0 + (E2)/Z0]
>
> = (E1)^2/Z0 + (E2)^2/Z0 + (E1)(E2)/Z0 + (E2)(E1)/Z0
>
>P = P1 + P2 + (E1)(E2)/Z0 + (E2)(E1)/Z0
>
>What's the bottom line? In the matched-Z0 case, those 2 pesky terms
>at the end of the equation won't cancel, and P is not equal to P1 + P2.
>
>For the Bird equation, superposition of 2 power terms is OK because
>of the relation (I-) = -(E-)/Z0. For the match point example, the
>relation between E and I is different, and superposition of power doesn't
>work. Sorry about the equations, but sometimes that's the best way to
>make a point. 73,
>Bill N3WK

And here I must again disagree, Bill, because superposition of power does work, as I have just shown.

Walt.

4894. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 19:07:59 UTC
From: w2du@iag.net
Message-ID: <3b0ffe2d.18730793@news.onemain.com>
Source record: 162042

On Sat, 26 May 2001 18:58:22 GMT, w2du@iag.net (Walter Maxwell) wrote:

>Now let's look at Johnson's equation: Pdel = |E1|^2/Zo - |E12|^2/Zo. By the same
>reasoning Ptotal = |E1|^2/Zo + |E|^2/Zo, simple algebraic manipulation.

Typos Bill, sorry, here is what it should have said:

Pdel = |E1|^2/Zo - |E2|^2/Zo, and Ptotal = |E1|^2/ + E2|^2/Zo.

Walt, W2DU

4895. Cushcraft R7 Matching Network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 19:11:45 UTC
From: Gary Liebisch <gliebisch@cinci.rr.com>
Message-ID: <RdTP6.26848$4x5.4149127@typhoon.kc.rr.com>
Source record: 162043

Does anyone know the value of the small ceramic disk capacitor inside the MN7 matching network on a Cushcraft R7? There are actually 3 capacitors in there, two are identical (82M) and one is smaller. It the lone small one I need to identify the value.

Gary
KC4FN
Milford, OH

4896. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 20:42:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ep4e7$599$1@slb0.atl.mindspring.net>
Source record: 162044

Richard:

Heh, heh...

[snip]
> With a mismatch, the reflected power isn`t being continuously supplied
> in the indicated quantity. Reflected power is previously supplied power
> in circulation.
[snip]

Your description above is the most elequoent and "pretty" description of
that
ficticious quantity called reflected power that I have ever seen.

A very apt description which clearly ennunciates its' "ficticious" role.

Congratulations, I could never have put it so eleqoently.

"Previously delivered power in circulation", heh, heh...sort of like our
National
Currency, the almighty greenbacks in everyone's wallets, are previously
delivered
money stillin circulation. But... until the mint/Fed increases the money
supply there is no
replensishment.

Not to put too fine a point on it, but...

IMHO... this is not a "power" but previously delivered "energy" still in
storage'
i.e. what the old timer's would have called potential energy, before the
modern
definitions of power perpetrated upon us by that "Dictionary".

That such an entity could actually be called a "power" is part of the
confusion thrown upon
us all by that misguided IEEE Dictionary...

-Peter K1PO

4897. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 21:03:53 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ep5mq$8rq$1@slb1.atl.mindspring.net>
Source record: 162045

Richard:

I beg to differ...

The Bird wattmeter does not measure power, never has!

It simply measures voltages across a bridge arm in a bridge circuit, nothing more nonthing less. Said bridge arm voltage is a result of an unknown impedance in the "unknowns" arm of the bridge balanced against an arbitrary reference impedance [50 Ohms resistive] in the "known" arm of the bridge.

This bridge was invented by George Wheatstone, a British natural philosopher back in the 1840's or so. Wheatstone was a co-discoverer of the electric telegraph and was involved in patent battles with Samuel F. B. Morse and others about various implementations of the electric telegraph. In fact one use of Wheatstone's bridge was for duplex telegraph, that is using a single telegraph line to send messages in two directions simulaneously! What an idea. Still in use today in millions and millions of modems. Problem is Wheatstone's patents ran out before the start of the 20th century.

Certainly if those patents for the Wheatstone bridge were still in force, the Bird company would be paying royalty tribute to George Wheatstone for every reflectometer circuit they sell today, even though they sell it as a wattmeter.

The Bird wattmeter, a voltmeter with watts painted on its' face.

Sort of like selling a cow with a horse painted on the side of it as a horse.

Most knowledgeable folks would note the difference with the cow, but not many hams have examined the Bird wattmeter, under the paint! Heh, heh.

The scale on the Bird meter face is "marked" in watts, based upon a bunch of assumptions about the relationship of the indicated voltage to some defintion of a power. [In some cases even ficticious power.]

The more that folks continue to believe that the Bird reflectometer is actually measuring power the more likely it is that they will come under the "spell" of misconceptions about the reality of power.

I say, let's call a cow a cow!

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:26029-3B0C8262-37@storefull-118.iap.bryant.webtv.net...
> Bill Klocko wrote:

> "What the author is saying is that it does NOT apply to 2 or more
> powers."
>
> Bird says:
> "A simple algebraic subtraction (Pfwd - Pref) yields the net power
> delivered to the load."
>
> We can rewrite that as: Pfwd = Pdel + Pref.
> Would you deny that the forward power measured by the Bird wattmeter
> consists of two powers, the delivered power and the re-reflected power?
>
> The transmitter only delivers the delivered power. The only source of
> additional forward power is the reflected power. The re-reflected power
> is identically the reflected power making its unique additional round
> trip between source and sink.
>
> The powers add as Bird says. The evidence is that the wattmeter works as
> advertised.
>
> Best regards, Richard Harrison, KB5WZI
>

4898. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 21:07:44 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ep5v6$29l$1@slb4.atl.mindspring.net>
Source record: 162046

Bill:

You are absolutely correct. "Superposition" mathematics is a property that is valid only in "linear systems".

Once you enter the realm of power, where independent variables like I and V are "multiplied" together rather than added, you are in the realm of non-linear systems, and...

in that realm...

Superpostition does not apply!

This is supported by irrefutable mathematical proofs...

Period, end of story.

You are correct and if I interpert Cecil's remarks correctly, which I may not be, then Cecil is wrong!

-Peter K1PO

"Bill Klocko" <klocko@toad.net> wrote in message news:224d9cd4.0105241745.27e8b688@posting.google.com...
> richardharrison@webtv.net (Richard Harrison) wrote in message news:<26029-3B0C8262-37@storefull-118.iap.bryant.webtv.net>...
> > Bird says:
> > "A simple algebraic subtraction (Pfwd - Pref) yields the net power
> > delivered to the load."
> >
> > We can rewrite that as: Pfwd = Pdel + Pref.
> > Would you deny that the forward power measured by the Bird wattmeter
> > consists of two powers, the delivered power and the re-reflected power?
>
> Hi Richard,
> Well, I don't have a Bird wattmeter, but I've heard they're quality instruments,
> I couldn't download any of their application notes, so I don't know if
> the above equation is exact or is an estimate. Of course, the *only* way
> to get Pdel is by 2 separate measurements with the slug reversed, right?
> So the equation could be only an estimate.
>
> You say the it works, but how do you actually know it works? Unless you
> have some independent method, like theory, to verify the measurements,
> you never really know.
>
> I checked with a number of other texts, and they all say basically the

> same: that superposition of multiple sources is only valid for linear
> quantities like voltage and current. What can I say? It appears that
> superposition of multiple power sources by simple addition is a no-no. 73,
> Bill N3WK

4899. Re: Cushcraft R7 Matching Network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 21:09:24 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B101B84.2674@wt.net>
Source record: 162047

Gary Liebisch wrote:
>
> Does anyone know the value of the small ceramic disk capacitor inside the
> MN7 matching network on a Cushcraft R7? There are actually 3 capacitors in
> there, two are identical (82M) and one is smaller. It the lone small one I
> need to identify the value.
>
> Gary
> KC4FN
> Milford, OH

Is there a number on it? Usually the first two numbers are values, and a third number the multiplier. The letter is the tolerance. M= 20%. So I "think" thats a 82 pf with a 20% tolerance being it has only two numbers, but I may be wrong. It could be a 8x100=800pf pf if the 2nd number is a multiplier instead of a value.
Someone will have to correct me on that as I'm not sure. I'd measure it if it worked, but I assume it is shot being as you want to get a new one. It may get to the point you have to just experiment, or find a unit that works and check it's cap. It would make it easier to pin down if you knew what band the matching cap is for.
If that was indeed a 82 pf, that would be "about" right for a 10m cap. If it were 800 pf , I would think that would match a much lower freq. As a "general rule with base fed 1/2 waves, 50 pf is needed on 10m, and double that every time you double the wavelength in meters. IE: 20m =100 pf. 40= 200 pf. I don't think the r7 has 80m, so that starts to make the 82 pf for 10-15??m seem more likely unless maybe they need more on 40m being it's so short. It's not ultra critical as you can tell by the 20% tolerance. You could use a 100 pf instead of an 82pf and still likely have a decent match. MK
--
http://web.wt.net/~nm5k

4900. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 21:19:38 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B101DEA.94661BF0@IEEE.org>
Source record: 162048

"Peter O. Brackett" wrote:
> That such an entity could actually be called a "power" is part of the
> confusion thrown upon us all by that misguided IEEE Dictionary...

Other words have multiple definitions, Peter. What's so special about
"power"?
--
73, Cecil

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4901. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 21:21:51 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B101E6E.953F0964@IEEE.org>
Source record: 162049

"Peter O. Brackett" wrote:
> You are correct and if I interpert Cecil's remarks correctly, which I may
> not be, then Cecil is wrong!

Peter, in my life, I have probably made thousands of remarks that were
wrong. Which remarks are you referring to, above?
--
73, Cecil

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4902. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 21:23:59 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B101EEF.781D@wt.net>
Source record: 162050

Mark Keith wrote:
I'm not trying to mount a crusade against
> windoms, I just trying to find out why the ones we used were so lousy.
> There must be differences in these windoms. Ours acted like it had a
> resister inline. And all were "Caroline windoms" that were storebought.
> MK

I got to thinking about this more. Actually, on recollection, the first two years we were using a G5RV fed in the normal "commercial" manner with ladder line and coax. Not the windom. We used the windom the 3rd year. So I need to place the total blame where it really belongs. We found the G5RV's terrible for 80m fed in their stock form as sold. I mean horrible with a capital H. In fact, I have to rate the G5RV's as worse than the windom we used. So let me correct this...I don't like windoms or commercial G5RV's on 80m..:) It was really the G5RV's lousy performance on 80m that spurred me to bringing wire for a dipole the year the windom showed up. The windom just happened to be the poor guinea pig for my test against a coax fed dipole. I don't want the windom to feel like the lone ranger..:/ MK

--
http://web.wt.net/~nm5k

4903. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 21:29:32 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ep76trdu1@slb0.atl.mindspring.net>
Source record: 162051

Richard:

For the "lossless line", the Terman statement is true all the way down to DC, i.e. for the lossless line at DC or zero frequency.

Zo = sqrt(L/C)

For... starting with the expression for the Zo of a general RLCG line...

Zo = sqrt((R + j*2*pi*f*L)/(G + j*2*pi*f*C))

If you set R = G = 0 as the lossless condition, which applies to most ham radio applications, and then you apply L'Hospital's Rule on evaluating limits, [Remember your first year calculus? Differentiate top and bottom expressions with respect to the independent variable, here f, and then evalaltuate the limit again, etc... go back to your first year calculus text to check on this.]

You will see that for the lossless line wherein R = 0 and G = 0, then the limit as f approaches zero is

Zo = sqrt(L/C)

In fact you could demonstrate this for yourself experimentally if you had a reflectometer [Bird Wattmeter?] that was DC coupled and worked all the way down to DC. I have in fact designed such a DC coupled reflectometer and would be pleased to send you the schematic diagram so that you could build your own and verify my assertions...

Best,

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:10374-3B0E6491-8@storefull-116.iap.bryant.webtv.net...
> Steve, VE9SRB wrote:
> "This is a valid relationship (Pdel=Pfwd-Pref), so long as the Zo of the
> line is a pure resistance."
>
> Terman says:
> "At all radio frequencies, and at all but the lowest audio frequencies,
> the ratio of R/omegaL and G/omegaC are so small that the characteristic
> impedance can be taken as a pure resistance of sq. rt. of L/C ohms.
> (p.173 edition of 1943
>
> Best regards, Richard Harrison, KB5WZI
>

4904. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 21:37:17 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ep7le$b1i$1@slb7.atl.mindspring.net>
Source record: 162052

Bill and Richard:

Your assumptions about the Bird reflected and incident voltage sensors are not quite correct.

The Bird sensor cannot possibly discriminate between forward and reflected waves, it simply doesn't span enough space/distance on the line to do that.

What the Bird sensor does do is to make a single point measurement of V and I at one point on the line, and then by a [analog computer] calculation it presents the voltage values...

a = V + IR, usually called the incident voltage, and

b = V - IR, usually called the reflelcted voltage,

on its' meter face, which is "marked" in Watts.

Where V and I are the voltage and current at the measurement point on the line and R is the equivalent of a pure 50 Ohm resistor internal to the measurment/calculation circuitry of the meter.

The analog computation of a and b [i.e. V + IR and V - IR is done simply by using George Wheatstone's celebrated bridge cirucuit first patented back in the 1840's.

-Peter K1PO

"Bill Klocko" <klocko@toad.net> wrote in message
news:224d9cd4.0105260909.2fe727da@posting.google.com...
> richardharrison@webtv.net (Richard Harrison) wrote in message
news:<13884-3B0F51AF-162@storefull-113.iap.bryant.webtv.net>...
> > Bill Klocko wrote:
> > "For the match point example, the relation between E and I is different
> > and superposition of power doesn`t work."
> >
> > The Bird wattnmeter uses the 180-degree out-of-phase relationship
> > between volts and amps in a once-reflected wave to distinguish that wave
> > from the forward wave. The volts and amps are in-phase in the forward
> > wave.
> >
> > To sense power, Bird uses a tiny sampling loop coupled to the center
> > conductor in a 50-ohm line section. Capacitance coupling gives a voltage
> > sample. Magnetic coupling gives a current sample. By design and careful
> > adjustment, the magnitude of the two samples is exactly the same.
> >
> > In the forward wave from the generator, the in-phase volts and amps

> > produce samples which are in-phase and equal in magnitude in the Bird
> > wattmeter. These are rectified and added to produce double the
> > deflection of a d-c meter that either sample would produce alone. The
> > meter is calibrated in watts.
> >
> > Reflected power traveling toward the generator has its volts and amps
> > 180-degrees out-of-phase, as a result of the single reflection, so the
> > net effect of these volts and amps as sensed by the sampling loop is
> > zero.
> >
> > To measure the magnitude of the reflected wave, Bird switches the
> > polarity of the sampling loop`s magnetic (amps) sample, and In the
> > switched position, samples from the reflected wave are in-phase, and
> > samples from the forward wave are now out-of-phase. Sample parity now
> > causes a net effect of zero on the meter deflection as produced by the
> > forward wave in this now switched position.
> >
> > This design and construction works very well.
> >
> > The out-of-phase relationship between volts and amps in the reflected
> > wave also has an effect when the wave arrives at the generator. When the
> > volts are max, the amps are min. The energy magnitudes in the electric
> > and magnetic fields are exactly equal. The net effect on the generator`s
> > internal impedance is zero. No energy is absorbed. It is all reflected.
> > This re-reflection restores the in-phase relation between volts and
> > amps. Re-reflected energy joins the newly produced energy delivered from
> > the generator to produce the total forward power.
> >
> > Out-of-phase voltage and current at the end of a transmission line seem
> > reasonable candidates for rejection and rebound to me.
> >
> > Best regards, Richard Harrison, KB5WZI
>
> Richard,
> Thanks for the info on the Bird meter operation. It appears that the meter
> is obtaining samples of total E = [(E1) + (E2)] and total I = [(I1) +
(I2)] in
> the forward wave, so based on that it's getting the forward power Pfwd. My
comment about
> superposition had to do with taking 2 power values P1 and P2 (not voltage
&
> and current samples) and trying to get Pfwd from them alone like some
people try to do.
> I'd also disagree about the total reflection part, but that's your
prerogative. 73,
> Bill N3WK

4905. Ground wire to Rohn 25 section?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 21:40:48 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <ApVP6.30981$v5.2403182@news1.rdc1.ct.home.com>
Source record: 162053

Whats the best way to connect a ground wire to
a Rohn 25? I've seen SAIC use exothermic welds
on the cross braces--but the procedure isn't approved
by Rohn and the darn molds are expensive.

--
Peter

4906. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 21:47:22 UTC
From: kb7qhc@home.com
Message-ID: <3b102380.625362864@news.seanet.com>
Source record: 162054

On Sat, 26 May 2001 17:29:32 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>For the "lossless line", the Terman statement is true all the way down to
>DC, i.e. for the lossless line at DC or zero frequency.
>
>Zo = sqrt(L/C)
>
>For... starting with the expression for the Zo of a general RLCG line...
>
>Zo = sqrt((R + j*2*pi*f*L)/(G + j*2*pi*f*C))
>

Hi Peter,

Still surprised, hmmm?

All the way down to
>DC or zero frequency.
leaves us with the prospect of
Z0 = sqrt((0 + 0)/(0 +0))
still

73's
Richard Clark, KB7QHC

4907. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 21:55:42 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B10265E.AFB8289B@IEEE.org>
Source record: 162055

Bill Klocko wrote:
> You found the missing power. Now, how does dealing
> with Ptot, P1, and P2 muddy the waters?

You said it yourself, Bill. P1 and P2 are NOT all the power. Steve has been saying for weeks that 75 joules/sec + 8.33 joules/sec equals 133.33 joules/sec which implies that 75 joules/sec and 8.33 joules/sec are all the powers involved. It obviously is NOT all the power. The correct equation is 75 joules/sec plus 8.33 joules/sec plus 50 joules/sec equals 133.33 joules/sec. This is essentially the only argument I have had with Steve. All other side arguments extend from that argument. I have agreed multiple times with his voltage vector addition but so far, he has refused to acknowledge the folly of his 75w + 8.33w = 133.33w equation.

> Looking at
> > the component powers gives us the correct picture for a Z0-matched
> > system. All energy is accounted for. There's no need to assert that:
> >
> > IF V1+V2=V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0 i.e. 75w+8.33w=133.33w
>
> I certainly didn't assert that.

In a previous posting, you said something like you didn't see anything wrong with the equation 75 watts + 8.33 watts = 133.33 watts. Did I misunderstand?

> Are you saying that Steve asserted that
> squaring both sides of V1+V2=V3 results in V1^2 + V2^2 = V3^2?

Yes, of course. That's exactly what 75 watts + 8.33 watts = 133.33 watts means.

In the previous example, the voltage delivered across the Z0-match is 106.066v, the re-reflected voltage equals 35.355v, and the forward voltage equals 141.4v. Steve took those three voltages and said

106.066^2/150 + 35.355^2/150 = 141.4^2/150 = 133.33w = 75w + 8.33w

That's what my weeks-long argument with Steve is all about.

> I don't think even a high school kid would make that mistake.

I agree with you, Bill. Your paper and my previous example including my phasor diagram are virtually carbon copies of each other. Steve agreed with my phasor diagram but he clings to that 75w + 8.33w = 133.33w equation.
--
73, Cecil

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4908. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:05:32 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1028AC.83E0743D@IEEE.org>
Source record: 162056

"Peter O. Brackett" wrote:
> The scale on the Bird meter face is "marked" in watts, based upon a bunch of
> assumptions about the relationship of the indicated voltage to some
> defintion of a power.

That's exactly true, Peter, and in general, that is true of a lot of instruments. Analog Simpson voltmeters don't measure volts. That's current flowing through that meter movement. AC volts is even worse having been passed through a non-linear element.

Given a Bird wattmeter that is being used within the boundary conditions specified by Bird, it is indicating proportional to "watts" as defined by the IEEE.
--
73, Cecil

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4909. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:08:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ep9gs$10u$1@slb5.atl.mindspring.net>
Source record: 162057

Cecil:

You already know my response... heh, heh... my favorite quote from Lewis Carol...

.....

"When I use a word", Humpty Dumpty said, in a rather scornful tone, "it means just what I choose it to mean, neither more nor less."

"The question is", said Alice, "whether you can make words mean so many different things."

"The question is", said Humpty Dumpty, "Who is to be master: - that's all."

Lewis Carol, "Alice in Wonderland - The Turtle soup"
.....

-Peter K1PO
"CAM" <Cecil.A.Moore@IEEE.org> wrote in message news:3B101DEA.94661BF0@IEEE.org...
> "Peter O. Brackett" wrote:
> > That such an entity could actually be called a "power" is part of the
> > confusion thrown upon us all by that misguided IEEE Dictionary...
>
> Other words have multiple definitions, Peter. What's so special about
> "power"?
> --
> 73, Cecil
>
>
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4910. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:11:16 UTC
From: Harold <hsnyder@houston.flightlessbird.com>
Message-ID: <8SVP6.40197$bv2.11041715@typhoon.austin.rr.com>
Source record: 162061
Cross-posted to: alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.shortwave

I hear that you can put one of these on a department store mannequin and use
it as a dummy load.

Harold
WD5KCA

"Campone" <info@mantenna.net> wrote in message
news:MPG.1578e3589c093ad39896b0@news.earthlink.net...
> An amazing new product will be released in the near future.
>
> The Mantenna!!
>
> The Mantenna is a special 3 layer 1 peice suit that contains copper
> strands and copper threading strategical1y placed at key areas within
> the interior wall of the second layer of the suit.
>
> The suit layers are a special blend of nylon and rayon. This blend is
> coated with a non-reflective conductive spray (The spray maintains the
> natural beauty of the fabric and is non-toxic).
>
> The belt line contains high grade BNC and PL style connectors to attach
> to your radio antenna connection.
>
> The suit will be availabe in 7 differents colors to keep everyone happy!
>
> The receive range shows remarkable results from 7Mhz - 1400Mhz.
>
> An optional hat is available:
>
> Hat model MAN-H1 is a cone style hat with built in Low Noise Amp (LNA)
> for those that enjoy satellite monitoring. The cone contains all
> the electronics and a high capacity rechargable power supply.
> Free during our official introduction will be an addon solar cell
> for constant recharging and constant power to the LNA.
>
> Stay Tuned For The Official Release!!
>
>

4911. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:12:04 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ep9n9snp1@slb5.atl.mindspring.net>
Source record: 162058

Cecil:

Sorry OM... don't take my comments personally. I like what you do and say.

And I hope I qualified myself by saying, "if I interp....etc."...

All I was trying to do with that post was to support Bill Klocko' assertion.

I was not attempting to disparage any particular assertions of yours...

-Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B101E6E.953F0964@IEEE.org...
> "Peter O. Brackett" wrote:
> > You are correct and if I interpert Cecil's remarks correctly, which I
may
> > not be, then Cecil is wrong!
>
> Peter, in my life, I have probably made thousands of remarks that were
> wrong. Which remarks are you referring to, above?
> --
> 73, Cecil
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4912. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:21:00 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9epa7dlci1@slb7.atl.mindspring.net>
Source record: 162059

Richard:

Oops!

It seems that you have not been introduced to L'Hospital's Rule...

Please look up L'Hospital's Rule for evaluating indeterminate limits in any standard first year calculus text book... In America this would be first year college level, in Europe it would be at the Grade 9 level. Why are they ahead of us in Maths?

Here's a reference that I have nearby...

"Calculus with Analytic Geometry" by Angus E. Taylor, Prentice Hall, Englewood Cliffs, NJ 1959, LCCN 59-011305, LC Shelf Call QA 303.T203.

Heh, heh... I'm perhaps giving away my age here...

L' Hospital's Rule can be found on p.456.

That will help you with the mathematical evaluation of Zo for a lossless line as f approaches zero.

It is undoubtedly Zo = sqrt(L/C), mathematics, physical theory, and experimental practice all confirm this.

Best,

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:3b102380.625362864@news.seanet.com...
> On Sat, 26 May 2001 17:29:32 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >For the "lossless line", the Terman statement is true all the way down to
> >DC, i.e. for the lossless line at DC or zero frequency.
> >
> >Zo = sqrt(L/C)
> >
> >For... starting with the expression for the Zo of a general RLCG line...
> >
> >Zo = sqrt((R + j*2*pi*f*L)/(G + j*2*pi*f*C))
> >
>
> Hi Peter,
>
> Still surprised, hmmm?

>
> All the way down to
> >DC or zero frequency.
> leaves us with the prospect of
> Z0 = sqrt((0 + 0)/(0 +0))
> still
>
> 73's
> Richard Clark, KB7QHC

4913. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:23:30 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B102CE2.B56439C2@IEEE.org>
Source record: 162060

"Peter O. Brackett" wrote:
> You already know my response... heh, heh... my favorite quote from Lewis
> Carol...

Well then, your mission is clear. All you have to do is define a new word
which possesses only the narrow definition of power that you use and then
talk Webster's, the IEEE, and the general population into adopting that
word. Good luck, Peter.

> "CAM" <Cecil.A.Moore@IEEE.org> wrote in message
> > Other words have multiple definitions, Peter. What's so special about
> > "power"?

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4914. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:30:09 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B102E71.B735BFD4@IEEE.org>
Source record: 162062

"Peter O. Brackett" wrote:
> Sorry OM... don't take my comments personally. I like what you do and say.
> And I hope I qualified myself by saying, "if I interp....etc."...
> All I was trying to do with that post was to support Bill Klocko' assertion.
> I was not attempting to disparage any particular assertions of yours...

Why not? You disparage me for spending $100 for an IEEE Dictionary. :-)

I was going to challenge you to prove that I ever said that superposition
applies to power. In fact, my point is that power is a *SCALAR* so vector
math, superposition, etc. simply do not apply. However, the conservation
of energy principle applies to the energy associated with the power.

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4915. Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:32:21 UTC
From: w2du@iag.net
Message-ID: <3b102197.27796649@news.onemain.com>
Source record: 162063

Bill, here is some additional proof that addition of either steady-state voltages or currents to determine total forward power is incorrect.

Consider a basic 3:1 mismatch with a 150-ohm resistive load on a 50 ohm line, or a 50-ohm resistive load on a 150-ohm line. The voltage reflection coefficient is 0.5, the power reflection coefficient is 0.25, and the transmission coefficient is 1 - 0.25 = 0.75.

The power increase factor is the reciprocal of the transmission coefficient, 0.75 = 1.33333. Consequently, with 100 w delivered by the source the total forward power is 133.33 w. We found this to be true in the 150-ohm line with 100 w delivered, 100 w absorbed in the load, but with 33.333 w reflected at the 150/50 ohm junction. (All power arriving at the 50/150 ohm junction is re-reflected back toward the load.)

Since the reflected power is added to the individual electric and magnetic fields developed by the source, the individual fields are each increased by sqr root of the power increase factor, the sqr root of 1.33333 = 1.1547, which is nowboth the voltage increase factor and the current increase factor.

The voltage on the 150-ohm line with 100 w delivered is 122.475 v. When this voltage is multiplied by the voltage increase factor, 122.475 x 1.1547 = 141.41 v, the total voltage on the 150-ohm line with 133.33 w forward power.

Now let's look at current. The current flowing on the 150-ohm line with 100 w delivered is 0.8165 a. Multiplied by the current increase factor, 0.8165 a. x 1.1547 = 0.9428 a, Now the kicker: 141.41 v. x 0.9428 a. = 133.33 w.

Bill, you'll find that these numbers also agree exactly with those on Cecil's phasor diagram.

Would you not now agree that the reflected energy is added to the that in the original electric and magnetic fields, and thus the power resulting from these energies is what is added, not the indivual reflected voltages resulting from the steady-state condition?

Walt, W2DU

4916. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:39:52 UTC
From: Sideband <sideband@spam.me.not>
Message-ID: <3B1030B8.11FF961E@spam.me.not>
Source record: 162064
Cross-posted to: alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.shortwave

::GROAN::

Harold wrote:
>
> I hear that you can put one of these on a department store mannequin and use
> it as a dummy load.
>
> Harold
> WD5KCA
>
> "Campone" <info@mantenna.net> wrote in message
> news:MPG.1578e3589c093ad39896b0@news.earthlink.net...
> > An amazing new product will be released in the near future.
> >
> > The Mantenna!!
> >
> > The Mantenna is a special 3 layer 1 peice suit that contains copper
> > strands and copper threading strategical1y placed at key areas within
> > the interior wall of the second layer of the suit.
> >
> > The suit layers are a special blend of nylon and rayon. This blend is
> > coated with a non-reflective conductive spray (The spray maintains the
> > natural beauty of the fabric and is non-toxic).
> >
> > The belt line contains high grade BNC and PL style connectors to attach
> > to your radio antenna connection.
> >
> > The suit will be availabe in 7 differents colors to keep everyone happy!
> >
> > The receive range shows remarkable results from 7Mhz - 1400Mhz.
> >
> > An optional hat is available:
> >
> > Hat model MAN-H1 is a cone style hat with built in Low Noise Amp (LNA)
> > for those that enjoy satellite monitoring. The cone contains all
> > the electronics and a high capacity rechargable power supply.
> > Free during our official introduction will be an addon solar cell
> > for constant recharging and constant power to the LNA.
> >
> > Stay Tuned For The Official Release!!
> >
> >

4917. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:46:08 UTC
From: Bill Meacham <NOSPAMexray@coqui.net>
Message-ID: <3B103230.BF97557E@coqui.net>
Source record: 162065
Cross-posted to: alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.shortwave

Harold wrote:
>
> I hear that you can put one of these on a department store mannequin and use
> it as a dummy load.
>
> Harold
> WD5KCA

I'm dying here!!!! Please stop!!!
-ex ROTFL

4918. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:50:10 UTC
From: 2w8ji@contesting.com
Message-ID: <3b102f4a.125404914@news.accessunited.com>
Source record: 162066

On Sat, 26 May 2001 17:03:53 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>I beg to differ...
>
>The Bird wattmeter does not measure power, never has!
>
>It simply measures voltages across a bridge arm in a bridge circuit, nothing
>more nonthing less. Said bridge arm voltage is a result of an unknown
>impedance in the "unknowns" arm of the bridge balanced against an arbitrary
>reference impedance [50 Ohms resistive] in the "known" arm of the bridge.

Your Bird is different than my Bird, or most other people's Birds.

My Bird meter has a coupling loop that samples current in the line,
and that loops also provides a "capacitor" that samples line voltage.

It has no "bridge" so to speak, except the voltage produced by the
voltage due to the capacitive divider is summed with the voltage
produced by the magnetic coupling. Since the phase of the voltage from
the capacitance remains constant no matter which direction the slug is
pointed, while the voltage produced by the magnetic coupling reverse
with direction....the sum of those voltages is sensitive to current
"direction" compared to voltage across the line.

Those volatges are set to be exactly equal when the line's ratio of
across vector (voltage) is exactly equal to the c voltage produced by
the through vector (current) .

Since the meter samples voltage and current it reads power.

>This bridge was invented by George Wheatstone, a British natural philosopher
>back in the 1840's or so. Wheatstone was a co-discoverer of the electric
>telegraph and was involved in patent battles with Samuel F. B. Morse and
>others about various implementations of the electric telegraph. In fact one
>use of Wheatstone's bridge was for duplex telegraph, that is using a single
>telegraph line to send messages in two directions simulaneously! What an
>idea. Still in use today in millions and millions of modems. Problem is
>Wheatstone's patents ran out before the start of the 20th century.

The Wheatstone bridge has absolutely nothing to do with a directional
coupler like the Bird meter uses.

>Certainly if those patents for the Wheatstone bridge were still in force,
>the Bird company would be paying royalty tribute to George Wheatstone for

>every reflectometer circuit they sell today, even though they sell it as a
>wattmeter.

Not a chance. The Bird element samples current and voltage and sums
them before rectifying the sum to produce a dc output. The Wheatstone
bridge simply balances the resistances or impedances at the center
point of two voltage dividers.

Totally different concept.

>The Bird wattmeter, a voltmeter with watts painted on its' face.
>
>Sort of like selling a cow with a horse painted on the side of it as a
>horse.

You've been spending too much time alone with your Bird.

>Most knowledgeable folks would note the difference with the cow, but not
>many hams have examined the Bird wattmeter, under the paint! Heh, heh.

That clearly is true. You had no idea how it works.

>I say, let's call a cow a cow!

I say, you can't beat a Bird.

73 Tom

4919. Re: Who IS this beauty?? teen48.jpg 9595 [1/7]

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:51:32 UTC
From: 2w8ji@contesting.com
Message-ID: <3b1032ca.126301192@news.accessunited.com>
Source record: 162067

It is Phil, the PR "man" from Cracktenna.

4920. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 22:56:05 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B103485.814D7CE2@IEEE.org>
Source record: 162068

Tom W8JI wrote:
> Since the meter samples voltage and current it reads power.

Tom, Peter doesn't accept the IEEE definitions of words so
communication is impossible. :-)

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4921. Re: Kenwood's TS-50 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 23:06:33 UTC
From: "Larry L. Lehmann" <larryl@nebi.com>
Message-ID: <3B1036F8.47112AE@nebi.com>
Source record: 161969

The Icom IC706MKIIG is an excellent radio. Selling for $904, has DSP, 2 meters, 440 and HF. Check it out. I have the Icom IC706MKII and it is a super mobile rig.

73

KC0DA

Jon M0BQQ wrote:

> John
>
> I would recommend either the TS50 which I own at present or the Yaesu FT840
> which is in my opinion slightly better and slightly larger. I have worked
> loads of DX mobile with the TS50 and am constantly complemented on the
> excellent audio.
> Good luck whatever you choose.
>
> Jon M0BQQ
>
> John Cunningham <johngrac@surfsouth.com> wrote in message
> news:zG%O6.141762$sP6.7668184@news3.aus1.giganews.com...
> > I'm going to buy my first hf rig, is the TS-50 a good starter rig? What
> > would you buy for under $1000? Why?
> > KE4QOP John
> >
> >

4922. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 23:10:28 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9epd4d$mq0$1@neptunium.btinternet.com>
Source record: 161970

Cecil said -
> Virtually all ham antenna systems are Z0-matched. Seems a
shortcut that works
> for virtually all ham antenna systems would be a good thing, not
a bad thing.
==========

Cecil, please don't think I'm nagging - even if I am. ;o)

Virtually all ham antenna systems are NOT Zo matched. Hardly any thought is ever given to it. SWR meters do not indicate SWR on the antenna feedline but on some imaginary long line between the meter and the transmitter.

It is a 1-in-100,000 chance that an antenna feedpoint has a pure resistance of 50-ohms even in the centre of one band, let alone all the other bands. No antenna has any special sympathetic relationship with 50 ohms. Or 300, or 450, or 600 ohms.

And on a one-band antenna, after weeks of messing about with height, V-angles, the length of radials, if there's something which approximates a Zo match at the favourite end of the band, everything goes haywire at the other end. But people are very satisfied with it and their efforts.

And as we know by measurements, if by some remote chance an antenna has a natural feedpoint resistance of 450 ohms, it is highly likely the RS 450-ohm ladderline Zo will depart from nominal by +/-15 percent. Of which the user is oblivious.

When its pouring with rain the departure from Zo-match may become much worse. On the other hand it is just as likely to become much better. But the user remains happy in his ignorance of Zo matching.

In-so-far as the ever popular G5RV, Carolina Windom, etc, are concerned, Zo-matching is entirely disregarded. In respect of all other antennas, users are quite happy if the SWR is 1.5 or less on the line between tuner and transmitter. What the SWR on the line between antenna and tuner might be is never given a thought.

I fully support your recommendations to use feedlines as impedance transformers. It is a matter of engineering economics. But that throws the observance and pretence of Zo matching (together with the conjugate variety) straight into the trash bin where they belong.

Yours, Reg, G4FGQ

4923. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 23:35:32 UTC
From: richardharrison@webtv.net
Message-ID: <10568-3B103DC4-31@storefull-111.iap.bryant.webtv.net>
Source record: 161972

Peter, K1PO wrote:
"The Bird wattmeter does not measure power, never has!"

That is correct, but does not stop the Bird from indicating power with +/- 5% accuracy in most situations. A voltmeter measures current but displays volts. A siemens dynamometer has two coils. One is a voltage coil and the other is a current coil as determined by connection across the load or in series with the load. Like the Bird which samples both volts and amps, the Siemens indicates watts.

The Bird is not an SWR bridge. Please read my previous post in this thread which explains the Bird`s operation. It is a lot more sophisticated than the Siemens because it must contend with r-f reflected power and separate the directions of measurement. It also must operate with a fixed voltage to current ratio which the Zo of 50-ohms supplies.

Repeat, the Bird is not an SWR bridge.

Best regards, Richard Harrison, KB5WZI

4924. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 23:35:42 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9epejeuvv1@slb6.atl.mindspring.net>
Source record: 161971

Cecil:

Like you, I am a man on a mission!

I'd like to keep our technical terminology straight clean and simple...

I dont' need luck though, I'm already doomed!

Heh, heh...

-Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B102CE2.B56439C2@IEEE.org...
> "Peter O. Brackett" wrote:
> > You already know my response... heh, heh... my favorite quote from Lewis
> > Carol...
>
> Well then, your mission is clear. All you have to do is define a new word
> which possesses only the narrow definition of power that you use and then
> talk Webster's, the IEEE, and the general population into adopting that
> word. Good luck, Peter.
>
> > "CAM" <Cecil.A.Moore@IEEE.org> wrote in message
> > > Other words have multiple definitions, Peter. What's so special about
> > > "power"?
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4925. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 23:47:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9epf94$n1v$1@slb0.atl.mindspring.net>
Source record: 161973

Reg and Cec:

I agree with Reg's assesment of Cec's practical results and Cecil's succinct messages and demonstrations that "you don't need ATU's, all you need is some line and a pair of cutters".

But... sometimes I get lost in Cecil's rather circuitous lines of reasoning to arrive at his conclusions.

IMHO... Cecil often makes his reasoning more complicated than it needs to be!

But mostly his conclusions are correct.

As Ronald Regan, one of our better Presidents, once said to a reporter who asked him what he thought of Jesse Jacksons' mission to Iran, just after Jesse came back with our "captives" when Jesse had secured the captive's release by methods not approved by Ronny.

"I never argue with success!"

And although Cecil often [IMHO] uses circuitous and tortuous methods of reasoning and visualization to arrive at his results, they are always good results.

Cecil, I love you man! [Meant in a brotherly way!]

-Peter K1PO

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:9epd4d$mq0$1@neptunium.btinternet.com...
> Cecil said -
> > Virtually all ham antenna systems are Z0-matched. Seems a
> shortcut that works
> > for virtually all ham antenna systems would be a good thing, not
> a bad thing.
> ==========
>
> Cecil, please don't think I'm nagging - even if I am. ;o)
>
> Virtually all ham antenna systems are NOT Zo matched. Hardly any
> thought is ever given to it. SWR meters do not indicate SWR on the
> antenna feedline but on some imaginary long line between the meter
> and the transmitter.
>
> It is a 1-in-100,000 chance that an antenna feedpoint has a pure
> resistance of 50-ohms even in the centre of one band, let alone all

> the other bands. No antenna has any special sympathetic
> relationship with 50 ohms. Or 300, or 450, or 600 ohms.
>
> And on a one-band antenna, after weeks of messing about with
> height, V-angles, the length of radials, if there's something which
> approximates a Zo match at the favourite end of the band,
> everything goes haywire at the other end. But people are very
> satisfied with it and their efforts.
>
> And as we know by measurements, if by some remote chance an antenna
> has a natural feedpoint resistance of 450 ohms, it is highly likely
> the RS 450-ohm ladderline Zo will depart from nominal by +/-15
> percent. Of which the user is oblivious.
>
> When its pouring with rain the departure from Zo-match may become
> much worse. On the other hand it is just as likely to become much
> better. But the user remains happy in his ignorance of Zo
> matching.
>
> In-so-far as the ever popular G5RV, Carolina Windom, etc, are
> concerned, Zo-matching is entirely disregarded. In respect of all
> other antennas, users are quite happy if the SWR is 1.5 or less on
> the line between tuner and transmitter. What the SWR on the line
> between antenna and tuner might be is never given a thought.
>
> I fully support your recommendations to use feedlines as impedance
> transformers. It is a matter of engineering economics. But that
> throws the observance and pretence of Zo matching (together with
> the conjugate variety) straight into the trash bin where they
> belong.
> ----
> Yours, Reg, G4FGQ
>
>

4926. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 23:48:30 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9epfbe$4pp$1@slb2.atl.mindspring.net>
Source record: 161974

Cecil:

No arguments here. I have the greatest regard for conversation of energy.

-Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B102E71.B735BFD4@IEEE.org...
> "Peter O. Brackett" wrote:
> > Sorry OM... don't take my comments personally. I like what you do and
say.
> > And I hope I qualified myself by saying, "if I interp....etc."...
> > All I was trying to do with that post was to support Bill Klocko'
assertion.
> > I was not attempting to disparage any particular assertions of yours...
>
> Why not? You disparage me for spending $100 for an IEEE Dictionary. :-)
>
> I was going to challenge you to prove that I ever said that superposition
> applies to power. In fact, my point is that power is a *SCALAR* so vector
> math, superposition, etc. simply do not apply. However, the conservation
> of energy principle applies to the energy associated with the power.
>
>
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4927. For Sale Cushcraft 17B2 5 Months old

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-26 23:57:12 UTC
From: genocide2rf357@aol.com
Message-ID: <20010526195712.10174.00001348@ng-fl1.aol.com>
Source record: 161975

Hello,
I bought a Cushcraft 17B2 for the Jan VHF contest and I used it for a portable hilltop antenna.I am selling it.E-mail me if interested.I will sell for 100 dollars plus shipping. thanks Mike

4928. 3 Element 6 Meter Cushcraft beam for sale

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 00:04:01 UTC
From: genocide2rf357@aol.com
Message-ID: <20010526200401.10174.00001349@ng-fl1.aol.com>
Source record: 161976

Hello this is a year old and used on six a lot.I am asking 50 dollars plus shipping. if u need any info feel free to e-mail me.

4929. M2 2 Meter Halo antenna For Sale

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 00:05:34 UTC
From: genocide2rf357@aol.com
Message-ID: <20010526200534.10174.00001350@ng-fl1.aol.com>
Source record: 161977

I have a M2 Halo antenna for sale I want 20 dollars plus shipping.any info needed feel free to e-mail me thanks in advance

4930. M2 440 MHZ halo Antenna for sale

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 00:07:02 UTC
From: genocide2rf357@aol.com
Message-ID: <20010526200702.10174.00001352@ng-fl1.aol.com>
Source record: 161978

I have a M2 440 Mhz Antenna for sale I am asking 25 plus shipping any info needed feel free to e-mail me later thanks.

4931. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 00:09:03 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9ephggqpm1@neptunium.btinternet.com>
Source record: 161980

Bill wrote -
> I don't think even a high school kid would make that mistake.
==========
Bill, the trouble these days is that school kids WILL make those sort of elementary mistakes. And worse.

The bickering on this elderly adult newsgroup, which has arisen because of arithmetical ignorance, is inexcusible. It seems people are unable to work out the number of rolls of wall paper needed to decorate the shack.

In the US, schoolkids have to be searched to prevent them taking firearms into the classrooms. Teachers are armed and wear bullet-proof vests. So much for maths lessons.

In the UK, new entrants to universities have to take several months courses in arithmetic before they can participate in what used to be normal first-year engineering studies.

I am in my 76th Year. At the age of 15 I was employed in the daytime in the machine shop of a factory making electric motors for the war effort. In the evenings, in the middle of air raids on local industry, at the technical college I was solving differential equations. Having learned the hard way I have not forgotten how to do it.

Chinese, Japanese, Korean, Indian, Iraqi, Libyan, Cuban, Mongolian, Yugoslavian, Malayan, Indianesian school children, and Brazilian street kids are numerically better educated.

Reg

4932. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 00:22:01 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ephaa$8ef$1@slb6.atl.mindspring.net>
Source record: 161979

Tom:

Hey... Sorry I missed you at Dayton. I was there only for Saturday.

I'll address your euridite remarks one at a time here below...

[snip]
> Your Bird is different than my Bird, or most other people's Birds.
>
[snip]

Nothing that a little Viagra couldn't fix!

[snip]
> My Bird meter has a coupling loop that samples current in the line,
> and that loops also provides a "capacitor" that samples line voltage.
>[snip]

Yep that's what most "Bruene design" reflectometers do! Sample voltage V at a point with a voltage divider of some sort, and sample current I at the same point with some kind of magnetic coupling.

Sometimes the coupling loop has numerous turns on a torroid to make the sampling of current more independent of frequency and give a wider frequency range than just an inch or so of "side by side" line.

[snip]
> It has no "bridge" so to speak, except the voltage produced by the
> voltage due to the capacitive divider is summed with the voltage
> produced by the magnetic coupling. Since the phase of the voltage from
> the capacitance remains constant no matter which direction the slug is
> pointed, while the voltage produced by the magnetic coupling reverse
> with direction....the sum of those voltages is sensitive to current
> "direction" compared to voltage across the line.
[snip]

Sorry to be a party pooper Tom but, depending upon how the schematic is drawn out [geometric and topological perspective] it may not look like a Wheatstone bridge, but it most certainly is. Try redrawing the schematic in several ways yourself and you will see that it is a bridge. Exactly the same as Wheatstone patented way back in the 1840's. If you want I can draw one out and send it to you.

BTW.... I believe, but I am not absolutely sure, that Warren Bruene W5OLY??? patented the modern version of these reflectometers back when he was a lead designer with Art Collins at Collins Radio. A patent search on the IBM patent site for inventors named Breune with assignee Collins Radio should

turn it up.

[snip]
>
> Those volatges are set to be exactly equal when the line's ratio of
> across vector (voltage) is exactly equal to the c voltage produced by
> the through vector (current) .
>
[snip]

Tom that's exactly what a Wheatstone measurement bridge does! Nothing more nothing less.

The voltage across the bridge arm is exactly zero and the voltages across the unknown Z [That is the line voltage V] and the known R [That is the voltage IR developed by the line current I flowing in the exact reference resistance R] are exactly equal when the bridge is balanced!

What? Is that not simple and straightforward?

[snip]
> Since the meter samples voltage and current it reads power.
[snip]

Tom, you know better than this... sampling voltage V and current I is only the first step on the way to power!

To derive power from V and I, one has to compute Power = V * I * cos(theta). Cleary this involves multiplications, and the evaluation of a cosine... all the Bird/Breune design bridge does is add and subtract quantities related to V and I, no multipliers are to be found in that circuitry anywhere!

What? Tom... I challenge you to show me the multiplier in your Bird!

There's none in mine.

Although sometimes when I sleep with my wife, I'd like to multiply my Bird, heh, heh...

[snip]
>
> The Wheatstone bridge has absolutely nothing to do with a directional
> coupler like the Bird meter uses.
[snip]

Tom you are wrong... for if Wheatstone's patents were still valid, they were taken out in the 1840's and were valid for 17 years, the Bird, and other reflectometers would undoubtedly violate Wheatstone's patents.

Among other uses, Wheatstone applied his directional bridge circuit to separating the forward and reverse waves on a telegraph wire so that a single wire could be duplexed and operators could send messages simultaneously from both ends. While at the same time Samuel F. B. Morse and his associate Alfred Vail still had to reverse the line and send in only

one direction at a time. Wheatstone was a Brit and a major player in the British telegraph systems at the time, similar in stature to Morse on this side of the Atlantic. The main difference was that Wheatstone was, what was then called a "natural philosopher" or scientist, while Morse was an aritst and painter, who's formal education was only in the arts... Morse depended upon his associate Vail to "rig things up" for him. Morse did not really understand the phenomena involved, while Wheatstone did.

[snip]
>
> Not a chance. The Bird element samples current and voltage and sums
> them before rectifying the sum to produce a dc output. The Wheatstone
> bridge simply balances the resistances or impedances at the center
> point of two voltage dividers.
>
> Totally different concept.

[snip]

Nope, you'r wrong again... to compute power you need to "MULTIPLY" not "SUM", and so the Bird cannot be a wattmeter, it is simply a horse painted on the side of a cow!

The concepts of Wheatstone and the Breune design reflectometers are identical! The reflectometer needle, the one that Bird labels, "reflected power" is just the null indicating meter for the bridge balance across the two voltage dividers.

Simple, eh?

Genius always is, and Wheatstone was a genious. Breune just found a way to do it efficiently at HF/RF frequencies, unfortunately when Breune did that he eliminated the ability for the bridge to accurately indicate reflected voltage all the way down to DC. Wheatstone did that!

[snip]
> You've been spending too much time alone with your Bird.
>[snip]

Perhaps you'r right. We all do sometimes get obsessed with our Birds. My obsession was at it's peak when I was about 14, now that I'm past 60, well... but... I took a few days off work and drove up to Dayton and left my Bird behind.

[snip]

> That clearly is true. You had no idea how it works.
[snip]

Tom... I'm afraid that you are wrong my friend. I've spent most of my life designing, building, putting into production and manufacturing reflected voltmeters, probably there are at least 20 million of my designs in the field working every day.

If only my name was on the "earnings" checks... such is the fate of the engineer!

[snip]
> >I say, let's call a cow a cow!
>
> I say, you can't beat a Bird.
>
> 73 Tom
[snip]

Tom, I'm not disparaging the Bird. I think the Bird is great. A "best of class" instrument!

But, read my lips, the BIRD DOES NOT MEASURE POWER, it measures only voltage and in a very specific way!

Best Regards,

-Peter K1PO

4933. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 00:26:43 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105261626.65529c1c@posting.google.com>
Source record: 161981

w2du@iag.net (Walter Maxwell) wrote in message
news:<3b0ff507.16388154@news.onemain.com>...
> On 25 May 2001 12:21:01 -0700, klocko@toad.net (Bill Klocko) wrote:
> The point here is where the voltages and currents are at either 0 degrees and
> 180 degrees or 180 degrees and 0 degrees, respectively, points on the line where
> the currents and voltages are non-reactive.

So this means that the equation is only valid at a point on the line
where the currents
and voltages are non-reactive? That makes no sense at all. Someone
wanting to measure power
would have to set up their meter at a very specific point on the line.
Richard Harrison
said that Bird's application note was "unequivocal" about their
equation, which means it
must be true at ANY point on the line. Johnson didn't say that I- =
-(E-/Z0) is only true
at certain points. Do you disagree with the derivation I put up?

> Sorry Bill, I can't agree that the equation above yields the power flow toward
> the load. Let's see why:
>
> E1 + E2 = Et = 141.2 v. and I1 + I2 = It = 2.828 a.
>
> The product of Et and It = 400 watts This is an impossible solution.

Why is it impossible? Here's a counter-example:
Suppose there are 2 1-V sources in series with a 1-ohm resistor.
What's the power dissipated
in the resistor? Using Kirchhoff's the current is 2A. You could say
that each source is supplying
half the current, so each source puts out 1 watt. The power delivered
to the resistor is then
P = 1 + 1 = 2 watts. This may be possible in your opinion, but it's
incorrect. And it's exactly
what you're trying to do with the multiple sources on the one side of
the match point. And with
Cecil's way of expressing the correct answer, P = 1 + 1 = 4.

> According to Cecil's phasor diagram there are three forward voltages, 106.066 v.
> 86.6 v. and 35.355 v.
>
> Now let's look at Johnson's equation: Pdel = |E1|^2/Zo - |E12|^2/Zo. By the same
> reasoning Ptotal = |E1|^2/Zo + |E|^2/Zo, simple algebraic manipulation.

Similar reasoning doesn't work here. Please go through the derivation given above for Pdel.
You will see that the 2 extra terms drop out leaving |E1|^2/Zo - |E12|^2/Zo. For the match
point, you just can't assume an equation because those terms may not drop out, and if you go
through the 2nd derivation, you'll see that they don't. Does Johnson list the second equation
Ptotal = |E1|^2/Zo + |E|^2/Zo? Is he using it for multiple sources like the three forward voltages?
I'll bet it's either not there or he doesn't add multiple sources.

Just out of curiosity, I looked up superposition in about a dozen circuits texts at a tech library.
Every one, without exception, either specifically listed it being valid for voltages and currents
(but no mention of power) or mentioned that it applies only to linear variables, which *automatically*
excludes power. One text even warned specifically against trying to superpose power values. "superposition
is applicable only to linear responses and the most common nonlinear response - power - is not subject
to superposition" (from Engineering Circuit Analysis by Hayt and Kennedy). In order to use superposition,
you must resolve any power terms into voltage and current, do the superpositions with those, and then
compute power from the resulting values (see my example above).

73,
Bill N3WK

4934. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 00:33:56 UTC
From: "David J. Windisch" <davidw@copper.net>
Message-ID: <XVXP6.18670$md1.9001@newsfeed.slurp.net>
Source record: 161982

Hi, Peter:

How many successive derivatives did you take to get to the not-indeterminate expression?

Is the frequency known as 'approaches d-c' different from the frequency known as 'equals d-c'?

My memory of L'Hospital's Rule is that it's useful in evaluating something which may approach a limit *before* becoming indeterminate, not for evaluating 'indeterminate limits'.

We are still left unable to solve for any actual value of the function when it takes one of the indeterminate forms 0/0 or lazy-eight/lazy-eight.

Mathematicians reserve to themselves the occasionally-useful privilege of assigning the value of the (L'Hospital's) limit, if such limit can be found, to the function, at the point of indeterminate-ness.

Is this what you did?

73, Dave, K3BHJ

4935. PDL2 Quad Conversion for Ten Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 00:41:58 UTC
From: Alan Childress <na4i@earthlink.net>
Message-ID: <q3YP6.35309$BN6.2123240@newsread1.prod.itd.earthlink.net>
Source record: 161983

Does anyone have a copy of the original manual that they don't mind sharing? I'd like to get a reference point to start with before converting the Avanti PDL2 to 10 meters. Any help would be appreciated. Also, successful conversions with good F/B and respectable gain would be greatly appreciated. I.E., measurements to include the wire size (gauge/diameter) and loop lengths plus etc.

Thanks,

Alan <NA4I>

4936. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 00:49:20 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9epithfne1@slb6.atl.mindspring.net>
Source record: 161984

Richard:

I agree the Bird is not an SWR bridge... In fact there are very few actual SWR bridges out there.

In fact it is not even a VSWR bridge. It merely indicates either reflected or incident volts depending upon which way the element is pointing.

I think that the definitions of VSWR and ISWR are well known and understood but the definition of just plain SWR is not... I believe that there are various claims by various Scattering Formalism guru's as to the exact definition of a "normalized" SWR... but I don't know of any readily available instruments that provide indications of a normalized SWR.

The Bird could be thought of as a form of VSWR bridge!

That is because, depending upon how it is hooked into a cirucuit, it could indicate a quantity related to VSWR. VSWR ~ Voltage Standing Wave Ratio.

The Bird actually indicates the reflected Voltage "b" across the null indication arm of a bridge circuit, this reflected voltage "b" may or may not be related to the VSWR on a line, depending upon how long the line is and the frequency at which the measurement is made. For instance at DC if there is a mismatch there will still be a reflected voltage but no standing wave! Curious, said the cat!

The reflected voltage "b" indicated by the Bird is:

b = V - IR or since V = IZ where Z may be a line impedance, then

b = I(Z - R)

and this is related to the reflection coefficient

rho = (Z - R)/(Z + R) which, I believe, is related to the VSWR if it exists by

VSWR = [(mag(rho) - 1)/(mag(rho) + 1)]n where mag(.) indicates to take the magnitude or absolute value.

There can be a reflected voltage and hence an "imputed" standing wave and standing wave ratio, even at DC or on lines that are too short with respect to wavelength of operation to even support more than a tiny fraction of a real standing wave.

Hence the Bird can provide values from which imputed VSWR's can be computed, even if there is only 0.0000000001 of a wave standing on a line! A case when most would claim there was no standing wave.

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:10568-3B103DC4-31@storefull-111.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "The Bird wattmeter does not measure power, never has!"
>
> That is correct, but does not stop the Bird from indicating power with
> +/- 5% accuracy in most situations. A voltmeter measures current but
> displays volts. A siemens dynamometer has two coils. One is a voltage
> coil and the other is a current coil as determined by connection across
> the load or in series with the load. Like the Bird which samples both
> volts and amps, the Siemens indicates watts.
>
> The Bird is not an SWR bridge. Please read my previous post in this
> thread which explains the Bird`s operation. It is a lot more
> sophisticated than the Siemens because it must contend with r-f
> reflected power and separate the directions of measurement. It also must
> operate with a fixed voltage to current ratio which the Zo of 50-ohms
> supplies.
>
> Repeat, the Bird is not an SWR bridge.
>
> Best regards, Richard Harrison, KB5WZI
>

4937. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 00:58:32 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9epjeo$9kk$1@slb6.atl.mindspring.net>
Source record: 161985

David:

I just differentiated the lossless Zo once top and bottom with respect to f
as L'Hospital tells us to do.

The resulting expression has no f in it since f is only in the first degree
top and bottom.

Then just evaluate the [differentiated top and bottom] expression... it
evaluates to Zo = sqrt(L/C).

Then of course like any good engineer, not trusting even old French
mathematicians, I measured a very nearly lossless Zo in a lab with a
reflectometer which has accurate response all the way down to DC...

Seems to be true!

Zo = sqrt(L/C) as f approaches zero for a lossless line.

And why not?

Such is not true for a "lossy" line.

-Peter K1PO

"David J. Windisch" <davidw@copper.net> wrote in message
news:XVXP6.18670$md1.9001@newsfeed.slurp.net...
> Hi, Peter:
>
> How many successive derivatives did you take to get to the
not-indeterminate
> expression?
>
> Is the frequency known as 'approaches d-c' different from the frequency
> known as 'equals d-c'?
>
> My memory of L'Hospital's Rule is that it's useful in evaluating something
> which may approach a limit *before* becoming indeterminate, not for
> evaluating 'indeterminate limits'.
>
> We are still left unable to solve for any actual value of the function
when
> it takes one of the indeterminate forms 0/0 or lazy-eight/lazy-eight.
>
> Mathematicians reserve to themselves the occasionally-useful privilege of
> assigning the value of the (L'Hospital's) limit, if such limit can be
found,

> to the function, at the point of indeterminate-ness.
>
> Is this what you did?
>
> 73, Dave, K3BHJ
>
>
>
>

4938. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 01:04:02 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9epjp3$tr6$1@nntp9.atl.mindspring.net>
Source record: 161986

Bill:

[snip]

In order to use superposition,
> you must resolve any power terms into voltage and current, do the
> superpositions with those, and then
> compute power from the resulting values (see my example above).
>
> 73,
> Bill N3WK
[snip]

You told em right!

Superposition is only valid in linear systems. That is systems in which the independent variables only appear in linear sums.

Computation of power is a non-linear operation that involves the multiplication of independent variables and the evaluation of transcendental functions...

Superposition of powers is incorrect and will only lead to errors!

Good work, I'm right here behind you with more references from my library shelf.

Let's put this silly idea of superposition of powers to bed for good!

-Peter K1PO

4939. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 01:19:30 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B105622.3B88ABC3@IEEE.org>
Source record: 161987

Reg Edwards wrote:
> Virtually all ham antenna systems are NOT Zo matched. Hardly any
> thought is ever given to it. SWR meters do not indicate SWR on the
> antenna feedline but on some imaginary long line between the meter
> and the transmitter.

I don't think you understand the definition of a Z0-match, Reg.
The Z0-match occurs at the *INPUT* of a tuner when the tuner is adjusted
to eliminate reflected energy from reaching the transmitter. A Z0-match
can occur no matter what the SWR between the tuner and the antenna.

> It is a 1-in-100,000 chance that an antenna feedpoint has a pure
> resistance of 50-ohms ...

A Z0-match has absolutely nothing to do with antenna impedance. A
Z0-match is achieved at the *INPUT* of any antenna tuner that has
been tuned to eliminate reflected energy from reaching the transmitter.

The Z0-match point is the point where reflections cease to exist, i.e.
where they never existed or where they have been canceled by wave
interference. Virtually all solid-state ham transmitters see 50 ohms
looking into the 50 ohm coax attached to their output connectors. That's
a Z0-match. It has to do with conditions *AT A POINT*, not with conditions
in the rest of the antenna system.
--
73, Cecil

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4940. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 01:22:50 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <f8l0ht04f8ipqj2iru5bkho52isscojb3m@4ax.com>
Source record: 161988

On Sat, 26 May 2001 18:21:00 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>Oops!
>
>It seems that you have not been introduced to L'Hospital's Rule...
>
>Please look up L'Hospital's Rule for evaluating indeterminate limits in any
>standard first year calculus text book... In America this would be first
>year college level, in Europe it would be at the Grade 9 level. Why are
>they ahead of us in Maths?
>
>Here's a reference that I have nearby...
>
>"Calculus with Analytic Geometry" by Angus E. Taylor, Prentice Hall,
>Englewood Cliffs, NJ 1959, LCCN 59-011305, LC Shelf Call QA 303.T203.
>
>Heh, heh... I'm perhaps giving away my age here...
>
>L' Hospital's Rule can be found on p.456.
>
>That will help you with the mathematical evaluation of Zo for a lossless
>line as f approaches zero.
>
>It is undoubtedly Zo = sqrt(L/C), mathematics, physical theory, and
>experimental practice all confirm this.
>
>Best,
>
>-Peter K1PO

Hi Peter,

Another example of show or tell, and you choose to tell - boring.

I am familiar enough with L'Hospital's Rule to see you are throwing
math against the wall to see if it sticks.

Want to try again?

73's
Richard Clark, KB7QHC

4941. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 01:27:16 UTC
From: Butch Magee <lynyrd@netdoor.com>
Message-ID: <3B1057F3.FE405108@netdoor.com>
Source record: 161989

I couldn't understand why the bad reports on Carolina Windoms from RadioWorks, I used theirs at home and and at work with total satisfaction and the damn things do hear better too! The C.Windom from Radio works is all coax no, NO ladder line on it. I've run the G5RV it suck four letter words on 80 and 15.

KF5DE

Mark Keith wrote:

> Mark Keith wrote:
> I'm not trying to mount a crusade against
> > windoms, I just trying to find out why the ones we used were so lousy.
> > There must be differences in these windoms. Ours acted like it had a
> > resister inline. And all were "Caroline windoms" that were storebought.
> > MK
>
> I got to thinking about this more. Actually, on recollection, the first
> two years we were using a G5RV fed in the normal "commercial" manner
> with ladder line and coax. Not the windom. We used the windom the 3rd
> year. So I need to place the total blame where it really belongs. We
> found the G5RV's terrible for 80m fed in their stock form as sold. I
> mean horrible with a capital H. In fact, I have to rate the G5RV's as
> worse than the windom we used. So let me correct this...I don't like
> windoms or commercial G5RV's on 80m..:) It was really the G5RV's lousy
> performance on 80m that spurred me to bringing wire for a dipole the
> year the windom showed up. The windom just happened to be the poor
> guinea pig for my test against a coax fed dipole. I don't want the
> windom to feel like the lone ranger..:/ MK
>
> --
> http://web.wt.net/~nm5k

4942. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 01:29:42 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B105886.E1E58C07@IEEE.org>
Source record: 161990

Bill Klocko wrote:
> So this means that the equation is only valid at a point on the line
> where the currents and voltages are non-reactive?

Since those conditions exist at the input of an antenna tuner, the equation covers almost all amateur applications. It is a valid shortcut for Z0-matched systems.

> Cecil's way of expressing the correct answer, P = 1 + 1 = 4.

No, no, no, that's Steve's way of expressing the answer, not mine. I was just quoting Steve. Please don't blame that on me. Steve says you can take two one watt signals, add them in phase, and get 4 watts out. I told him with math like that, he can solve California's energy problems.

> In order to use superposition,
> you must resolve any power terms into voltage and current, do the
> superpositions with those, and then
> compute power from the resulting values (see my example above).

I, for one, don't disagree with that, Bill. All my power (joules/sec) arguments are based on conservation of energy. 75 joules plus 8.33 joules just doesn't equal 133.33 joules.

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4943. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 01:45:25 UTC
From: "David J. Windisch" <davidw@copper.net>
Message-ID: <XYYP6.21491$md1.9743@newsfeed.slurp.net>
Source record: 161991

Peter:

As you say .. except that L'Hospital's evaluates only the limit as we approach the indeterminate form; we are still unable to solve for any actual value of the function at its point of indeterminacy.

Are you assigning the value of the limit to the case where x = a?

73, Dave, K3BHJ

BTW, what's the directivity of your d-c reflectometer? GE Cap left that line blank on the cal cert-sheet for the one at the shop.

4944. Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 01:51:48 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <dmm0htk5bu4jkad28p52jgdl3qqs63qidh@4ax.com>
Source record: 161992

Hi All,

From Network Analysis, The Complex Frequency Plane,

[the analysis being offered]" depends upon the principle
of superposition. It depends, in other words, upon the
fact that in a linear system such as (2-1) the current flowing
in response to two driving forces acting together is the
sum of the currents which would flow in response to the
two separately."

(2-1) is a series RLC circuit driven by an AC Voltage source.

73's
Richard Clark, KB7QHC

4945. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 01:55:41 UTC
From: 2w8ji@contesting.com
Message-ID: <3b105ba2.136758162@news.accessunited.com>
Source record: 161993

On Sat, 26 May 2001 20:22:01 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>I'll address your euridite remarks one at a time here below...

Where did I put my dictionary? Oh yes, I loaned it to Phil.

>Sorry to be a party pooper Tom but, depending upon how the schematic is
>drawn out [geometric and topological perspective] it may not look like a
>Wheatstone bridge, but it most certainly is.

A two component Wheatstone bridge? What am I missing?

>If you want I can draw one out and send it to you.

Great. Make mine a Bud Lite. Send it Fed X please.

>What? Tom... I challenge you to show me the multiplier in your Bird!
>There's none in mine.

Mine adds two distinct voltages, one the result of current and one the
result of voltage.

If you meter only reads voltage, please tell me how it is directional
and impedance sensitive. Draw it out if you like.

73 Tom

4946. Re: Ground wire to Rohn 25 section?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 02:43:23 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3b1069af_3@news3.prserv.net>
Source record: 161994

Two possibilities:

1. If using a base plate with bolts near ground level, put plated eye terminals on the end of the ground cables and then under the 3 lower bolts.

2. If not, I use several stainless hose clamps to clamp a passive conductor to the outside of each leg. No bare copper in contact with the galvanizing. Either passivated stainless or plated copper conductor.

I have also seen plated split bolts (Kearneys) used, the style made for aluminum to copper connections. These are used to clamp a plated ground conductor to an angle brace. I prefer to have the ground conductor dressed vertically. I suppose you could use a stainless plate and stainless u-bolts to clamp a ground conductor across a horizontal brace next to the leg. A good coating of roofing tar or commercial coax seal to keep moisture away from the joint helps longevity. Have fun. And Rohn is right. You don't need a soft cross brace. CadWeld and other exothermic processes are good (and impressive to watch) for railroad rail, but have some hidden problems in electronic applications.

--
Crazy George
Peter J. Bertini <commquart@home.com> wrote in message
news:ApVP6.30981$v5.2403182@news1.rdc1.ct.home.com...
> Whats the best way to connect a ground wire to
> a Rohn 25? I've seen SAIC use exothermic welds
> on the cross braces--but the procedure isn't approved
> by Rohn and the darn molds are expensive.
>
> --
> Peter
>
>

4947. Re: Good ham logging program?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 03:57:58 UTC
From: "..." <w9jcm@reno.quik.com>
Message-ID: <aX_P6.1258$yz6.9197@newsfeed.intelenet.net>
Source record: 161995
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment

```
logic 5 does everythinggg
"Keith Beebe" <keith.beebe@verizon.net> wrote in message
news:JdOP6.7650$xM2.3115588@typhoon2.ba-dsg.net...
> Check out DX4WIN at www.dx4win.com
>
> A demo version is available in the downloads section.
>
> Keith Beebe W3KB
>
> "Dino" <dinod@deltanet.com> wrote in message
> news:4zAP6.21528$CD5.11186924@news2.rdc2.tx.home.com...
> > DXBASE 2002 demo can be downloaded here...
> >
> > http://www.dxbase.com/demowin.htm
> >
> > Dino
> >
> >
> > >hey charles
> > >that software looking really good on there website
> > >but i am not paying $100 for software with out getting to try it first
> there
> > are
> > >to many variables in computers and radios and such that would render
the
> > thing
> > >usless
> > >i wish they would offer a trail program for 2 weeks to a month like
> everyone
> > >else does to give you a chance to see if it will work on your system
and
> > that if
> > >the software is what your looking for
> > >i am glad you find it useful happy hamming
> > >73
> > >
> > >Charles Johnston wrote:
> > >
> > >> Guess I'll chime in after trying most of the major logging programs
> such
> > as
> > >> LogPlus , Log Windows , DX4WIN , and Logic 5 I have settled on DXBase
> > 2002.
```

> > >> Here is a snippet about the product....
> > >>
> > >> <snip>
> > >>
> > >> Designed for those who demand the best, DXbase 2002 by Scientific
> > Solutions,
> > >> Inc. is the premiere amateur radio logging software for 32bit
Windows.
> > One
> > >> look and you'll wonder how you ever managed without it. Whether you
> want
> > to
> > >> custom design your own QSL cards and labels, operate PSK mode and log
> > >> directly into DXbase, perfect CW output with the direct interface to
> the
> > >> W5XD external keyer, automatically create award submission forms,
> create
> > >> your own reports, monitor VHF Packet and Internet Packet letting
DXbase
> > tell
> > >> you when you need one, or just log a QSO with the greatest of ease,
> DXbase
> > >> 2002 is the software for you.
> > >>
> > >> <snip>
> > >>
> > >> I have used this product since DXBase 2000 and it is a reliable and
> > >> extremely high-performance logging program
> > >> That can do everything the other loggers do plus much more.....
> > >>
> > >> Download the informational demo at http://www.dxbase.com
> > >>
> > >> --
> > >>
> > >> 73 / DX
> > >>
> > >> Charles Johnston
> > >> charles@ab7sl.com
> > >>
> > >> AB7SL - Ham Radio Pages
> > >> http://www.ab7sl.com
> > >
> >
>
>

4948. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 04:19:18 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B108046.494042CA@IEEE.org>
Source record: 161996

Richard Clark wrote:
> [the analysis being offered]" depends upon the principle
> of superposition. It depends, in other words, upon the
> fact that in a linear system such as (2-1) the current flowing
> in response to two driving forces acting together is the
> sum of the currents which would flow in response to the
> two separately."

Does it say that the two driving forces cause both the voltages and
the currents to add in phase?
--
73, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4949. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 04:21:03 UTC
From: w2du@iag.net
Message-ID: <3b10534a.40519173@news.onemain.com>
Source record: 161997

On 26 May 2001 17:26:43 -0700, klocko@toad.net (Bill Klocko) wrote:

>w2du@iag.net (Walter Maxwell) wrote in message
news:<3b0ff507.16388154@news.onemain.com>...
>> On 25 May 2001 12:21:01 -0700, klocko@toad.net (Bill Klocko) wrote:
>> The point here is where the voltages and currents are at either 0 degrees and
>> 180 degrees or 180 degrees and 0 degrees, respectively, points on the line where
>> the currents and voltages are non-reactive.
>
>So this means that the equation is only valid at a point on the line
>where the currents >and voltages are non-reactive?

That's what it means for E+ and E-. We're talking about Johnson's Eq 6.17, Page
150, right? In the paragraph below Eq 6.13 Johnson says it's at the point of
maximum or minimum voltage, where he impedance is purely resistive. Again, in
the next paragraph he says, "An equivalent expression for power can be written
at a point of minimum voltage and maximum current..." All of his expressions on
this page from Eq 6.12 thru Eq 6.16 involve ONLY resistive voltages and
currents.

>That makes no sense at all. Someone
>wanting to measure power
>would have to set up their meter at a very specific point on the line.
>Richard Harrison
>said that Bird's application note was "unequivocal" about their
>equation, which means it
>must be true at ANY point on the line. Johnson didn't say that I- =
>-(E-/Z0) is only true
>at certain points. Do you disagree with the derivation I put up?
>
No.

>> Sorry Bill, I can't agree that the equation above yields the power flow toward
>> the load. Let's see why:
>>
>> E1 + E2 = Et = 141.2 v. and I1 + I2 = It = 2.828 a.
>>
>> The product of Et and It = 400 watts This is an impossible solution.
>
>Why is it impossible?

I'ts impossible because I calculated incorrectly. I inadvertantly squared E1 and
E2 before dividing by Zo, resulting in incorrect currents. I apologize.

snip

>And with
>Cecil's way of expressing the correct answer, P = 1 + 1 = 4.

Bill, you have misundstood Cecil's posts. It is Steve who believes 1 + 1 = 4. Cecil is trying unsuccessfully to prove to Steve that it's not correct, So don't blame Cecil for Steve's error.
>
>> According to Cecil's phasor diagram there are three forward voltages, 106.066 v.
>> 86.6 v. and 35.355 v.
>>
>> Now let's look at Johnson's equation: Pdel = |E1|^2/Zo - |E12|^2/Zo. By the same
>> reasoning Ptotal = |E1|^2/Zo + |E|^2/Zo, simple algebraic manipulation.

>Similar reasoning doesn't work here. Please go through the derivation
>given above for Pdel.

I reviewed your derivation for Pdel and it is corrrect, but the terms that cancel are unnecessary--see below..

>You will see that the 2 extra terms drop out leaving |E1|^2/Zo -
>|E12|^2/Zo. For the match
>point, you just can't assume an equation because those terms may not
>drop out, and if you go
>through the 2nd derivation, you'll see that they don't.

Bill, it's not necessary to use cross multiplication between the E and I terms, because both E terms are apples and both I terms are oranges. You simply add the apples and add the oranges and multiply total apples by total oranges.

So now let's plug the voltages and currents into the expression to see what happens.

E1 + E2 = 106.066 v + 35.355 v = E = 141.42 v

I1 + I2 = 0.7071 a + o.2357 a = I = 0.9428 v

E x I = 233.33 w

This would seem to prove the addition of voltages yields the correct answer, but unfortunately this answer is strictly coincidental, because there are 50 watts missing.

E1 x I1 = 75 w and E2 x I2 = 8.33 watts The total of these powers is only 83.333 w, but we need 133.33 w of forward power to satisfy the power equation. There are 50 w missing and these are the 50 w Cecil has been trying to make everyone understand. These 50 w cannot be ignored if we follow the law of conservation of energy. We know that with lossless line if100 w are delivered to the line, 100 w are going to be absorbed by the load. There is no way this can happen if the total power is only 83.333 w.

Consequently, the missing power is found as follows.

E1 x I1 = 75 w, E2 x I2 = 8.333 w, but E3 = 86.6 v and I3 = 0.5774 a, whose product is 50 w.

This is the 50 watts that is missing from Steve's and your power budget that Cecil has been screaming about from year one.

> Does Johnson
>list the second equation
>Ptotal = |E1|^2/Zo + |E|^2/Zo? Is he using it for multiple sources
>like the three forward voltages?
>I'll bet it's either not there or he doesn't add multiple sources.

From his Eq 6.17 it shouldn't be hard for a mathematician to reason that it can by extension.
>
>Just out of curiosity, I looked up superposition in about a dozen
>circuits texts at a tech library.
>Every one, without exception, either specifically listed it being
>valid for voltages and currents.

Then why is superposition of power valid in Johnson's Eq 6.17?

|E1|^2/Zo + |E2|^2/Zo must be valid as the total forward power if Johnson's Pdel = |E1|^2/Zo - |E2|^2/Zo. As I said earlier, this total power expression is a simple algebraic manipulation of terms that no good mathematician can deny.

>(but no mention of power) or mentioned that it applies only to linear
>variables, which *automatically*
>excludes power. One text even warned specifically against trying to
>superpose power values. "superposition
>is applicable only to linear responses and the most common nonlinear
>response - power - is not subject
>to superposition" (from Engineering Circuit Analysis by Hayt and
>Kennedy). In order to use superposition,
>you must resolve any power terms into voltage and current, do the
>superpositions with those, and then
>compute power from the resulting values (see my example above).
>
>73,
>Bill N3WK

If you superpose the three forward voltages in the expression you use the forward power will be greater than 133.33 w, which clearly will be an incorrect result.

Think carefully about the coincidental 133.33 w you get by using less than the total forward power.

But I do apologize for the inadvertant error in dividing the square of E1 and E2 in my earlier post.

Walt, W2DU

4950. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 04:42:25 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eq0ih$3k8$1@slb6.atl.mindspring.net>
Source record: 161998

David:

After applying L'Hospital's Rule once the function is a constant with
respect to frequency.

And so... it's no problem evaluating it at f = 0. Zo = sqrt(L/C).

DC refelectometers... well I have designed several of these devices that
work from DC up to several MHz and which can handle very wild Zo functions,
not just a simple Zo = 50Ohms, some of these are analog and some are hybrid
digital/analog.

The directivity of the purely analog ones is upwards of 40dB in production,
but that is an average, the actual directivity varies across the band, and
the digital/analog hybrids have upwards to 100 - 110dB of directivity.

These are designed to work on very lossy lines not lossless lines, so that
they operate at high performance not only when Zo is a fixed resistive
constant but when Zo varies all over the map across the band of interest.
With these directional coupler applications, Zo can vary from several kOhms
with a highly capacitive component down to an almost purely resistive value
around 100 Ohms. In other words, we are able to separate out the forward
and reverse waves with these devices when Zo is not very well controlled or
known in advance!

The directional coupler acutally automatically measures and synthesizes an
artificial functional Zo [Not merely a constant!] using a least mean squared
algorithm, to minimize the error between the artificial Zo and the actual Zo
across the band of interest to match the line in question so the waves
travelling in opposite directions can be resolved. This is how broadband
modems are duplexed on a single transmission line.

-Peter K1PO

"David J. Windisch" <davidw@copper.net> wrote in message
news:XYYP6.21491$md1.9743@newsfeed.slurp.net...
> Peter:
>
> As you say .. except that L'Hospital's evaluates only the limit as we
> approach the indeterminate form; we are still unable to solve for any
actual
> value of the function at its point of indeterminacy.
>
> Are you assigning the value of the limit to the case where x = a?
>
> 73, Dave, K3BHJ
>

> BTW, what's the directivity of your d-c reflectometer? GE Cap left that
> line blank on the cal cert-sheet for the one at the shop.
>
>

4951. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 04:45:59 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eq0p9$s8o$1@slb2.atl.mindspring.net>
Source record: 161999

Richard:

Heh, heh... I'll "show" if you wanna meet me somewhere.

I travel a lot on business, I could perhaps be in your part of the country soon with a DC reflectometer in my briefcase!

Or, if you want to pay the postage, I'll send it and you can make the measurements yourself...

What do you propose?

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message news:f8l0ht04f8ipqj2iru5bkho52isscojb3m@4ax.com...
> On Sat, 26 May 2001 18:21:00 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >Oops!
> >
> >It seems that you have not been introduced to L'Hospital's Rule...
> >
> >Please look up L'Hospital's Rule for evaluating indeterminate limits in any
> >standard first year calculus text book... In America this would be first
> >year college level, in Europe it would be at the Grade 9 level. Why are
> >they ahead of us in Maths?
> >
> >Here's a reference that I have nearby...
> >
> >"Calculus with Analytic Geometry" by Angus E. Taylor, Prentice Hall,
> >Englewood Cliffs, NJ 1959, LCCN 59-011305, LC Shelf Call QA 303.T203.
> >
> >Heh, heh... I'm perhaps giving away my age here...
> >
> >L' Hospital's Rule can be found on p.456.
> >
> >That will help you with the mathematical evaluation of Zo for a lossless
> >line as f approaches zero.
> >
> >It is undoubtedly Zo = sqrt(L/C), mathematics, physical theory, and
> >experimental practice all confirm this.
> >

> >Best,
> >
> >-Peter K1PO
>
> Hi Peter,
>
> Another example of show or tell, and you choose to tell - boring.
>
> I am familiar enough with L'Hospital's Rule to see you are throwing
> math against the wall to see if it sticks.
>
> Want to try again?
>
> 73's
> Richard Clark, KB7QHC

4952. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 05:07:23 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eq21clrq1@nntp9.atl.mindspring.net>
Source record: 162000

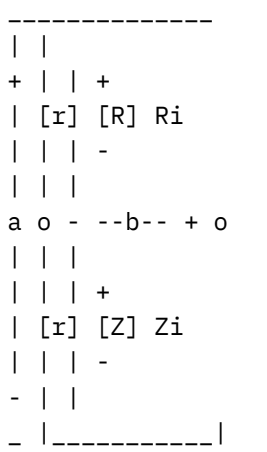
Tom:

OK, if you insist... but

You have seen this one from me before here on this NG....

Wheatstone reflectometer or VSWR bridge

-> i



Two arm four element "Wheatstone" bridge.

First arm - two series connected equal valued resistors [r].
Second arm - reference impedance [R] in series with unknown
impedance [Z].
The incident voltage "a" is applied across both arms.
Load current i flows through both [R] and [Z] in series.
Ohm's law:
Voltage across [R] is Ri.
Voltage across [Z] is Zi.
Note that the "incident" voltage "a" is given by the sum:
a = Zi + Ri = (Z + R)i
Later use i = a/(Z + R) from this equation.
Place the indicating device (use a hi Z voltmeter) of the Wheatstone
"bridge"
across the "span" between the two arms of the circuit. (Hence the
name "bridge" for this circuit, because the meter bridges the arms.)
Now calculate the reflected voltage "b" indicated by
the meter placed on the bridge. This is obtained by subtraction.
b = Zi - a/2
Substitute for a.
b = Zi - (Z + R)i/2
Simplify.

b = (Z - R)i/2
Substitute for i.
And ta dahhhh here it is....

b = ((Z-R)/(Z+R))a/2
or
b = (rho*a)/2

Within a scale factor of 1/2, the bridge voltmeter output equals the
incicdent voltage "a" times the reflection coefficient (Z-R)/(Z+R).

As they taught me in high school geometry...
QED!

Clearly Z may be anything you like, from a simple resistor to a
complex impedance to a transmission line or antenna.

No waves, no partial differential equations, no phasors, no rotating
vectors, no forward and reverse power cancellations at virtual
short circuits, no magic, no mumbo jumbo.... no large print books,
no coupled transmission line elements spanning a standing wave,
no slotted lines, etc...

And no power calculation or presentation. I and V are never multiplied
in this circuit, just added and subtracted! This is not a power meter!

This technique for directional wave separation was developed and patented
by George Wheatstone around about 1846 in England and was used
to provide duplex operation on early telegraph cirucuits. In other
words, by using this Wheatstone bridge directional coupler telegraph
operators could send in both directions at once!

And here you thought that Bird invented it! Heh, heh.

Tom starting with this configuration, which is DC coupled of course
if you make an AC coupled bridge using say a capacitive voltage divider
instead of the two r's in my simplified circuit, and a center tapped
transformer
on the other arm, you will see that the Breune design reflectometer is
precisely
the Wheatstone bridge.

Also if you are interested in more detail on how to design directional
couplers...

See Reg Edwards page for a computer program to help you
to design these SWR bridge circuits...

I've got circuit diagrams and lab models of dozens of different designs of
these
devices some using Op-Amps, some with A/D and D/A converters so that
some of the work can be done digitally. Now that's where you can really
use the V and I samples and multipy them together to get "real" power.

Best,

-Peter K1PO

"Tom W8JI" <2w8ji@contesting.com> wrote in message
news:3b105ba2.136758162@news.accessunited.com...
> On Sat, 26 May 2001 20:22:01 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >I'll address your euridite remarks one at a time here below...
>
> Where did I put my dictionary? Oh yes, I loaned it to Phil.
>
> >Sorry to be a party pooper Tom but, depending upon how the schematic is
> >drawn out [geometric and topological perspective] it may not look like a
> >Wheatstone bridge, but it most certainly is.
>
> A two component Wheatstone bridge? What am I missing?
>
> >If you want I can draw one out and send it to you.
>
> Great. Make mine a Bud Lite. Send it Fed X please.
>
> >What? Tom... I challenge you to show me the multiplier in your Bird!
> >There's none in mine.
>
> Mine adds two distinct voltages, one the result of current and one the
> result of voltage.
>
> If you meter only reads voltage, please tell me how it is directional
> and impedance sensitive. Draw it out if you like.
>
> 73 Tom

4953. Re: PDL2 Quad Conversion for Ten Meters

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 05:23:37 UTC
From: dinod@deltanet.com
Message-ID: <tb0Q6.27256$CD5.14574644@news2.rdc2.tx.home.com>
Source record: 162001

Here is a copy of an e-mail I received from one of the original Avanti Engineers...

[begin copy]

Hi Dino,

These antennas were originally designed/manufactured/ sold by Avanti Research. I was one of the engineers there for 20+ years. The antennas can be scaled by multiplying all element lengths by the scaling fraction 27.2/XX where XX= the 10M freq. The only measurement that does not scale well is the perimeter of the reflector loop- it is extremely critical to maintain a high F/B ratio and must be found experimentally on a test range.

[end of copy]

Also, stay away from the "back-door" kits for the PDL-II. They do nothing be degrade the signal! Just scale the antenna from the original design.

Dino

Alan Childress said...
>
>Does anyone have a copy of the original manual that they don't mind sharing?
>I'd like to get a reference point to start with before converting the Avanti
>PDL2 to 10 meters. Any help would be appreciated. Also, successful
>conversions with good F/B and respectable gain would be greatly appreciated.
>I.E., measurements to include the wire size (gauge/diameter) and loop
>lengths plus etc.
>
>Thanks,
>
>Alan <NA4I>

4954. Re: Radio Works Carolina Windom vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 07:15:43 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B10A99F.7B1E@wt.net>
Source record: 162002

Butch Magee wrote:
>
> I couldn't understand why the bad reports on Carolina Windoms from
> RadioWorks, I used theirs at home and and at work with total satisfaction and
> the damn things do hear better too! The C.Windom from Radio works is all
> coax no, NO ladder line on it. I've run the G5RV it suck four letter words
> on 80 and 15.
>
> KF5DE

Yea, Where I got the ladder line on the brain was from the G5RV's. If I remember right, the windom was single wire to a choke/balun to coax. But both had the same problem of excess loss in the system compared to a full size dipole. The G5RV was the worse of the two I think on 80m. They were both usuable on 40m, but again the full size coax dipole whipped the pants off them both in our case. Of course, the G5RV wouldn't be half bad if fed with just ladder line. It's that goofy feed setup they seem to like to use that kills them. But again, in my tests that I did , the coax dipole beat even a full 130 ft dipole on 80m when fed with ladder line and using my 989C tuner. Sure, it wasn't too bad a loss, but there was a difference. During an event like FD when the going gets tuff, I like all the firepower I can muster. So I like the coax fed dipole. I've never seen any other method using a tuner that can beat it in my cases on 80m. The only way I can see ladder line winning is if you use the Cecil method and use no tuner. But who wants to deal with that at FD? Too picky on where you can string the feeder. IE: don't want to lay on the ground, get wet, be against metal, etc. And you have to change the line when changing bands. On my "X" 80/40 dipole fed with coax, I change bands and do nothing. I don't even have to think about the antenna the rest of the night. I just change to the other band and go. And before someone asks "what about the other higher bands?", we usually have a yagi up for those. I only work 80/40 usually. MK
--
http://web.wt.net/~nm5k

4955. Re: J-Pole Design

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 09:33:37 UTC
From: Colby Gilliam <colbyjg@bellsouth.net>
Message-ID: <MC3Q6.1522$6i.67584@news1.atl>
Source record: 162003

GOTO WWW. THEDRAGONMASTER.COM/J-POLE.HTML.SORRY ABOUT ALL CAPS,KEYBOARD IS MESSING UP.

4956. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 10:53:01 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9eqm9lrvp1@neptunium.btinternet.com>
Source record: 162004

Cecil wrote -
> I don't think you understand the definition of a Z0-match, Reg.

Cecil, pardon my ignorance.

> The Z0-match occurs at the *INPUT* of a tuner when the tuner is
adjusted
> to eliminate reflected energy from reaching the transmitter. A
Z0-match
> can occur no matter what the SWR between the tuner and the
antenna.

Cecil, could you please say by what means the tuner adjuster is
made aware of when this seemingly desirable state of affairs has
been achieved ?

Reg.

4957. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 11:32:20 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B10E5C4.83317808@mwci.net>
Source record: 162005

Bill Klocko wrote:

> w2du@iag.net (Walter Maxwell) wrote in message
news:<3b0ff507.16388154@news.onemain.com>...
> > On 25 May 2001 12:21:01 -0700, klocko@toad.net (Bill Klocko) wrote:
> > The point here is where the voltages and currents are at either 0 degrees and
> > 180 degrees or 180 degrees and 0 degrees, respectively, points on the line where
> > the currents and voltages are non-reactive.
>
> So this means that the equation is only valid at a point on the line
> where the currents
> and voltages are non-reactive?

No.

Johnson says it is "easier" to follow his reasoning when everything is assumed "for the moment"
to be resistive, with E and I at their min or max values, as shown in Fig 6.2. Johnson creates
a bit of possible confusion in this segment.

The bottom line is Eq 6.17, which says:

P = |E+|^2 / Z0 - |E-|^2 / Z0 = Pfwd - Prefl

This states that forward power is constant everywhere on the line (because E+ is constant) and
reflected power is constant everywhere on the line (because E- is constant). Review Eqs 4.3 to
4.6 and the associated text.

The standing wave of E or I results from phase interactions between (E+) and (E-) or between
(I+) and (I-). However, (E+) and (E-), or (I+) and (I-), viewed independently, have constant
magnitudes (values of positive peak of sinewave). (E-) and (I-) depend only on the reflection
coefficient at the load, and they also have constant magnitudes.

Eq 6.17 is the Directional Wattmeter Equation, and it is correct at any location on the line
because it distinguishes between |E+| and |E-| (or |I+| and |I-|). In that respect, it is a
special kind of "bridge" circuit, with Z0 as a reference. Also, the magnitude symbols | | in
that equation are correct because the instrument uses diode envelope detection.

The actual circuit design of the instrument uses both magnitude and phase of
current I = (I+) + (I-) samples
and
voltage E = (E+) + (E-) samples
to "calculate" and display Pfwd and Prefl, but the end result is mathematically identical
to
Eq. 6.17.

Bill W0IYH

4958. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 12:15:40 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eqr4b$6rl$1@slb3.atl.mindspring.net>
Source record: 162006
Cross-posted to: alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.shortwave

Yes... I believe that Fractal Antenna Systems has a patent pending.

"Peter J. Bertini" <commquart@home.com> wrote in message
news:vNNP6.29210$v5.2304104@news1.rdc1.ct.home.com...
> Wonder if it is patented?
>
>
>

4959. Fractals replaced?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 12:19:40 UTC
From: JerryL <jlockett@onemain.com>
Message-ID: <9eqrct$kc4e$1@ID-55752.news.dfncis.de>
Source record: 162007

Antenna breakthrough hints of software radio
By Patrick Mannion
EE Times
(05/18/01, 12:42 p.m. EST)

Pleas force Avanti tool users onto shaky ground

Internet architects zero in on reliability, security

Basestation boom continues, despite handset slump

Nonorganic EL display rides on blue phosphor

Protocol pair strives for smarter networks

MANHASSET, N.Y. - Using proprietary magnetic-isolation and RF MEMS-based antenna-reconfiguration technologies, e-tenna Corp. has brought the elusive goal of a software-defined radio one step closer to reality. The San Diego company's approach, which eliminates many of the RF front-end obstacles, also promises to improve the performance and lower the cost of antennas for wireless handsets and infrastructure.

Working from the antenna backward, e-tenna's solution could eventually make expensive and bulky bandpass filters, transmit-and-receive switches and multiplexers redundant, while also allowing the antenna to operate in all major communications bands from 800 through 2,100 MHz and higher.

Its antenna also improves power-transfer efficiency by 4 dB over internal antenna technologies, the company said, thereby increasing the range or reducing power consumption, and cutting down on dropped calls.

The company will offer the technology on a license-royalty basis. "We can take out $4 to $6 from a $70 bill of materials for a dual-band phone now," said David McCartney, president of e-tenna. "And that only goes up as you migrate to tri- or quad-band telephones."

"I haven't seen anything else like this before," said Jack Quinn, president of Micrologic Research (Phoenix). "If it works the way they say it does, it should certainly simplify cellular telephones today."

E-tenna's core intellectual property lies in its Artificial Magnetic Conductor (AMC) technology, which it combines with a patented reconfigurable-antenna technology based on microelectromechanical systems (MEMS).

Dave Auckland, director of engineering at e-tenna, described AMCs as high-impedance surfaces that provide significant isolation, a key challenge for small antennas that are mounted inside a phone.

"Think of it as a perfect magnetic conductor, not an electrical conductor," he said. "As a result, the magnetic fields tend to vanish on the boundaries."

The technology relies on its bandgap performance to give it a certain frequency performance at its band edge. The bandgap controls the way the signal is propagated on the surface of the structure by controlling the transverse-electric and transverse-magnetic modes of operation. "You won't find this in the textbooks," said Auckland, "since no one's dissected it this way [before]. But this dissection allows us to design the surface such that the antennas work the way they're supposed to."

The end result is that e-tenna can put wire antennas directly on top of the AMC surface while allowing them to radiate very efficiently with no impedance ramifications. "Yet," said Auckland, "it gives you very high isolation between the antenna and the circuit board - and also between the handset and the user's head and hand. The specific absorption rate is one-third that of alternative, internal [antenna] offerings."

The most immediate implication of this high isolation is the ability to place two wire-patch antennas back to back within a very small space without the possibility of interference. According to company president McCartney, "its natural isolation of 30 to 35 dB meets GSM duplex requirements, while 45 to 50 dB is our next step to meet CDMA needs."

This means the handset can eliminate the transmit/receive switch up front, since now both antennas can be designed-in on one device. To date, such a switch has been used to allow alternate operation of the transmit/receive paths to avoid mutual interference.

"The other advantage to having separate Tx and Rx antennas is that designers can better match the antenna to the transmit and receive paths," said McCartney. "These have divergent requirements in terms of impedance matching. We also get rid of the multiplexers and bandpass filters." A dual-band GSM phone typically has three diplexers while a CDMA phone has one 6-mm-high duplexer.

The bandpass filters are eliminated by means of e-tenna's patented autoreconfigurable antenna technology, which also gives the device its wide operating-frequency range and paves the way for software-defined radios (SDRs).

Navy delivery

The autoreconfigurable technology first found its way into e-tenna's delivery of a UHF satellite-communications antenna to the U.S. Navy. It achieved 70 percent efficiency with channel bandwidths of 2 to 3 MHz, the company reports.

That initial version used a wire antenna that was switched between different air interfaces using PIN diodes. "We're now moving to microelectromechanical systems to do the switching," said McCartney.

To date, MEMS have not been usable for this kind of application, since they have required voltages of 20 to 30 V. "We think we have a MEMS design that can go below 3 V through a partnership within Titan Corp.," of which e-tenna is a subsidiary, said McCartney. "That's a separate announcement to come soon. Suffice to say that it will lead to a very low-power, latching-type design for the autoreconfigurable antenna."

In the meantime, McCartney emphasized that the e-tenna solution does not involve just switching among antenna elements, but adds spectral shaping of the antenna's response. "We're really changing the electrical properties of the aperture and the radiating structure - it electrically looks different at each frequency," he said.

"The high-Q antenna ends up being very efficient over the 5 to 10 MHz of the passband," said Auckland. "The combination of the precise electronic tuning and the natural roll-off of the antenna eliminates the need for bandpass filters."

The current version has a 1:3 tuning range, hence the focus on 800 to 2,100 MHz. "The AMC and antenna are currently breadboarded for lower-frequency operation to allow manual adjustment of the components," said McCartney, "though with 2003 design cycles now ramping up, we plan to have intellectual property to offer by the summer."

Design requirements

Exactly how the technology will be incorporated into new designs has yet to be determined. "We're still trying to define that," said McCartney. "What we have is a bit more complicated than a passive antenna. It has some extra components, it needs dc power, it will have an ASIC with the autotuning circuit."

The antenna control unit will need a logic input from a DSP or a digital word from a synthesizer, while the autotuning requires some detection and processing. "That will be done in the antenna," said McCartney. "So when the radio goes on it'll tell the antenna where to go for the transmit-and-receive signal."

Mike Woodward, principal software engineer at soft-radio developer RadioScape (London), termed the antenna "certainly one the three areas of heavy research into SDRs, and any advance there can be considered a key enabler." The two other key areas relate to the baseband processing and RF down conversion.

For baseband processing, the emergence of high-performance, low-power DSPs has been a boon. International Wireless Technologies, for example, incorporates three of VLSI Systems Inc.'s low-power DSPs to handle the processing of the various air-interface standards. International Wireless said it plans to announce its partnership with an RF company in the near future.

The RF segment is being tackled on a multitude of fronts, but has always remained stubbornly power hungry and inflexible. That's due to the myriad stringent requirements of each air-interface standard, whether it's the sensitivity requirements of Global System for Mobile Communications (GSM) or the bandwidth needs of code-division multiple access.

Direct-conversion advances

However, some of the most promising breakthroughs of late have come from advances in direct conversion from companies like Analog Devices, Conexant, Direct2Data and Texas Instruments. These have all opened the door to RF front ends that can better accommodate multiple air interfaces, while at the same time reducing the overall parts count, saving space and reducing cost.

"Direct-conversion radios have eliminated those big expensive parts," said Allen Nogee, analyst at Cahners InStat (Tempe, Ariz.). "But the problem with direct conversion is that the receiver and transmitter become very sensitive to each other if you don't have good isolation between them."

That's where the e-tenna development holds promise.

"We've been able to do SDRs for over 15 years now - but only if you're willing to throw enough money and power at the problem," said Nogee. "As a result, it has not been a viable technology for wireless handsets."

4960. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 12:55:49 UTC
From: richardharrison@webtv.net
Message-ID: <18748-3B10F955-5@storefull-114.iap.bryant.webtv.net>
Source record: 162011

Peter, K1PO wrote:
"Hence the Bird can provide values from which imputed VSWR`s can be computed, even though there is only 0.0000000001 of a wave standing on a line!"

Peter is correct so long as the voltage to curremt ratio is 50 ohms, the Zo for which the Bird is calibrated. Bird relies on a fixed Zo to keep its voltage and current samples exactly balanced.

VSWR has the same value as ISWR in a transmission line. This is because Z=E/I.

As reflected power is a function of mismatch, and SWR is also a function of mismatch, if you know forward and reverse powers in a line, you can compute the SWR. Or, you can read values from a Bird supplied chart. Bird also gives the formula to make your own calculation.

Best regards, Richard Harrison, KB5WZI

4961. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 12:56:19 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9eqthjknu0@208.207.71.176>
Source record: 162008

Reg Edwards wrote:
>
> Cecil wrote -
> > I don't think you understand the definition of a Z0-match, Reg.
>
> Cecil, pardon my ignorance.
>
> > The Z0-match occurs at the *INPUT* of a tuner when the tuner is
> adjusted
> > to eliminate reflected energy from reaching the transmitter. A
> Z0-match
> > can occur no matter what the SWR between the tuner and the
> antenna.
>
> Cecil, could you please say by what means the tuner adjuster is
> made aware of when this seemingly desirable state of affairs has
> been achieved ?

Reg, I do it by observing the reflected power meter as I make the tuner adjustment. It dips to zero as the Zo matchpoint is reached.

I assume that the sampling circuitry built into rigs with the automatic tuners does likewise since the tuner stops working when that minimum reflected point is reached.

Dick

4962. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 12:57:50 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B10F9CE.D20A127B@mwci.net>
Source record: 162009

Tom W8JI wrote:

> It has no "bridge" so to speak

Wrong.

When the reading of the reflected port is zero, a bridge circuit is balanced (nulled). Specifically, one voltage sample, and another voltage sample that is proportional to current, are in exact opposite phase and amplitude. If the load is Z0 the bridge is balanced. There are many kinds of AC impedance bridges that operate on the very same principle, where Z0 is one arm of the bridge.

Bill W0IYH

4963. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 13:15:21 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9equl9$o6v$0@208.207.71.176>
Source record: 162010

Reg Edwards wrote:
>
> Bill wrote -
> > I don't think even a high school kid would make that mistake.
> ==========
> Bill, the trouble these days is that school kids WILL make those
> sort of elementary mistakes. And worse.
>
> The bickering on this elderly adult newsgroup, which has arisen
> because of arithmetical ignorance, is inexcusible. It seems people
> are unable to work out the number of rolls of wall paper needed to
> decorate the shack.
>
> In the US, schoolkids have to be searched to prevent them taking
> firearms into the classrooms. Teachers are armed and wear
> bullet-proof vests. So much for maths lessons.
>
> In the UK, new entrants to universities have to take several months
> courses in arithmetic before they can participate in what used to
> be normal first-year engineering studies.
>
> I am in my 76th Year. At the age of 15 I was employed in the
> daytime in the machine shop of a factory making electric motors for
> the war effort. In the evenings, in the middle of air raids on
> local industry, at the technical college I was solving differential
> equations. Having learned the hard way I have not forgotten how to
> do it.
>
> Chinese, Japanese, Korean, Indian, Iraqi, Libyan, Cuban, Mongolian,
> Yugoslavian, Malayan, Indianesian school children, and Brazilian
> street kids are numerically better educated.

Indeed they are. And the reason is clear - there is no longer any
discipline involved in the process of education. Every student is
allowed to be as free of real learning as they wish to be, and they are
passed from one grade to the next regardleas of the body of knowledge
that they did not absorb. The planning is even tailored to facilitate
this very fact. No treacher shall confront fragile egos with strict
rules nor dare to fail to accomodate an individual's sensitivities, even
as that individual does not posses the maturity to realize the meaning
of education.
Compare this to times when one either learned the required knowledge
for that level or he remained at that level for another year, or longer
until he did learn it. So we have college entrants who must now learn

what they were not required to learn in grade and high school. Meanwhile kids are left with far too much idle time to watch TV and to wander off into all sorts of illadvised and destructive pursuits.
No wonder the cultures which apply selfdiscipline and individual incentive rather than pandering to each individual's sensitivities (instead of teaching how do deal with them as we used to do) are coming to the fore as we decline.

Dick

4964. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 13:16:48 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B10FE40.ADD6CF43@IEEE.org>
Source record: 162012

Reg Edwards wrote:
>
> Cecil wrote -
> > I don't think you understand the definition of a Z0-match, Reg.
>
> Cecil, pardon my ignorance.

We are all ignorant of something, Reg. A Z0-match exists when you measure Z0 while looking into a feedline with a Z0 characteristic impedance. Unlike a conjugate match, A Z0-match is not required to exist over the entire system. That's why I prefer to discuss a Z0-match rather than a conjugate match.

> > The Z0-match occurs at the *INPUT* of a tuner when the tuner is adjusted
> > to eliminate reflected energy from reaching the transmitter. A Z0-match
> > can occur no matter what the SWR between the tuner and the antenna.
>
> Cecil, could you please say by what means the tuner adjuster is
> made aware of when this seemingly desirable state of affairs has
> been achieved ?

Maybe an illustration is in order. Assuming an average ham solid-state transceiver designed to drive a 50 ohm load (lossless conditions), install a one wavelength section of 50 ohm coax between the transceiver and the antenna tuner. Also install a 50 ohm SWR meter at the halfway point of that piece of 50 ohm coax. Now adjust the tuner for zero reflected power as indicated by the SWR meter.

I think you would agree that the coax between the transceiver and the tuner is flat, i.e. matched line conditions exist. The SWR meter can be placed anywhere on the one wavelength section of coax and the reflected power will be zero. The one wavelength section of coax is not engaged in any impedance transforming action. Therefore, the length of that section of coax doesn't matter. It can be reduced to three feet and nothing changes. Z0-matched conditions exist at all points on that piece of coax no matter what the length. The Z0-match *point* is where the reflections cease. In a system with reflections that is at the input of the antenna tuner.

Consider an autotuner which can be mounted at the antenna feedpoint. The Z0-match point at the antenna tuner input has been moved all the way to the antenna and matched line conditions exist everywhere on the feedline.
--
cheers, Cecil

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4965. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 13:26:03 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9eqv9b$pe5$0@208.207.71.176>
Source record: 162013

"Peter O. Brackett" wrote:
>
> Bill:
>
> [snip]
>
> In order to use superposition,
> > you must resolve any power terms into voltage and current, do the
> > superpositions with those, and then
> > compute power from the resulting values (see my example above).
> >
> > 73,
> > Bill N3WK
> [snip]
>
> You told em right!
>
> Superposition is only valid in linear systems. That is systems in which the
> independent variables only appear in linear sums.
>
> Computation of power is a non-linear operation that involves the
> multiplication of independent variables and the evaluation of transcendental
> functions...
>
> Superposition of powers is incorrect and will only lead to errors!
>
> Good work, I'm right here behind you with more references from my library
> shelf.
>
> Let's put this silly idea of superposition of powers to bed for good!
>
> -Peter K1PO

Hey Pete,

At a point where voltage and current are in phase at zero, what else
can it be BUT linear??

Dick

4966. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 13:27:43 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1100CF.CC6C4671@IEEE.org>
Source record: 162014

"Peter O. Brackett" wrote:
> Wheatstone reflectometer or VSWR bridge

Peter, since you drew your ASCII diagram in a proportional font
of some sort, for most of us, it is distorted beyond recognition.
How about doing your ASCII diagrams in fixed width font?
--
cheers, Cecil

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4967. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 13:31:29 UTC
From: NDS <nds@freeuk.com>
Message-ID: <d%gQ6.31910$ML4.2853696@nnrp4.clara.net>
Source record: 161933
Cross-posted to: alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.shortwave

I wired an old coat up to use with a cb radio back in the 80's!
I wonder if the inventor of this new 'coat' got the idea from me back then?!

Campone <info@mantenna.net> wrote in message
news:MPG.1578e3589c093ad39896b0@news.earthlink.net...
> An amazing new product will be released in the near future.
>
> The Mantenna!!
>
> The Mantenna is a special 3 layer 1 peice suit that contains copper
> strands and copper threading strategical1y placed at key areas within
> the interior wall of the second layer of the suit.
>
> The suit layers are a special blend of nylon and rayon. This blend is
> coated with a non-reflective conductive spray (The spray maintains the
> natural beauty of the fabric and is non-toxic).
>
> The belt line contains high grade BNC and PL style connectors to attach
> to your radio antenna connection.
>
> The suit will be availabe in 7 differents colors to keep everyone happy!
>
> The receive range shows remarkable results from 7Mhz - 1400Mhz.
>
> An optional hat is available:
>
> Hat model MAN-H1 is a cone style hat with built in Low Noise Amp (LNA)
> for those that enjoy satellite monitoring. The cone contains all
> the electronics and a high capacity rechargable power supply.
> Free during our official introduction will be an addon solar cell
> for constant recharging and constant power to the LNA.
>
> Stay Tuned For The Official Release!!
>
>

4968. Slinky Antenna Schematic Wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 13:48:45 UTC
From: hj3ort@yahoo.com
Message-ID: <1B7Q6.2900$Uj6.12516@open-news.pacbell.net>
Source record: 162015

Hi all

I am very interested in the "dipole" Slinky, but don`t have the schematic.
I saw this antenna in "CQ Amateur Radio" magazzine in the 80's, but lose it.

Can somebody tell if exist an url with the schematic. Tried
http://www.geocities.com/swl_yb400pe/slinkypage.html but haven't it.

73's de HJ3ORT Jose Luis

Jose Luis

4969. Direction of a Sloper Antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 13:48:59 UTC
From: av8tor@licensed4fun.com
Message-ID: <9er0ka$6t8o$2@newssvr05-en0.news.prodigy.com>
Source record: 162016

I'm considering a sloper antenna for a general coverage receiver.(Antenna Supermarket SWL Sloper Antenna). However I need to know which way a sloper will pick up signals the best.

Is it just like a dipole where as it will receive signals best from broadside (ie: dipole running north-south pickes up signals best from the east-west)

Or is it oppsite (ie: Sloper running north-south with highest point on the north end. Picks up best signels from the south)

Thanks,
George
http://www.Licensed4Fun.com
--

_____
I Made eBay My $175,000 a Year Career!
I'm Retired at age 36 and Enjoying Life!
--> http://www.licensed4fun.com/ebay.htm <--
_____

4970. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 13:56:58 UTC
From: richardharrison@webtv.net
Message-ID: <3148-3B1107AA-28@storefull-115.iap.bryant.webtv.net>
Source record: 161870

Bill, W0IYH wrote:
"When the reading of the reflected port is zero, a bridge circuit is balanced (nulled). Specifically, one voltage sample, and another voltage sample that is proportional to current, are in exact opposite phase and amplitude."

Very scrambled and confusing to me.

If the reflected power reading is zero, it is not because of opposite reflected power samples. It is because of equal and opposite forward power samples. This is how a Bird wattmeter disregards forward power while sensing reflected power.

It is also because the reflected power samples of a wave which has its voltage and current 180-degrees out-of-phase, have been configured by meter switching to be in-phase. A zero meter deflection when reading reflected watts is because there is zero energy traveling in the reflected power direction to be sensed.

Best regards, Richard Harrison, KB5WZI

4971. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 13:58:21 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1107FD.24493132@IEEE.org>
Source record: 162017

Walter Maxwell wrote:
> Bill, you have misundstood Cecil's posts. It is Steve who believes 1 + 1 = 4.
> Cecil is trying unsuccessfully to prove to Steve that it's not correct, So
> don't blame Cecil for Steve's error.

IMO, Steve has noticed an interesting mathematical relationship involving
some voltages and tried to draw some conclusions about physics based on
that interesting mathematical relationship.

Here's an equally interesting voltage relationship from which equally
fuzzy conclusions might be drawn.

100w XMTR---50 ohm coax---x---1/2WL 150 ohm twinlead---50 ohm load

Forward voltage on the 50 ohm coax equals 70.71 volts at zero degrees.
Reflected voltage on the 150 ohm twinlead equals 70.71 volts at 180 degrees.
Forward voltage on the 150 ohm twinlead equals 141.42 volts at zero degrees.

What is the physical meaning of the fact that generated voltage minus
reflected voltage equals forward voltage? _____
(It's a fill-in-the-blank question :-)
--
cheers, Cecil

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4972. Re: Fractals replaced?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 14:04:41 UTC
From: "W.G. Ewald" <wgewald@att.net>
Message-ID: <ni22htoa1bqkpgnrn981bc00u8pvk1l69t@4ax.com>
Source record: 162018

On Sun, 27 May 2001 05:19:40 -0700, "JerryL" <jlockett@onemain.com>
wrote:

>
>MANHASSET, N.Y. - Using proprietary magnetic-isolation and RF MEMS-based
>antenna-reconfiguration technologies, e-tenna Corp. has brought the elusive
>goal of a software-defined radio one step closer to reality. The San Diego
>company's approach, which eliminates many of the RF front-end obstacles,
>also promises to improve the performance and lower the cost of antennas for
>wireless handsets and infrastructure.

e-Tenna Corporation: Patent Agent/Engineer
ï¿½ Candidate must have experience writing invention reports and
disclosures, drafting patent applications and claims, resolving patent
office actions and interfacing between design engineers and patent
attorneys. A background in electromagnetics, physics, RF and/or
wireless technology is desired. Knowledge of intellectual property
law and experience using software tools to research competitive
intelligence is also highly desirable.

http://www.online-jobs.com/employer/etenna_corporation.htm

4973. Re: Direction of a Sloper Antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 14:10:27 UTC
From: Roger Sparks <sparksrc@home.com>
Message-ID: <nV7Q6.63976$p33.1361779@news1.sttls1.wa.home.com>
Source record: 161869

"Av8tor" <av8tor@licensed4fun.com> wrote in message
news:9er0ka$6t8o$2@newssvr05-en0.news.prodigy.com...
> I'm considering a sloper antenna for a general coverage receiver.(Antenna
> Supermarket SWL Sloper Antenna). However I need to know which way a
sloper
> will pick up signals the best.
>
> Is it just like a dipole where as it will receive signals best from
broadside
> (ie: dipole running north-south pickes up signals best from the east-west)
>
> Or is it oppsite (ie: Sloper running north-south with highest point on the
> north end. Picks up best signels from the south)
>

It would pick up the signals best from the south

> Thanks,
> George
> http://www.Licensed4Fun.com
> --
> ____
> I Made eBay My $175,000 a Year Career!
> I'm Retired at age 36 and Enjoying Life!
> --> http://www.licensed4fun.com/ebay.htm <--
> ____
>

Think of the sloper as a vertical antenna with a slight slope. Sky waves
will hit it more directly from one side, and would have to bounce off the
ground before hitting it directly from the other side.

Hope this helps.

73, Roger, W7WKB

4974. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 14:39:46 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1111B2.10591C09@IEEE.org>
Source record: 161871

Dick Carroll wrote:
>
> Reg Edwards wrote:
> > Cecil, could you please say by what means the tuner adjuster is
> > made aware of when this seemingly desirable state of affairs has
> > been achieved ?
>
> Reg, I do it by observing the reflected power meter as I make the tuner
> adjustment. It dips to zero as the Zo matchpoint is reached.

Dick, you stepped into Reg's trap. See my reply to see how I avoided
it. :-)
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4975. Re: Ground wire to Rohn 25 section?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 14:45:24 UTC
From: dmartin560@aol.com
Message-ID: <20010527104524.14878.00001387@ng-cm1.aol.com>
Source record: 161872

Use the "two piece" ground clamp (available from home supply stores in the electrical dept) to the tower leg. It is two bronze pieces with two machine bolts to hold them together. The smaller size will fit from 1/2" to 1-1/4" range...fits Rohn 25 legs nicely. The wire hole will accept #2 solid wire...just what you want for a tower lightning ground. You can use this same clamp for the ground rod but I prefer the "one piece" clamp for burial...when I must use a clamp. It is an oval shaped bronze clamp with a single 3/8" bolt to tighten it to the rod. Don't over tighten this clamp. I have came back after installation and found these type clamps cracked opposite the bolt. Use electrical copper coat liberally to make a good connection and protect the joint. It is kinda expensive and hard to find. I now use Cadweld to the rods. You don't have to buy the molds for common Cadweld connections anymore. They have disposable one-shot mini molds. These are available from Tessco.com. They are also available at your local elec distributor that sells Erico products. But, I find my local supply house never has the size/style I need.

If you need more info or need to purchase these items I can supply them...also the #2 tinned solid copper wire you will need to connect everything together.

73,
Dwayne KG4ADM
Lakeside Communications
Gainesville, GA

4976. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 14:48:31 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105270648.7b1bc861@posting.google.com>
Source record: 161873

CAM <Cecil.A.Moore@IEEE.org> wrote in message news:<3B10265E.AFB8289B@IEEE.org>...
> Bill Klocko wrote:
> > You found the missing power. Now, how does dealing
> > with Ptot, P1, and P2 muddy the waters?
>
> You said it yourself, Bill. P1 and P2 are NOT all the power. Steve has
> been saying for weeks that 75 joules/sec + 8.33 joules/sec equals
> 133.33 joules/sec which implies that 75 joules/sec and 8.33 joules/sec
> are all the powers involved. It obviously is NOT all the power. The correct
> equation is 75 joules/sec plus 8.33 joules/sec plus 50 joules/sec equals
> 133.33 joules/sec. This is essentially the only argument I have had with
> Steve. All other side arguments extend from that argument. I have agreed
> multiple times with his voltage vector addition but so far, he has refused
> to acknowledge the folly of his 75w + 8.33w = 133.33w equation.

Well, I haven't gone through Steve's voltage analysis, but I don't have a problem
with the 75w + 8.33w = 133.33w result. Have you seen my example from Hayt and Kennedy
where 1 + 1 = 4? Where's the missing power there?

> > Looking at
> > > the component powers gives us the correct picture for a Z0-matched
> > > system. All energy is accounted for. There's no need to assert that:
> > >
> > > IF V1+V2=V3 THEN V1^2/Z0 + V2^2/Z0 = V3^2/Z0 i.e. 75w+8.33w=133.33w
> >
> > Are you saying that Steve asserted that
> > squaring both sides of V1+V2=V3 results in V1^2 + V2^2 = V3^2?
>
> Yes, of course. That's exactly what 75 watts + 8.33 watts = 133.33 watts means.

My point was that I couldn't believe that Steve would take (V1+V2)(V1+V2) and
get V1^2 + V2^2, as opposed to V1^2 + V2^2 + 2V1*V2. That was the mistake I was
referring to. Of course, we'll have to wait until Steve returns and responds himself.

> I agree with you, Bill. Your paper and my previous example including my phasor
> diagram are virtually carbon copies of each other. Steve agreed with my phasor
> diagram but he clings to that 75w + 8.33w = 133.33w equation.

Well, that's curious. Here's an example from that paper of mine:
For the wave transmitted across the match point
E5tl = .5/0, I5tl = .006666/0, P5tl = .003333
For the wave re-reflected at the match point
E5rl = .156/0, I5rl = .0020833/0, P5rl = .000325
The total wave components toward the load are
E5rl + E5tl = .656/0, I5rl + I5tl = .00875/0, P5 = .00574

Please note that P5tl + P5rl = .00366 and not equal to P5.
So in your accounting system, .003333w + .000325w = .00574w
Does your carbon copy show that P5tl + P5rl not equal P5? 73,
Bill N3WK

4977. Re: Ground wire to Rohn 25 section?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 14:59:25 UTC
From: dmartin560@aol.com
Message-ID: <20010527105925.14878.00001390@ng-cm1.aol.com>
Source record: 161875

Whats the best way to connect a ground wire to
a Rohn 25? I've seen SAIC use exothermic welds
on the cross braces--but the procedure isn't approved
by Rohn and the darn molds are expensive.

>Use the "two piece" ground clamp (available from home supply stores in the
>electrical dept) to the tower leg. It is two bronze pieces with two machine
>bolts to hold them together. The smaller size will fit from 1/2" to 1-1/4"
>range...fits Rohn 25 legs nicely. The wire hole will accept #2 solid
>wire...just what you want for a tower lightning ground. You can use this
>same
>clamp for the ground rod but I prefer the "one piece" clamp for burial...when
>I
>must use a clamp. It is an oval shaped bronze clamp with a single 3/8" bolt
>to
>tighten it to the rod. Don't over tighten this clamp. I have came back
>after
>installation and found these type clamps cracked opposite the bolt. Use
>electrical copper coat liberally to make a good connection and protect the
>joint. It is kinda expensive and hard to find. I now use Cadweld to the
>rods.
> You don't have to buy the molds for common Cadweld connections anymore.
>They
>have disposable one-shot mini molds. These are available from Tessco.com.
>They are also available at your local elec distributor that sells Erico
>products. But, I find my local supply house never has the size/style I need.
>
>If you need more info or need to purchase these items I can supply
>them...also
>the #2 tinned solid copper wire you will need to connect everything together.
>
>73,
>Dwayne KG4ADM
>Lakeside Communications
>Gainesville, GA

4978. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 14:59:46 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105270659.5ed1c235@posting.google.com>
Source record: 161874

w2du@iag.net (Walter Maxwell) wrote in message
news:<3b102197.27796649@news.onemain.com>...
> Would you not now agree that the reflected energy is added to the that in the
> original electric and magnetic fields, and thus the power resulting from these
> energies is what is added, not the indivual reflected voltages resulting from
> the steady-state condition?

Walt,
I'm afraid we'll have to agree to disagree again. Here's an example from that
paper of mine:
For the wave transmitted across the match point
E5tl = .5/0, I5tl = .006666/0, P5tl = .003333
For the wave re-reflected at the match point
E5rl = .156/0, I5rl = .0020833/0, P5rl = .000325
The total wave components toward the load are
E5rl + E5tl = .656/0, I5rl + I5tl = .00875/0, P5 = .00574

Please note that the sum of the power terms at the match point is
P5tl + P5rl = .00366, which is not equal to P5. So there is no need
to come up with a missing power term to balance things out.

If you agree with the final steady state values, then you have to
agree with the intermediate values that contribute to the steady state. 73,
Bill N3WK

4979. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 15:16:31 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B111A4F.A8A2470E@mwci.net>
Source record: 161876

Richard Harrison wrote:

> Bill, W0IYH wrote:
> "When the reading of the reflected port is zero, a bridge circuit is
> balanced (nulled). Specifically, one voltage sample, and another voltage
> sample that is proportional to current, are in exact opposite phase and
> amplitude."
>
> Very scrambled and confusing to me.

The above info from me is an accurate description of how the *circuitry* of the directional wattmeter works. This *circuitry* implements the forward and reverse power measurements. The instrument works in an identical manner for a lumped LCR circuit (no transmission line, no waves).

The circuitry is only interested in the *impedance* that it sees at the output terminal. It does not care about anything else. The mathematical relationships between forward and reflected waves and impedance values make the directional wattmeter possible.

The instrument only needs a single voltage measurement and a single current measurement to determine both the forward reading and the reflected reading.

Also, the instrument does not measure power, it measures voltage. The voltmeter scale can be calibrated in watts only because the reference Z0 is 50 ohms, or whatever.

Bill W0IYH

4980. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 15:41:52 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105270741.5d47eacf@posting.google.com>
Source record: 161877

w2du@iag.net (Walter Maxwell) wrote in message
news:<3b10534a.40519173@news.onemain.com>...
> On 26 May 2001 17:26:43 -0700, klocko@toad.net (Bill Klocko) wrote:
> That's what it means for E+ and E-. We're talking about Johnson's Eq 6.17, Page
> 150, right? In the paragraph below Eq 6.13 Johnson says it's at the point of
> maximum or minimum voltage, where he impedance is purely resistive. Again, in
> the next paragraph he says, "An equivalent expression for power can be written
> at a point of minimum voltage and maximum current..." All of his expressions on
> this page from Eq 6.12 thru Eq 6.16 involve ONLY resistive voltages and
> currents.

I don't think that's necessarily true. I got the equation Pdel = Pfwd
- Pref using
only eqns 4.3 to 4.6 and P = EI. As I recall (don't have my Johnson
here (no jokes,
all you wiseguys)), these equations are based on Eqn 4.1 which has
e^(ax)
exponentials where x is distance from the sending end. Eqn 4.6 is I- =
-(E-)/Z0 which
is based on the reflected current always having a 180 phase relative
to the reflected
voltage.

So my point still holds. Anyone wishing to measure power (e.g., on the
quarter-wave
transformer line to verify the Pfwd and Pref values discussed here)
and have the Bird
meter display the correct values would have to set up their meter at a
very specific
point on the line. God help anyone trying to do that.

> I'ts impossible because I calculated incorrectly. I inadvertantly squared E1 and
> E2 before dividing by Zo, resulting in incorrect currents. I apologize.

Walt, it's refreshing to see someone admit a mistake here. My hat's
off to
you.

> E x I = 233.33 w
>
> This would seem to prove the addition of voltages yields the correct answer, but
> unfortunately this answer is strictly coincidental, because there are 50 watts
> missing.

But it's not coincidental.

> >Just out of curiosity, I looked up superposition in about a dozen
> >circuits texts at a tech library.
> >Every one, without exception, either specifically listed it being
> >valid for voltages and currents.
>
> Then why is superposition of power valid in Johnson's Eq 6.17?

That's a special case because those 2 cross terms (apple * orange)
just
happen to cancel because the once-reflected current has a minus in
front it.
The 2 cross terms in P = EI don't cancel in general.

> |E1|^2/Zo + |E2|^2/Zo must be valid as the total forward power if Johnson's
> Pdel = |E1|^2/Zo - |E2|^2/Zo. As I said earlier, this total power expression is
> a simple algebraic manipulation of terms that no good mathematician can deny.

Well, a good mathematician would check his manipulation of terms by
deriving the equation from scratch.
Also, the mathematician would ask the engineer if it's physically
correct

> >(but no mention of power) or mentioned that it applies only to linear
> >variables, which *automatically*
> >excludes power. One text even warned specifically against trying to
> >superpose power values. "superposition
> >is applicable only to linear responses and the most common nonlinear
> >response - power - is not subject
> >to superposition" (from Engineering Circuit Analysis by Hayt and
> >Kennedy). In order to use superposition,
> >you must resolve any power terms into voltage and current, do the
> >superpositions with those, and then
> >compute power from the resulting values (see my example above).

I think my comments about the superposition of power are falling on
deaf
ears, so we'll have to agree to disagree again, Walt. 73,
Bill N3WK

4981. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 15:58:48 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9er87ongt0@208.207.71.176>
Source record: 161878

CAM wrote:
>
> Dick Carroll wrote:
> >
> > Reg Edwards wrote:
> > > Cecil, could you please say by what means the tuner adjuster is
> > > made aware of when this seemingly desirable state of affairs has
> > > been achieved ?
> >
> > Reg, I do it by observing the reflected power meter as I make the tuner
> > adjustment. It dips to zero as the Zo matchpoint is reached.
>
> Dick, you stepped into Reg's trap. See my reply to see how I avoided
> it. :-)

I still don't see the trap. It is immaterial what is downstream from
the matchpoint AFA the transmitter and indicator are conderned. The only
concern there is the amount of loss encountered.

4982. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 16:19:57 UTC
From: kb7qhc@home.com
Message-ID: <3b1128be.692240939@news.seanet.com>
Source record: 161880

On Sun, 27 May 2001 00:45:59 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>Heh, heh... I'll "show" if you wanna meet me somewhere.
>
>I travel a lot on business, I could perhaps be in your part of the country
>soon with a DC reflectometer in my briefcase!
>
>Or, if you want to pay the postage, I'll send it and you can make the
>measurements yourself...
>
>What do you propose?
>
>-Peter K1PO

Hi Peter,

I propose you show your work. L'Hospital's Rule What?

73's
Richard Clark, KB7QHC

4983. Re: Slinky Antenna Schematic Wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 16:20:07 UTC
From: Nouchmar Emprichieste <gobax@rospol.net>
Message-ID: <XO9Q6.272$oF3.36446@news7.onvoy.net>
Source record: 161879

Not sure what you want as a schematic? A slinky is about 67 feet of coiled metal band. Just treat it as 67 feet of wire and build an antenna, dipole, sloper, vertical, etc. Stretch each one out to about 14 ft but at least 7 feet and go.

hj3ort@yahoo.com wrote in message
<1B7Q6.2900$Uj6.12516@open-news.pacbell.net>...
>Hi all
>
>I am very interested in the "dipole" Slinky, but don`t have the schematic.
>I saw this antenna in "CQ Amateur Radio" magazzine in the 80's, but lose
it.
>
>Can somebody tell if exist an url with the schematic. Tried
>http://www.geocities.com/swl_yb400pe/slinkypage.html but haven't it.
>
>73's de HJ3ORT Jose Luis
>
>Jose Luis

4984. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 16:36:44 UTC
From: kb7qhc@home.com
Message-ID: <3b122bb6.693000732@news.seanet.com>
Source record: 161881

On Sat, 26 May 2001 18:35:32 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>
>Repeat, the Bird is not an SWR bridge.
>
>Best regards, Richard Harrison, KB5WZI

Hi All,

These "is not" "is too" arguments are ironic because what you gentlemen are fighting about is the same thing.

BOTH the Bird Meter AND the Bruene Meter can be described as either a bridge OR a directional coupler based instrument equally without being wrong. The Bird requires the intervention of the operator to complete the metaphor of bridge, but as a system description the two instruments are identical.

It is only to satisfy this silliness of not their "not measuring power" that the discussion get really pointless.

73's
Richard Clark, KB7QHC

4985. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 16:51:02 UTC
From: w2du@iag.net
Message-ID: <3b112f0b.1625357@news.onemain.com>
Source record: 161882

On 27 May 2001 07:59:46 -0700, klocko@toad.net (Bill Klocko) wrote:

>If you agree with the final steady state values, then you have to
>agree with the intermediate values that contribute to the steady state. 73,
>Bill N3WK

Well Bill, I guess we'll both have to agree to disagree, so be it.

However, I still believe the answer you get for the two reflected voltages is coincidental. I
haven't done the calculation, but I'll bet if you replace the 150-ohm 1/2 wl line with a 100-ohm
line you'll discover that with the 0.5 rho of the 150/50 line mismatch is coincidental, because I
don't think the answers you'll get with the 100-ohm line will come out as they do with 150-ohm line.

And since we agree to disagree, I'm signing off on this subject. Thanks for the ride!

Walt, W2DU

4986. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 16:57:11 UTC
From: kb7qhc@home.com
Message-ID: <3b132d82.693460803@news.seanet.com>
Source record: 161883

On Sat, 26 May 2001 23:19:18 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> [the analysis being offered]" depends upon the principle
>> of superposition. It depends, in other words, upon the
>> fact that in a linear system such as (2-1) the current flowing
>> in response to two driving forces acting together is the
>> sum of the currents which would flow in response to the
>> two separately."
>
>Does it say that the two driving forces cause both the voltages and
>the currents to add in phase?

Hi Cecil,

The statement above is complete. In phase, out of phase, such
elaboration belabors the obvious product of addition - at any phase.

If you pick up a text on circuit analysis, superposition examples
abound and the techniques of mesh and nodal analysis offer you the
correct techniques for examining these transmission line problems with
multiple sources. These two analytical techniques employ the bedrock
of superposition and Kirchoff's Laws.

73's
Richard Clark, KB7QHC

4987. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 17:05:13 UTC
From: tdonaly@cs.com
Message-ID: <20010527130513.03849.00001636@ng-cb1.news.cs.com>
Source record: 161884

Per Dave,
>
>Hi, Peter:
>
>How many successive derivatives did you take to get to the not-indeterminate
>expression?
>
>Is the frequency known as 'approaches d-c' different from the frequency
>known as 'equals d-c'?
>
>My memory of L'Hospital's Rule is that it's useful in evaluating something
>which may approach a limit *before* becoming indeterminate, not for
>evaluating 'indeterminate limits'.
>
>We are still left unable to solve for any actual value of the function when
>it takes one of the indeterminate forms 0/0 or lazy-eight/lazy-eight.
>
>Mathematicians reserve to themselves the occasionally-useful privilege of
>assigning the value of the (L'Hospital's) limit, if such limit can be found,
>to the function, at the point of indeterminate-ness.
>
>Is this what you did?
>
>73, Dave, K3BHJ

Hi Dave,
you might ask Peter to work his derivitive step by step.
Peter's math sometimes
resembles that of Paul J. Nahin as exempified in Paul's book The Science of
Radio. The most
charitable way to describe such math is to say that it is very interesting.

Tom Donaly KA6RUH

4988. Re: What means dBc ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 17:19:14 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3B113712.6641C80C@dialpoint.net>
Source record: 161887

It is in refference to the circular polarity. Many satellites use
circular polorized antennas, either right or left hand and there is
about 20 db differance in the two just as horizontal and vertical have
that much differance. There is a 3 db loss if using either a horizontal
or vertical antenna to receive a circular signal. Sometimes it is to
indicate how well the antenna is truely circular and not some odd shape
such as where the vertical component is slightly larger than the
horizontal.

DL7JSK wrote:
>
> Hi NG
> I've read this in a description of a satellite turnstile antenna.I know dBd
> and dBi,but not dBc.Can anybody tell me what it means ?
>
> 73
> Tom

4989. What means dBc ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 17:52:10 UTC
From: DL7JSK <tansorg@cs.tu-berlin.de>
Message-ID: <9eresaqua02$1@news.t-online.com>
Source record: 161885

Hi NG
I've read this in a description of a satellite turnstile antenna.I know dBd
and dBi,but not dBc.Can anybody tell me what it means ?

73
Tom

4990. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 17:57:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9erf61$6r6$1@slb4.atl.mindspring.net>
Source record: 161886

Thread:

The principle of superpostion for voltages and currents has been mathematically proven to be a valid operation, based on results from the theory of linear systems of differential equations.

Linear systems are the type/class of system that is completely described by systems of linear differential equations, these are the types of systems of equations that govern many electrical circuits and networks.

But superposition only works for linear systems, and not for non-linear systems. And it only works for the independent variables, in this case voltages and currents and NOT powers. In linear systems, the independent variables only appear in linear sums, never in products or other mathematical operations. Power is clearly ruled out since it is the result of multiplying V by I not summing them!

Superposition of powers is simply an invalid operation! Both mathematically and experimentally. Theoretically and practically.

Apply superposition of powers at your own risk! There is no mathematical or circuit theoretic support for such dubvious methods.

Superpose currents and voltages to your heart's content and rest assured that you will not arrive at erroneous results, superpose powers and... well "caveat emptor".

Best Regards,

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b132d82.693460803@news.seanet.com...
> On Sat, 26 May 2001 23:19:18 -0500, CAM <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >Richard Clark wrote:
> >> [the analysis being offered]" depends upon the principle
> >> of superposition. It depends, in other words, upon the
> >> fact that in a linear system such as (2-1) the current flowing
> >> in response to two driving forces acting together is the
> >> sum of the currents which would flow in response to the
> >> two separately."
> >
> >Does it say that the two driving forces cause both the voltages and
> >the currents to add in phase?
>

> Hi Cecil,
>
> The statement above is complete. In phase, out of phase, such
> elaboration belabors the obvious product of addition - at any phase.
>
> If you pick up a text on circuit analysis, superposition examples
> abound and the techniques of mesh and nodal analysis offer you the
> correct techniques for examining these transmission line problems with
> multiple sources. These two analytical techniques employ the bedrock
> of superposition and Kirchoff's Laws.
>
> 73's
> Richard Clark, KB7QHC

4991. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 18:17:10 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1144A6.E572C561@IEEE.org>
Source record: 161888

Dick Carroll wrote:
>
> CAM wrote:
> >
> > Dick Carroll wrote:
> > >
> > > Reg Edwards wrote:
> > > > Cecil, could you please say by what means the tuner adjuster is
> > > > made aware of when this seemingly desirable state of affairs has
> > > > been achieved ?
> > >
> > > Reg, I do it by observing the reflected power meter as I make the tuner
> > > adjustment. It dips to zero as the Zo matchpoint is reached.
> >
> > Dick, you stepped into Reg's trap. See my reply to see how I avoided
> > it. :-)
>
> I still don't see the trap. It is immaterial what is downstream from
> the matchpoint AFA the transmitter and indicator are conderned. The only
> concern there is the amount of loss encountered.

The trap is there is not enough coax between the transmitter and tuner to be
able to develop standing waves so how can we possibly measure the SWR. :-)
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

4992. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 18:30:24 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9erh31ajl1@slb2.atl.mindspring.net>
Source record: 161889

Tom:

Heh, heh... I see you like my maths...

Indeed I have a great collection of dubvious mathematical proofs, some of which I have shared here with the group.

And so it pays to be wary when I post mathematical stuff... you never know when I might be:

a.) Absolutely correct.
b.) Pulling your leg.
c.) Making a mistake.

But... I always try to make my contributions thought provoking, and sometimes I like to poke fun at the pretentious, in an effort to get them to simplify, but I hope I never deliberately try to trick anyone.

Now in this case, the case of the Zo of a lossless RLGC transmission line at DC... I am being perfectly straight!

Heh, heh... well maybe I'm messing with ya'll a little by introducing L'Hospital's Rule when most engineers would claim that it's unecessary.

For in fact you don't even need L'Hospital's Rule, it's valid to do so, but not necessary.

And if you don't believe my maths, why then just measure it in your lab, you need to verify mathematical results experimentally!

Here's the maths for Zo for a lossless line, without L'Hospital.

For the general RLCG transmission line where R, L, C and G are respectively the series resistance, series inductance, shunt capacitance and shunt conductance per unit length, then it is well known that:

Zo = sqrt((R + j*2*pi*f*L)/(G + j*2*pi*f*C)) If you don't know this result, then consult most textbooks that teach a first course on transmission lines.

The lossless line is one where R and G are both zero, so for the lossless line R = G = 0 and setting those to zero in the previous definition we get.

Zo = sqrt(j*2*pi*f*L/j*2*pi*f*C)

Now an engineer, not a mathematician, would divide out all common factors top and bottom inside the sqrt sign. i.e. j divides out with j, 2 divides out with 2, same with pi, and f. You are then left with...

Zo = sqrt(L/C) which is valid at all frequencies including f = 0 , or DC.

Which was my assertion.

Some don't like dividing out factors in the previous definition of Zo when you know before hand that you are going to let f approach zero, for if you let f approach zero you will get...

Zo = sqrt(0/0) which is an indeterminate form.

According to our mathematician friends these kinds of indeterminate forms would have to be evaluated with L'Hospital's Rule. L'Hospitals Rule is applied to the indeterminate form until either a valid limit is reached or the process terminates with a still indeterminate form.

L'Hospital's Rule, states that you must differentiate both the upper and lower expressions that are evaluating to zero with respect to the limit approaching variable, in this case f, i.e. the functions in the numerator and denominator of the (0/0) fraction must be differentiated, and then let f approach zero again in the resulting differentiated functions to see what happens. If you do that you will have to differentiate j*2*pi*f*L with respect to f and do the same for j*2*pi*f*C. These derivatives are very simple, eg...

d(j*2*pi*f*L)/df = j*2*pi*L

and

d(j*2*pi*f*C)/df = j*2*pi*C

then you have

Zo = sqrt(j*2*pi*L/j*2*pi*C) = sqrt(L/C), which was my assertion anyway.

And so, you can take my engineer's shortcut, or you can go the mathematician's long way through Mesieur L'Hospital, you get the same result.

Now if you want to test this in the lab, simply take a DC coupled reflectometer that can measure the reflected voltage all the way down to DC, note that the Bird Model 43 cannot do this since it is AC coupled, and then hook up a few feet of very low loss RG-8 to a 50 Ohm resistive dummy load and the DC coupled reflectometer, and then measure the reflected voltage, which will be zero, starting at say a few MHz and go all the way down to DC. You will find that the reflected voltage will not change...

Experimental proof that the Zo of a lossless line is...

Zo = sqrt(L/C) even at DC!

Need more?

Best,

-Peter K1PO

"Tdonaly" <tdonaly@cs.com> wrote in message
news:20010527130513.03849.00001636@ng-cb1.news.cs.com...
> Per Dave,

> >
> >Hi, Peter:
> >
> >How many successive derivatives did you take to get to the
not-indeterminate
> >expression?
> >
> >Is the frequency known as 'approaches d-c' different from the frequency
> >known as 'equals d-c'?
> >
> >My memory of L'Hospital's Rule is that it's useful in evaluating
something
> >which may approach a limit *before* becoming indeterminate, not for
> >evaluating 'indeterminate limits'.
> >
> >We are still left unable to solve for any actual value of the function
when
> >it takes one of the indeterminate forms 0/0 or lazy-eight/lazy-eight.
> >
> >Mathematicians reserve to themselves the occasionally-useful privilege of
> >assigning the value of the (L'Hospital's) limit, if such limit can be
found,
> >to the function, at the point of indeterminate-ness.
> >
> >Is this what you did?
> >
> >73, Dave, K3BHJ
>
> Hi Dave,
> you might ask Peter to work his derivitive step by
step.
> Peter's math sometimes
> resembles that of Paul J. Nahin as exempified in Paul's book The Science
of
> Radio. The most
> charitable way to describe such math is to say that it is very
interesting.
>
> Tom Donaly KA6RUH

4993. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 18:32:28 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9erh6sgrv1@slb7.atl.mindspring.net>
Source record: 161890

Richard:

Oh, I thought you wanted to see the actual lab experiment carried out.

Showing my work is easier, I did that on another nearby post on this thread.

Why are you asking?

Skeptical? Or just curious, or don't you trust me...

I never post suspicious mathematical proofs do I?

Heh, heh...

Just teasing.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b1128be.692240939@news.seanet.com...
> On Sun, 27 May 2001 00:45:59 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >Heh, heh... I'll "show" if you wanna meet me somewhere.
> >
> >I travel a lot on business, I could perhaps be in your part of the
country
> >soon with a DC reflectometer in my briefcase!
> >
> >Or, if you want to pay the postage, I'll send it and you can make the
> >measurements yourself...
> >
> >What do you propose?
> >
> >-Peter K1PO
>
> Hi Peter,
>
> I propose you show your work. L'Hospital's Rule What?
>
> 73's
> Richard Clark, KB7QHC

4994. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 18:40:27 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9erhmg$nq0$1@slb5.atl.mindspring.net>
Source record: 161891

Dick:

[snip]
>
> At a point where voltage and current are in phase at zero, what else
> can it be BUT linear??
>
> Dick
[snip]

Not sure I understand your question.

By linear system I mean a system where the independent variables, i.e voltages and currents V and I only appear in sums.

To get to power you have to multiply V by I since P = IV cos(theta). This multiplication of two independent variables by each other is not a linear operation, in fact the explicit mathematical term is that power is the form of non-linear operation knows a multi-linear relationship in V and I.

The principle of superposition is proved to be a valid operation only for linear systems, it is not a valid operation for non-linear systems in general or multi-linear systems in particular.

And so it does not really matter if theta = 0 and the cosine is not involved, for you are still multiplying I by V and that indeed will give you power, but once you have done that you cannot apply superposition to the resulting powers since they are now in the non-linear realm. Superposition in linear electrical circuits and networks only applies to V and I.

That's why I always say, "all you really need are V and I".

Best,

-Peter K1PO

4995. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 18:43:22 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B114ACA.1CF8F18D@IEEE.org>
Source record: 161893

Bill Klocko wrote:
> Well, I haven't gone through Steve's voltage analysis, but I don't have a problem
> with the 75w + 8.33w = 133.33w result.

You don't have a problem with:

IF V1+V2=Vtot THEN V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0 ??????

That premise can easily be disproved.

> Have you seen my example from Hayt and Kennedy
> where 1 + 1 = 4? Where's the missing power there?

Bill, please repeat after me: "There is never, ever any missing energy."
If energy appears to be missing, it's because not all of it has been
identified and accounted for. If you think one joule/sec plus one
joule/sec equals four joules/sec, it's because you haven't located
the other two joules/sec yet. If you can add one joule and one joule
and get four joules, the state of California will give you a fortune
for that secret.

> Well, that's curious. Here's an example from that paper of mine:
> For the wave transmitted across the match point
> E5tl = .5/0, I5tl = .006666/0, P5tl = .003333
> For the wave re-reflected at the match point
> E5rl = .156/0, I5rl = .0020833/0, P5rl = .000325
> The total wave components toward the load are
> E5rl + E5tl = .656/0, I5rl + I5tl = .00875/0, P5 = .00574

Nope, that's not the total wave components, Bill. You forgot to include
the wave cancellation energy (power) which gets dumped into the electro-
magnetic fields. The correct equation is:

0.003333w + 0.000325w + 0.002082w = 0.00574w

There's 0.002082 joules/sec of destructive/constructive interference that
you didn't account for. That's why your energy equation doesn't balance.

> Please note that P5tl + P5rl = .00366 and not equal to P5.

But P5tl and P5rl are not all the powers in the system. Did you say
that P5tl and P5rl are all the powers in the system?

> So in your accounting system, .003333w + .000325w = .00574w

Nope, it doesn't, Bill. My accounting system is the equation above. Mine
balances and doesn't violate the conservation of energy principle.

> Does your carbon copy show that P5tl + P5rl not equal P5?

Any high school math student can tell you that 0.003333 + 0.00325
does NOT equal 0.00574. Did you say it does in your paper?
--
cheers, Cecil

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4996. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 18:44:01 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9erht6$d49$1@slb5.atl.mindspring.net>
Source record: 161892

Bill:

Nope no deaf ears here. I agree and support your assertions.

Superposition simply does not apply to powers.

If doing that sometimes yeilds a correct answer, then that is nothing more nor less than a simple co-incidence,since applying the principle of superposition to electrical power is a completely invalid operation.

In linear electrical circuits and networks the principle of superposition only applies to voltages and currents.

-Peter K1PO

"Bill Klocko" <klocko@toad.net> wrote in message news:224d9cd4.0105270741.5d47eacf@posting.google.com...
> w2du@iag.net (Walter Maxwell) wrote in message news:<3b10534a.40519173@news.onemain.com>...
> > On 26 May 2001 17:26:43 -0700, klocko@toad.net (Bill Klocko) wrote:
> > That's what it means for E+ and E-. We're talking about Johnson's Eq 6.17, Page
> > 150, right? In the paragraph below Eq 6.13 Johnson says it's at the point of
> > maximum or minimum voltage, where he impedance is purely resistive. Again, in
> > the next paragraph he says, "An equivalent expression for power can be written
> > at a point of minimum voltage and maximum current..." All of his expressions on
> > this page from Eq 6.12 thru Eq 6.16 involve ONLY resistive voltages and
> > currents.
>
> I don't think that's necessarily true. I got the equation Pdel = Pfwd
> - Pref using
> only eqns 4.3 to 4.6 and P = EI. As I recall (don't have my Johnson
> here (no jokes,
> all you wiseguys)), these equations are based on Eqn 4.1 which has
> e^(ax)
> exponentials where x is distance from the sending end. Eqn 4.6 is I- =
> -(E-)/Z0 which
> is based on the reflected current always having a 180 phase relative
> to the reflected
> voltage.
>
> So my point still holds. Anyone wishing to measure power (e.g., on the

> quarter-wave
> transformer line to verify the Pfwd and Pref values discussed here)
> and have the Bird
> meter display the correct values would have to set up their meter at a
> very specific
> point on the line. God help anyone trying to do that.
>
> > I'ts impossible because I calculated incorrectly. I inadvertantly
squared E1 and
> > E2 before dividing by Zo, resulting in incorrect currents. I apologize.
>
> Walt, it's refreshing to see someone admit a mistake here. My hat's
> off to
> you.
>
> > E x I = 233.33 w
> >
> > This would seem to prove the addition of voltages yields the correct
answer, but
> > unfortunately this answer is strictly coincidental, because there are 50
watts
> > missing.
>
> But it's not coincidental.
>
> > >Just out of curiosity, I looked up superposition in about a dozen
> > >circuits texts at a tech library.
> > >Every one, without exception, either specifically listed it being
> > >valid for voltages and currents.
> >
> > Then why is superposition of power valid in Johnson's Eq 6.17?
>
> That's a special case because those 2 cross terms (apple * orange)
> just
> happen to cancel because the once-reflected current has a minus in
> front it.
> The 2 cross terms in P = EI don't cancel in general.
>
> > |E1|^2/Zo + |E2|^2/Zo must be valid as the total forward power if
Johnson's
> > Pdel = |E1|^2/Zo - |E2|^2/Zo. As I said earlier, this total power
expression is
> > a simple algebraic manipulation of terms that no good mathematician can
deny.
>
> Well, a good mathematician would check his manipulation of terms by
> deriving the equation from scratch.
> Also, the mathematician would ask the engineer if it's physically
> correct
>

> > >(but no mention of power) or mentioned that it applies only to linear
> > >variables, which *automatically*
> > >excludes power. One text even warned specifically against trying to
> > >superpose power values. "superposition
> > >is applicable only to linear responses and the most common nonlinear
> > >response - power - is not subject
> > >to superposition" (from Engineering Circuit Analysis by Hayt and
> > >Kennedy). In order to use superposition,
> > >you must resolve any power terms into voltage and current, do the
> > >superpositions with those, and then
> > >compute power from the resulting values (see my example above).
>
> I think my comments about the superposition of power are falling on
> deaf
> ears, so we'll have to agree to disagree again, Walt. 73,
> Bill N3WK

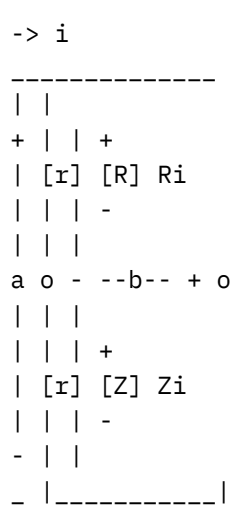
4997. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 18:47:01 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eri26$6h1$1@slb7.atl.mindspring.net>
Source record: 161894

Cecil:

How's this?

Wheatstone reflectometer or VSWR bridge



Two arm four element "Wheatstone" bridge.

First arm - two series connected equal valued resistors [r].
Second arm - reference impedance [R] in series with unknown
impedance [Z].
The incident voltage "a" is applied across both arms.
Load current i flows through both [R] and [Z] in series.
Ohm's law:
Voltage across [R] is Ri.
Voltage across [Z] is Zi.
Note that the "incident" voltage "a" is given by the sum:
a = Zi + Ri = (Z + R)i
Later use i = a/(Z + R) from this equation.
Place the indicating device (use a hi Z voltmeter) of the Wheatstone
"bridge"
across the "span" between the two arms of the circuit. (Hence the
name "bridge" for this circuit, because the meter bridges the arms.)
Now calculate the reflected voltage "b" indicated by
the meter placed on the bridge. This is obtained by subtraction.
b = Zi - a/2
Substitute for a.
b = Zi - (Z + R)i/2
Simplify.
b = (Z - R)i/2
Substitute for i.

And ta dahhhh here it is....

b = ((Z-R)/(Z+R))a/2
or
b = (rho*a)/2

Within a scale factor of 1/2, the bridge voltmeter output equals the
incicdent voltage "a" times the reflection coefficient (Z-R)/(Z+R).

As they taught me in high school geometry...
QED!

Clearly Z may be anything you like, from a simple resistor to a
complex impedance to a transmission line or antenna.

No waves, no partial differential equations, no phasors, no rotating
vectors, no forward and reverse power cancellations at virtual
short circuits, no magic, no mumbo jumbo.... no large print books,
no coupled transmission line elements spanning a standing wave,
no slotted lines, etc...

And no power calculation or presentation. I and V are never multiplied
in this circuit, just added and subtracted! This is not a power meter!

This technique for directional wave separation was developed and patented
by George Wheatstone around about 1846 in England and was used
to provide duplex operation on early telegraph cirucuits. In other
words, by using this Wheatstone bridge directional coupler telegraph
operators could send in both directions at once!

And here you thought that Bird invented it! Heh, heh.

Tom starting with this configuration, which is DC coupled of course
if you make an AC coupled bridge using say a capacitive voltage divider
instead of the two r's in my simplified circuit, and a center tapped
transformer
on the other arm, you will see that the Breune design reflectometer is
precisely
the Wheatstone bridge.

Also if you are interested in more detail on how to design directional
couplers...

See Reg Edwards page for a computer program to help you
to design these SWR bridge circuits...

I've got circuit diagrams and lab models of dozens of different designs of
these
devices some using Op-Amps, some with A/D and D/A converters so that
some of the work can be done digitally. Now that's where you can really
use the V and I samples and multipy them together to get "real" power.

Best,

-Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B1100CF.CC6C4671@IEEE.org...
> "Peter O. Brackett" wrote:
> > Wheatstone reflectometer or VSWR bridge
>
> Peter, since you drew your ASCII diagram in a proportional font
> of some sort, for most of us, it is distorted beyond recognition.
> How about doing your ASCII diagrams in fixed width font?
> --
> cheers, Cecil
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4998. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 18:50:03 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B114C5B.98F41DAB@IEEE.org>
Source record: 161895

Bill Klocko wrote:
> Please note that the sum of the power terms at the match point is
> P5tl + P5rl = .00366, which is not equal to P5. So there is no need
> to come up with a missing power term to balance things out.

Bill, when an energy equation doesn't balance, there is something wrong with the equation. Physics 101 - energy cannot be created or destroyed by ordinary means.

P5tl and P5rl are simply not all of the components of P5. You left out the constructive interference energy. Again, if you really are capable of violating the principle of the conservation of energy, California will make you rich overnight.
--
cheers, Cecil

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4999. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 18:50:12 UTC
From: kb7qhc@home.com
Message-ID: <3b124c16.701288529@news.seanet.com>
Source record: 161896

On Sun, 27 May 2001 14:30:24 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>
>And so it pays to be wary when I post mathematical stuff... you never know
>when I might be:
>
>a.) Absolutely correct.
>b.) Pulling your leg.
>c.) Making a mistake.
>

Hi Peter,

I would add and choose:
4.) All of the above.

73's
Richard Clark, KB7QHC

5000. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 18:53:08 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B114D14.FF59828D@IEEE.org>
Source record: 161897

Richard Clark wrote:
> If you pick up a text on circuit analysis, superposition examples
> abound and the techniques of mesh and nodal analysis offer you the
> correct techniques for examining these transmission line problems with
> multiple sources. These two analytical techniques employ the bedrock
> of superposition and Kirchoff's Laws.

Do any of them say it is possible to combine 75 joules with 8.33 joules
to obtain a total of 133.33 joules? If so, why don't the California
power companies do that?
--
cheers, Cecil

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5001. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 18:59:46 UTC
From: kb7qhc@home.com
Message-ID: <3b134cb1.701443071@news.seanet.com>
Source record: 161898

On Sun, 27 May 2001 16:51:02 GMT, w2du@iag.net (Walter Maxwell) wrote:

>On 27 May 2001 07:59:46 -0700, klocko@toad.net (Bill Klocko) wrote:
>
>
>>If you agree with the final steady state values, then you have to
>>agree with the intermediate values that contribute to the steady state. 73,
>>Bill N3WK
>
>
>Well Bill, I guess we'll both have to agree to disagree, so be it.
>
>However, I still believe the answer you get for the two reflected voltages is
coincidental. I
>haven't done the calculation, but I'll bet if you replace the 150-ohm 1/2 wl line with a
100-ohm
>line you'll discover that with the 0.5 rho of the 150/50 line mismatch is coincidental,
because I
>don't think the answers you'll get with the 100-ohm line will come out as they do with
150-ohm line.
>
>And since we agree to disagree, I'm signing off on this subject. Thanks for the ride!
>
>Walt, W2DU

Hi Walt,

By these statements I take it that you re-cant your position on Bill's
presentation being correct.

Can you offer us some specific - within the context of his paper -
that reveals an error? A simple page reference will suffice with a
presentation of the math or formula that evidences this failure. I
would be curious to see at what point where you and Kraus depart.

73's
Richard Clark, KB7QHC

5002. Re: Slinky Antenna Schematic Wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 19:08:14 UTC
From: kb7qhc@home.com
Message-ID: <3b144fc5.702231505@news.seanet.com>
Source record: 161899

On Sun, 27 May 2001 16:20:07 GMT, "Nouchmar Emprichieste"
<gobax@rospol.net> wrote:

>Not sure what you want as a schematic? A slinky is about 67 feet of coiled
>metal band. Just treat it as 67 feet of wire and build an antenna, dipole,
>sloper, vertical, etc. Stretch each one out to about 14 ft but at least 7
>feet and go.
>
>
>hj3ort@yahoo.com wrote in message
><1B7Q6.2900$Uj6.12516@open-news.pacbell.net>...
>>Hi all
>>
>>I am very interested in the "dipole" Slinky, but don`t have the schematic.
>>I saw this antenna in "CQ Amateur Radio" magazzine in the 80's, but lose
>it.
>>
>>Can somebody tell if exist an url with the schematic. Tried
>>http://www.geocities.com/swl_yb400pe/slinkypage.html but haven't it.
>>
>>73's de HJ3ORT Jose Luis
>>
>>Jose Luis
>

Hi All,

Two slinkys in dipole fashion stretched out (about 12 - 20 feet) until
SWR falls to an acceptable level will probably work around 40M. You
will need to double up (to 4) on slinkys for 80M if memory serves me.

73's
Richard Clark, KB7QHC

5003. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 19:12:06 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B115186.6A91726A@IEEE.org>
Source record: 161900

"Peter O. Brackett" wrote:
> The principle of superpostion for voltages and currents has been
> mathematically proven to be a valid operation, based on results from the
> theory of linear systems of differential equations.

Likewise, the principle of conservation of energy has been proven to
be valid.

An antenna system involves both principles. The voltages and currents
must obey the principle of superposition and the energy must obey the
conservation of energy principle. Just because someone is partial
to superposition doesn't mean that they can willy-nilly ignore energy
conservation. The unrecognized joules/sec necessary for balancing the
energy equation exist. We just have to find them. In the previous
examples, those absolutely necessary joules/sec exist in the
destructive/constructive interference pattern. Two questions need to
be asked and answered. (1) Does destructive/constructive interference
exist in the system? (2) If so, how much energy is involved? Invariably,
if the interference energy is identified and quantified, the energy
equation will balance perfectly.
--
cheers, Cecil

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5004. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 19:43:20 UTC
From: kb7qhc@home.com
Message-ID: <3b155333.703109387@news.seanet.com>
Source record: 161901

On Sun, 27 May 2001 16:57:11 GMT, kb7qhc@home.com (Richard Clark)
wrote:

>On Sat, 26 May 2001 23:19:18 -0500, CAM <Cecil.A.Moore@IEEE.org>
>wrote:
>
>>Richard Clark wrote:
>>> [the analysis being offered]" depends upon the principle
>>> of superposition. It depends, in other words, upon the
>>> fact that in a linear system such as (2-1) the current flowing
>>> in response to two driving forces acting together is the
>>> sum of the currents which would flow in response to the
>>> two separately."
>>
>>Does it say that the two driving forces cause both the voltages and
>>the currents to add in phase?
>
>Hi Cecil,
>
>The statement above is complete. In phase, out of phase, such
>elaboration belabors the obvious product of addition - at any phase.
>
>If you pick up a text on circuit analysis, superposition examples
>abound and the techniques of mesh and nodal analysis offer you the
>correct techniques for examining these transmission line problems with
>multiple sources. These two analytical techniques employ the bedrock
>of superposition and Kirchoff's Laws.
>
>73's
>Richard Clark, KB7QHC

Hi Cecil,

Let me elaborate further. Superposition is not the simple addition of
everything you find. Rather it is part of the techniques I name above
and the techniques are the arbiters of what is added to what.
Superposition is more the justification than the means. If you do
this correctly you should end up with several equations (as part of
the process of altering the circuit per the techniques) that build a
matrix that eventually resolves to the solution.

I should point out that as many, including myself, have warned here,
Source Z is very important and if neglected or applied arbitrarily
will yield error. And yes, this means there is no such thing as a
lossless source - so fuggidaboutit.

The trick to superposition (application) is that the "other" sources must be replaced with equivalent loads, or by opens and shorts (depending on the method of analysis you choose to pursue). And it is the combination of these results that are added.

So to read Bode's statement a little closer:
>>> is the sum of the currents which would flow in response to the
>>> two separately."
requires at least two substitutions where each source is replaced with an equivalent load to observe the effect on the active source. Then (the second substitution) replace the active source with its equivalent load, and return the previously load-replaced source to its sourcing capacity (and so on with as many sources as there may be).

The critical element here is that the other source(s) acts as a load to the first. With n sources, there are n simultaneous equations that add.

73's
Richard Clark, KB7QHC

5005. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 19:56:40 UTC
From: kb7qhc@home.com
Message-ID: <3b16594b.704669501@news.seanet.com>
Source record: 161902

On Sun, 27 May 2001 13:53:08 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> If you pick up a text on circuit analysis, superposition examples
>> abound and the techniques of mesh and nodal analysis offer you the
>> correct techniques for examining these transmission line problems with
>> multiple sources. These two analytical techniques employ the bedrock
>> of superposition and Kirchoff's Laws.
>
>Do any of them say it is possible to combine 75 joules with 8.33 joules
>to obtain a total of 133.33 joules? If so, why don't the California
>power companies do that?

Hi Cecil,

This is an exercise that YOU need to perform per one of the two
techniques already identified. However, I would point out that
nowhere in any circuit analysis text that I have ever read do they
ever establish power as the basis of an exercise (unless that exercise
is an example of an exception rather than the rule - in other words, a
rare topic).

This is one of the reasons why I faulted you for establishing power
limited or constrained thought experiments. Power Sources are not the
staple of classical treatments in the texts and introduction of
non-linear constraints poison the well of discussion. By forcing
these artificial considerations, you stand every chance of
mis-applying the workings of superposition.

73's
Richard Clark, KB7QHC

5006. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 19:57:57 UTC
From: kb7qhc@home.com
Message-ID: <3b175c28.705403005@news.seanet.com>
Source record: 161904

On Sun, 27 May 2001 13:50:03 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Bill Klocko wrote:
>> Please note that the sum of the power terms at the match point is
>> P5tl + P5rl = .00366, which is not equal to P5. So there is no need
>> to come up with a missing power term to balance things out.
>
>Bill, when an energy equation doesn't balance, there is something wrong
>with the equation. Physics 101 - energy cannot be created or destroyed
>by ordinary means.
>
>P5tl and P5rl are simply not all of the components of P5. You left out
>the constructive interference energy. Again, if you really are capable
>of violating the principle of the conservation of energy, California
>will make you rich overnight.

Hi Cecil,

By these statements I take it that you re-cant your position on Bill's
presentation being correct.

Can you offer us some specific - within the context of his paper -
that reveals an error? A simple page reference will suffice with a
presentation of the math or formula that evidences this failure. I
would be curious to see at what point where you and Kraus depart.

73's
Richard Clark, KB7QHC

5007. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 20:00:46 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105271200.7b1abbc2@posting.google.com>
Source record: 161903

CAM <Cecil.A.Moore@IEEE.org> wrote in message news:<3B114D14.FF59828D@IEEE.org>...
> Richard Clark wrote:
> > If you pick up a text on circuit analysis, superposition examples
> > abound and the techniques of mesh and nodal analysis offer you the
> > correct techniques for examining these transmission line problems with
> > multiple sources. These two analytical techniques employ the bedrock
> > of superposition and Kirchoff's Laws.
>
> Do any of them say it is possible to combine 75 joules with 8.33 joules
> to obtain a total of 133.33 joules?

Only if you do it by way of combining the voltages and currents, and then
computing power. 73,
Bill N3WK

5008. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 20:03:42 UTC
From: kb7qhc@home.com
Message-ID: <3b185d6a.705724007@news.seanet.com>
Source record: 161905

On Sun, 27 May 2001 14:32:28 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>Oh, I thought you wanted to see the actual lab experiment carried out.
>
>Showing my work is easier, I did that on another nearby post on this thread.
>
>Why are you asking?
>
>Skeptical? Or just curious, or don't you trust me...
>
>I never post suspicious mathematical proofs do I?
>
>Heh, heh...
>
>Just teasing.
>
>-Peter K1PO
>

Hi Peter,

Well, what I saw was not what I would call showing your work, so I
will accept that you are teasing.

73's
Richard Clark, KB7QHC

5009. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 20:50:04 UTC
From: w2du@iag.net
Message-ID: <3b115aef.12861954@news.onemain.com>
Source record: 161906

On Sun, 27 May 2001 18:59:46 GMT, kb7qhc@home.com (Richard Clark) wrote:

>On Sun, 27 May 2001 16:51:02 GMT, w2du@iag.net (Walter Maxwell) wrote:
>
>>On 27 May 2001 07:59:46 -0700, klocko@toad.net (Bill Klocko) wrote:
>>
>>
>>>If you agree with the final steady state values, then you have to
>>>agree with the intermediate values that contribute to the steady state. 73,
>>>Bill N3WK
>>
>>
>>Well Bill, I guess we'll both have to agree to disagree, so be it.
>>
>>However, I still believe the answer you get for the two reflected voltages is
coincidental. I
>>haven't done the calculation, but I'll bet if you replace the 150-ohm 1/2 wl line with a
100-ohm
>>line you'll discover that with the 0.5 rho of the 150/50 line mismatch is coincidental,
because I
>>don't think the answers you'll get with the 100-ohm line will come out as they do with
150-ohm line.
>>
>>And since we agree to disagree, I'm signing off on this subject. Thanks for the ride!
>>
>>Walt, W2DU
>
>Hi Walt,
>
>By these statements I take it that you re-cant your position on Bill's
>presentation being correct.

No Richard, I'm not recanting my position on the correctness of Bill's presentation in his
paper on
Modeling the Quarter-Wave Transformer. I find it perfectly clear and accurate.

>
>Can you offer us some specific - within the context of his paper -
>that reveals an error? A simple page reference will suffice with a
>presentation of the math or formula that evidences this failure. I
>would be curious to see at what point where you and Kraus depart.
>
>73's
>Richard Clark, KB7QHC

I don't recall Kraus being involved in the discussion, besides, I wouldn't even think of departing
from Kraus. He's my idol.

But where I depart from Bill is how can he be so knowledgeable as to write the excellent paper
mentioned above, and still not agree with Johnson's presentation of subtracting and adding powers in
his Eq 6.17. That the voltages in Bill's and Steve's posts add to give the correct power is a quirk,
because it doesn't include the foward power necessary to deliver all the power to the load in view
of the 3:1 mismatch. In one of my previous posts I showed how to obtain all the required power, but
Bill discounted it as being unnecessary. This is why I decided not to continue.

What is being overlooked here is that the reflected power, or energy, if you will, is added to the
source power by increasing the energy in the electromagnetic field developed from the voltage
applied by the source.

Let's go back to the more simple example where a resistive 150-ohm load terminates the 50-ohm Zo
line. Here we deal with only one reflected wave, albeit composed of both voltage and current. The
voltage and current reflection currents are rho and -rho respectively, with magnitude 0.5. Thus the
power reflection coefficient is 0.25 and the power transmission coefficient is 1 - 0.25, or 0.75.

The forward power increase factor for rho = 0.25 is the reciprocal of the power transmission
coefficient, equal to 1.33333. I've presented this many times before, so as you know, the forward
power is 133.33 w. Johnson's expression says that Pdel is total forward power less the reflected
power. 75% of 133.33 w is 100 w absorbed in the load; 25% of 133.33 w is 33.333 w reflected.

Now if 33.333 w is subtracted from 133.33 w, leaving 100 w absorbed, then that 33.333 w must be
added to the 100 w of source power to make up the 133.33 w of forward power. This is correct
mathematically, and it is proven correct by measurements. Saying that the source and reflected
powers don't add to form the forward power is simply absurd.

Because the power increase factor is 1.3333, the voltage and current increase factor is the sqr root
of 1.3333, 1.1547. Multiplying the souce voltage by 1.1547 we get 81.65 v. Multiplying the source
current by 1.1547 we get 1.633 a. Observe that the product of the enlarged voltage and

current is
133.33 w

Now let's look at the voltage-addition method by which he attempts to prove that the powers don't
add.

The source voltage in a 50-ohm line for 100 w is 70.71 v and the current is 1.414 a. The reflected
voltage for 33.333 watts is 40.82 v and the reflected current is 0.8165 a.

Using Steve's method of adding the source and reflected voltages we get 70.71 v + 40.82 v = 111.54
v. Steve squares this value and divides by Zo to get 248.8 watts of forward power. But he knows that
this is incorrect because he knows that 133.33 w is the correct forward power. However, since he
wrongly believes that the powers don't add he reverted to the example with the 150-ohm 1/2 wl line
to show that the forward voltages of 106.066 v and 35.355 v added yield 141.42 v, which is the
voltage that yields 133.33 w on a 150-ohm line. The problem is that this condition is a coincidence
because the power don't add up. For the problem to be solved correctly the powers must add up
correctly to conform with the law of conservation of energy.

I showed in my earlier post that the powers do add up correctly when the power of 75 w results from
the product of 106.066 v x 0.7071 a; 50 w results from 86.6 v x 0.577 a; 8.33 w results from 35.355
v x 0.236 a. These powers to total 133.33 w, while the voltages add to total 228.2 v. 228.2 volts on
a 150-ohm line would result in 347.17 w, clearly incorrect.

I'm exiting this thread Richard, because everyone I know of, except Cecil, doesn't seem to grasp
what's really going one here. I'm facing a stone wall so there's no point in saying anything further
on the subject.

Thanks for hearing me out, Richard

Walt, W2DU

PS---perhaps the term superposition as defined by Bode isn't applicable here, because surely it's
powers that are being added, not currents or voltages.

5010. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 21:02:05 UTC
From: tdonaly@cs.com
Message-ID: <20010527170205.24106.00001265@ng-cq1.news.cs.com>
Source record: 161907

Richard wrote,

>On Sun, 27 May 2001 14:30:24 -0400, "Peter O. Brackett"
><ab4bc@ix.netcom.com> wrote:
>
>>
>>And so it pays to be wary when I post mathematical stuff... you never know
>>when I might be:
>>
>>a.) Absolutely correct.
>>b.) Pulling your leg.
>>c.) Making a mistake.
>>
>
>Hi Peter,
>
>I would add and choose:
>4.) All of the above.
>
>73's
>Richard Clark, KB7QHC

Hi Richard,
please note Peter's creative derivative. Well, if
everyone else is entitled to
do crackpot math on this newsgroup, I believe I should be able to make a
contribution.
I believe Peter is perfectly correct in his assertion that Z0 is equal to the
square root of
L/C at f=0 and here's why:
Z0=0/0
Z0*0=0
then, since 0 times any number is also equal to 0, Z0 may as well be equal to
the square root
of L/C as anything else. QED. No differential calculus needed. This may
seem a bit on the
ridiculous side to you, Richard, but I believe it represents an example of the
high level of mathematical
achievement commonly evidenced on this news group.

73 Tom Donaly KA6RUH

5011. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 21:06:28 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B116C54.5BD79B2B@IEEE.org>
Source record: 161908

"Peter O. Brackett" wrote:
> And if you don't believe my maths, why then just measure it in your lab, you
> need to verify mathematical results experimentally!

I did measure it in my lab, Peter. In a DC steady-state system, all the
voltages and all the currents are the same whether I use 50 ohm coax
or 450 ohm ladder-line. 'Course, I'm still waiting for you to send me
that one wavelength at DC piece of transmission line.
--
cheers, Cecil

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5012. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 21:13:14 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B116DEA.4AC1AD0D@IEEE.org>
Source record: 161909

"Peter O. Brackett" wrote:
>
> Cecil:
>
> How's this?
>
> Wheatstone reflectometer or VSWR bridge

That's still a proportional font which is still all screwed up on my
display. Why not use a fixed font (Courier) for ASCII diagrams?
--
cheers, Cecil

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5013. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 21:17:42 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <85r2htg8vdtdl8rivhmgmk19ifq11hivc6@4ax.com>
Source record: 161910

On Sun, 27 May 2001 20:50:04 GMT, w2du@iag.net (Walter Maxwell) wrote:

>On Sun, 27 May 2001 18:59:46 GMT, kb7qhc@home.com (Richard Clark) wrote:
>
>>On Sun, 27 May 2001 16:51:02 GMT, w2du@iag.net (Walter Maxwell) wrote:
>>
>>>On 27 May 2001 07:59:46 -0700, klocko@toad.net (Bill Klocko) wrote:
>>>
>>>
>>>>If you agree with the final steady state values, then you have to
>>>>agree with the intermediate values that contribute to the steady state. 73,
>>>>Bill N3WK
>>>
>>>
>>>Well Bill, I guess we'll both have to agree to disagree, so be it.
>>>
>>>However, I still believe the answer you get for the two reflected voltages is
coincidental. I
>>>haven't done the calculation, but I'll bet if you replace the 150-ohm 1/2 wl line with a
100-ohm
>>>line you'll discover that with the 0.5 rho of the 150/50 line mismatch is coincidental,
because I
>>>don't think the answers you'll get with the 100-ohm line will come out as they do with
150-ohm line.
>>>
>>>And since we agree to disagree, I'm signing off on this subject. Thanks for the ride!
>>>
>>>Walt, W2DU
>>
>>Hi Walt,
>>
>>By these statements I take it that you re-cant your position on Bill's
>>presentation being correct.
>
>No Richard, I'm not recanting my position on the correctness of Bill's presentation in his
paper on
>Modeling the Quarter-Wave Transformer. I find it perfectly clear and accurate.
>
>>
>>Can you offer us some specific - within the context of his paper -
>>that reveals an error? A simple page reference will suffice with a
>>presentation of the math or formula that evidences this failure. I
>>would be curious to see at what point where you and Kraus depart.
>>

>>73's
>>Richard Clark, KB7QHC
>
>I don't recall Kraus being involved in the discussion, besides, I wouldn't even think of departing
>from Kraus. He's my idol.

Take a look at the references that Bill provides (2) for Kraus.

>
>But where I depart from Bill is how can he be so knowledgeable as to write the excellent paper
>mentioned above, and still not agree with Johnson's presentation of subtracting and adding powers in
>his Eq 6.17.

OK. But this can equally be a problem of your interpretation of Bill,
or of Johnson.

>That the voltages in Bill's and Steve's posts add to give the correct power is a quirk,

Again show or tell. Give us the best evidence in the form of page
citation from Bill's work and the formula that is being abused.

>because it doesn't include the foward power necessary to deliver all the power to the load in view
>of the 3:1 mismatch. In one of my previous posts I showed how to obtain all the required power, but
>Bill discounted it as being unnecessary. This is why I decided not to continue.
>
OK, but that is another matter.

>What is being overlooked here is that the reflected power, or energy, if you will, is added to the
>source power by increasing the energy in the electromagnetic field developed from the voltage
>applied by the source.
>
snip
>
>I'm exiting this thread Richard, because everyone I know of, except Cecil, doesn't seem to grasp
>what's really going one here. I'm facing a stone wall so there's no point in saying anything further
>on the subject.
>
>Thanks for hearing me out, Richard
>
>Walt, W2DU
>
>PS---perhaps the term superposition as defined by Bode isn't applicable here, because surely it's

>powers that are being added, not currents or voltages.
>

Hi Walt,

Your last, the PS, is telling when it comes to complaints of stone walls and dense readers.

You and Cecil need to brush up on Mesh and Nodal analysis. You may just be surprised to find vindication in there - but you guys keep beating a dead horse in preference to exploration.

73's
Richard Clark, KB7QHC

5014. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 21:33:17 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B11729D.4A7EFC9B@IEEE.org>
Source record: 161911

Walter Maxwell wrote:
> But where I depart from Bill is how can he be so knowledgeable as to write the excellent paper
> mentioned above, and still not agree with Johnson's presentation of subtracting and adding powers in
> his Eq 6.17. That the voltages in Bill's and Steve's posts add to give the correct power is a quirk,
> because it doesn't include the foward power necessary to deliver all the power to the load in view
> of the 3:1 mismatch. In one of my previous posts I showed how to obtain all the required power, but
> Bill discounted it as being unnecessary. This is why I decided not to continue.

This is what I call the RF Guru Blind Spot. On the one hand they say:

Ptot = P1 + P2 + 2*sqrt(P1*P2) (Steve's equation) so,

133.33w = 75w + 8.33w + 2*sqrt(75*8.33) = 75w + 8.33w + 50w

which is a perfectly correct equation. I agree with it 100% because it includes
the 50w of destructive/constructive interference power (energy). The 2*sqrt(P1*P2)
is a mathematically necessary and correct fudge factor to make the energy equation
balance.

On the other hand they say: 75w + 8.33w = 133.33w (Steve's other equation)

which means that Ptot = P1 + P2 = Vtot^2/Z0 = V1^2/Z0 + V2^2/Z0

These two equations contradict each other, guys.

Summary Question: Which equation is the correct one?

(A) Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w

(B) Ptot = P1 + P2 = 75w + 8.33w = 133.33w
--
cheers, Cecil

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5015. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 21:45:45 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B117589.49021A15@IEEE.org>
Source record: 161912

Richard Clark wrote:
>
> On Sun, 27 May 2001 13:50:03 -0500, CAM <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >Bill Klocko wrote:
> >> Please note that the sum of the power terms at the match point is
> >> P5tl + P5rl = .00366, which is not equal to P5. So there is no need
> >> to come up with a missing power term to balance things out.
> > >
> > >Bill, when an energy equation doesn't balance, there is something wrong
> > >with the equation. Physics 101 - energy cannot be created or destroyed
> > >by ordinary means.
> > >
> > >P5tl and P5rl are simply not all of the components of P5. You left out
> > >the constructive interference energy. Again, if you really are capable
> > >of violating the principle of the conservation of energy, California
> > >will make you rich overnight.
>
> Hi Cecil,
>
> By these statements I take it that you re-cant your position on Bill's
> presentation being correct.

Why should I do that? What I am disagreeing with is what Bill has said on
this newsgroup, not what he said in his article. He doesn't see anything
wrong with the equation 75w + 8.33w = 133.33w which is Steve's position.
Yet Steve contradicts himself when he says Ptot=P1+P2+2*sqrt(P1*P2)

> Can you offer us some specific - within the context of his paper -
> that reveals an error?

Why do you think there's an error in his paper?
--
cheers, Cecil

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5016. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 21:59:58 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1178DE.D174D0ED@IEEE.org>
Source record: 161913

Richard Clark wrote:
> This is an exercise that YOU need to perform per one of the two
> techniques already identified. However, I would point out that
> nowhere in any circuit analysis text that I have ever read do they
> ever establish power as the basis of an exercise (unless that exercise
> is an example of an exception rather than the rule - in other words, a
> rare topic).

My point exactly, Richard. Yet, Steve and now, Bill, have chosen to
make power the central topic. I don't see anything except power in
Steve's equation:

Ptot = P1 + P2 + 2*sqrt(P1*P2)

or Steve's other equation that contradicts that one:

75w + 8.33w = 133.33w

Steve has sent me an article where he talks about little else besides
power and even has the famous cos(theta) appearing in his power equations.

> This is one of the reasons why I faulted you for establishing power
> limited or constrained thought experiments. Power Sources are not the
> staple of classical treatments in the texts and introduction of
> non-linear constraints poison the well of discussion. By forcing
> these artificial considerations, you stand every chance of
> mis-applying the workings of superposition.

I didn't bring the subject up, Richard. STEVE INTRODUCED THE SUBJECT OF
POWER BY SAYING THAT 75W+8.33W=133.33W. If he had stuck with voltages, I
wouldn't have had a problem with what he said. Since Steve brought up the
subject of power, I want to get the issue of power resolved.

Why do you not have a problem with Steve introducing the subject of power
but then have such a problem with me wanting to discuss the concepts of
power that Steve introduced? (I get paranoid about stuff like that.)
--
cheers, Cecil

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5017. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 22:04:21 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1179E5.4BE3F933@IEEE.org>
Source record: 161914

Bill Klocko wrote:
>
> CAM <Cecil.A.Moore@IEEE.org> wrote in message news:<3B114D14.FF59828D@IEEE.org>...
> > Richard Clark wrote:
> > > If you pick up a text on circuit analysis, superposition examples
> > > abound and the techniques of mesh and nodal analysis offer you the
> > > correct techniques for examining these transmission line problems with
> > > multiple sources. These two analytical techniques employ the bedrock
> > > of superposition and Kirchoff's Laws.
> >
> > Do any of them say it is possible to combine 75 joules with 8.33 joules
> > to obtain a total of 133.33 joules?
>
> Only if you do it by way of combining the voltages and currents, and then
> computing power. 73,

There is NO way to do it, Bill. Doing such violates the conservation of energy
principle. Which of the following equations is the correct one?

(A) Ptot = P1 + P2 or (B) Ptot = P1 + P2 + 2*sqrt(P1*P2)
133.33w = 75w + 8.33w 133.33w = 75w + 8.33w + 50w

They cannot both be true but both have been presented by Steve as
being true. With your above statement, can I assume that you think
(A) is true and (B) is false?
--
cheers, Cecil

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5018. Re: Will amateur radio astronomers be the first to directly detect extrasolar planets?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 22:40:40 UTC
From: George Emsden <yqf33@dial.pipex.com>
Message-ID: <3b11826f$0$15024$cc9e4d1f@news.dial.pipex.com>
Source record: 161915
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.antenna,sci.astro,sci.astro.seti,sci.space.policy

Could someone tell me how the existence of a large planet like say, Jupiter orbiting round another "Sun" is going to help us find ETI?

As techniques improve, I am sure that more planets will be discovered but this does not get us closer to discovering ET civilisations where the SETI project is basically trying to process buckets of radio signals to sort out the natural from the "man-made" for want of a better word.

--
George Emsden

"Robert Clark" <rgclark@my-deja.com> wrote in message
news:5f181508.0105231015.1e88fc8f@posting.google.com...
> The existence of extrasolar planets has been inferred from the
> wobbling seen in some stars. Their actual light still has not been
> detected or distinguished from that of their parent stars.
> The long wavelength radio bursts that emanate from Jupiter have led
> to suggestions that extrasolar planets might be detected by searching
> for such bursts in the vicinity of stars:
>
> Opening a New Window on the Universe:
> High Resolution, Long Wavelength Radio Astronomy,
> 2.5.2 Extrasolar Planets,
> by Joseph Lazio
> http://rsd-www.nrl.navy.mil/7213/lazio/decade_web/node34.html
>
> However, sensitive searches have so far failed to detect them. This
> is undoubtedly due to distance attenuation for such planets
> light-years away. The distance to Jupiter ranges up to 9 x 10^8 km. A
> star 10 light-years away is at 9 x 10^13 km, a factor of 10^5 larger
> than the Jupiter distance.
> The Jovian radio bursts have been detected by amateurs with simple
> dipole antennas:
>
> Radio-Jupiter for Amateur Observers, By Jim Sky
> http://web2.thesphere.com/SAS/bulletin/Sas44/page1.html#Jupiter
>
> PROJECT P5-2. JUPITER-IO MAGNETOSPHERE RADIO NOISE
> http://www.elmag5.com/jupiter-io.htm
>
> With its Radio JOVE project NASA also distributes low-cost dipole
> kits to schools:
>

> How To Hear Radio Signals From Jupiter
> http://www.spacetoday.org/SolSys/Jupiter/JupiterRadio.html
>
> Radio JOVE
> http://spacescience.com/headlines/y2000/ast22may_1.htm?list
>
> The proposal is for amateur radio astronomers to set up arrays of
> such low cost dipole antennas world-wide. The T-shaped dipoles have
> the advantage of steerability, but the vertical dipoles have the
> advantage of simplicity and low cost for setting up large arrays. An
> example of a steerable dipole array is the one that first discovered
> the Jovian decametric emissions:
>
> The Discovery of Jupiter's Radio Emissions
> How a chance discovery opened up the field of Jovian radio studies
> http://radiojove.gsfc.nasa.gov/library/sci_briefs/discovery.html
>
> The signals from the various arrays would be combined digitally to
> form a world-wide radio telescope. The large-wavelengths being
> detected simplify the task of combining the signals
> interferometrically. GPS transmitters are now available that can give
> locations to within inches:
>
> NASA satellite technology goes down on the farm
> http://www.spaceflightnow.com/news/n0105/11farm/
>
> The clocks in such transmitters also provide timing at better than
> nanosecond resolution.
>
> The signal strength for Jupiter at 10 light-years would decrease as
> the square of the distance, so would be smaller by a factor of 10^10.
> However, the extrasolar Jovian planets detected so far have been close
> in to their primaries and are expected to produce stronger radio
> emissions than Jupiter, perhaps, 100 to 1000 times more intense. Using
> the optimistic estimate of 1000 times greater intensity would require
> 100,000 separate arrays with 100 dipoles or 10,000 arrays with 1,000
> dipoles to detect such emissions.
>
>
>
> Bob Clark

5019. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 22:52:03 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B118513.E5DB2182@IEEE.org>
Source record: 161917

Richard Clark wrote:
> You and Cecil need to brush up on Mesh and Nodal analysis. You may
> just be surprised to find vindication in there - but you guys keep
> beating a dead horse in preference to exploration.

Please feel free to vindicate either or both of us, Richard. Isn't the truth worth that? BTW, conservation of energy was not a dead horse last time I looked.

Maybe you can resolve the apparent contradiction between:

Ptot = P1 + P2 = 75w + 8.33w = 133.33w VS

Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w

Don't you find it strange that Steve maintains that both those equations are correct while, at the same time, denying the second one is correct?
--
cheers, Cecil

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5020. Re: What means dBc ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 22:52:19 UTC
From: Ian Jackson <ianjackson@g3ohx.demon.co.uk>
Message-ID: <TL0kvLAjUYE7Ew34@g3ohx.demon.co.uk>
Source record: 161916

>
>DL7JSK wrote:
>>
>> Hi NG
>> I've read this in a description of a satellite turnstile antenna.I know dBd
>> and dBi,but not dBc.Can anybody tell me what it means ?
>>
>> 73
>> Tom

In article <3B113712.6641C80C@dialpoint.net>, Ralph Mowery
<rmowery@dialpoint.net> writes
>It is in refference to the circular polarity. Many satellites use
>circular polorized antennas, either right or left hand and there is
>about 20 db differance in the two just as horizontal and vertical have
>that much difference. There is a 3 db loss if using either a horizontal
>or vertical antenna to receive a circular signal. Sometimes it is to
>indicate how well the antenna is truely circular and not some odd shape
>such as where the vertical component is slightly larger than the
>horizontal.

Uh???
I understand 'dBc' as 'dB with respect to carrier'.
In the world of cable TV, it is something which I would use to indicate
the level of an unwanted signal which is inside the wanted TV channel.
I've never heard of it when it refers to 'lack of circularity'.
Ian.

5021. Re: What means dBc ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 22:58:06 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9es0ou$jl8$1@nntp9.atl.mindspring.net>
Source record: 161918

All:

FWIW....

dBrnc is decibels above reference noise with "c-message" weighting.

c-message weighting is a spectral template/mask.

-Peter K1PO

"Ian Jackson" <ianjackson@g3ohx.demon.co.uk> wrote in message
news:TL0kvLAjUYE7Ew34@g3ohx.demon.co.uk...
> >
> >DL7JSK wrote:
> >>
> >> Hi NG
> >> I've read this in a description of a satellite turnstile antenna.I know
dBd
> >> and dBi,but not dBc.Can anybody tell me what it means ?
> >>
> >> 73
> >> Tom
>
>
> In article <3B113712.6641C80C@dialpoint.net>, Ralph Mowery
> <rmowery@dialpoint.net> writes
> >It is in refference to the circular polarity. Many satellites use
> >circular polorized antennas, either right or left hand and there is
> >about 20 db differance in the two just as horizontal and vertical have
> >that much differance. There is a 3 db loss if using either a horizontal
> >or vertical antenna to receive a circular signal. Sometimes it is to
> >indicate how well the antenna is truely circular and not some odd shape
> >such as where the vertical component is slightly larger than the
> >horizontal.
>
> Uh???
> I understand 'dBc' as 'dB with respect to carrier'.
> In the world of cable TV, it is something which I would use to indicate
> the level of an unwanted signal which is inside the wanted TV channel.
> I've never heard of it when it refers to 'lack of circularity'.
> Ian.
>

5022. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 23:15:30 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9es1phakc1@slb3.atl.mindspring.net>
Source record: 161919

Cecil:

Conservation of energy is valid... if and only if....

The energy in question is "real"...

i.e. if and only if it involves the "real" generation of "real" energy is involved, none of that recirculating energy that was already generated once and keeps coming back to be counted again at some "virtual short"or some other such visualization or complicated conconction developed to justify the visualization, is allowed.

Also you might note that here is no mathematical basis to the conservation of energy "law" it is merely an experimental ovservation. While there is a mathematical basis for the superposition principal. And, not that it is relevant to the present discussions, relativistic mechanics as introduced by "Albert" allows for an interchange between E and m.

Cecil, IMHO... you really have to be careful to make sure that the energies that you are trying to balance under the "conservation of energy law" are well and truly based on actual energies and not on ficticious energies.

As I keep trying to point out... some of the energies that some folks on this NG are discussing are iun fact ficticious! Since these energies are based on indications from instruments that are "marked" with watts but are actually measuing voltages. To be absolutely sure of your final answers, you have to know that the meters that you are using are really measuring watts or watts/seconds, and not something else!

I am not taking any particular calculation or assertion of yours to task Cecil, and often your common sense saves you, but you are skating on very thin ice.

The reflection voltage bridges, such as those made by the Bird company and others are simply not measuring what they say they are. It is all a big lie...

And so... I say... caveat emptor.

If you accept what a reflected voltmeter, with a meter face calibrated in Watts, says as reality, you deserve what traps you may ultimately fall into.

Be more skecptical my friend and do not build up too complicated an explanation for what you find!

I wish you good luck with your scientific arguments, but often IMHO.... you are on tenuous scientific grounds.

Best,

-Peter K1PO

. "CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B115186.6A91726A@IEEE.org...
> "Peter O. Brackett" wrote:
> > The principle of superpostion for voltages and currents has been
> > mathematically proven to be a valid operation, based on results from the
> > theory of linear systems of differential equations.
>
> Likewise, the principle of conservation of energy has been proven to
> be valid.
>
> An antenna system involves both principles. The voltages and currents
> must obey the principle of superposition and the energy must obey the
> conservation of energy principle. Just because someone is partial
> to superposition doesn't mean that they can willy-nilly ignore energy
> conservation. The unrecognized joules/sec necessary for balancing the
> energy equation exist. We just have to find them. In the previous
> examples, those absolutely necessary joules/sec exist in the
> destructive/constructive interference pattern. Two questions need to
> be asked and answered. (1) Does destructive/constructive interference
> exist in the system? (2) If so, how much energy is involved? Invariably,
> if the interference energy is identified and quantified, the energy
> equation will balance perfectly.
> --
> cheers, Cecil
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5023. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 23:19:30 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9es211cva1@slb3.atl.mindspring.net>
Source record: 161920

Richard:

I love you man! (In a brotherly way!)

Keep up the good work.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b124c16.701288529@news.seanet.com...
> On Sun, 27 May 2001 14:30:24 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >
> > >And so it pays to be wary when I post mathematical stuff... you never
know
> > >when I might be:
> > >
> > >a.) Absolutely correct.
> > >b.) Pulling your leg.
> > >c.) Making a mistake.
> > >
> >
> > Hi Peter,
> >
> > I would add and choose:
> > 4.) All of the above.
> >
> > 73's
> > Richard Clark, KB7QHC

5024. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 23:21:52 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B118C10.6B3F625F@IEEE.org>
Source record: 161923

"Peter O. Brackett" wrote:
> Richard: I love you man! (In a brotherly way!)

Hey Peter, you said the same thing about me. Want to try a
threesome? :-)

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5025. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 23:22:45 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9es27q$fm2$1@slb5.atl.mindspring.net>
Source record: 161921

Tom:

Where did you get your Ph.D. in Applied Math?

Incidently, mine came with a "joker' card... I'm just a humble engineer who
likes to trip up mathematicians.

Was it U of Sao Palont or ?

Heh, heh...

Did you ever read Richard Feynman's parting comments after he left a
sabatical session at one of those Latin American universities...

-Peter K1PO

"Tdonaly" <tdonaly@cs.com> wrote in message
news:20010527170205.24106.00001265@ng-cq1.news.cs.com...
> Richard wrote,
>
> >On Sun, 27 May 2001 14:30:24 -0400, "Peter O. Brackett"
> ><ab4bc@ix.netcom.com> wrote:
> >
> >>
> >>And so it pays to be wary when I post mathematical stuff... you never
know
> >>when I might be:
> >>
> >>a.) Absolutely correct.
> >>b.) Pulling your leg.
> >>c.) Making a mistake.
> >>
> >
> >Hi Peter,
> >
> >I would add and choose:
> >4.) All of the above.
> >
> >73's
> >Richard Clark, KB7QHC
>
> Hi Richard,
> please note Peter's creative derivative. Well,
if
> everyone else is entitled to
> do crackpot math on this newsgroup, I believe I should be able to make a

> contribution.
> I believe Peter is perfectly correct in his assertion that Z0 is equal to
the
> square root of
> L/C at f=0 and here's why:
> Z0=0/0
> Z0*0=0
> then, since 0 times any number is also equal to 0, Z0 may as well be equal
to
> the square root
> of L/C as anything else. QED. No differential calculus needed. This
may
> seem a bit on the
> ridiculous side to you, Richard, but I believe it represents an example of
the
> high level of mathematical
> achievement commonly evidenced on this news group.
>
> 73 Tom Donaly KA6RUH
>
>
>

5026. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 23:24:28 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9es2ac$4tk$1@slb7.atl.mindspring.net>
Source record: 161922

Cecil:

[snip]
> I did measure it in my lab, Peter. In a DC steady-state system, all the
> voltages and all the currents are the same whether I use 50 ohm coax
> or 450 ohm ladder-line
[snip]

YES! You have confirmed all of my lab results. Great!

And did you measure the VSWR's on those systems for various loads?

Revealing eh?

-Peter K1PO

5027. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 23:26:11 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9es2dh$2ki$1@slb3.atl.mindspring.net>
Source record: 161924

Richard:

Like the regal "courts" of old, every scientific USENET NG needs a "joker"!

Don't you agree?

Whe else would/could say, "The emperor is wearing no clothes!"

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b185d6a.705724007@news.seanet.com...
> On Sun, 27 May 2001 14:32:28 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >Oh, I thought you wanted to see the actual lab experiment carried out.
> >
> >Showing my work is easier, I did that on another nearby post on this
thread.
> >
> >Why are you asking?
> >
> >Skeptical? Or just curious, or don't you trust me...
> >
> >I never post suspicious mathematical proofs do I?
> >
> >Heh, heh...
> >
> >Just teasing.
> >
> >-Peter K1PO
> >
>
> Hi Peter,
>
> Well, what I saw was not what I would call showing your work, so I
> will accept that you are teasing.
>
> 73's
> Richard Clark, KB7QHC

5028. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 23:28:26 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9es2ht$392$1@slb2.atl.mindspring.net>
Source record: 161925

Cecil:

I'd be pleased to do it if I knew how.

I used to be able to do that "font" stuff when I was using Pine or Eudora on
a Unix machine, now I'm using MS Outlook on a Wintel machine.

How do you suggest that I post in a fixed font from this danged application?

-Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B116DEA.4AC1AD0D@IEEE.org...
> "Peter O. Brackett" wrote:
> >
> > Cecil:
> >
> > How's this?
> >
> > Wheatstone reflectometer or VSWR bridge
>
> That's still a proportional font which is still all screwed up on my
> display. Why not use a fixed font (Courier) for ASCII diagrams?
> --
> cheers, Cecil
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5029. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 23:31:22 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9es2naflt1@slb3.atl.mindspring.net>
Source record: 161926

Richard:

Horse! That's a dead parrot that they are beating on the counter.

The "Norwegian Blue" is the breed I believe.

John Cleese would be proud.

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:85r2htg8vdtdl8rivhmgmk19ifq11hivc6@4ax.com...
> On Sun, 27 May 2001 20:50:04 GMT, w2du@iag.net (Walter Maxwell) wrote:
>
> >On Sun, 27 May 2001 18:59:46 GMT, kb7qhc@home.com (Richard Clark) wrote:
> >
> >>On Sun, 27 May 2001 16:51:02 GMT, w2du@iag.net (Walter Maxwell) wrote:
> >>
> >>>On 27 May 2001 07:59:46 -0700, klocko@toad.net (Bill Klocko) wrote:
> >>>
> >>>
> >>>>If you agree with the final steady state values, then you have to
> >>>>agree with the intermediate values that contribute to the steady
state. 73,
> >>>>Bill N3WK
> >>>
> >>>
> >>>Well Bill, I guess we'll both have to agree to disagree, so be it.
> >>>
> >>>However, I still believe the answer you get for the two reflected
voltages is coincidental. I
> >>>haven't done the calculation, but I'll bet if you replace the 150-ohm
1/2 wl line with a 100-ohm
> >>>line you'll discover that with the 0.5 rho of the 150/50 line mismatch
is coincidental, because I
> >>>don't think the answers you'll get with the 100-ohm line will come out
as they do with 150-ohm line.
> >>>
> >>>And since we agree to disagree, I'm signing off on this subject. Thanks
for the ride!
> >>>
> >>>Walt, W2DU
> >>
> >>Hi Walt,
> >>
> >>By these statements I take it that you re-cant your position on Bill's

> >>presentation being correct.
> >
> >No Richard, I'm not recanting my position on the correctness of Bill's
presentation in his paper on
> >Modeling the Quarter-Wave Transformer. I find it perfectly clear and
accurate.
> >
> >>
> >>Can you offer us some specific - within the context of his paper -
> >>that reveals an error? A simple page reference will suffice with a
> >>presentation of the math or formula that evidences this failure. I
> >>would be curious to see at what point where you and Kraus depart.
> >>
> >>73's
> >>Richard Clark, KB7QHC
> >
> >I don't recall Kraus being involved in the discussion, besides, I
wouldn't even think of departing
> >from Kraus. He's my idol.
>
> Take a look at the references that Bill provides (2) for Kraus.
>
> >
> >But where I depart from Bill is how can he be so knowledgeable as to
write the excellent paper
> >mentioned above, and still not agree with Johnson's presentation of
subtracting and adding powers in
> >his Eq 6.17.
>
> OK. But this can equally be a problem of your interpretation of Bill,
> or of Johnson.
>
> >That the voltages in Bill's and Steve's posts add to give the correct
power is a quirk,
>
> Again show or tell. Give us the best evidence in the form of page
> citation from Bill's work and the formula that is being abused.
>
> >because it doesn't include the foward power necessary to deliver all the
power to the load in view
> >of the 3:1 mismatch. In one of my previous posts I showed how to obtain
all the required power, but
> >Bill discounted it as being unnecessary. This is why I decided not to
continue.
> >
> OK, but that is another matter.
>
> >What is being overlooked here is that the reflected power, or energy, if
you will, is added to the
> >source power by increasing the energy in the electromagnetic field

developed from the voltage
> >applied by the source.
> >
> snip
> >
> >I'm exiting this thread Richard, because everyone I know of, except
Cecil, doesn't seem to grasp
> >what's really going one here. I'm facing a stone wall so there's no point
in saying anything further
> >on the subject.
> >
> >Thanks for hearing me out, Richard
> >
> >Walt, W2DU
> >
> >PS---perhaps the term superposition as defined by Bode isn't applicable
here, because surely it's
> >powers that are being added, not currents or voltages.
> >
>
> Hi Walt,
>
> Your last, the PS, is telling when it comes to complaints of stone
> walls and dense readers.
>
> You and Cecil need to brush up on Mesh and Nodal analysis. You may
> just be surprised to find vindication in there - but you guys keep
> beating a dead horse in preference to exploration.
>
> 73's
> Richard Clark, KB7QHC

5030. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 23:39:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9es35n$v1e$1@slb2.atl.mindspring.net>
Source record: 161927

Cecil:

Threesome...?

Heh, heh... only in my fantasies... I'm far too old for that.

The mind and spirit are strong but the flesh is weak!

Best,

-Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B118C10.6B3F625F@IEEE.org...
> "Peter O. Brackett" wrote:
> > Richard: I love you man! (In a brotherly way!)
>
> Hey Peter, you said the same thing about me. Want to try a
> threesome? :-)
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5031. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 23:55:27 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1193EF.BB084C6E@IEEE.org>
Source record: 161929

"Peter O. Brackett" wrote:
>
> Cecil: Conservation of energy is valid... if and only if...
> The energy in question is "real"...
> i.e. if and only if it involves the "real" generation of "real" energy is
> involved, none of that recirculating energy that was already generated once
> and keeps coming back to be counted again at some "virtual short"or some
> other such visualization or complicated conconction developed to justify the
> visualization, is allowed.

I feel like I am being nibbled to death by a flock of ducks, Peter.
Steve proposes a couple of equations involving reflected power. I
question whether both equations can be valid or not and you come
back with that there is no such thing as reflected power. The question
is: Why are you attacking me instead of Steve? Is there really a
conspiracy among RF Gurus to hide the truth from us mere mortals?

I am just about ready to believe there is and am on the verge of
folding my tent like Galileo did. You seem to be a fair person. Are
you fair or is it just part of the conspiracy? You seem to be the
good cop in a "good cop, bad cop" scenario designed to get me to
give up. Steve is the one who brought up the subject of reflected
power with his power equations. You did not jump on him. You only
jumped on my response to Steve's introduction of reflected power in
his equations. One wonders why.

> Also you might note that here is no mathematical basis to the conservation
> of energy "law" it is merely an experimental ovservation.

Of course, when your buddy gets proven wrong in an argument, the argument
didn't matter anyway. Why am I not surprised?

> Cecil, IMHO... you really have to be careful to make sure that the energies
> that you are trying to balance under the "conservation of energy law" are
> well and truly based on actual energies and not on ficticious energies.

Why do you object to my trying to balance "fictitious energies" when you
didn't object to Steve's introduction of "fictitious energies"? Could it be
that you are not a good guy, Peter, you just pretend to be?

> I am not taking any particular calculation or assertion of yours to task
> Cecil, and often your common sense saves you, but you are skating on very
> thin ice.

Steve must not weigh as much as me, huh? You have not objected to His introduction
of reflected power in His equations. One wonders why. I was born at night, Peter,
but it wasn't last night. Why do you not object to Steve's assertion that both

the following equations are true?

Ptot = P1 + P2 = 75w + 8.33w = 133.33w AND

Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w

Why are you protecting Steve and jumping on me? If this is team
play, I am considerably undermanned.
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

5032. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-27 23:55:56 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105271555.1bf3f9c7@posting.google.com>
Source record: 161928

CAM <Cecil.A.Moore@IEEE.org> wrote in message news:<3B114ACA.1CF8F18D@IEEE.org>...
> You don't have a problem with:
> IF V1+V2=Vtot THEN V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0 ??????

Sure, I've got a problem with that. You keep coming up with
(A+B)(A+B) = A^2 + B^2, when any high school kid knows it's
(A+B)(A+B) = A^2 + B^2 + 2AB
I guess you're not reading my messages.

After several days of at least cordial interchange, you're resorting
to your nasty side again.

I agree with Steve's voltage analysis, so I don't have a problem with
the result 75w + 8.33w = 133.33w, if you want to express it that way.
But I've already provided comments on the incorrectness of adding power
terms.

I've already given several counter-examples where it's ABSOLUTELY NECESSARY
to work with the voltages and currents, otherwise you come up with the wrong
answer. But I guess you're not reading my messages.

> If you can add one joule and one joule and get four joules, the state of
> California will give you a fortune for that secret.

Why don't you call someone from a power company in the state of California
and ask if they consider power values to be scalars and just add 'em up?
I'll bet the laughter would be deafening.

> Nope, that's not the total wave components, Bill. You forgot to include
> the wave cancellation energy (power) which gets dumped into the electro-
> magnetic fields. The correct equation is:

But I thought you agreed with the contents of that paper. And you
said your phasor diagram is a carbon copy of that paper of mine. If I
forgot the "wave cancellation energy" then so did you. But I don't worry
about any "wave cancellation energy" because all quantities in the paper
add up to exactly what everybody would expect. I don't need any
fudge factor to make an "energy equation" balance.

> There's 0.002082 joules/sec of destructive/constructive interference that
> you didn't account for. That's why your energy equation doesn't balance.

Tell you what, you continue to add those powers in spite of the advice
of every circuits book around, add whatever fudge factors you need to get
your energy equation to balance, and continue to march down that road in
blissful ignorance.

I've made my points, I'm done.
Bill N3WK

5033. Re: Good ham logging program? - klog-full-1.0.28.zip (00/11)

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 00:13:11 UTC
From: sbt5@???.com
Message-ID: <ln53htsqosmhssliul45u6bvgm4g3ltopu@4ax.com>
Source record: 161930

I was looking for a logging program also. I came across this shareware program. I havent used it yet but will be giving it a try.

On Sat, 26 May 2001 13:30:17 GMT, "Keith Beebe" <keith.beebe@verizon.net> wrote:

>Check out DX4WIN at www.dx4win.com
>
>A demo version is available in the downloads section.
>
>Keith Beebe W3KB
>
>"Dino" <dinod@deltanet.com> wrote in message
>news:4zAP6.21528$CD5.11186924@news2.rdc2.tx.home.com...
>> DXBASE 2002 demo can be downloaded here...
>>
>> http://www.dxbase.com/demowin.htm
>>
>> Dino
>>
>>
>> >hey charles
>> >that software looking really good on there website
>> >but i am not paying $100 for software with out getting to try it first
>there
>> are
>> >to many variables in computers and radios and such that would render the
>> thing
>> >usless
>> >i wish they would offer a trail program for 2 weeks to a month like
>everyone
>> >else does to give you a chance to see if it will work on your system and
>> that if
>> >the software is what your looking for
>> >i am glad you find it useful happy hamming
>> >73
>> >
>> >Charles Johnston wrote:
>> >
>> >> Guess I'll chime in after trying most of the major logging programs
>such
>> as
>> >> LogPlus , Log Windows , DX4WIN , and Logic 5 I have settled on DXBase
>> 2002.
>> >> Here is a snippet about the product....

>> >>
>> >> <snip>
>> >>
>> >> Designed for those who demand the best, DXbase 2002 by Scientific
>> Solutions,
>> >> Inc. is the premiere amateur radio logging software for 32bit Windows.
>> One
>> >> look and you'll wonder how you ever managed without it. Whether you
>want
>> to
>> >> custom design your own QSL cards and labels, operate PSK mode and log
>> >> directly into DXbase, perfect CW output with the direct interface to
>the
>> >> W5XD external keyer, automatically create award submission forms,
>create
>> >> your own reports, monitor VHF Packet and Internet Packet letting DXbase
>> tell
>> >> you when you need one, or just log a QSO with the greatest of ease,
>DXbase
>> >> 2002 is the software for you.
>> >>
>> >> <snip>
>> >>
>> >> I have used this product since DXBase 2000 and it is a reliable and
>> >> extremely high-performance logging program
>> >> That can do everything the other loggers do plus much more.....
>> >>
>> >> Download the informational demo at http://www.dxbase.com
>> >>
>> >> --
>> >>
>> >> 73 / DX
>> >>
>> >> Charles Johnston
>> >> charles@ab7sl.com
>> >>
>> >> AB7SL - Ham Radio Pages
>> >> http://www.ab7sl.com
>> >
>>
>

5034. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 00:25:59 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3B119B1B.A71F1CE@haertig.com>
Source record: 161931

I think Roger's incremental approach to understanfding coax is very helpful. It helps reinforce the idea that shielding in a coax cable is not so much a matter of containing fields inside the cable but of assuring the the sum of a number of fields exterior to the cable is zero.

Imagine Roger's two wire line. The current in both conductors is the same, but opposite in direction. At a point normal to the center of the line and normal to the plane in which the conductors run the field from both conductors will have the same magnatude but be 180 deg out of phase, and the net field is zero. This is because the point is equidistant from both conductors.

Now imagine a point that is normal to the center of the line but lies in the plane of the conductors. The field will not be zero here, because one conductor will be slightly farther away from the point than the other conductor.

If we now make three wire line, the point that is normal to the plane of the conductors will still see a net zero field. The field from the center conductor will be the same as before but the field from each of the side conductors will each be half (since each now carries one half of the current), but the sum of their fields will be equal to the field from the center conductor, but still 180 deg out of phase.

Now consider the point that lies in the plane of the conductors. It will still see the same field from the center conductor, but sees slightly more than half the field from the nearer side conductor and slightly less than half field from the farther side conductor. (The difference in field is owing to the different distances between the point and the two side conductors.) However, the sum of these two fields will equal the field from the center conductor, but 180 deg out of phase, so NOW there is NO field at this point.

This idea can be further extrapolated to additional symetrical pairs of wires until the side conductors form a solid "shield." Leaky coax (whether intentional or not) is just a matter of the degree to which the "shield" is imperfect.

It is clear from this that the field from the center conductor is not attenuated by the shield. If it were, then the necessary cancellation couldn'r occur outside the coax.

It is also helpful to think of distances in terms of wavelengths.

Since reciprocity applies, we can look at this in a receiving mode rather than transmitting mode. Imagine a piece of coax connected to the antenna input of a receiver. For anal retentive thoroughness, we even

cap the distant end of the coax with a conductive cap. The fact that
the receiver now does not pick any signals (do we all agree about this?)
indicates that exactly the same signal is induced in the center
conductor as the "shield". If the inner conductor were perfectly
"shielded" and no signal induced on it, then the receiver would be all
ears because there would be a voltage difference at the input to the
receiver due the voltage induced in the outer that wasn't induced in the inner.

As to the relationship of balance and leakiness, two condidtions have to
be met for a coax not to radiate: the sum of the currents in the two
directions has to zero (meaning balanced or, equivalently, no common
mode), and the sum of the fields from the outer at all points outside
must equal the field from inner, remembering that the field contribution
from each outer conductor is proportional to the current in the
conductor and the distance from the point.

Hope this sheds more light than it absorbs.

Gray

Roger Sparks wrote:
>
> Good Afternoon Peter,
>
> You sure know how to ask complicated questions, and I think you know the
> answers before you ask!!
> But if we are to get a better understanding of how coax really works, we
> need to ask and answer just as you have done.
>
> So let's see if we can think alike. Your questions are similar, and are
> basically "How can a braid leak or not leak energy?"
>
> The assumption we will begin with is that the inner and outer currents are
> equal, and 180 degrees out of phase. In other words, the coaxial
> transmission line is feeding a matched and balanced load.
>
> Now if a twin lead line (a two wire line) was feeding the same load, we
> would have a slight amount of radiation because the fields carried by the
> two wires would not perfectly cancel. It would be easy to unbalance the
> line by bringing another conductor near one of the two wires.
>
> We could reduce the radiation in a two wire line by making it a 3 wire line,
> with one middle conductor and two wires on the outside. This line would be
> a little less subject to radiation losses and unbalance by nearby objects.
>
> We could further reduce the radiation by making about 20 wires equally
> spaced around the center wire. We could keep adding wires until we had a
> solid conductor all the way around the center conductor. With a solid
> conductor as the 'shield' surrounding the center conductor, and remembering
> that the currents are balanced, we should have a 'perfect' reduction in
> radiation, and should have 'perfect' isolation from nearby objects.

>
> I think you will agree with me so far. We have not talked about unbalanced
> currents here, and this is not the same situation as my earlier posting
> dealing with 'fold back current'.
>
> Now to more directly answer your question, leaky cable would be cable with
> less copper, a more open weave, or more holes punctured in the solid
> conductor. A third conductor placed close to such cable would receive more
> energy from the central coaxial conductor than would be received from a
> tighter or solid conductor.
>
> The role of a balanced current must be emphasized. Any condition which
> results in one conductor of the coax rising to a higher voltage than the
> other, better, the shifting of the equal potential surface I described in
> the earlier posting, or best, the application of a voltage that would cause
> both conductors to host a different field strength, would cause unbalanced
> currents.
>
> Obviously, we can not have both balanced, and unbalanced, situations. We
> either have one or the other. Therefore, we can not say, "Roger, in one
> posting you talk about perfect shielding, and in the other, the leaky solid
> conductor. You are contradicting yourself." No, we are not talking about
> the same circuit conditions.
>
> So there we have it. Does this fit with the way you think about leaky
> coaxial cable?
>
> 73, Roger, W7WKB
>
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> news:9e9u67$1sf$1@slb4.atl.mindspring.net...
> > Roger:
> >
> > Then why are some coaxial cables more "leaky" than others?
> >
> > What happens to a perfectly shielded coaxial cable, i.e one wherein there
> > are no currents on the outside of the shield due to currents on the
> insice,
> > when rows of "holes" are punctured at regular intervals along the cable?
> >
> > Why is braid coverage important?
> >
> > Why do coaxial cable manufacturers rate their cables according to
> shielding
> > effectiveness?
> >
> > Etc...
> >
> > -Peter K1PO
> >

> >
> > "Roger Sparks" <sparksrc@home.com> wrote in message
> > news:SeTM6.19733$p33.353932@news1.sttls1.wa.home.com...
> > > Richard Harrison, KB5WZI , wrote
> > > (snip some)
> > > We know that at r-f, a braid performs nearly the same as a solid shield.
> > > Wires weaving between sides don`t carry the r-f with them as they weave
> > > between sides. Skin effect requires the current to remain on the same
> > > side of the braid.
> > > (snipe more)
> > > Certainly, the statement that "there is no voltage difference between
> > > the inside of the braid and the outside of the braid" is very unlikely.
> > >
> > > (snip more)
> > >
> > > Good Morning Richard,
> > >
> > > I think it is good that you are keeping this question alive. You will
> > > notice that I started a new thread, which I did because I think the
> topic
> > > will receive a better review if it becomes the principal subject.
> > >
> > > Just to keep the discussion focused, I am thinking about the fold-around
> > > current on the braid that is illustrated in the ARRL Antenna Book. This
> > is
> > > represented as being a second current path which drains power from the
> > > antenna. If it drains power, then it must have measurable voltage and
> > > current. The Antenna Book teaches that this current (it does not talk
> > about
> > > voltage) is kept separate from the inner side by skin effect.
> > >
> > > I think two physical laws actually interplay here. The first is how
> > current
> > > would flow in braid considering that the wires are not running parallel
> to
> > > the current, and further, that the wires overlap, one on top of the
> other,
> > > and then reverse.
> > >
> > > The second is how current, that is electrical charges, are distributed
> in
> > a
> > > round wire when the distribution is not neutral, or zero energy
> situation.
> > >
> > > To deal with the physical configuration first, we need to carefully look
> > at
> > > how the braid is laid together. I notice that the braid on RG-8 is
> > > configured so that no wires run parallel to the center wire. In
> addition,

> > a
> > > wire will run on the inside surface for about 1/4 inch, then will rise
> and
> > > run on top of another group of wires for about 1/4 inch thereby becoming
> > the
> > > outside wire for about 1/4 inch. Because of this interweave, a current
> > > running on the inside would have to change wires every 1/4 inch to
> remain
> > on
> > > the inside. Any outside current would also have to change wires every
> 1/4
> > > inch to remain of the outside.
> > >
> > > The point of contact is on the top and bottom of each wire, and currents
> > on
> > > the top or bottom (inside or outside of the coax) would have to go
> through
> > > these contact points (the identical points) in their path to remain on
> the
> > > top or bottom. Separation would be impossible.
> > >
> > > The second law of physics to consider is the distribution of charges in
> a
> > > round conductor. A current is defined as a movement of charges and we
> > > usually think of this as negative charges moving away from positive
> > charges
> > > (which remain fixed). The negative charges are moving as a group which
> > > results in a concentration of negative charges in a volume. Because
> > > negative charges repel, they will expand in volume to cover the entire
> > > surface of the conductor. If a nearby surface (such as the inside
> > conductor
> > > in a coax line) has negative charges, then the distribution will shift
> > > toward that surface, but will not occupy only the bottom half of the
> wire
> > > for instance, because the concentration of charges in half a wire would
> be
> > a
> > > higher energy situation than would a concentration around the entire
> wire
> > > surface.
> > >
> > > This argument disappears for any separate outside current because it
> would
> > > not be balance by inside charges on the center conductor. Instead, a
> > > negative charge on the outside surface would (by capacitive action)
> repel
> > > negative charges on the inside conductor, and would therefore induce a
> > > current on the inner (center) conductor. In this way, any outer current
> > > would influence both the inside of the outer conductor and the center
> > > conductor of a coax line.

> > >
> > > I understood Kevin, w9cf, to say in an earlier posting that capacitive
> > flux
> > > (the voltage field) moves through a conductor at the same speed as
> through
> > a
> > > dielectric and does not diminish with depth. This is contrasted to the
> > > magnetic field which does diminish with depth of penetration into the
> > > conductor (skin effect).
> > >
> > > If you disagree with this analysis, please divide the rebuttal into two
> > > parts:
> > > 1) how the current can pass through identical points and not mix.
> > > 2)how the charge distribution can remain concentrated on only one side
> of
> > > round wires.
> > >
> > > 73, Roger, W7WKB
> > >
> > >
> >
> >

5035. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 00:27:26 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105271627.3962e55d@posting.google.com>
Source record: 161932

w2du@iag.net (Walter Maxwell) wrote in message
news:<3b115aef.12861954@news.onemain.com>...
> But where I depart from Bill is how can he be so knowledgeable as to write the excellent
paper
> mentioned above, and still not agree with Johnson's presentation of subtracting and
adding powers in
> his Eq 6.17.

Now just a minute here, Walt. I've already said I agreed with Johnson's presentation relative to subtracting powers in Eqn 6.17. I even provided a derivation equivalent to Eqn 6.17 that is based on equations from Chapter 4. So don't say I don't agree with Eqn 6.17 or its use. I have said I don't agree with your equation for the sum of the powers at the match point. I've got my Johnson here (no jokes) and it would be a stretch to generalize Eqn 6.17 to the sum of powers. You've assumed an equation, right? My objection is with that equation and its use. It's counter to circuit theory.

BTW, Johnson on pp 244-245 addresses superposition. Guess what: currents and voltages only. 73,
Bill N3WK

5036. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 01:04:12 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B11A40C.924DD75E@IEEE.org>
Source record: 161934

Bill Klocko wrote:
>
> CAM <Cecil.A.Moore@IEEE.org> wrote in message news:<3B114ACA.1CF8F18D@IEEE.org>...
> > You don't have a problem with:
> > IF V1+V2=Vtot THEN V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0 ??????
>
> Sure, I've got a problem with that. You keep coming up with
> (A+B)(A+B) = A^2 + B^2, when any high school kid knows it's
> (A+B)(A+B) = A^2 + B^2 + 2AB
> I guess you're not reading my messages.

I guess you are not understanding what Steve has said.

> After several days of at least cordial interchange, you're resorting
> to your nasty side again.

Pot calling the kettle black. That certainly is a nasty response. I am
fed up with the logical diversions. Why can't anybody just address the
issues?

> I agree with Steve's voltage analysis, so I don't have a problem with
> the result 75w + 8.33w = 133.33w, if you want to express it that way.

So which equation is right?

Ptot = P1 + P2 = 75w + 8.33w = 133.33w OR

Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w

If you agree with Steve, you agree with both equations. I find agreeing
with both equations beyond belief. Steve introduced the 2*sqrt(P1*P2)
fudge factor. It wasn't I.

> I've already given several counter-examples where it's ABSOLUTELY NECESSARY
> to work with the voltages and currents, otherwise you come up with the wrong
> answer. But I guess you're not reading my messages.

I agree with that, Bill. STEVE INTRODUCED THE CONCEPT OF POWER. It
wasn't I. Why are you blaming me for the subject that Steve introduced?

> > If you can add one joule and one joule and get four joules, the state of
> > California will give you a fortune for that secret.
>
> Why don't you call someone from a power company in the state of California
> and ask if they consider power values to be scalars and just add 'em up?
> I'll bet the laughter would be deafening.

My degree is in Power Engineering, Bill. Power *IS* a scalar. Two 100 megawatt
power generation stations can provide 200 megawatts but no more than 200 megawatts.
Why are transmission lines any different? To me, this doesn't seem like rocket science.
Where,
exactly, is the magic associated with transmission lines that allow them
to violate the conservation of energy principle?

> > Nope, that's not the total wave components, Bill. You forgot to include
> > the wave cancellation energy (power) which gets dumped into the electro-
> > magnetic fields. The correct equation is:
>
> But I thought you agreed with the contents of that paper. And you
> said your phasor diagram is a carbon copy of that paper of mine. If I
> forgot the "wave cancellation energy" then so did you. But I don't worry
> about any "wave cancellation energy" because all quantities in the paper
> add up to exactly what everybody would expect. I don't need any
> fudge factor to make an "energy equation" balance.

I don't recall you saying anything about wave cancellation energy, Bill.
It is possible that your paper is 100% correct but you made an error in
your statements on the newsgroup. What exactly is behind all these diversions?

> > There's 0.002082 joules/sec of destructive/constructive interference that
> > you didn't account for. That's why your energy equation doesn't balance.
>
> Tell you what, you continue to add those powers in spite of the advice
> of every circuits book around, add whatever fudge factors you need to get
> your energy equation to balance, and continue to march down that road in
> blissful ignorance.

I'm not the one who introduced the fudge factors, Bill. Steve did. I am only
questioning the introduction of those fudge factors. Why are they necessary?
If you are going to defend Steve's assertions then you are required to
defend Steve's assertions.

To summarize: I agree with Steve's additions of voltages. STEVE INTRODUCED
THE CONCEPT OF ADDING POWERS. It wasn't my idea. I am simply questioning
his "addition" of powers. He even sent me a paper he wrote in which trig
functions are introduced into his (vector?) additions of power.

Please explain which of the following equations are true.

Ptot = P1 + P2 = 75w + 8.33w = 133.33w OR

Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w

Steve has asserted both equations are true and you, by implication, have
agreed with him. Is that really what you want to do?
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5037. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 01:07:02 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B11A4B6.A146A29B@IEEE.org>
Source record: 161935

"Peter O. Brackett" wrote:
> How do you suggest that I post in a fixed font from this danged application?

In Netscape, there is a selection under properties that allows selection
of fixed or proportional fonts. I'll bet Outlook has a similar selection.
Then again, considering it's Microsoft, maybe not.
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

5038. Dipole vs Isotron

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 01:14:21 UTC
From: Bruno Quesnel <quesnelb@ve2.ele.etsmtl.ca>
Message-ID: <3B11A66D.73C6B7F0@ve2.ele.etsmtl.ca>
Source record: 161936

Hi to all,

My question is mostly to compare the Isotron combo 10-15-20 meters
versus a rotatable dipole (or just dippole). Mainly to find people that
have operated maybe both or at least offer material to compare.

Which one would be the best to operate within space limited space
and give the best performance for the buck.

thanks in advance

--
Bruno Quesnel quesnelb@ve2.ele.etsmtl.ca
Genie Electrique va2bmg@videotron.ca
Electrical Engineering VA2BMG
Ecole de Technologie Superieure

5039. Re: Dipole vs Isotron

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 01:19:21 UTC
From: "Peter J. Bertini" <commquart@home.com>
Message-ID: <tIhQ6.32310$v5.2646489@news1.rdc1.ct.home.com>
Source record: 161937

A small trap dipole, such as the TA31, would
be infinitely better. IMHO.

Peter

"Bruno Quesnel" <quesnelb@ve2.ele.etsmtl.ca> wrote in message
news:3B11A66D.73C6B7F0@ve2.ele.etsmtl.ca...
> Hi to all,
>
> My question is mostly to compare the Isotron combo 10-15-20 meters
> versus a rotatable dipole (or just dippole). Mainly to find people that
> have operated maybe both or at least offer material to compare.
>
> Which one would be the best to operate within space limited space
> and give the best performance for the buck.
>
> thanks in advance
>
> --
> Bruno Quesnel quesnelb@ve2.ele.etsmtl.ca
> Genie Electrique va2bmg@videotron.ca
> Electrical Engineering VA2BMG
> Ecole de Technologie Superieure
>
>

5040. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 02:08:47 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9esbuhgtq1@slb3.atl.mindspring.net>
Source record: 161938

Gray:

A very thoughtful and revealing set of ideas...

Articulated in a way that could be verified both numerically and
experimentally.

Nice job.

-Peter K1PO

"Gray Frierson Haertig" <gfh@haertig.com> wrote in message
news:3B119B1B.A71F1CE@haertig.com...
>
> I think Roger's incremental approach to understanfding coax is very
> helpful. It helps reinforce the idea that shielding in a coax cable is
> not so much a matter of containing fields inside the cable but of
> assuring the the sum of a number of fields exterior to the cable is zero.
>
> Imagine Roger's two wire line. The current in both conductors is the
> same, but opposite in direction. At a point normal to the center of the
> line and normal to the plane in which the conductors run the field from
> both conductors will have the same magnatude but be 180 deg out of
> phase, and the net field is zero. This is because the point is
> equidistant from both conductors.
>
> Now imagine a point that is normal to the center of the line but lies in
> the plane of the conductors. The field will not be zero here, because
> one conductor will be slightly farther away from the point than the
> other conductor.
>
> If we now make three wire line, the point that is normal to the plane of
> the conductors will still see a net zero field. The field from the
> center conductor will be the same as before but the field from each of
> the side conductors will each be half (since each now carries one half
> of the current), but the sum of their fields will be equal to the field
> from the center conductor, but still 180 deg out of phase.
>
> Now consider the point that lies in the plane of the conductors. It
> will still see the same field from the center conductor, but sees
> slightly more than half the field from the nearer side conductor and
> slightly less than half field from the farther side conductor. (The
> difference in field is owing to the different distances between the
> point and the two side conductors.) However, the sum of these two
> fields will equal the field from the center conductor, but 180 deg out
> of phase, so NOW there is NO field at this point.

>
> This idea can be further extrapolated to additional symetrical pairs of
> wires until the side conductors form a solid "shield." Leaky coax
> (whether intentional or not) is just a matter of the degree to which the
> "shield" is imperfect.
>
> It is clear from this that the field from the center conductor is not
> attenuated by the shield. If it were, then the necessary cancellation
> couldn'r occur outside the coax.
>
> It is also helpful to think of distances in terms of wavelengths.
>
> Since reciprocity applies, we can look at this in a receiving mode
> rather than transmitting mode. Imagine a piece of coax connected to the
> antenna input of a receiver. For anal retentive thoroughness, we even
> cap the distant end of the coax with a conductive cap. The fact that
> the receiver now does not pick any signals (do we all agree about this?)
> indicates that exactly the same signal is induced in the center
> conductor as the "shield". If the inner conductor were perfectly
> "shielded" and no signal induced on it, then the receiver would be all
> ears because there would be a voltage difference at the input to the
> receiver due the voltage induced in the outer that wasn't induced in the
inner.
>
> As to the relationship of balance and leakiness, two condidtions have to
> be met for a coax not to radiate: the sum of the currents in the two
> directions has to zero (meaning balanced or, equivalently, no common
> mode), and the sum of the fields from the outer at all points outside
> must equal the field from inner, remembering that the field contribution
> from each outer conductor is proportional to the current in the
> conductor and the distance from the point.
>
> Hope this sheds more light than it absorbs.
>
> Gray
>
>
>
>
>
> Roger Sparks wrote:
> >
> > Good Afternoon Peter,
> >
> > You sure know how to ask complicated questions, and I think you know the
> > answers before you ask!!
> > But if we are to get a better understanding of how coax really works, we
> > need to ask and answer just as you have done.
> >
> > So let's see if we can think alike. Your questions are similar, and are

> > basically "How can a braid leak or not leak energy?"
> >
> > The assumption we will begin with is that the inner and outer currents
are
> > equal, and 180 degrees out of phase. In other words, the coaxial
> > transmission line is feeding a matched and balanced load.
> >
> > Now if a twin lead line (a two wire line) was feeding the same load, we
> > would have a slight amount of radiation because the fields carried by
the
> > two wires would not perfectly cancel. It would be easy to unbalance the
> > line by bringing another conductor near one of the two wires.
> >
> > We could reduce the radiation in a two wire line by making it a 3 wire
line,
> > with one middle conductor and two wires on the outside. This line would
be
> > a little less subject to radiation losses and unbalance by nearby
objects.
> >
> > We could further reduce the radiation by making about 20 wires equally
> > spaced around the center wire. We could keep adding wires until we had
a
> > solid conductor all the way around the center conductor. With a solid
> > conductor as the 'shield' surrounding the center conductor, and
remembering
> > that the currents are balanced, we should have a 'perfect' reduction in
> > radiation, and should have 'perfect' isolation from nearby objects.
> >
> > I think you will agree with me so far. We have not talked about
unbalanced
> > currents here, and this is not the same situation as my earlier posting
> > dealing with 'fold back current'.
> >
> > Now to more directly answer your question, leaky cable would be cable
with
> > less copper, a more open weave, or more holes punctured in the solid
> > conductor. A third conductor placed close to such cable would receive
more
> > energy from the central coaxial conductor than would be received from a
> > tighter or solid conductor.
> >
> > The role of a balanced current must be emphasized. Any condition which
> > results in one conductor of the coax rising to a higher voltage than the
> > other, better, the shifting of the equal potential surface I described
in
> > the earlier posting, or best, the application of a voltage that would
cause
> > both conductors to host a different field strength, would cause
unbalanced

> > currents.
> >
> > Obviously, we can not have both balanced, and unbalanced, situations.
We
> > either have one or the other. Therefore, we can not say, "Roger, in
one
> > posting you talk about perfect shielding, and in the other, the leaky
solid
> > conductor. You are contradicting yourself." No, we are not talking
about
> > the same circuit conditions.
> >
> > So there we have it. Does this fit with the way you think about leaky
> > coaxial cable?
> >
> > 73, Roger, W7WKB
> >
> > "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> > news:9e9u67$1sf$1@slb4.atl.mindspring.net...
> > > Roger:
> > >
> > > Then why are some coaxial cables more "leaky" than others?
> > >
> > > What happens to a perfectly shielded coaxial cable, i.e one wherein
there
> > > are no currents on the outside of the shield due to currents on the
> > insice,
> > > when rows of "holes" are punctured at regular intervals along the
cable?
> > >
> > > Why is braid coverage important?
> > >
> > > Why do coaxial cable manufacturers rate their cables according to
> > shielding
> > > effectiveness?
> > >
> > > Etc...
> > >
> > > -Peter K1PO
> > >
> > >
> > > "Roger Sparks" <sparksrc@home.com> wrote in message
> > > news:SeTM6.19733$p33.353932@news1.sttls1.wa.home.com...
> > > > Richard Harrison, KB5WZI , wrote
> > > > (snip some)
> > > > We know that at r-f, a braid performs nearly the same as a solid
shield.
> > > > Wires weaving between sides don`t carry the r-f with them as they
weave
> > > > between sides. Skin effect requires the current to remain on the

same
> > > > side of the braid.
> > > > (snipe more)
> > > > Certainly, the statement that "there is no voltage difference
between
> > > > the inside of the braid and the outside of the braid" is very
unlikely.
> > > >
> > > > (snip more)
> > > >
> > > > Good Morning Richard,
> > > >
> > > > I think it is good that you are keeping this question alive. You
will
> > > > notice that I started a new thread, which I did because I think the
> > topic
> > > > will receive a better review if it becomes the principal subject.
> > > >
> > > > Just to keep the discussion focused, I am thinking about the
fold-around
> > > > current on the braid that is illustrated in the ARRL Antenna Book.
This
> > > is
> > > > represented as being a second current path which drains power from
the
> > > > antenna. If it drains power, then it must have measurable voltage
and
> > > > current. The Antenna Book teaches that this current (it does not
talk
> > > about
> > > > voltage) is kept separate from the inner side by skin effect.
> > > >
> > > > I think two physical laws actually interplay here. The first is how
> > > current
> > > > would flow in braid considering that the wires are not running
parallel
> > to
> > > > the current, and further, that the wires overlap, one on top of the
> > other,
> > > > and then reverse.
> > > >
> > > > The second is how current, that is electrical charges, are
distributed
> > in
> > > a
> > > > round wire when the distribution is not neutral, or zero energy
> > situation.
> > > >
> > > > To deal with the physical configuration first, we need to carefully
look

> > > at
> > > > how the braid is laid together. I notice that the braid on RG-8 is
> > > > configured so that no wires run parallel to the center wire. In
> > addition,
> > > > a
> > > > wire will run on the inside surface for about 1/4 inch, then will
rise
> > and
> > > > run on top of another group of wires for about 1/4 inch thereby
becoming
> > > the
> > > > outside wire for about 1/4 inch. Because of this interweave, a
current
> > > > running on the inside would have to change wires every 1/4 inch to
> > remain
> > > on
> > > > the inside. Any outside current would also have to change wires
every
> > 1/4
> > > > inch to remain of the outside.
> > > >
> > > > The point of contact is on the top and bottom of each wire, and
currents
> > > on
> > > > the top or bottom (inside or outside of the coax) would have to go
> > through
> > > > these contact points (the identical points) in their path to remain
on
> > the
> > > > top or bottom. Separation would be impossible.
> > > >
> > > > The second law of physics to consider is the distribution of charges
in
> > a
> > > > round conductor. A current is defined as a movement of charges and
we
> > > > usually think of this as negative charges moving away from positive
> > > charges
> > > > (which remain fixed). The negative charges are moving as a group
which
> > > > results in a concentration of negative charges in a volume. Because
> > > > negative charges repel, they will expand in volume to cover the
entire
> > > > surface of the conductor. If a nearby surface (such as the inside
> > > conductor
> > > > in a coax line) has negative charges, then the distribution will
shift
> > > > toward that surface, but will not occupy only the bottom half of the
> > wire
> > > > for instance, because the concentration of charges in half a wire

would
> > be
> > > a
> > > > higher energy situation than would a concentration around the entire
> > wire
> > > > surface.
> > > >
> > > > This argument disappears for any separate outside current because it
> > would
> > > > not be balance by inside charges on the center conductor. Instead,
a
> > > > negative charge on the outside surface would (by capacitive action)
> > repel
> > > > negative charges on the inside conductor, and would therefore induce
a
> > > > current on the inner (center) conductor. In this way, any outer
current
> > > > would influence both the inside of the outer conductor and the
center
> > > > conductor of a coax line.
> > > >
> > > > I understood Kevin, w9cf, to say in an earlier posting that
capacitive
> > > flux
> > > > (the voltage field) moves through a conductor at the same speed as
> > through
> > > a
> > > > dielectric and does not diminish with depth. This is contrasted to
the
> > > > magnetic field which does diminish with depth of penetration into
the
> > > > conductor (skin effect).
> > > >
> > > > If you disagree with this analysis, please divide the rebuttal into
two
> > > > parts:
> > > > 1) how the current can pass through identical points and not mix.
> > > > 2)how the charge distribution can remain concentrated on only one
side
> > of
> > > > round wires.
> > > >
> > > > 73, Roger, W7WKB
> > > >
> > > >
> > >
> > >

5041. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 02:18:28 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B11B574.17F4D2ED@IEEE.org>
Source record: 161939

Bill Klocko wrote:
> Well, that's curious. Here's an example from that paper of mine:
> For the wave transmitted across the match point
> E5tl = .5/0, I5tl = .006666/0, P5tl = .003333
> For the wave re-reflected at the match point
> E5rl = .156/0, I5rl = .0020833/0, P5rl = .000325
> The total wave components toward the load are
> E5rl + E5tl = .656/0, I5rl + I5tl = .00875/0, P5 = .00574

I have been through your paper from top to bottom and back more than twice, Bill, and I haven't found the above anywhere. I also haven't found where you assert that 0.00333w+0.00325w=0.00574w

On what PDF page, exactly, is that material located? Are you in on a world-wide conspiracy to play a joke on me?
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5042. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 02:42:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9esdu1$89l$1@slb3.atl.mindspring.net>
Source record: 161940

Cecil:

First off... My deepest and sincerest applogies.

You probably have the perception that I am picking at you in particular. And that is my fault.

And... although I may not have addressed any of my posts explicitly to Steve, I do have very deep reservations about Steve Best's apparent [to me] lack of understanding of some of the issues that have been discussed.

Apparently I have not addressed my posts directly to Steve as I should have.

Again I applogize to you Cecil. There is no conspiracy.

I feel that, IMHO... from reading both Steve Best's and Walt Maxwell's postings that neither of those gentlemen have yet exhibited a deep understanding of the basic principles behind reflection metrology and the "scattering formalism".

They do not even seem to understand the basic framework under which the equations of the scattering formalism are constructed!

And neither seems to have any understanding of the construction and operation of the metrology involved in so-called wattmeters.

Walt's and Steve's understanding seems to be quite superficial and based upon simple algegraic manipulation of formulae for which they apparently lack a basic understanding of the basis and framework on which that formalism was set up.

fpr example, I for one am appalled that these gentlemen refuse to address my examples of DC reflections.

These examples of DC reflections are not trivial, these examples and their analysis and understanding reveal simple and deep concepts of the framework and formulae involved in the scattering formalism and their meanings. The extremely simple DC reflection examples are accurately based upon the "scattering formalism" and need to be "explained" by Steve and Walt and brought under their rationales for all to see.

I was also deeply disturbed that Walt Maxwell quoted back some "circulator" jargon to me based upon a complex microwave lab setup described to me by Wes, but yet it appears from Walt's defensive responses that he has no experience or understanding of circulator technology. I offered to send him schematics of circulators which I have designed and put into production along with explanations of their internal operations and... he just changed the subject. So much for reflections.

I don't even pretend to be a "reflection" guru... but it is my assesment that with a lot of their postings, both Walt and Steve are making much ado about nothing!

They seem to me to be like high priests chanting mumbo jumbo to keep the uninitiated intimidated and they refuse to address the issues on simple and clear terms understandable by ordinary engineers and technicians. Their examples and analysis are complex, convoluted and totured to the point where a "common man" cannot even follow them.

Why they attempt to make such simple concepts seem so complex is beyond me.

Cecil, again I applogize to you, if it appears that my posts have not been "even handed".

And I still maintain that, in the scattering formalism, the so-called "reflected power" is a fictional or symbolic power and so cannot be treated as if it were a commodity to be traded in the great "conservation of energy" balance.

-Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B1193EF.BB084C6E@IEEE.org...
> "Peter O. Brackett" wrote:
> >
> > Cecil: Conservation of energy is valid... if and only if...
> > The energy in question is "real"...
> > i.e. if and only if it involves the "real" generation of "real" energy
is
> > involved, none of that recirculating energy that was already generated
once
> > and keeps coming back to be counted again at some "virtual short"or some
> > other such visualization or complicated conconction developed to justify
the
> > visualization, is allowed.
>
> I feel like I am being nibbled to death by a flock of ducks, Peter.
> Steve proposes a couple of equations involving reflected power. I
> question whether both equations can be valid or not and you come
> back with that there is no such thing as reflected power. The question
> is: Why are you attacking me instead of Steve? Is there really a
> conspiracy among RF Gurus to hide the truth from us mere mortals?
>
> I am just about ready to believe there is and am on the verge of
> folding my tent like Galileo did. You seem to be a fair person. Are
> you fair or is it just part of the conspiracy? You seem to be the
> good cop in a "good cop, bad cop" scenario designed to get me to
> give up. Steve is the one who brought up the subject of reflected
> power with his power equations. You did not jump on him. You only
> jumped on my response to Steve's introduction of reflected power in
> his equations. One wonders why.
>

> > Also you might note that here is no mathematical basis to the
conservation
> > of energy "law" it is merely an experimental ovservation.
>
> Of course, when your buddy gets proven wrong in an argument, the argument
> didn't matter anyway. Why am I not surprised?
>
> > Cecil, IMHO... you really have to be careful to make sure that the
energies
> > that you are trying to balance under the "conservation of energy law"
are
> > well and truly based on actual energies and not on ficticious energies.
>
> Why do you object to my trying to balance "fictitious energies" when you
> didn't object to Steve's introduction of "fictitious energies"? Could it
be
> that you are not a good guy, Peter, you just pretend to be?
>
> > I am not taking any particular calculation or assertion of yours to task
> > Cecil, and often your common sense saves you, but you are skating on
very
> > thin ice.
>
> Steve must not weigh as much as me, huh? You have not objected to His
introduction
> of reflected power in His equations. One wonders why. I was born at night,
Peter,
> but it wasn't last night. Why do you not object to Steve's assertion that
both
> the following equations are true?
>
> Ptot = P1 + P2 = 75w + 8.33w = 133.33w AND
>
> Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w
>
> Why are you protecting Steve and jumping on me? If this is team
> play, I am considerably undermanned.
> --
> cheers, Cecil
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5043. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 02:45:23 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <eca3hts5h9ilcumog3jeg8hoebkku33ad8@4ax.com>
Source record: 161941

On Sun, 27 May 2001 16:59:58 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>
>Why do you not have a problem with Steve introducing the subject of power
>but then have such a problem with me wanting to discuss the concepts of
>power that Steve introduced? (I get paranoid about stuff like that.)
>--
>cheers, Cecil
>
>
Hi Cecil,

Both Walt and you act like only Steve's contrition can resurrect your
theories or dignity.

I can embrace a contradiction for the benefit of a new perspective,
Cecil. Look at my web pages, there's 100's of them with fractals!
:-)

73's
Richard Clark, KB7QHC

5044. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 02:58:40 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <pkf3htshr1h6f34eefkk6q989hmf6p927l@4ax.com>
Source record: 161942

On Sun, 27 May 2001 17:52:03 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Please feel free to vindicate either or both of us, Richard. Isn't the
>truth worth that?

Hi Cecil,

As offered before, truth is unknowable. Any attempt to express it
must necessarily render the answer a lie through the omission of
completeness.

Set yourselves free.

73's
Richard Clark, KB7QHC

5045. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 03:05:51 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9esfaf$24k$0@208.207.71.155>
Source record: 161943

```
CAM wrote:
>
> Dick Carroll wrote:
> >
> > CAM wrote:
> > >
> > > Dick Carroll wrote:
> > > >
> > > > Reg Edwards wrote:
> > > > > Cecil, could you please say by what means the tuner adjuster is
> > > > > made aware of when this seemingly desirable state of affairs has
> > > > > been achieved ?
> > > >
> > > > Reg, I do it by observing the reflected power meter as I make the tuner
> > > > adjustment. It dips to zero as the Zo matchpoint is reached.
> > >
> > > Dick, you stepped into Reg's trap. See my reply to see how I avoided
> > > it. :-)
> >
> > I still don't see the trap. It is immaterial what is downstream from
> > the matchpoint AFA the transmitter and indicator are conderned. The only
> > concern there is the amount of loss encountered.
>
> The trap is there is not enough coax between the transmitter and tuner to be
> able to develop standing waves so how can we possibly measure the SWR. :-)

That may be a trap for you. It isn't for me.
```

5046. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 03:10:36 UTC
From: w2du@iag.net
Message-ID: <3b11beb9.38407116@news.onemain.com>
Source record: 161944

On 27 May 2001 17:27:26 -0700, klocko@toad.net (Bill Klocko) wrote:

>w2du@iag.net (Walter Maxwell) wrote in message
news:<3b115aef.12861954@news.onemain.com>...
>> But where I depart from Bill is how can he be so knowledgeable as to write the excellent
paper
>> mentioned above, and still not agree with Johnson's presentation of subtracting and
adding powers in
>> his Eq 6.17.
>
>Now just a minute here, Walt. I've already said I agreed with Johnson's presentation
>relative to subtracting powers in Eqn 6.17. I even provided a derivation equivalent
>to Eqn 6.17 that is based on equations from Chapter 4. So don't say I don't agree
>with Eqn 6.17 or its use. I have said I don't agree with your equation for the
>sum of the powers at the match point. I've got my Johnson here (no jokes) and it would
>be a stretch to generalize Eqn 6.17 to the sum of powers. You've assumed an equation,
>right? My objection is with that equation and its use. It's counter to circuit theory.
>
>BTW, Johnson on pp 244-245 addresses superposition. Guess what: currents and voltages
>only. 73,
>Bill N3WK

Sorry Bill, I went too far without thinking about your agreement with Johnson concerning
subtracting
powers. That was a lapse in judgment. However, it is still apparent that you don't agree
that
Johnson's Eq 6.17 can be manipulated algebraically to include addition of powers. It's
simple math.
If A = B - C, then B certainly equals A + C. Why is that a stretch? If the reflected power
is
subtracted from the forward power at the mismatch how does the forward power regain the
lost power
without addition?

I haven't yet had a chance to look at Johnson's pp 244-245,but I will. However, I'll be
surprised if
those pages make the case for forward power based in the addition of the steady-state
reflected
voltage and the source voltage.

Walt, W2DU

5047. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 03:16:01 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B11C2F1.262E356D@IEEE.org>
Source record: 161945

Dick Carroll wrote:
>
> CAM wrote:
> > The trap is there is not enough coax between the transmitter and tuner to be
> > able to develop standing waves so how can we possibly measure the SWR. :-)
>
> That may be a trap for you. It isn't for me.

Yep, ignorance is bliss.

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5048. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 03:16:46 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B11C31E.B5F15C9@IEEE.org>
Source record: 161946

Richard Clark wrote:
> Set yourselves free.

Thanks for your support.

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5049. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 03:32:47 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B11C6DF.BF445ACD@IEEE.org>
Source record: 161947

"Peter O. Brackett" wrote:
> Again I applogize to you Cecil. There is no conspiracy.

Good cop again?

> And I still maintain that, in the scattering formalism, the so-called
> "reflected power" is a fictional or symbolic power and so cannot be treated
> as if it were a commodity to be traded in the great "conservation of energy"
> balance.

I am simply trying to learn, Peter. Demanding an answer to a question is
one of the ways I learn. When someone refuses to answer a question, a
red flag goes up for me. Why not answer a simple question?

You have said that you think there is no reflected energy but there is
energy in reflections. I'm a simple Texan and that seems like a contradiction
to me. However, I have been out of the state and have seen with my own eyes
the incoming (forward) and outgoing (reflected) waves at the shoreline in
California. I've also seen TDRs at work, felt a resistor getting hot from
reflected power, and performed numerous TV ghosting experiments.

I didn't start the power discussion - Steve did. I have said about thirty times
now that I agree with the result of his voltage additions. But seems to me,
there is something wrong when he asserts that:

(1) Ptot = P1 + P2 = 75w + 8.33w = 133.33w while at the same time asserting

(2) Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w

Even if you don't believe in reflected power, don't you agree something is
wrong with asserting both those equations to be true at the same time?
--
cheers, Cecil

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5050. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 03:35:43 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B11C78F.15C0FEB8@IEEE.org>
Source record: 161948

Richard Clark wrote:
> I can embrace a contradiction for the benefit of a new perspective,
> Cecil.

What I want to know is why you embrace Steve's contradictions and not
mine? :-)
--
cheers, Cecil

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5051. all band dipole question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 03:54:21 UTC
From: Mark Langberg <mlangberg@mediaone.net>
Message-ID: <NZjQ6.37964$9G.284584@typhoon.mw.mediaone.net>
Source record: 161949

I am putting up a 165 foot dipole fed with ladder line to an antenna tuner.
I only have 100 feet between the 2 available supports on my property.
Assuming I will not be cutting off the extra 35 feet and also cannot let the
ends just dangle because they will be too close to the ground, can I just
loop the extra 35' from one end back in the general direction of the antenna
axis? (It would be less than 30 degrees from the antenna wire axis.)
What do you suggest I do with the extra 35'? Please suggest more than one
option, if possible.

5052. Re: all band dipole question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 04:10:58 UTC
From: k4ia@aol.com
Message-ID: <20010528001058.04104.00001295@ng-cl1.aol.com>
Source record: 161950

You can't loop it back without seriously compromising your antenna - it starts to cancel itself. You can shorten it to what will fit and droop the ends down as much as you feel comfortable with.

Don't worry about shortening it - it won't be resonant anyway and your ladder line and tuner will do all the work for oyu.
Radio K4IA
Buck
Fredericksburg, Virginia USA

REAL CHEAP Long Distance 4.9 cents/min Interstate and REAL CHEAP Intrastate, International, Toll Free, Callback, Calling Cards, Pagers and more Tune to http://www.ld.net/?bucksavers

5053. Re: What means dBc ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 04:33:38 UTC
From: w1rfi@aol.com
Message-ID: <20010528003338.21996.00001504@ng-mj1.aol.com>
Source record: 161951

>From: "Peter O. Brackett" ab4bc@ix.netcom.com

>dBrnc is decibels above reference noise with "c-message" weighting.

In terms of RF signals, dBc is dB relative to the carrier level. Thus a harmonic might be listed as -60 dBc. What is really amusing is to see how many times the minus sign is left off the level. :-)

73,
Ed Hare, W1RFI

5054. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 04:54:04 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eslkd$o4e$1@slb6.atl.mindspring.net>
Source record: 161952

Cecil:

Yes I do.

But you have to pay closer attention to my assertions, they are simple but subtle.

I did not say there was no such thing as reflected power.

What I said is that the quantity that ya'll are calling "the reflected power" as set up by the mathematical framework of the scattering formalism, and as "measured" by those standard reflectometer circuits such as the Bird Model 43, which are set up to match that formalism, is not an actual power incumbent in the circuit and networks being discussed. It is related, yes, but it is not an actual power therein. It is a "formal" power, I prefer to call it a ficticious power, since that's what it is. It is a power that would be present under a circumstance that doesn't quite exist. Confusing? Yes! Why... for the life of me, I don't know why those "formalists" have made this so confusing, I suppose it is just so they can assert their "priesthood" over the rest of us riff raff!

Perhaps I should not use the term ficticious reflected power, because I believe when I do that, it put's many folks off... but that is what it is. It is an artificial power created simply by a symbolic calculation which does not use the actual variables in the circuit or network under discussion or under test. Sure it is related but it is not what you "think" it is as its' name might lead you to believe.

This subtle difference of which I speak, between the so-called "reflected power" and the actual power in the reflections, is very plain if you examine the DC case closely and then generalize that to the AC or RF case.

Until folks stop being "mesmerized" by the "names" of ficticious powers presented by those meters and the scattering formalism and begin to think about what's really happening, then those "words" will tend to make folks think that they are computing with things that they really are not.

The only way to see all of this is to forget about powers for a while and go directly back to first principles, use only volts, amps, and Ohm's Law and study the exact definitions of what the reflected voltage really is....

Draw schematics of the reflectometer circuits and trace out their operations and the origins of the equations, and then and only then everything will become clear.

It's best to do this at DC by the way, since all the elements and principles of understanding are there and there is less confusion about phase angles

and such.

As I say, "all you really need are I and V" and Ohm's law and a study of the definitions... they start with volts and amps and not with powers.

That's why I refuse to even get into these "power" discussions with you and Walt and Steve and others... simply because they are not what y'all think they are! I'll gladly get into discussions about volts and amps and Ohms and such, but I say leave power's out of it until you really understand what you are doing. Applying the principle of superposition to powers is just downright silly!

The powers are the results of the volts and amps and not vice versa.

Start there... with V and I... in fact you never have to introduce power to get all the answers and design equations you need to completely engineer matching systems.

I tell you, the "scattering fomalists" have made all of this stuff far more complicated than it needs to be!

Forget about "powers" they only lead to incorrect conclusions and the build up of complex and convoluted visualizations that are completely unecessary!

If the manufacturers of those danged "Wattmeters" only labeled them with what they actually are, that is "reflected" and "incident" voltmeters and published a manual with the definitions of reflected volts and incident volts, then we wouldn't be having all of this confusion!

Most of the confusion and arguments come about because you are all trying to "reconcile" ficticious watts! Don't do it. Reconcile only volts and amps and let the watts fall where they may! For that's what Mother Nature does.

Best,

-Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B11C6DF.BF445ACD@IEEE.org...
> "Peter O. Brackett" wrote:
> > Again I applogize to you Cecil. There is no conspiracy.
>
> Good cop again?
>
> > And I still maintain that, in the scattering formalism, the so-called
> > "reflected power" is a fictional or symbolic power and so cannot be
treated
> > as if it were a commodity to be traded in the great "conservation of
energy"
> > balance.
>
> I am simply trying to learn, Peter. Demanding an answer to a question is
> one of the ways I learn. When someone refuses to answer a question, a
> red flag goes up for me. Why not answer a simple question?

>
> You have said that you think there is no reflected energy but there is
> energy in reflections. I'm a simple Texan and that seems like a
contradiction
> to me. However, I have been out of the state and have seen with my own
eyes
> the incoming (forward) and outgoing (reflected) waves at the shoreline in
> California. I've also seen TDRs at work, felt a resistor getting hot from
> reflected power, and performed numerous TV ghosting experiments.
>
> I didn't start the power discussion - Steve did. I have said about thirty
times
> now that I agree with the result of his voltage additions. But seems to
me,
> there is something wrong when he asserts that:
>
> (1) Ptot = P1 + P2 = 75w + 8.33w = 133.33w while at the same time
asserting
>
> (2) Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w
>
> Even if you don't believe in reflected power, don't you agree something is
> wrong with asserting both those equations to be true at the same time?
> --
> cheers, Cecil
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5055. How to receive spread specturm transmissions from cordless phones?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 05:12:30 UTC
From: Tim Willson <tim.willson@state.mn.us>
Message-ID: <3B11DE3E.EA5ADEC6@state.mn.us>
Source record: 161953
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.space

Anyone have any success or or suggestions about the method and equipment used to recover spread spectrum cordless telephone transmissions? They are in the 902 to 927 mHz range. Thanks for answering here, so that all may benefit.

5056. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 07:37:50 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3b11fd1c.4353705@news.aepnet.com>
Source record: 161954

On Sun, 27 May 2001 22:42:39 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
wrote:

>Cecil:

[blah blah]
>
>I was also deeply disturbed that Walt Maxwell quoted back some "circulator"
>jargon to me based upon a complex microwave lab setup described to me by
>Wes, but yet it appears from Walt's defensive responses that he has no
>experience or understanding of circulator technology. I offered to send him
>schematics of circulators which I have designed and put into production
>along with explanations of their internal operations and... he just changed
>the subject. So much for reflections.

Speaking of "changing the subject", I proposed a simple (not 'complex')
directional coupler experiment. I asked you to explain how the terminations in
my power sensors managed to heat up with your "fictitious reflected power" and
all you wanted to do was discuss the weather.

You then mumbled something about complicated circulator technology and I
responded that you could feel free to remove the circulator and replace it with
a fixed attenuator.

Did you respond....no... instead you started a "DC" thread. So much for
sticking to the subject.

Wes Stewart N7WS

5057. Re: What means dBc ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 09:59:15 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3B122173.D1A737E0@dialpoint.net>
Source record: 161956

While I guess that the 'c' could mean anything, when the original
question mentioned
dBd and dBi I would guess the 'd' and 'i' were in reference to
antennas. The dB as we all agree is a Decibel which is just a ratio and
needs something to tell what it is a ratio of. The 'd' is dipole and
the 'i' is an isotropic antenna. Therefore the 'c' is for circular
polarization.

> >DL7JSK wrote:
> >>
> >> Hi NG
> >> I've read this in a description of a satellite turnstile antenna.I know dBd
> >> and dBi,but not dBc.Can anybody tell me what it means ?
> >>
> >> 73
> >> Tom
>
> In article <3B113712.6641C80C@dialpoint.net>, Ralph Mowery
> <rmowery@dialpoint.net> writes
> >It is in refference to the circular polarity. Many satellites use
> >circular polorized antennas, either right or left hand and there is
>
>
> Uh???
> I understand 'dBc' as 'dB with respect to carrier'.
> In the world of cable TV, it is something which I would use to indicate
> the level of an unwanted signal which is inside the wanted TV channel.
> I've never heard of it when it refers to 'lack of circularity'.
> Ian.

5058. Does anyone have experience of the Force 12 ZR3 antenna ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 11:15:52 UTC
From: David Allsopp <dfall@btinternet.com>
Message-ID: <4mc4htc2ovc91v8pf0okpocr942nh0fo16@4ax.com>
Source record: 161957

Does anyone have any experience of these low profile, compact vertical
triple band (20-15-10 metres) doubtlet antennas?

How do they perform against a full size dipole/vertical?

Your views would be appreciated

David
G0DFA

5059. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 11:21:23 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1234B3.6772D6C6@IEEE.org>
Source record: 161958

"Peter O. Brackett" wrote:
> Perhaps I should not use the term ficticious reflected power, because I
> believe when I do that, it put's many folks off... but that is what it is.
> It is an artificial power created simply by a symbolic calculation which
> does not use the actual variables in the circuit or network under discussion
> or under test. Sure it is related but it is not what you "think" it is as
> its' name might lead you to believe.

I know you don't think it's power until it is manifest which disagrees with
the IEEE definition of power. Are you willing to say that "reflected power"
is energy in motion?

> This subtle difference of which I speak, between the so-called "reflected
> power" and the actual power in the reflections, is very plain if you examine
> the DC case closely and then generalize that to the AC or RF case.

I have done that, Peter. But the interesting characteristics of reflected
waves don't appear until different RF cycles start interfering with each
other. That's where TV ghosting comes from. Same cycle reflections, such
as occur at DC, are not very interesting.

> The only way to see all of this is to forget about powers for a while and go
> directly back to first principles, use only volts, amps, and Ohm's Law and
> study the exact definitions of what the reflected voltage really is....

But Steve's treatment of powers is what the discussion is all about.

> As I say, "all you really need are I and V" and Ohm's law and a study of the
> definitions... they start with volts and amps and not with powers.

But there is no question or argument about volts and amps. The only questions
and arguments are about powers.

> Applying the principle of superposition to powers is just downright silly!

I agree, and that's exactly what I am trying to prove. I am dealing with
buckets of energy from a conservation of energy standpoint. Seems to me,
vector math just doesn't work on scalars like powers.

> Start there... with V and I... in fact you never have to introduce power to
> get all the answers and design equations you need to completely engineer
> matching systems.

I'm not the one who introduced power into the discussion. Shouldn't the one
who introduced power into the discussion be the one to straighten it out?

> Forget about "powers" they only lead to incorrect conclusions and the build
> up of complex and convoluted visualizations that are completely unecessary!

My point exactly. Why do you think I am hammering the power assertions so hard?

> Reconcile only volts and amps and let the watts fall where they may!

Trouble is, some people have watts falling where they shouldn't. That's what I am trying to resolve.
--
cheers, Cecil

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5060. Re: all band dipole question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 11:24:16 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B123560.283439AD@IEEE.org>
Source record: 161959

Mark Langberg wrote:
>
> I am putting up a 165 foot dipole fed with ladder line to an antenna tuner.
> I only have 100 feet between the 2 available supports on my property.
> Assuming I will not be cutting off the extra 35 feet and also cannot let the
> ends just dangle because they will be too close to the ground, can I just
> loop the extra 35' from one end back in the general direction of the antenna
> axis? (It would be less than 30 degrees from the antenna wire axis.)
> What do you suggest I do with the extra 35'? Please suggest more than one
> option, if possible.

One option, wind the extra 35' into an end hat on each end.
--
cheers, Cecil

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5061. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 11:39:35 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1238F7.FC8CF865@IEEE.org>
Source record: 161960

Bill Klocko wrote:
>
> CAM <Cecil.A.Moore@IEEE.org> wrote:

> After several days of at least cordial interchange, you're resorting
> to your nasty side again.

What you are seeing is frustration. I am trying to learn something and every possible roadblock, evasion, and diversion is being thrown up in the path of my learning experience. There's even an inconsistency in this posting of yours.

> > You don't have a problem with:
> > IF V1+V2=Vtot THEN V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0 ??????
>
> Sure, I've got a problem with that. You keep coming up with
> (A+B)(A+B) = A^2 + B^2, when any high school kid knows it's
> (A+B)(A+B) = A^2 + B^2 + 2AB
> I guess you're not reading my messages.

> I agree with Steve's voltage analysis, so I don't have a problem with
> the result 75w + 8.33w = 133.33w, if you want to express it that way.

But Bill, 75w + 8.33w = 133.33w is exactly what you said you have a problem with in the paragraph above. How can you agree you have a problem in one paragraph and then say you don't have that same problem in the next paragraph. I'm not trying to be hard nosed. Surely you can see the contradiction in those two statements:

(1) "I've got a problem with:"

IF V1 + V2 = Vtot THEN V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0

(2) "I don't have a problem with:"

V1^2/Z0 = 75w, V2^2/Z0 = 8.33w, Vtot^2/Z0 = 133.33w so 75w+8.33w=133.33w

So which of the following equations is valid?

(A) V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0 = 75w + 8.33w = 133.33w

(B) V1^2/Z0 + V2^2/Z0 + 2*sqrt(V1^2/Z0*V2^2/Z0) = 75w + 8.33w + 50w = 133.33w
--
cheers, Cecil

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5062. Re: How to receive spread specturm transmissions from cordless phones?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 12:17:23 UTC
From: Dave Shrader <W1MCE@arrl.net>
Message-ID: <3B1241BE.33CA104E@arrl.net>
Source record: 161961
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.space

You're not supposed to be able to decode spread spectrum. It is a secure mode!

Tim Willson wrote:
>
> Anyone have any success or or suggestions about the method and
> equipment used to recover spread spectrum cordless telephone
> transmissions? They are in the 902 to 927 mHz range. Thanks
> for answering here, so that all may benefit.

5063. Re: Will amateur radio astronomers be the first to directly detect extrasolar planets?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 13:04:22 UTC
From: jlazio@patriot.net
Message-ID: <m2hey5vd49.fsf@patriot.net>
Source record: 161962
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.antenna,sci.astro,sci.astro.seti,sci.space.policy

>>>>> "GE" == George Emsden <yqf33@dial.pipex.com> writes:

GE> "Robert Clark" <rgclark@my-deja.com> wrote in message
GE> news:5f181508.0105231015.1e88fc8f@posting.google.com...
>> The existence of extrasolar planets has been inferred from the
>> wobbling seen in some stars. Their actual light still has not been
>> detected or distinguished from that of their parent stars. The
>> long wavelength radio bursts that emanate from Jupiter have led to
>> suggestions that extrasolar planets might be detected by searching
>> for such bursts in the vicinity of stars:
>>
>> Opening a New Window on the Universe: High Resolution, Long
>> Wavelength Radio Astronomy, 2.5.2 Extrasolar Planets, [...]
>> http://rsd-www.nrl.navy.mil/7213/lazio/decade_web/node34.html

GE> Could someone tell me how the existence of a large planet like
GE> say, Jupiter orbiting round another "Sun" is going to help us find
GE> ETI?

Nobody has claimed that it will, at least not directly. There is the indirect aspect that finding other solar systems does improve our confidence in planets being a natural by-product of star formation.

I think there's also some excitement in being able to study planets in another solar system. Current detection techniques allow us to say that there is a planet and to constrain its mass but not much else. Being able to detect and study the natural radio emission from planets in another solar system would allow us to begin studying the planets as bodies themselves.

GE> As techniques improve, I am sure that more planets will be
GE> discovered but this does not get us closer to discovering ET
GE> civilisations where the SETI project is basically trying to
GE> process buckets of radio signals to sort out the natural from the
GE> "man-made" for want of a better word.

Another indirect aspect of being able to detect the natural radio emission from exoplanets is the likelihood that we will have to develop more clever ways of filtering out human-generated interference. These improved techniques might also have considerable impact on the "sorting" or filtering that radio SETI programs have to do.

--
Lt. Lazio, HTML police | e-mail: jlazio@patriot.net
No means no, stop rape. | http://patriot.net/%7Ejlazio/
sci.astro FAQ at http://sciastro.astronomy.net/sci.astro.html

5064. Re: all band dipole question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 14:08:49 UTC
From: Dan Richardson <k6mhe@arrl.net>
Message-ID: <7fm4ht8gfnn6alap5tpq26df1c9vfodbjm@4ax.com>
Source record: 161966

I'm curious as what is the importance of maintaining 165 feet? It
would seem to me that folding the ends back would be more detrimental
than cutting some off.

Rather than having the drop straight down why not pull down and to the
side? That should give better clearance from the ground. Or cut say
just 10 feet off of each end and then let them dangle?

Danny

On Mon, 28 May 2001 03:54:21 GMT, "Mark Langberg"
<mlangberg@mediaone.net> wrote:

>I am putting up a 165 foot dipole fed with ladder line to an antenna tuner.
>I only have 100 feet between the 2 available supports on my property.
>Assuming I will not be cutting off the extra 35 feet and also cannot let the
>ends just dangle because they will be too close to the ground, can I just
>loop the extra 35' from one end back in the general direction of the antenna
>axis? (It would be less than 30 degrees from the antenna wire axis.)
>What do you suggest I do with the extra 35'? Please suggest more than one
>option, if possible.
>
>

5065. Re: Will amateur radio astronomers be the first to directly detect extrasolar planets?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 14:13:18 UTC
From: "Alfred A. Aburto Jr." <aburto@cts.com>
Message-ID: <3b125c3d$0$770$e2e8da3@nntp.cts.com>
Source record: 161963
Cross-posted to: rec.radio.amateur.space,rec.radio.amateur.antenna,sci.astro,sci.astro.seti,sci.space.policy

Joseph,
This is a great idea! Have you talked to the "Radio Jove" group ... a world wide group monitoring Jupiter emissions. Also there are people in SARA (Society of Amateur Radio Astronomers) monitoring Jupiter. They'd be excited about looking for the 20MHz like emissions from other giant planets! I guess the only problem to do coherent or incoherent summing from all those amatuer radio telescopes (antennas :) would be to have accurate clocks at each site.

One question though. Would the emissions always be in the 20MHz region? Doesn't the emission at 20MHz depend upon the planet having a nearby moon (Io in Jupiters case)?
Al

> T. Joseph W. Lazio <jlazio@patriot.net> wrote in message news:m2lmnmg28a.fsf@patriot.net...
> >>>>> "RC" == Robert Clark <rgclark@my-deja.com> writes:
>
> RC> The existence of extrasolar planets has been inferred from the
> RC> wobbling seen in some stars. Their actual light still has not been
> RC> detected or distinguished from that of their parent stars. The
> RC> long wavelength radio bursts that emanate from Jupiter have led to
> RC> suggestions that extrasolar planets might be detected by searching
> RC> for such bursts in the vicinity of stars:
>
> RC> Opening a New Window on the Universe: High Resolution, Long
> RC> Wavelength Radio Astronomy, 2.5.2 Extrasolar Planets, [...]
> RC> http://rsd-www.nrl.navy.mil/7213/lazio/decade_web/node34.html
>
> RC> However, sensitive searches have so far failed to detect
> RC> them. This is undoubtedly due to distance attenuation for such
> RC> planets light-years away. The distance to Jupiter ranges up to 9 x
> RC> 10^8 km. A star 10 light-years away is at 9 x 10^13 km, a factor
> RC> of 10^5 larger than the Jupiter distance.
>
> The key is to go to low frequencies (low by radio astronomical
> standards). Jupiter's emission cuts off quite strongly around 40
> MHz. Thus, most professional radio telescopes, which are optimized to
> work around 1000 MHz have little chance of detecting any radio
> emission from these exoplanets.
>
> As you say, there has been no detection of radio emission from an
> exoplanet. I know that Bastian and collaborators looked, using the
> VLA, toward many stars. However, most of their observations were at

> 330 MHz and above; again one might worry that at these high
> frequencies the exoplanets produce no emission anyway.
>
> I've got a project going to look at tau Boo. At least according to
> one model, there's a slim chance that it would produce detectable
> emission at 74 MHz, a frequency at which the VLA does operate. Stay
> tuned! :)
>
> --
> Lt. Lazio, HTML police | e-mail: jlazio@patriot.net
> No means no, stop rape. | http://patriot.net/%7Ejlazio/
> sci.astro FAQ at http://sciastro.astronomy.net/sci.astro.html

5066. Re: How to receive spread specturm transmissions from cordless phones?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 14:14:10 UTC
From: TooManyTubes <kb8tl@yahoo.com>
Message-ID: <th4nbdqamrggd2@corp.supernews.com>
Source record: 161964
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.spac

Educational purposes only, I'm certain.

"Dave Shrader" <W1MCE@arrl.net> wrote in message
news:3B1241BE.33CA104E@arrl.net...
> You're not supposed to be able to decode spread spectrum. It is a secure
> mode!
>
> Tim Willson wrote:
> >
> > Anyone have any success or or suggestions about the method and
> > equipment used to recover spread spectrum cordless telephone
> > transmissions? They are in the 902 to 927 mHz range. Thanks
> > for answering here, so that all may benefit.

5067. Question regarding. linear loaded antenna.or wires?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 14:49:30 UTC
From: chuckc6vch@aol.com
Message-ID: <20010528104930.29173.00002005@ng-ff1.aol.com>
Source record: 161965

Any information on this subject good or bad. antenna I have cushcraft A4S

chuck kc6vch

5068. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 14:54:05 UTC
From: richardharrison@webtv.net
Message-ID: <18750-3B12668D-11@storefull-114.iap.bryant.webtv.net>
Source record: 161968

Gray Frierson Haertig wrote:
"It is clear from this that the field from the center conductor is not attenuated by the shield."

The "this" above may be the evolution of coax from parallel wire line where equal and opposite fields balance out at a distance from the wires.

This is not the mecanism with coax. The field of the center conductor is confined within coax.

I gave an example of skeletal open-wire coax used by broadcasters in my previous post. These use 4, 6, 8, and 12 wires around the center conductor in varying grades of effectiveness in containing the field of that center conductor. The outer shield wires are shorted together at small fractions of a wavelength along the path of the line and grounded througth the support pole there.

Every increase in the number of wires used in the "shield" around the center conductor decreases the induced current in the ground under the line.

So, I would say it is clear that the field from the center conductor is attenuated by the shield.

Best regards, Richard Harrison, KB5WZI

5069. Re: How to receive spread specturm transmissions from cordless phones?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 15:07:14 UTC
From: Bill Cromwell <bcromwell1@earthlink.net>
Message-ID: <CQtQ6.42270$9D5.2556394@newsread2.prod.itd.earthlink.net>
Source record: 161820
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.spac

I suppose it is illeagal to monitor ypur own phone system?

Bill

Dave Shrader <W1MCE@arrl.net> wrote in message
news:3B1241BE.33CA104E@arrl.net...
> You're not supposed to be able to decode spread spectrum. It is a secure
> mode!
>
> Tim Willson wrote:
> >
> > Anyone have any success or or suggestions about the method and
> > equipment used to recover spread spectrum cordless telephone
> > transmissions? They are in the 902 to 927 mHz range. Thanks
> > for answering here, so that all may benefit.
>

5070. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 15:09:23 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9etpm4$ue5$1@slb2.atl.mindspring.net>
Source record: 161967

Cecil:

Heh, heh... I agree and I see what you have been trying to do with Walt and Steve, but they are convinced that "power" is what is important and are trying to defend their reputations on some "shaky" power statements that they have made in public.

They don't seem prepared to drop the power considerations and look simply at Volts and Amps and Ohms, etc...

And from my viewpoint none of those "power" arguments make any sense, since they are ficticious powers anyway, just a by product of a mathematical formalism.

Cecil, I do not agree with you that the DC case, or the "within a cycle case" as you put it, are dull and uninteresting. In point of fact they are some of the most interesting cases. Much more interesting than your easily separated and eliminated/cancelled TV ghosts.

Certainly the low frequency cases are most illuminating and extremely complicated at their best.

Consider trying to resolve radar returns and echos when the targets are all within a wavelength. Consider what the seismic sounding guys do as they set of "shots" near the surface of the earth and try to deduce the subtereanean structures layers and oil deposits far below. Is it possible to do so? Yes it is? Are there echo's within a wavelength, certainly. Can you resolve them to any degree of resolution? What are the limits of such reflection mechanics? Is it simple? Nope, it is very complicated, interesting and challenging and involves the concepts of beamforming and de-smearing and de-convolution of signals using advanced signal processing techniques and methods.

Don't be so quick to dismiss the "simple" cases.

-Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B1234B3.6772D6C6@IEEE.org...
> "Peter O. Brackett" wrote:
> > Perhaps I should not use the term ficticious reflected power, because I
> > believe when I do that, it put's many folks off... but that is what it
is.
> > It is an artificial power created simply by a symbolic calculation which
> > does not use the actual variables in the circuit or network under
discussion
> > or under test. Sure it is related but it is not what you "think" it is

as
> > its' name might lead you to believe.
>
> I know you don't think it's power until it is manifest which disagrees
with
> the IEEE definition of power. Are you willing to say that "reflected
power"
> is energy in motion?
>
> > This subtle difference of which I speak, between the so-called
"reflected
> > power" and the actual power in the reflections, is very plain if you
examine
> > the DC case closely and then generalize that to the AC or RF case.
>
> I have done that, Peter. But the interesting characteristics of reflected
> waves don't appear until different RF cycles start interfering with each
> other. That's where TV ghosting comes from. Same cycle reflections, such
> as occur at DC, are not very interesting.
>
> > The only way to see all of this is to forget about powers for a while
and go
> > directly back to first principles, use only volts, amps, and Ohm's Law
and
> > study the exact definitions of what the reflected voltage really is....
>
> But Steve's treatment of powers is what the discussion is all about.
>
> > As I say, "all you really need are I and V" and Ohm's law and a study of
the
> > definitions... they start with volts and amps and not with powers.
>
> But there is no question or argument about volts and amps. The only
questions
> and arguments are about powers.
>
> > Applying the principle of superposition to powers is just downright
silly!
>
> I agree, and that's exactly what I am trying to prove. I am dealing with
> buckets of energy from a conservation of energy standpoint. Seems to me,
> vector math just doesn't work on scalars like powers.
>
> > Start there... with V and I... in fact you never have to introduce power
to
> > get all the answers and design equations you need to completely engineer
> > matching systems.
>
> I'm not the one who introduced power into the discussion. Shouldn't the
one

> who introduced power into the discussion be the one to straighten it out?
>
> > Forget about "powers" they only lead to incorrect conclusions and the
build
> > up of complex and convoluted visualizations that are completely
unecessary!
>
> My point exactly. Why do you think I am hammering the power assertions so
> hard?
>
> > Reconcile only volts and amps and let the watts fall where they may!
>
> Trouble is, some people have watts falling where they shouldn't. That's
> what I am trying to resolve.
> --
> cheers, Cecil
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5071. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 15:12:29 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <aTtQ6.6840$X4.844771@nntp2.onemain.com>
Source record: 161819

Walter Maxwell <w2du@iag.net> wrote in message
news:3b11beb9.38407116@news.onemain.com...
> On 27 May 2001 17:27:26 -0700, klocko@toad.net (Bill Klocko) wrote:
>
> >w2du@iag.net (Walter Maxwell) wrote in message
news:<3b115aef.12861954@news.onemain.com>...
> I haven't yet had a chance to look at Johnson's pp 244-245,but I will.
However, I'll be surprised if
> those pages make the case for forward power based in the addition of the
steady-state reflected
> voltage and the source voltage.
>
> Walt, W2DU

Bill, I've reviewed Johnson's pp 244-245 that defines superposition. But as I've said earlier in this thread, it is not superposition that adds the reflected power to that of the source at the matching point. It's true that in my QEX article I said it is superposition, but I was wrong there.

With superposition any voltage added to a circuit comes from an additional, external source, which naturally increases the total voltage and current in the circuit. In our matching circuitry there is no additional source of voltage.

By adding voltages via superposition in our matching case the total forward voltage becomes extreme, and if those voltages were added on each cycle the total voltage would increase exponentially. But there is no additional voltage source, only that of the original source voltage entering the line. So let's look at what is really happening in the matching circuit.

Any line section used as a matching device is a resonant circuit. After the steady state is reached the energy circulates continuously from one end of the line to the other. The build up of voltage and current in the line is due only to the resonant rise in voltage and current, as in a lumped LC circuit, which also requires build up to the steady-state condition.

The SWR on the line is the Q, which, on lossless line, depends only on the nature of the termination. If the termination matches the line impedance there is no buildup of voltage and current. If the termination is either an open or short circuit the SWR and Q are infinite. Thus the voltage and current build up ranges between the limits of 1 to 2, 1 when the line is matched and 2 when there is total reflection at the termination. On the lossless line the only voltage supplied to the line is that necessary to allow the load to absorb the power delivered by the source.

All of the energy circulating within the resonant line originated from the single source, none has been added at the matching point by virtue of an additional source of voltage. Therefore the energy reflected at the mismatched termination is simply re-reflected at the matching point as it circulates back and forth along the line in the manner similar that of the energy circulating in a lumped LC circuit. Consequently the steady-state level of the increased forward voltage (and power) is not due to superposition, and thus the reflected and source voltages do not add directly as claimed.

Since the forward power equals the source power plus the reflected power, and since the forward power minus the reflected power equals the power absorbed in the load, the only way for the power budget to balance is for the reflected power to add to the source power to enable the forward power to deliver the source power to the load and still reflect the power not absorbed to the load.

In other words, Johnson's Eq 6.17 can be made to read like this:

Psource + Pref = Pfwd Pfwd - Pref = Pdel.

This Bill, is the result of refreshing my understanding of the principle of superposition gleaned from reviewing Johnson's pp 244-245 at your suggestion. Those pages are thus irrelevant to the case of determining the forward voltage (and power) as I said in my post above.

Walt, W2DU

5072. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 15:20:41 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9etqba$16q$1@nntp9.atl.mindspring.net>
Source record: 161821

Wes:

Hey how's wx in Tucson?

Wes I asked you to send me a USPS address or an email address off line, where you can receive Adobe.pdf files.

I'll send you some circulator and directional coupler schematics, construction diagrams, design and sensitivity analysis, etc... and we can discuss them in whatever depth you wish..

The example lab set up you suggested is quite complicated for a NG discussion, and it seems that you also believe the "labels" on your circulators, directional couplers and such mean one thing, while I assert that they mean another. And so we can't really have discussion until we all agree on what the terms mean. The only way to do that is by looking at and understanding schematic diagrams. You certainly can't do that by looking at a meter face labeled "Watts" when it is actually measuring an indirectly related "Voltage"!.

Just because a port or meter face has "Reflected Power" silk screened on it, does not mean that it is what it says it is.

You really have to look at the schematic diagrams and figure out how these things work in order to understand them, for the jargon and terminology surrounding the "scattering formalism" is only loosely coupled to what you are talking about here on this NG.

Wes... the DC case is much simpler than you might imagine. It contains only three elements, two resistors and one ideal battery. All it takes to discuss is Volts, Amps, and Ohm's Law, and all of the reflection mechanics that you will ever need are laid bare for all to see, no hocus pocus, no mumbo jumbo, no priests telling you one thing and meaning another, etc..... come on in... It won't hurt.

Liberate yourself from the high priests of reflection mechanics!

It's raining here in Cary, NC now.

Best,

-Peter K1PO

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message news:3b11fd1c.4353705@news.aepnet.com...
> On Sun, 27 May 2001 22:42:39 -0400, "Peter O. Brackett" <ab4bc@ix.netcom.com>
> wrote:

>
> >Cecil:
>
> [blah blah]
> >
> >I was also deeply disturbed that Walt Maxwell quoted back some
"circulator"
> >jargon to me based upon a complex microwave lab setup described to me by
> >Wes, but yet it appears from Walt's defensive responses that he has no
> >experience or understanding of circulator technology. I offered to send
him
> >schematics of circulators which I have designed and put into production
> >along with explanations of their internal operations and... he just
changed
> >the subject. So much for reflections.
>
> Speaking of "changing the subject", I proposed a simple (not 'complex')
> directional coupler experiment. I asked you to explain how the
terminations in
> my power sensors managed to heat up with your "fictitious reflected power"
and
> all you wanted to do was discuss the weather.
>
> You then mumbled something about complicated circulator technology and I
> responded that you could feel free to remove the circulator and replace it
with
> a fixed attenuator.
>
> Did you respond....no... instead you started a "DC" thread. So much for
> sticking to the subject.
>
> Wes Stewart N7WS
>

5073. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 15:22:22 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B126D2E.D5C5118F@mwci.net>
Source record: 161822

CAM wrote:

> So which of the following equations is valid?
>
> (A) V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0 = 75w + 8.33w = 133.33w
>
> (B) V1^2/Z0 + V2^2/Z0 + 2*sqrt(V1^2/Z0*V2^2/Z0) = 75w + 8.33w + 50w = 133.33w

In Eq A the assumption is that V1 and V2 are *in-phase* with each other and the voltages add directly.

In Eq B the assumption is that V1 and V2 are *90 degrees out of phase* and the voltages add at right angles (Pythagorean theorem).

Under those conditions they are both OK. But if the phase angle is not zero or 90 degrees then the exact value of phase angle theta needs to be taken into consideration.

V^2/Z0 = [V1^2 + 2*V1*V2*cos(theta) + V2^2] / Z0

The cosine of 0 degrees is 1.0, the cosine of 90 degrees is 0.0.

In networks with two or more generators it is a problem to assign reference phase numbers to the generators. For power dissipation purposes, zero phase is sometimes "worst case". Usually, in circuits, it doesn't matter because generators in different parts of a circuit are shifted differently at different frequencies.

In transmission lines, delivered power (the Wattmeter Equation) is

Pdel = |E+|^2/Z0 - |E-|^2/Z0 = Pfwd - Prefl = Pgen

where Pfwd and Prefl are constants, |E+| and |E-| are scalar, and phase is not mentioned or required. It is true that E+ and E- produce standing waves, but for Pfwd and Prefl values it is only the magnitudes that are involved. In this example, for 50 ohms and 150 ohms, the reflection coefficient is

kr = (150 -50) / (150 + 50) = 0.5

and

Pdel = 133.33 - 33.33 = 100 W = Pgen

Bill W0IYH

5074. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 15:26:14 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105280726.6ae9256a@posting.google.com>
Source record: 161823

CAM <Cecil.A.Moore@IEEE.org> wrote in message news:<3B11A40C.924DD75E@IEEE.org>...
> So which equation is right?
>
> Ptot = P1 + P2 = 75w + 8.33w = 133.33w OR

As I recall, Steve did a voltage analysis to come up with a correct answer.
This is your willy nilly superposing of multiple power terms in an attempt
to discredit his analysis. It is incorrect.

>
> Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w
>

The equation Ptot = P1 + P2 + 2*sqrt(P1*P2) is correct.

The equation 75w + 8.33w + 50w = 133.33w is YOUR attempt to balance some
sort of "energy equation." Although mathematically correct, the 50w term
is YOUR fudge factor that YOU require to balance the equation. If you're
confused about the fact that it's YOU who requires this term, see your
own quote below about the "0.002082 joules/sec of destructive/constructive
interference" that I "didn't account for." This term is not necessary in a
correct voltage/current analysis. The equation as it stands is physically
meaningless.

> If you agree with Steve, you agree with both equations. I find agreeing
> with both equations beyond belief. Steve introduced the 2*sqrt(P1*P2)
> fudge factor. It wasn't I.

> > I've already given several counter-examples where it's ABSOLUTELY NECESSARY
> > to work with the voltages and currents, otherwise you come up with the wrong
> > answer. But I guess you're not reading my messages.
>
> I agree with that, Bill. STEVE INTRODUCED THE CONCEPT OF POWER. It
> wasn't I. Why are you blaming me for the subject that Steve introduced?

Why don't you take up the issue with Steve if and when he decides to respond
to your comments.

> > > If you can add one joule and one joule and get four joules, the state of
> > > California will give you a fortune for that secret.
> >
> > Why don't you call someone from a power company in the state of California
> > and ask if they consider power values to be scalars and just add 'em up?
> > I'll bet the laughter would be deafening.
>
> My degree is in Power Engineering, Bill. Power *IS* a scalar. Two 100 megawatt
> power generation stations can provide 200 megawatts but no more than 200 megawatts.

> Why are transmission lines any different? To me, this doesn't seem like rocket science.
Where,
> exactly, is the magic associated with transmission lines that allow them
> to violate the conservation of energy principle?

Well, I had only one course in power and even I know that power engineers use vector
voltage
and vector current to come up with vector power in VARS and the power factor. Do you
honestly
expect anyone to believe that when a power company wants to switch in a supplementary
generator
that they simply flip a switch and put it online with the others? So why don't you call
someone from a power company in the state of California and tell them that power
values are scalars?

>
> > > Nope, that's not the total wave components, Bill. You forgot to include
> > > the wave cancellation energy (power) which gets dumped into the electro-
> > > magnetic fields. The correct equation is:
> >
> > But I thought you agreed with the contents of that paper. And you
> > said your phasor diagram is a carbon copy of that paper of mine. If I
> > forgot the "wave cancellation energy" then so did you. But I don't worry
> > about any "wave cancellation energy" because all quantities in the paper
> > add up to exactly what everybody would expect. I don't need any
> > fudge factor to make an "energy equation" balance.
>
> I don't recall you saying anything about wave cancellation energy, Bill.
> It is possible that your paper is 100% correct but you made an error in
> your statements on the newsgroup. What exactly is behind all these diversions?
>

No, you said it. Read 3 paragraphs above. I was proving that superposing
multiple power sources is a no-no, and a fudge factor is not necessary. There's
no diversion on my part. I was trying to show the inconsistency in your own remarks.

> > Tell you what, you continue to add those powers in spite of the advice
> > of every circuits book around, add whatever fudge factors you need to get
> > your energy equation to balance, and continue to march down that road in
> > blissful ignorance.
>
> I'm not the one who introduced the fudge factors, Bill. Steve did. I am only
> questioning the introduction of those fudge factors. Why are they necessary?
> If you are going to defend Steve's assertions then you are required to
> defend Steve's assertions.

So now it's Steve who introduced the fudge factors and you're the one questioning
them? You're really something. Compare the paragraph above to the paragraph
below and tell us that it's Steve's 0.002082 joules/sec fudge factor that I didn't
account for. You need a rest - you don't even read your own replies.

> > > There's 0.002082 joules/sec of destructive/constructive interference that
> > > you didn't account for. That's why your energy equation doesn't balance.
> >
>
> To summarize: I agree with Steve's additions of voltages. STEVE INTRODUCED
> THE CONCEPT OF ADDING POWERS. It wasn't my idea. I am simply questioning
> his "addition" of powers. He even sent me a paper he wrote in which trig
> functions are introduced into his (vector?) additions of power.

Nice try. But it won't work. HMD (Happy Memorial Day in CW shorthand). 73,
Bill N3WK

5075. Re: all band dipole question

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 15:29:19 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9etqs4$35u$1@slb5.atl.mindspring.net>
Source record: 161824

I would just cut the 165 feet down to fit the lot.

Or as Cecil mentions, he's always got great ideas, if you don't want to cut the wire off and throw it away, just zig-zag the ends back and forth and make a "capacitance hat" end loading on each end. Make em symmetrical to avoid common mode problems.

Those capacitive end loadings will allow a longer high current section [antenna standing wave] along the radiator at the feedpoint and possibly give you better directivity for ham purposes. A long radiating element, in terms of wavelengths, tends to get very directive off the ends. The capacitive end loading will make the antenna a little more broadside oriented.

If you want detailed numerical analysis and plots of typical radiation patterns before you start, cutting and making capacitance loaded ends, why not get a copy of EZENEC and do some simple modeling to get some approximations to see what the radiation patterns look like on the bands of interest to you.

-Peter K1PO

"Dan Richardson" <k6mhe@arrl.net> wrote in message
news:7fm4ht8gfnn6alap5tpq26df1c9vfodbjm@4ax.com...
> I'm curious as what is the importance of maintaining 165 feet? It
> would seem to me that folding the ends back would be more detrimental
> than cutting some off.
>
> Rather than having the drop straight down why not pull down and to the
> side? That should give better clearance from the ground. Or cut say
> just 10 feet off of each end and then let them dangle?
>
> Danny
>
>
>
> On Mon, 28 May 2001 03:54:21 GMT, "Mark Langberg"
> <mlangberg@mediaone.net> wrote:
>
> >I am putting up a 165 foot dipole fed with ladder line to an antenna
tuner.
> >I only have 100 feet between the 2 available supports on my property.
> >Assuming I will not be cutting off the extra 35 feet and also cannot let
the
> >ends just dangle because they will be too close to the ground, can I just
> >loop the extra 35' from one end back in the general direction of the

antenna
> >axis? (It would be less than 30 degrees from the antenna wire axis.)
> >What do you suggest I do with the extra 35'? Please suggest more than one
> >option, if possible.
> >
> >
>

5076. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 15:33:01 UTC
From: richardharrison@webtv.net
Message-ID: <15661-3B126FAD-197@storefull-116.iap.bryant.webtv.net>
Source record: 161826

Richard Clark wrote:
"As offered before, truth is unknowable."

It is even more likely that truth is unacceptable.

At a transmission line short or open no energy is consumed. Energy is 100% reflected and a 180-degree phase shift between volts and amps is imposed in the reflected wave.

In a partial reflection of a wave the reflected energy has the same 180-degree phase shift imposed between volts and amps. When equal and opposite parcels of energy tagged volts and amps arrive back at the sending impedance, the only effect they can produce is another 180-degree phase shift because they are incapable of absorption.

All my adult life, and that is a long, long time, I`ve been told by experts that re-reflection by the sender is total. Now I think I`ve figured out why this is true.

Best regards, Richard Harrison, KB5WZI

5077. Re: What means dBc ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 15:46:06 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <tbs4htcqa1gc81vvj6ud2hk4ib5ocjr90m@4ax.com>
Source record: 161825

Ralph Mowery <rmowery@dialpoint.net>
shared these priceless pearls of wisdom:

->While I guess that the 'c' could mean anything, when the original
->question mentioned
->dBd and dBi I would guess the 'd' and 'i' were in reference to
->antennas. The dB as we all agree is a Decibel which is just a ratio and
->needs something to tell what it is a ratio of. The 'd' is dipole and
->the 'i' is an isotropic antenna. Therefore the 'c' is for circular
->polarization.

No, I don't think so. While I agree that dBd is the measure of an antenna's gain in a particular direction with the reference being a dipole being pointed in the same direction, and the same for isotropic (less the "pointing" factor of a omnidirectional radiator), I fail to understand how "c" can stand simply for circular polarization. What is the reference antenna?

As Ed Hare said, most of us that do this sort of work immediately see dBc and think of some spurious emission referenced to the carrier. However, since this reference wasn't to a transmitter but to an antenna system, I'm afraid that I've gotta say "I don't know".

Jim
Jim Weir, VP Eng. RST Eng. WX6RST
A&P, CFI, and other good alphabet soup

5078. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 15:46:50 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105280746.5c087f53@posting.google.com>
Source record: 161827

w2du@iag.net (Walter Maxwell) wrote in message
news:<3b11beb9.38407116@news.onemain.com>...
> On 27 May 2001 17:27:26 -0700, klocko@toad.net (Bill Klocko) wrote:
>
> >w2du@iag.net (Walter Maxwell) wrote in message
news:<3b115aef.12861954@news.onemain.com>...
> Sorry Bill, I went too far without thinking about your agreement with Johnson concerning
subtracting
> powers. That was a lapse in judgment. However, it is still apparent that you don't agree
that
> Johnson's Eq 6.17 can be manipulated algebraically to include addition of powers. It's
simple math.
> If A = B - C, then .... Why is that a stretch? If the reflected power is
> subtracted from the forward power at the mismatch how does the forward power regain the
lost power
> without addition?

OK Walt, apology accepted. As for those equations, in A = B - C, A =
Pdel, B = Pfwd, and C = Pref.
In this case, Pfwd and Pref are going in different directions. Sure,
you manipulate the equation as is,
but then all you've got B = A + C where you're solving for Pfwd in
terms of Pdel and Pref. What you want
is an equation for A = Pdel where B = P1fwd and C = P2fwd. In this
case, as opposed to the first,
P1fwd and P2fwd represent 2 waves both going in the same (forward)
direction at the match point. This is
superposition of the 2 forward power terms and special care needs to
be taken. Please see my 2 derivations.
In the first case, those cross terms cancel and in the second case
they don't. 73,
Bill N3WK

5079. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 15:50:09 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B1273B1.E0214CEC@mwci.net>
Source record: 161828

Peter O. Brackett wrote:

> The DC case is much simpler than you might imagine. It contains only
> three elements, two resistors and one ideal battery. All it takes to
> discuss is Volts, Amps, and Ohm's Law, and all of the reflection mechanics
> are laid bare.

The Smith chart is a good place to see DC. The R axis is the locus of all R values. For a battery with 50 ohms internal resistance and a 150 ohm load, a circle through R=150 ohms is the 3:1 SWR circle. The return loss can also be easily found.

For DC these numbers are not themselves very useful, but one number that is useful at DC is the "mismatch loss", and it is numerically equal to the return loss.

Bill W0IYH

5080. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 15:52:22 UTC
From: richardharrison@webtv.net
Message-ID: <15661-3B127436-199@storefull-116.iap.bryant.webtv.net>
Source record: 161829

Walt, W2DU wrote:
"In other words, Johnson`s Eq 6.17 can be made to read like this:
Psource + Pref = Pforward
Pforward - Pref = Pdelivered."

(In a lossless line Psource = Pdelivered.)

That agrees with Bird. Walt hit one out of the park with this posting.

Best regards, Richard Harrison, KB5WZI

5081. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 16:45:41 UTC
From: kb7qhc@home.com
Message-ID: <3b127e0e.779616799@news.seanet.com>
Source record: 161830

On Sun, 27 May 2001 22:35:43 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> I can embrace a contradiction for the benefit of a new perspective,
>> Cecil.
>
>What I want to know is why you embrace Steve's contradictions and not
>mine? :-)

His perspectives are more interesting. His Quizzes take more work and
are less prone to pencil whipping. Where you and Walt love to chew
the same problems to death (boring at 200+ lines), Steve slices
through those academic Gordian knots with a stroke.

73's
Richard Clark, KB7QHC

5082. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 16:49:45 UTC
From: kb7qhc@home.com
Message-ID: <3b148153.780454003@news.seanet.com>
Source record: 161831

On Sun, 27 May 2001 17:04:21 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>There is NO way to do it, Bill.

Hi Cecil,

You haven't performed the Mesh or Nodal analysis, have you?

73's
Richard Clark, KB7QHC

5083. Re: How to receive spread specturm transmissions from cordless phones?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 17:08:35 UTC
From: Macgman <macgyver9@iname.com>
Message-ID: <nCvQ6.2145$_%1.280404@paloalto-snr1.gtei.net>
Source record: 161832
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.space,alt.ham-radio.vhf-uhf

I worked on RF hardware and software design of spread spectrum phones. The US government would have a serverly hard time decoding a spread spectrum signal phone (its easier to just tap the line...hehehe). The base unit passes the handset a "seed" this seed corresponds to a psuedo-random high speed code on which the multichipped audio stream is EX-OR'ed with. Also there are control signals passed back and forth between base and handset....not to mention channel selection...etc. Sounds complicated yet?.....well there is more.....Your receiver archetecture only takes care of the physical radio demodulation......there is the software layer that is the BIG unknown, that layer takes care of EVERYTHING, if you have no clue how or what it does you will be spinning your wheels for years.

Best Regards,
MacGmaN

5084. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 17:14:47 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9eu11a$8us$1@uranium.btinternet.com>
Source record: 161833

Cecil, I can't find your answer to my so-called catch question.
Could you repeat it please ? It's probably the CIA dirty tricks
department. I gave up smoking years back so there's no point in
sending exploding cigars.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

5085. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 17:27:25 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <CRvQ6.6864$X4.879560@nntp2.onemain.com>
Source record: 161834

CAM <Cecil.A.Moore@IEEE.org> wrote in message
news:3B11729D.4A7EFC9B@IEEE.org...
>
> On the other hand they say: 75w + 8.33w = 133.33w (Steve's other
equation)
>
> which means that Ptot = P1 + P2 = Vtot^2/Z0 = V1^2/Z0 + V2^2/Z0
>
> These two equations contradict each other, guys.
>
> Summary Question: Which equation is the correct one?
>
> (A) Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w
>
> (B) Ptot = P1 + P2 = 75w + 8.33w = 133.33w
> --
> cheers, Cecil

Cecil, equation (B) is correct, although the wattage numbers are incorrect because the powers don't add up, although the voltages do, but erroneously.

The only equation that is correct is that which works under all conditions. For example, equation (A) does not work for the simple example where the line is 50 ohms terminated with a 150-ohm load, and supplied with a 100 watt source. The forward power is 100 w and the reflected power is 33.333 w.

Equation (B) correctly handles this condition, yielding 133.33 w of forward power.

However, using these same values in equation (A) yields 248.8 w, the same value obtained by adding the source and steady-state reflected voltages directly, squaring their sum and dividing by Zo. This 248.8 w can only be obtained by introducing another voltage source in addition to the original source voltage of 70.71 v. Unfortunately, there is no such additional voltage source, and consequently, proves that the modality at the matching point is not one of superposition.

Equation (B) is correct because the total forward power is simply the reflected power P2 added to the source power P1. This equation works for all conditions when the additions of powers are added correctly.

Walt, W2DU

5086. Re: What means dBc ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 17:33:42 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3B128BFA.7137D64D@haertig.com>
Source record: 161835

I'll agrree that dBc is pretty universally taken to mean dB with respect
to carrier level.

However, when measuring the gain of a circularly polarized antenna it is
important to state whether the gain figures are relative to a circularly
polarized standard antenna or a linearly polarized antenna. It would
seem to make the most sense to reference the gain of a circularly
polarized antenna to a circularly polarized standard antenna, and that
is how it mostly done in the engineering community, but for some reason
known only to itself, the FCC states the gain of circularly polarized
antennas in the FM and television services relative to a linear standard antenna.

However, if somebody is using the term dBc to mean something other than
dB relative to carrier level, it is rather a hopeless thing, since
nobody will know just what the hell he means.

Gray

Jim Weir wrote:
>
> Ralph Mowery <rmowery@dialpoint.net>
> shared these priceless pearls of wisdom:
>
> ->While I guess that the 'c' could mean anything, when the original
> ->question mentioned
> ->dBd and dBi I would guess the 'd' and 'i' were in reference to
> ->antennas. The dB as we all agree is a Decibel which is just a ratio and
> ->needs something to tell what it is a ratio of. The 'd' is dipole and
> ->the 'i' is an isotropic antenna. Therefore the 'c' is for circular
> ->polarization.
>
> No, I don't think so. While I agree that dBd is the measure of an antenna's
> gain in a particular direction with the reference being a dipole being pointed
> in the same direction, and the same for isotropic (less the "pointing" factor of
> a omnidirectional radiator), I fail to understand how "c" can stand simply for
> circular polarization. What is the reference antenna?
>
> As Ed Hare said, most of us that do this sort of work immediately see dBc and
> think of some spurious emission referenced to the carrier. However, since this
> reference wasn't to a transmitter but to an antenna system, I'm afraid that I've
> gotta say "I don't know".
>
> Jim
> Jim Weir, VP Eng. RST Eng. WX6RST
> A&P, CFI, and other good alphabet soup

5087. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 17:45:38 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105280945.6e2e0848@posting.google.com>
Source record: 161836

CAM <Cecil.A.Moore@IEEE.org> wrote in message news:<3B11A40C.924DD75E@IEEE.org>...
> I agree with that, Bill. STEVE INTRODUCED THE CONCEPT OF POWER. It
> wasn't I. Why are you blaming me for the subject that Steve introduced?
>
> I'm not the one who introduced the fudge factors, Bill. Steve did. I am only
> questioning the introduction of those fudge factors. Why are they necessary?
> If you are going to defend Steve's assertions then you are required to
> defend Steve's assertions.
>
> To summarize: I agree with Steve's additions of voltages. STEVE INTRODUCED
> THE CONCEPT OF ADDING POWERS. It wasn't my idea. I am simply questioning
> his "addition" of powers. He even sent me a paper he wrote in which trig
> functions are introduced into his (vector?) additions of power.

A couple of points that have me kind of upset:

1. I realize that Steve, for some reason, is the lightning rod for your criticism. However, in any forum, it's considered extremely bad form to say what someone asserted or did not assert, when the guy is not around to immediately respond. I suggest you bring these same statements to Steve's attention when he comes back.

2. The incorrect addition of powers is your thing. Many weeks back, I followed the various threads enough to realize that your continual response to criticism of addition of powers was "Uh, Earth to Steve, power is a scalar." Again, nice try, but it won't work.

> Please explain which of the following equations are true.
>
> Ptot = P1 + P2 = 75w + 8.33w = 133.33w OR
>
> Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w
>
> Steve has asserted both equations are true and you, by implication, have
> agreed with him. Is that really what you want to do?

3. I noticed this same type of question in the latest post. You asked, I answered. Move on.

4. Here's a question for you. Which of the following is true?
Power is a scalar, which means that power companies merely flip a switch to bring 2 100-kW generators on line with each other to get 200 kW.

or

Power is a nonlinear vector quantity, which means that the addition of multiple power sources by superposition is technically incorrect and not supported by any of the technical literature.

HMD. Bill N3WK

5088. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 17:52:14 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12904E.D7F3AD1@IEEE.org>
Source record: 161837

Bill Klocko wrote:
>
> CAM <Cecil.A.Moore@IEEE.org> wrote in message news:<3B11A40C.924DD75E@IEEE.org>...
> > So which equation is right?
> >
> > Ptot = P1 + P2 = 75w + 8.33w = 133.33w OR
>
> As I recall, Steve did a voltage analysis to come up with a correct answer.
> This is your willy nilly superposing of multiple power terms in an attempt
> to discredit his analysis. It is incorrect.

No, no, no, I am not trying to discredit his analysis. This is Steve's very
own equation. He published it for the first time. This equation is what
started the entire disagreement between Steve and me. This is Steve's
willy-nilly superposing of multiple power terms and is exactly what I
have been objecting to for weeks.

> The equation Ptot = P1 + P2 + 2*sqrt(P1*P2) is correct.
>
> The equation 75w + 8.33w + 50w = 133.33w is YOUR attempt to balance some
> sort of "energy equation." Although mathematically correct, the 50w term
> is YOUR fudge factor that YOU require to balance the equation.

No, no, no, this is NOT my equation. This is Steve's equation that he
published here on this newsgroup. All these equations originated with
Steve. I am simply questioning them and trying to understand them. Please
stop accusing me of something I did NOT do.

> Why don't you take up the issue with Steve if and when he decides to respond
> to your comments.

I will and I have as part of a learning experience. I'm trying to understand
Steve when he publishes those power equations above. It appeared that you
were defending Steve's power equations.

Steve sent me a copy of a paper he wrote that says the general power equation is:

Ptot = P1 + P2 + 2*sqrt(P1)*sqrt(P2)*cos(theta)

If that's not an attempt to superposition powers, I don't know what is.

> Do you honestly
> expect anyone to believe that when a power company wants to switch in a supplementary
generator
> that they simply flip a switch and put it online with the others?

Of course not, Bill. I developed some of the automatic reclosure algorithms used with SCADA systems. Please stop trying to put words into my mouth that I didn't say. Exactly how would you propose to get more than one megawatt of energy out of a one megawatt generating station? What I am saying is that nobody can take two sources, each limited to 100 watts, and combine them to get 400 watts. Yet that is the result of Ptot = P1 + P2 +2*sqrt(P1*P2). If that equation is not an attempt at the superpositioning of power, what is it?

> No, you said it. Read 3 paragraphs above. I was proving that superposing
> multiple power sources is a no-no, and a fudge factor is not necessary. There's
> no diversion on my part. I was trying to show the inconsistency in your own remarks.

But that's my side of the argument against Steve. Steve is the one trying to superposition powers. I contend that power is a scalar and cannot be superpositioned. Steve is the one who introduced a fudge factor. He has sent me an article that he authored that is loaded with fudge factors for power like:

Ptot = P1 + P2 + 2*sqrt(P1)*sqrt(P2) cos(theta)

That equation implies that we can get 400 megawatts out of two 100 megawatt generating stations.

> So now it's Steve who introduced the fudge factors and you're the one questioning
> them?

Yes, it was Steve who first said 75w + 8.33w = 133.33w and Ptot = P1 + P2 + 2*sqrt(P1*P2) That's what the argument is all about. I know you came into the argument late and got the wrong impression. Perhaps some others helped to give you the wrong impression.

> > > > There's 0.002082 joules/sec of destructive/constructive interference that
> > > > you didn't account for. That's why your energy equation doesn't balance.

This is correct and is why Steve's equation 75w+8.33w=133.33w doesn't balance. You didn't attempt to balance the energy equation in your paper so you didn't make this mistake. Have you ever made the statement that, in your paper:

0.003333w + 0.000325w = 0.00574w ???

If you have made that statement, I have the same argument with you that I have with Steve. That certainly looks like an attempt at superpositioning of scalar power. What I recall you saying is that there is more forward power than there is power in the two waves. That's a 100% correct statement and why I don't have any argument with your paper.

> > To summarize: I agree with Steve's additions of voltages. STEVE INTRODUCED
> > THE CONCEPT OF ADDING POWERS. It wasn't my idea. I am simply questioning
> > his "addition" of powers. He even sent me a paper he wrote in which trig
> > functions are introduced into his (vector?) additions of power.

This is correct. That's where Steve's equation Ptot = P1 + P2 +2*sqrt(P1*P2) came from. He's trying to balance the energy equation.

> Nice try. But it won't work.

All these postings are archived in Google (deja.com). I can prove everything
I'm saying. It is understandable that you apparently haven't read those postings.

To summarize: Steve introduced two equations involving power.

(1) 75w + 8.33w = 133.33w which implies V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0

(2) Ptot = P1 + P2 +2*sqrt(P1*P2) which implies 133.33w = 75w + 8.33w + 50w

I objected to Steve's treatment of power in this manner. Anyone who was reading
these postings at the time can verify that fact for you. I have said about 30
times now that I have no argument with Steve's vector addition of voltages.
The argument is, and has been, all about Steve's treatment of power.
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5089. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 18:05:07 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B129353.C190ABDB@IEEE.org>
Source record: 161838

"William E. Sabin" wrote:
>
> CAM wrote:
>
> > So which of the following equations is valid?
> >
> > (A) V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0 = 75w + 8.33w = 133.33w
>
> In Eq A the assumption is that V1 and V2 are *in-phase* with each other and the
> voltages add directly.

Where does the missing energy come from, Bill? Please understand what I am asking.

Do you believe it is possible to combine the outputs of two identical generating stations *in phase* to get four times the power available from just one of them? That's what equation (A) above allows. What I am saying about equation (A) is that we have ignored the energy in the wave cancellation at the Z0-match. I've calculated the wave cancellation as 25w supplied by the source and 25w supplied by the reflected waves. That 50w of constructive interference is what allows the total power to equal 133.33w because that wave cancellation energy is dumped into the electromagnetic field. There is no place else for it to go.

If you don't understand what I just wrote, please ask for more explanation. I've lately had a problem with conveying my meanings.
--
cheers, Cecil

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5090. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 18:07:00 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3B1293C9.5BDD50FA@haertig.com>
Source record: 161839

Hey Richard,

The ground beneath the open wire unbalanced line is not shielded from
the center conductor. If it were, then the ground would be exposed to
an equal (but opposite phase) radiation from the outer conductors, and
clearly it is not. Your experience and my experience confirms that the
radiation level below an open wire unbalanced feed system is relatively low.

Since nothing "shields" the ground from the current in the outer
conductors, the only way the field at the ground could be zero is if the
field from the outer conductors was being cancelled by another field of
equal magnitude but opposite sense. This is conveniently provided by
the current in the inner wire.

If the mechanism of "shielding" in open wire unbalanced line is somehow
different than the mechanism in coax, at what point in the evolution of
coax from open wire line does the mechanism change?

What is the mechanism by which the "shielding" is improved by the
addition of more wires to the "cage" around the center conductor?

For arguement's sake, let's say my analysis is correct. Is there
anyway, exterior to the line, to determine if the field is entirely
contained within the line or whether there are two equal but opposite
sense fields that are cancelling?

Gray

Richard Harrison wrote:
>
> Gray Frierson Haertig wrote:
> "It is clear from this that the field from the center conductor is not
> attenuated by the shield."
>
> The "this" above may be the evolution of coax from parallel wire line
> where equal and opposite fields balance out at a distance from the
> wires.
>
> This is not the mecanism with coax. The field of the center conductor is
> confined within coax.
>
> I gave an example of skeletal open-wire coax used by broadcasters in my
> previous post. These use 4, 6, 8, and 12 wires around the center
> conductor in varying grades of effectiveness in containing the field of
> that center conductor. The outer shield wires are shorted together at
> small fractions of a wavelength along the path of the line and grounded

> througth the support pole there.
>
> Every increase in the number of wires used in the "shield" around the
> center conductor decreases the induced current in the ground under the
> line.
>
> So, I would say it is clear that the field from the center conductor is
> attenuated by the shield.
>
> Best regards, Richard Harrison, KB5WZI

5091. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 18:08:49 UTC
From: kb7qhc@home.com
Message-ID: <3b128f13.783973974@news.seanet.com>
Source record: 161840

On Mon, 28 May 2001 13:27:25 -0400, "Walter Maxwell" <w2du@iag.net>
wrote:

>> (A) Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w
>>
>> (B) Ptot = P1 + P2 = 75w + 8.33w = 133.33w
snip
>Unfortunately, there is no such additional
>voltage source, and consequently, proves that the modality at the matching
>point is not one of superposition.

Hi Walt,

No second source and yet you have a choice of two equations each
containing two powers (and you selected B, remember).

You are being myopic in the extreme. It is a commonplace in circuit
analysis that a problem partitioned by Meshes or Nodes allows a load
in one solution to perform as the source in a second solution. The
mere inclusion of P2 above tacitly allows for two sources existing
even if the second is simply the reflection of the only real source.

Need I point out that your hesitance to accept a "Virtual Source" does
not bode well with your proposals of "Virtual Shorts?" If the idea of
"Virtual" is so elegant and lucid for demonstration to novices, how is
it that conceptually you deny it here? This is the bane of offering
smorgasbord physics for dummies.

Your last line's sly suggestion is that superposition fails. If so it
can only be through misapplication, not through its own inherent
weakness. In other words, the fault can only be yours. I say this
because neither you, Cecil, nor Steve for that matter have shown a
circuit analysis. Bill's paper comes the closest, but it does not
apply the classical methods, but rather approaches the solution
iteratively.

You guys cannot make appeals to superposition to pull your chestnuts
out of the fire if you cannot perform the mechanics that use it.

73's
Richard Clark, KB7QHC

5092. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 18:18:04 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12965C.4EC82EB3@IEEE.org>
Source record: 161841

"Peter O. Brackett" wrote:
> Don't be so quick to dismiss the "simple" cases.

Of course, I was only talking about ham antenna systems.
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5093. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 18:21:29 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B129729.CF476834@IEEE.org>
Source record: 161842

Richard Clark wrote:
> His perspectives are more interesting. His Quizzes take more work and
> are less prone to pencil whipping.

And he puts them out at a rate guaranteed to exceed one's abilities
to solve them. Thus, he puts us in a HERE: GOTO HERE loop so we
don't have time to do any posting. :-)
--
cheers, Cecil

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5094. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 18:24:07 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1297C7.D2008426@IEEE.org>
Source record: 161843

Richard Clark wrote:
>
> On Sun, 27 May 2001 17:04:21 -0500, CAM <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >There is NO way to do it, Bill.
>
> You haven't performed the Mesh or Nodal analysis, have you?

You still don't understand what I am saying, Richard. Here it is again:

We cannot take two 100 megawatt generating stations and combine their
outputs in phase to obtain 400 megawatt capacity. That is what I have
been saying all along. Why can't anyone understand this simple fact?
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5095. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 18:25:00 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <SGwQ6.3148$5V1.764798@nntp3.onemain.com>
Source record: 161844

Richard Clark <kb7qhc@home.com> wrote in message
news:3b128f13.783973974@news.seanet.com...
> On Mon, 28 May 2001 13:27:25 -0400, "Walter Maxwell" <w2du@iag.net>
> wrote:
>
> >> (A) Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w
> >>
> >> (B) Ptot = P1 + P2 = 75w + 8.33w = 133.33w
> snip
> >Unfortunately, there is no such additional
> >voltage source, and consequently, proves that the modality at the
matching
> >point is not one of superposition.
>
> Hi Walt,
>
> No second source and yet you have a choice of two equations each
> containing two powers (and you selected B, remember).
>
> You are being myopic in the extreme. It is a commonplace in circuit
> analysis that a problem partitioned by Meshes or Nodes allows a load
> in one solution to perform as the source in a second solution. The
> mere inclusion of P2 above tacitly allows for two sources existing
> even if the second is simply the reflection of the only real source.
>
> Need I point out that your hesitance to accept a "Virtual Source" does
> not bode well with your proposals of "Virtual Shorts?" If the idea of
> "Virtual" is so elegant and lucid for demonstration to novices, how is
> it that conceptually you deny it here? This is the bane of offering
> smorgasbord physics for dummies.
>
> Your last line's sly suggestion is that superposition fails. If so it
> can only be through misapplication, not through its own inherent
> weakness. In other words, the fault can only be yours. I say this
> because neither you, Cecil, nor Steve for that matter have shown a
> circuit analysis. Bill's paper comes the closest, but it does not
> apply the classical methods, but rather approaches the solution
> iteratively.
>
> You guys cannot make appeals to superposition to pull your chestnuts
> out of the fire if you cannot perform the mechanics that use it.
>
> 73's
> Richard Clark, KB7QHC

Well Richard, if as you state that my sly suggestion that superposition fails only through my misapplication, would you then please, without your inherent negativism toward our posts, tell us how you would perform the mechanics of how the reflected power adds to the source power? Keep the explanation in the style for dummies, of course.

Walt, W2DU

PS--Richard, have you ever agreed with anything I presented on this NG?

5096. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 18:27:54 UTC
From: w2du@iag.net
Message-ID: <3b129877.15540666@news.onemain.com>
Source record: 161845

On Mon, 28 May 2001 10:52:22 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Walt, W2DU wrote:
>"In other words, Johnson`s Eq 6.17 can be made to read like this:
>Psource + Pref = Pforward
>Pforward - Pref = Pdelivered."
>
>(In a lossless line Psource = Pdelivered.)
>
>That agrees with Bird. Walt hit one out of the park with this posting.
>
>Best regards, Richard Harrison, KB5WZI
>
Not according to Richard C. In his opinion I struck out, as usual.

Walt, W2DU

5097. portable HF antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 18:41:07 UTC
From: ON4CLN <on4cln@qsl.net>
Message-ID: <7ZwQ6.17437$X03.1405036@afrodite.telenet-ops.be>
Source record: 161846

Hello to all...

I just bought a second hand HF+6m rig (Alinco TH-70) and now I'm planning to make some portable antennas.
I do not have a tuner/SWR meter, so "random wire going up a tree" is out of the question.

I could make verticals or dipoles for each band of interest, but this makes up a fair amount of stuff to take into the field.

Multiband portable antennas: any suggestions or experiences? Design ideas?
Or should I just buy a tuner and swing a wire up the trees?

All input is greatly appreciated!
73! Franki ON4CLN

5098. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 18:48:31 UTC
From: kb7qhc@home.com
Message-ID: <3b139473.785349983@news.seanet.com>
Source record: 161847

On Mon, 28 May 2001 12:52:14 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>> > Ptot = P1 + P2 = 75w + 8.33w = 133.33w OR
>>
>> As I recall, Steve did a voltage analysis to come up with a correct answer.
>> This is your willy nilly superposing of multiple power terms in an attempt
>> to discredit his analysis. It is incorrect.
>
>No, no, no, I am not trying to discredit his analysis. This is Steve's very
>own equation

Hi Cecil,

This is NOT Steve's very own equation. It is a solution that you
disagree with, learn to come to terms with the difference.

Steve's "equation" is:
Ptot = P1 + P2 + 2 * sqrt(P1 * P2)

I have asked for the reference for it, to no avail (which you never
supported me for) instead you pine away about the error ad nauseum and
summon up conspiracy theories. I've asked you to focus your
challenges on references in this regard and you have chosen to badger
the error (and it is in the conduct of these attacks that you've
developed your paranoia). Learn to distinguish between what is
important and what is trivial (the error is trivial).

73's
Richard Clark, KB7QHC

5099. Re: Coax and antenna for 2-meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 18:54:40 UTC
From: KD7MTM@webtv.net
Message-ID: <12001-3B129EF0-61@storefull-124.iap.bryant.webtv.net>
Source record: 161851

Being new to ham radio, please forgive me for my ignorance. If I say something stupid, it is due to that ignorance and not to rile anyone. I have been told that to get a correct reading on a SWR meter that I need odd multiples of a half wavelength such as 1/2, 3/2, 5/2, etc. I know that due to the fact that the feedline is 50 ohms by design that I can use any length that reaches from the radio to the antenna AFTER the SWR is set but what about WHEN I am trying to set it? Is what I was told about the odd multiples of a half wavelength for setting the SWR true or is it another one of the many myths out there?
My only goal is to get an accurate reading. I do not want to fry a radio that I cannot afford to replace. I will get an MFJ SWR Analyzer when I can afford it but that is still a long way off. Until that time, I am stuck using a SWR meter.
Thank you for the replies so far and for those to come, Jeremy
KD7MTM

5100. - W9INN Antennas Page On-Line -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 18:56:28 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <wbxQ6.44652$9D5.2603205@newsread2.prod.itd.earthlink.net>
Source record: 161848
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx

Bill (W9INN) has authorized me to publish a page about his great wire antennas. Contact information for Bill is on the page as well as measured data (from my QTH) on his most popular MPD-5C "max performance dipole" antenna.

- click on the " W9INN Antennas " button at the site listed below

--

73 / DX

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

5101. Re: Coax and antenna for 2-meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 19:02:20 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3B12A0BC.10820D68@dialpoint.net>
Source record: 161858

What you are stating is one of the confusing things about antennas. The swr meter will read the swr at the point is it inserted in the line. The reason for using a 1/2 wavelenght (electrical) is that the impedance repeats itself in that distance. If you want to measure the impedance of an antenna and it is not possiable to get the swr meter to the termionals of the antenna , then a 1/2 wavelenhth of coax is used. If any other length is used then the impedance will be modified depending on the mismatch, length, and impedance of the coax.

If you are using 50 ohm coax and want to adjust the antenna you can use any length of coax and put the swr meter at the rig. To see how well the antenna and coax are matched you can then insert a short length of coax (1/4 wavelength if possiable) and remeasure the swr. If any great change is noted then the antenna is not matched. Use low power tuil you get the swr to under 2 or 3 to 1 and then if needed you can switch to the higher power settings. Some swr meters will read a false lower swr at low power due to the fact the diodes need a small ammount of power to conduct.

While the analizers are nice, a good swr meter will do all that is needed for most.

Jeremy wrote:
>
> Being new to ham radio, please forgive me for my ignorance. If I say
> something stupid, it is due to that ignorance and not to rile anyone.
> I have been told that to get a correct reading on a SWR meter that I
> need odd multiples of a half wavelength such as 1/2, 3/2, 5/2, etc. I
> know that due to the fact that the feedline is 50 ohms by design that I
> can use any length that reaches from the radio to the antenna AFTER the
> SWR is set but what about WHEN I am trying to set it? Is what I was told
> about the odd multiples of a half wavelength for setting the SWR true or
> is it another one of the many myths out there?
> My only goal is to get an accurate reading. I do not want to fry a
> radio that I cannot afford to replace. I will get an MFJ SWR Analyzer
> when I can afford it but that is still a long way off. Until that time,
> I am stuck using a SWR meter.
> Thank you for the replies so far and for those to come, Jeremy
> KD7MTM

5102. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 19:11:07 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B12A2CB.6E24F4B6@mwci.net>
Source record: 161850

CAM wrote:

> Where does the missing energy come from, Bill?

There is no missing energy. For the same amount of energy, two identical generators *in-phase* deliver twice as much power (the rate at which energy is delivered) as two generators that are 90 degrees out-of-phase for the simple reason that both generators are huffing and puffing in unison, rather than grunting and groaning separately, out of sync with each other.

Think of a rope pulling contest or a rowing contest. It is exactly that simple, no big mystery. The equations are just the math way of expressing this "back to basics" idea.

The equations that I gave you are 100% correct, OM.

Bill W0IYH

5103. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 19:16:26 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12A40A.3ECEF635@IEEE.org>
Source record: 161852

Reg Edwards wrote:
> Cecil, I can't find your answer to my so-called catch question.
> Could you repeat it please ?

Gee Reg, it's right below your posting on my newsreader. I'll
forward it to you by email. I apologize about the "catch question"
remark. The Devil made me do it.
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5104. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 19:16:44 UTC
From: kb7qhc@home.com
Message-ID: <3b149e06.787800977@news.seanet.com>
Source record: 161853

On Mon, 28 May 2001 14:25:00 -0400, "Walter Maxwell" <w2du@iag.net>
wrote:

>
>Well Richard, if as you state that my sly suggestion that superposition
>fails only through my misapplication, would you then please, without your
>inherent negativism toward our posts, tell us how you would perform the
>mechanics of how the reflected power adds to the source power? Keep the
>explanation in the style for dummies, of course.
>
>Walt, W2DU
>
>PS--Richard, have you ever agreed with anything I presented on this NG?
>

Hi Walt,

Would I tell you how? As this has been the subject of mine for
several days now:

Read up Circuit analysis, re: Modal or Mesh, use superposition and
return to us with an engineering answer that shows only that work
necessary to obtain the solution.

OR

Skip this failed superposition of powers.

As for your PS, how you answer this either/or reveals your desire to
respond to a critic, or steamroll an ant. Too often you simply press
your foot to the throttle - why would I agree with someone who ignores
my questions, makes claims of secret conspiracies, and calls me
stupid?

73's
Richard Clark, KB7QHC

5105. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 19:19:54 UTC
From: kb7qhc@home.com
Message-ID: <3b16a493.789477027@news.seanet.com>
Source record: 161854

On Mon, 28 May 2001 13:21:29 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> His perspectives are more interesting. His Quizzes take more work and
>> are less prone to pencil whipping.
>
>And he puts them out at a rate guaranteed to exceed one's abilities
>to solve them. Thus, he puts us in a HERE: GOTO HERE loop so we
>don't have time to do any posting. :-)

Hi Cecil,

By your smiley face, I would agree that it is a good thing.

73's
Richard Clark, KB7QHC

5106. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 19:30:43 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12A763.71CF09A8@IEEE.org>
Source record: 161855

Richard Clark wrote:
>
> On Mon, 28 May 2001 12:52:14 -0500, CAM <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >> > Ptot = P1 + P2 = 75w + 8.33w = 133.33w OR
> >>
> >No, no, no, I am not trying to discredit his analysis. This is Steve's very
> >own equation
>
> Hi Cecil,
>
> This is NOT Steve's very own equation. It is a solution that you
> disagree with, learn to come to terms with the difference.
>
> Steve's "equation" is:
> Ptot = P1 + P2 + 2 * sqrt(P1 * P2)

That's only one of Steve's equations. Please pay attention, Richard,
and please tell me you are mistaken and not trying to falsify the
information. It is virtually impossible to falsify information when
everything is archived. Here's Steve's posting. I don't know if it
was the original but it will do. Do you feel like an apology?
****
From: VE9SRB (srbest@att.net)
Subject: Addition of Power
Newsgroups: rec.radio.amateur.antenna
Date: 2001-05-02 06:55:46 PST

75 W added in phase with 8.33 Watts results in a total forward power of
133.33 Watts.
****

> I have asked for the reference for it, to no avail (which you never
> supported me for) instead you pine away about the error ad nauseum and
> summon up conspiracy theories.

I did post this, Richard. If you are going to make demands, then you should
at least read my responses to your demands. Remember, I'm paranoid and I
already suspect that you are Steve's secret twin brother.
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5107. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 19:32:26 UTC
From: kb7qhc@home.com
Message-ID: <3b17a4e4.789558505@news.seanet.com>
Source record: 161856

On Mon, 28 May 2001 13:24:07 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> On Sun, 27 May 2001 17:04:21 -0500, CAM <Cecil.A.Moore@IEEE.org>
>> wrote:
>>
>> >There is NO way to do it, Bill.
>>
>> You haven't performed the Mesh or Nodal analysis, have you?
>
>You still don't understand what I am saying, Richard. Here it is again:
>
>We cannot take two 100 megawatt generating stations and combine their
>outputs in phase to obtain 400 megawatt capacity. That is what I have
>been saying all along. Why can't anyone understand this simple fact?

Hi Cecil,

So, your answer is NO, you have not chosen to perform this, and yet
you continue to draw on failed claims of superposition.

73's
Richard Clark, KB7QHC

5108. Re: Good ham logging program?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 19:45:40 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3b12aae0.16072256@news.aepnet.com>
Source record: 161857
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment

On Fri, 25 May 2001 21:57:20 GMT, dinod@deltanet.com (Dino) wrote:

>DXBASE 2002 demo can be downloaded here...
>
>http://www.dxbase.com/demowin.htm
>
>Dino

That is not a "demo." It is the help file. Often I have found the help file to be of little "help" even having the program. It is no substitute for a working demo.

Wes N7WS
>
>
>>hey charles
>>that software looking really good on there website
>>but i am not paying $100 for software with out getting to try it first there
>are
>>to many variables in computers and radios and such that would render the
>thing
>>usless
>>i wish they would offer a trail program for 2 weeks to a month like everyone
>>else does to give you a chance to see if it will work on your system and
>that if
>>the software is what your looking for
>>i am glad you find it useful happy hamming
>>73
>>
>>Charles Johnston wrote:
>>
>>> Guess I'll chime in after trying most of the major logging programs such
>as
>>> LogPlus , Log Windows , DX4WIN , and Logic 5 I have settled on DXBase
>2002.
>>> Here is a snippet about the product....
>>>
>>> <snip>
>>>
>>> Designed for those who demand the best, DXbase 2002 by Scientific
>Solutions,
>>> Inc. is the premiere amateur radio logging software for 32bit Windows.
>One
>>> look and you'll wonder how you ever managed without it. Whether you want

>to
>>> custom design your own QSL cards and labels, operate PSK mode and log
>>> directly into DXbase, perfect CW output with the direct interface to the
>>> W5XD external keyer, automatically create award submission forms, create
>>> your own reports, monitor VHF Packet and Internet Packet letting DXbase
>tell
>>> you when you need one, or just log a QSO with the greatest of ease, DXbase
>>> 2002 is the software for you.
>>>
>>> <snip>
>>>
>>> I have used this product since DXBase 2000 and it is a reliable and
>>> extremely high-performance logging program
>>> That can do everything the other loggers do plus much more.....
>>>
>>> Download the informational demo at http://www.dxbase.com
>>>
>>> --
>>>
>>> 73 / DX
>>>
>>> Charles Johnston
>>> charles@ab7sl.com
>>>
>>> AB7SL - Ham Radio Pages
>>> http://www.ab7sl.com
>>
>

5109. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 19:48:16 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12AB7F.A6DCD706@IEEE.org>
Source record: 161859

Bill Klocko wrote:
> 1. I realize that Steve, for some reason, is the lightning rod for your criticism.
> However, in any forum, it's considered extremely bad form to say what someone asserted
> or did not assert, when the guy is not around to immediately respond. I suggest
> you bring these same statements to Steve's attention when he comes back.

Bill, I didn't realize that Steve was not around. He has been around for months.
He has a habit of, after losing an argument, disappearing for awhile and returning
claiming that my side was his side all along and I'm the one who is wrong. I've
told him I don't mind those unfair tactics as long as the real truth comes out.

> 2. The incorrect addition of powers is your thing.

You obviously have not followed these arguments from the beginning. Steve is
the one who introduced addition of powers to the discussion. I'm beginning to
smell a rat. Steve cannot defend himself so he disappears and you show up, not
understanding what has transpired, and try to accuse me of what Steve has been
saying. This tag team stuff is getting old, Bill. Why can't just one of your
guys take a stand and enlighten me? FYI, here is one of Steve's numerous statements:
****
From: VE9SRB (srbest@att.net)
Subject: Addition of Power
Newsgroups: rec.radio.amateur.antenna
Date: 2001-05-02 06:55:46 PST

75 W added in phase with 8.33 Watts results in a total forward power of
133.33 Watts.
****
> 4. Here's a question for you. Which of the following is true?
> Power is a scalar, which means that power companies merely flip a switch
> to bring 2 100-kW generators on line with each other to get 200 kW.

Give me a break, Bill. My EE degree is in Power Engineering. Are you trying
to defeat my argument with a Big Lie? Please demonstrate to all of us how
you can combine the output of two 100 megawatt generating plants to obtain
a total of 400 megawatts output. California is *very* interested. The equation:

Ptot = P1 + P2 + 2*sqrt(P1*P2) says it is possible.

> Power is a nonlinear vector quantity, which means that the addition of multiple
> power sources by superposition is technically incorrect and not supported
> by any of the technical literature.

That, in different words, is exactly what I have been trying to tell Steve for
weeks now. Thanks for your support.
--
cheers, Cecil

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5110. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 19:51:52 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <wYxQ6.3160$5V1.787740@nntp3.onemain.com>
Source record: 161860

Richard Clark <kb7qhc@home.com> wrote in message
news:3b128f13.783973974@news.seanet.com...
> On Mon, 28 May 2001 13:27:25 -0400, "Walter Maxwell" <w2du@iag.net>
> wrote:
>
> >> (A) Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w
> >>
> >> (B) Ptot = P1 + P2 = 75w + 8.33w = 133.33w
> snip
> >Unfortunately, there is no such additional
> >voltage source, and consequently, proves that the modality at the
matching
> >point is not one of superposition.
>
> Hi Walt,
>
> No second source and yet you have a choice of two equations each
> containing two powers (and you selected B, remember).
>
> You are being myopic in the extreme. It is a commonplace in circuit
> analysis that a problem partitioned by Meshes or Nodes allows a load
> in one solution to perform as the source in a second solution. The
> mere inclusion of P2 above tacitly allows for two sources existing
> even if the second is simply the reflection of the only real source.
>
> Need I point out that your hesitance to accept a "Virtual Source" does
> not bode well with your proposals of "Virtual Shorts?" If the idea of
> "Virtual" is so elegant and lucid for demonstration to novices, how is
> it that conceptually you deny it here? This is the bane of offering
> smorgasbord physics for dummies.
>
> Your last line's sly suggestion is that superposition fails. If so it
> can only be through misapplication, not through its own inherent
> weakness. In other words, the fault can only be yours. I say this
> because neither you, Cecil, nor Steve for that matter have shown a
> circuit analysis. Bill's paper comes the closest, but it does not
> apply the classical methods, but rather approaches the solution
> iteratively.
>
> You guys cannot make appeals to superposition to pull your chestnuts
> out of the fire if you cannot perform the mechanics that use it.
>
> 73's
> Richard Clark, KB7QHC

I must recant my observation that re-reflection at the match point is not a mode of superposition. I found a reference in 'Lines, Waves, and Antennas' by Brown, Sharpe, Hughes, and Post that agrees with you Richard, that allows for two sources, even though one is a reflection of the real source. I made too hastily a decision on this one.

However, I'm now trying to reconcile the disparity between direct voltage addition and addition of the sum of the squares of the voltages. Why do I find the direct addition gives incorrect answer for the forward power, while the addition of the sum of the squares does not?

Walt, W2DU

5111. Re: Good ham logging program?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 19:58:41 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3b12adeb.16851818@news.aepnet.com>
Source record: 161861
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment

On Thu, 24 May 2001 19:12:46 GMT, "Charles Johnston" <ctj92@earthlink.net>
wrote:

>Guess I'll chime in after trying most of the major logging programs such as
>LogPlus , Log Windows , DX4WIN , and Logic 5 I have settled on DXBase 2002.
>Here is a snippet about the product....
>
><snip>
>
>Designed for those who demand the best, DXbase 2002 by Scientific Solutions,
>Inc. is the premiere amateur radio logging software for 32bit Windows. One
>look and you'll wonder how you ever managed without it. Whether you want to
>custom design your own QSL cards and labels, operate PSK mode and log
>directly into DXbase, perfect CW output with the direct interface to the
>W5XD external keyer, automatically create award submission forms, create
>your own reports, monitor VHF Packet and Internet Packet letting DXbase tell
>you when you need one, or just log a QSO with the greatest of ease, DXbase
>2002 is the software for you.
>
><snip>
>
>I have used this product since DXBase 2000 and it is a reliable and
>extremely high-performance logging program
>That can do everything the other loggers do plus much more.....
>
>Download the informational demo at http://www.dxbase.com

Charles,

Are you one of their beta testers?

Wes Stewart, N7WS
>
>--
>
>73 / DX
>
>Charles Johnston
>charles@ab7sl.com
>
>AB7SL - Ham Radio Pages
>http://www.ab7sl.com
>
>

>
>
>

5112. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 20:00:13 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12AE4D.98C2AD5A@IEEE.org>
Source record: 161862

"William E. Sabin" wrote:
>
> CAM wrote:
> > Where does the missing energy come from, Bill?
>
> There is no missing energy. For the same amount of energy, two identical generators
> *in-phase* deliver twice as much power ...

But, but, but, Bill, what about P1 + P2 + 2*sqrt(P1*P2) ???????? Steve says
that two waves in phase deliver more power than is contained in the two
separate waves. Here's what he said:
****
From: VE9SRB (srbest@att.net)
Subject: Addition of Power
Newsgroups: rec.radio.amateur.antenna
Date: 2001-05-02 06:55:46 PST

75 W added in phase with 8.33 Watts results in a total forward power of
133.33 Watts.
****
That equation above says you can get four times the energy, not two times the
energy. "There is no missing energy." is my argument, Bill.

> The equations that I gave you are 100% correct, OM.

I agree with you, Bill, you still are either misunderstanding what I am
saying or trying to discredit me for reasons unknown to me. I said,
"If you don't understand what I just wrote, please ask for more explanation."

Please tell me exactly how one can extract more energy from two waves than
is contained in the two waves? California would be very interested.
--
cheers, Cecil

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5113. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 20:05:34 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12AF8E.8FFB2DD2@IEEE.org>
Source record: 161863

Richard Clark wrote:
> ... neither you, Cecil, nor Steve for that matter have shown a
> circuit analysis. Bill's paper comes the closest, but it does not
> apply the classical methods, but rather approaches the solution
> iteratively.

You want a circuit analysis to prove the conservation of energy
principle? I'm afraid that is beyond my capabilities. Will a
phasor diagram do? :-)
--
cheers, Cecil

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5114. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 20:08:29 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12B03D.C00DD602@IEEE.org>
Source record: 161864

Walter Maxwell wrote:
> Well Richard, if as you state that my sly suggestion that superposition
> fails only through my misapplication, would you then please, without your
> inherent negativism toward our posts, tell us how you would perform the
> mechanics of how the reflected power adds to the source power? Keep the
> explanation in the style for dummies, of course.

I've already asked him to do that, Walt. He said the burden of proof is upon us. Translation: He doesn't know the answer and would rather kibitz. :-)
--
cheers, Cecil

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5115. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 20:22:50 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12B39A.3BAD544B@IEEE.org>
Source record: 161865

Richard Clark wrote:
> Skip this failed superposition of powers.

One wonders why you haven't said that to Steve since he was the one
who introduced all those power equations.
--
cheers, Cecil

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5116. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 20:27:14 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12B4A2.62C54C7C@IEEE.org>
Source record: 161866

Richard Clark wrote:
> By your smiley face, I would agree that it is a good thing.

One wonders why you consider my objection to Steve's superposition of
powers formulas to be a bad thing.
--
cheers, Cecil

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5117. please forgive my ignorance..but...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 20:28:20 UTC
From: Matt <matt_patt123@yahoo.com>
Message-ID: <9eubn402la@enews4.newsguy.com>
Source record: 161771

What is 2 meter SSB??? What class license do you need before you can operate on these frequencies? I've been out of the HAM scene for about a year or so and have never heard of it before I started reading this NG.

Thanks
Matt

5118. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 20:30:51 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eucgs$jv6$1@slb7.atl.mindspring.net>
Source record: 161867

Bill:

That's correct, and one can "impute" a VSWR for the DC case as well... even
though there is no actual standing wave.

-Peter K1PO

"William E. Sabin" <sabinw@mwci.net> wrote in message
news:3B1273B1.E0214CEC@mwci.net...
>
>
> Peter O. Brackett wrote:
>
> > The DC case is much simpler than you might imagine. It contains only
> > three elements, two resistors and one ideal battery. All it takes to
> > discuss is Volts, Amps, and Ohm's Law, and all of the reflection
mechanics
> > are laid bare.
>
> The Smith chart is a good place to see DC. The R axis is the locus of all
R
> values. For a battery with 50 ohms internal resistance and a 150 ohm load,
a
> circle through R=150 ohms is the 3:1 SWR circle. The return loss can also
be
> easily found.
>
> For DC these numbers are not themselves very useful, but one number that
is
> useful at DC is the "mismatch loss", and it is numerically equal to the
return
> loss.
>
> Bill W0IYH
>

5119. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 20:32:38 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12B5E6.3BA3CCF0@IEEE.org>
Source record: 161868

Richard Clark wrote:
> So, your answer is NO, you have not chosen to perform this, and yet
> you continue to draw on failed claims of superposition.

One more time, Richard, it is I who is objecting to Steve's formulas involving superposition of powers, not the other way around. I have had no argument with Steve's vector addition of voltages. I, personally, have zero claims of superposition of powers. All my arguments are based on buckets of conserved energy not subject to superposition. Please cease and desist with this obfuscation.
--
cheers, Cecil

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5120. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 20:35:12 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eucp0$q39$1@slb7.atl.mindspring.net>
Source record: 161769

Cecil: The total combined power output of two or more sources if they are robust enough depends upon their internal impedances and how they are interconnected and nothing more, does it not? You simply can't say a priori how much power you will get from the combination in terms of their "rated" power as you are stating it. -Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message news:3B1297C7.D2008426@IEEE.org...
> Richard Clark wrote:
> >
> > On Sun, 27 May 2001 17:04:21 -0500, CAM <Cecil.A.Moore@IEEE.org>
> > wrote:
> >
> > >There is NO way to do it, Bill.
> >
> > You haven't performed the Mesh or Nodal analysis, have you?
>
> You still don't understand what I am saying, Richard. Here it is again:
>
> We cannot take two 100 megawatt generating stations and combine their
> outputs in phase to obtain 400 megawatt capacity. That is what I have
> been saying all along. Why can't anyone understand this simple fact?
> --
> cheers, Cecil
>
>
> <antispam@newsfeeds.com> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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5121. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 20:50:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9eudmk$2n$1@slb5.atl.mindspring.net>
Source record: 161770

Richard:

Well said!

Enough of this "fakir physics".

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b128f13.783973974@news.seanet.com...
> On Mon, 28 May 2001 13:27:25 -0400, "Walter Maxwell" <w2du@iag.net>
> wrote:
>
> >> (A) Ptot = P1 + P2 + 2*sqrt(P1*P2) = 75w + 8.33w + 50w = 133.33w
> >>
> >> (B) Ptot = P1 + P2 = 75w + 8.33w = 133.33w
> snip
> >Unfortunately, there is no such additional
> >voltage source, and consequently, proves that the modality at the
matching
> >point is not one of superposition.
>
> Hi Walt,
>
> No second source and yet you have a choice of two equations each
> containing two powers (and you selected B, remember).
>
> You are being myopic in the extreme. It is a commonplace in circuit
> analysis that a problem partitioned by Meshes or Nodes allows a load
> in one solution to perform as the source in a second solution. The
> mere inclusion of P2 above tacitly allows for two sources existing
> even if the second is simply the reflection of the only real source.
>
> Need I point out that your hesitance to accept a "Virtual Source" does
> not bode well with your proposals of "Virtual Shorts?" If the idea of
> "Virtual" is so elegant and lucid for demonstration to novices, how is
> it that conceptually you deny it here? This is the bane of offering
> smorgasbord physics for dummies.
>
> Your last line's sly suggestion is that superposition fails. If so it
> can only be through misapplication, not through its own inherent
> weakness. In other words, the fault can only be yours. I say this
> because neither you, Cecil, nor Steve for that matter have shown a
> circuit analysis. Bill's paper comes the closest, but it does not
> apply the classical methods, but rather approaches the solution

> iteratively.
>
> You guys cannot make appeals to superposition to pull your chestnuts
> out of the fire if you cannot perform the mechanics that use it.
>
> 73's
> Richard Clark, KB7QHC

5122. Re: - W9INN Antennas Page On-Line -

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:01:41 UTC
From: Charles Johnston <ctj92@earthlink.net>
Message-ID: <V0zQ6.44993$9D5.2633357@newsread2.prod.itd.earthlink.net>
Source record: 161772
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx

Hello Walt,
Your concerns are addressed fully on the FAQ Page of my site.

Thank you for posting......

--

73 / DX

Charles Johnston
charles@ab7sl.com

AB7SL - Ham Radio Pages
http://www.ab7sl.com

5123. Weatherproofing Connectors?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:08:21 UTC
From: DeniGm3skn <deni@gm3skn.fsnet.co.uk>
Message-ID: <9euf1acm1@news8.svr.pol.co.uk>
Source record: 161776

Does anyone know where to get that wonderful weatherproof black sealant mastic that comes in a 2 inch wide strip about a foot long with Andrews FHJ250/450 heliax connectors. It's the best I have ever come across, really works, never sets hard and can be moulded around any connector.
Can it be bought anywhere? what is it? Any info?

73, Deni GM3SKN

5124. Re: please forgive my ignorance..but...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:09:18 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12BE7E.3438D44F@IEEE.org>
Source record: 161774

Matt wrote:
> What is 2 meter SSB??? What class license do you need before you can
> operate on these frequencies?

2m SSB-only is 144.1-144.3 MHz. Any presently available ham license will do.
An IC-706 will do 2m SSB.
--
cheers, Cecil

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5125. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:09:40 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9euepl$1b0$1@slb1.atl.mindspring.net>
Source record: 161773

Cecil et al:

Just to be clear...

although it is widely believed to hold for most physical situations, there is simply no mathematical proof of the principle of conservation of energy. This principle is simply and experimentally observed fact.

In fact it is well known that the principle of conservation of energy only seems to hold for non-relativistic mechanics.

That being said it is an important and strong concept... but it should be noted that...

The principle of Conservation of Energy is not used as an axiom, theorem, or even as a spurious fact, in the development of either Maxwell's Equations or the equations of Circuit Analysis/Network Theory.

In other words, Maxwell's equations and the equations of circuit theory are completely independent of the principle of conservation of energy.

The conservation of energy is outside the scope of Maxwell's equations. That principle simply was not used in developing those equations.

One might ask, is it possible to derive the principle of conservation of energy from Maxwell's equations? The answer is.... no.

The only caveat about invoking the conservation of energy principle is that one must be extremely careful when doing so... pitfalls await the unsuspecting. Make sure you know that your energies are "real", heh, heh.

Recall the old chestnut....

A capacitor of capacitance C has a charge Q stored in it. The voltage across that capacitor is then V = Q/C. The energy stored in that capacitor is E = C*V*V/2. Now that capacitor is losslessly connected to a second capacitor of capacitance C so that the first discharges into the second. What is the final equilibrium state for the voltage and charge?

Now compute the total power in the system.

How do you explain the discrepancy?

Is charge conserved or is energy conserved, or is...

Which is correct the answer... the one given by the circuit theory equations and Maxwell which demand charge conservation or the answer given by the conservation of energy principle?

Fun...

-Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B12AF8E.8FFB2DD2@IEEE.org...
> Richard Clark wrote:
> > ... neither you, Cecil, nor Steve for that matter have shown a
> > circuit analysis. Bill's paper comes the closest, but it does not
> > apply the classical methods, but rather approaches the solution
> > iteratively.
>
> You want a circuit analysis to prove the conservation of energy
> principle? I'm afraid that is beyond my capabilities. Will a
> phasor diagram do? :-)
> --
> cheers, Cecil
>
>
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5126. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:11:08 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9euesd$8i0$1@slb7.atl.mindspring.net>
Source record: 161775

Walt:

[snip]
> reflected power to that of the source at the matching point. It's true
that
> in my QEX article I said it is superposition, but I was wrong there.
[snip]

OK, I'll accept that.

-Peter K1PO

5127. Re: Coax and antenna for 2-meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:15:12 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12BFE0.657C5491@IEEE.org>
Source record: 161777

Jeremy wrote:
> I have been told that to get a correct reading on a SWR meter that I
> need odd multiples of a half wavelength such as 1/2, 3/2, 5/2, etc.

That's a myth, Jeremy. SWR meters are designed to separately extract the forward wave and the reflected wave. A decent SWR meter will indicate the proper SWR no matter what is the length of the 50 ohm coax.

An N*1/2WL transmission line will repeat the antenna impedance but I doubt that is useful to you at the moment. Most of us simply adjust the 2m antenna for low SWR at the transmitter no matter what the length of the coax.
--
cheers, Cecil

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5128. Re: portable HF antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:17:38 UTC
From: on4bam@yahoo.com
Message-ID: <3b12bf21.20453467@news.easynet.be>
Source record: 161778

On Mon, 28 May 2001 18:41:07 GMT, "ON4CLN" <on4cln@qsl.net> wrote:

>Multiband portable antennas: any suggestions or experiences? Design ideas?
>Or should I just buy a tuner and swing a wire up the trees?

Hi Franki,

I tried several setups with my TS50. Random wire with tuner,
dipoles.... FD4... (too large for most situations).
I'm now looking into the new DK9SQ antenna. I mailed Walter for more
info just before Dayton but only got a short reply because he was
going to attend the Hamvention. He will launch his new antenna for
Europe in Friedrichshafen. So far the info I have is on the Kanga
webpage:
http://www.bright.net/~kanga/kanga/folded_vertical.htm

I hope to have more info soon. Someone will probably bring me one of
the antennas from Friedrichshafen.

Bye Maurice
--
Hamradio: ON4BAM / M0CIL http://www.qsl.net/on4bam
Pix and travelstories from Alaska, Schotland
South Africa and IOTA activations

5129. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:23:50 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B12C1E6.DFA5829@mwci.net>
Source record: 161779

Let's take another whack at this and get it right:

> So which of the following equations is valid?
>
> (A) V1^2/Z0 + V2^2/Z0 = Vtot^2/Z0 = 75w + 8.33w = 133.33w
>
> (B) V1^2/Z0 + V2^2/Z0 + 2*sqrt(V1^2/Z0*V2^2/Z0) = 75w + 8.33w + 50w = 133.33w

75 + 8.33 is obviously not equal to 133.33. What's wrong?

Equation A is incorrectly stated and should be rewritten

(A) [V1 + V2]^2 / Z0 = [61.237 + 20.4]^2 / 50 = 133.33 watts

In this equation V1 and V2 are intended to be *in-phase*, so V1 and V2 *add directly*.

Now look at Equation A again and expand it to look like Equation B

(B) [V1 + V2]^2 / Z0 = [V1^2 +2*V1*V2 + V2^2] / Z0

= [3749 + 2498 + 416.2] / 50

= 133.33 watts

which is the same result, which should be no surprise. V1 and V2 are still in-phase.

Now consider this equation:

V^2/Z0 = [V1^2 + 2*V1*V2*cos(theta) + V2^2] / Z0

where theta is the phase angle between V1 and V2.

This equation is correct for *any* phase angle. For example, suppose theta is 45 degrees, then

V^2/Z0 = [3749 + 2498*0.7071 + 416.6] / 50 = 118.6 watts

Suppose theta is 90 degrees,

V^2/Z0 = [3749 + 2498*0.0 + 416.6] / 50 = 83.3 watts which is 75 + 8.33

We now have the right interpretation.

Note that going from 90 degrees to exactly in-phase gives us an additional 50 watts, which is exactly what we expect, because the two generators are now huffing and puffing in unison, like a rowing team. In other words, the two generators are "coherent".

Bill W0IYH

5130. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:26:03 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12C26B.D66B8E96@IEEE.org>
Source record: 161780

"Peter O. Brackett" wrote:
> The only caveat about invoking the conservation of energy principle is that
> one must be extremely careful when doing so... pitfalls await the
> unsuspecting.

I am well aware of the old knife-in-the-back pitfall. :-)

P.S. There's no such thing as a lossless capacitor, wire, or system.
Energy is conserved. Electrical energy is changed to heat energy.

How many angels can dance on the head of a pin? Assumptions are the
same as for your lossless capacitor.
--
cheers, Cecil

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5131. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:28:57 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B12C319.FD1B4DBF@mwci.net>
Source record: 161781

Cecil, please see my revised answer to your original question. I didn't get it right the first time or the second time. It is finally right the third time.

CAM wrote:

> "William E. Sabin" wrote:
> >
> > CAM wrote:
> > > Where does the missing energy come from, Bill?
> >
> > There is no missing energy. For the same amount of energy, two identical generators
> > *in-phase* deliver twice as much power ...

Bill W0IYH

5132. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:41:32 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9euglc$j00$1@slb6.atl.mindspring.net>
Source record: 161782

Cecil:

Me "stab in the back", what?

Awwww.... that's no fun, you'r starting to take this all too seriously...

USENET NG's are places to have fun.

Dare I say... lighten up? Heh, heh...

Cecil... I love you man... go take on Walt and Steve and give it to em good.

Methinks it's Walt and Steve who need to lighten up.

Best,

-Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B12C26B.D66B8E96@IEEE.org...
> "Peter O. Brackett" wrote:
> > The only caveat about invoking the conservation of energy principle is
that
> > one must be extremely careful when doing so... pitfalls await the
> > unsuspecting.
>
> I am well aware of the old knife-in-the-back pitfall. :-)
>
> P.S. There's no such thing as a lossless capacitor, wire, or system.
> Energy is conserved. Electrical energy is changed to heat energy.
>
> How many angels can dance on the head of a pin? Assumptions are the
> same as for your lossless capacitor.
> --
> cheers, Cecil
>
>
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5133. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:44:29 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12C6BD.4110A0A3@IEEE.org>
Source record: 161783

"William E. Sabin" wrote:
> 75 + 8.33 is obviously not equal to 133.33.

Steve, are you reading this? I've been saying this for weeks while
you said:
****
From: VE9SRB (srbest@att.net)
Subject: Addition of Power
Newsgroups: rec.radio.amateur.antenna
Date: 2001-05-02 06:55:46 PST

75 W added in phase with 8.33 Watts results in a total forward power of
133.33 Watts.
****
> (A) [V1 + V2]^2 / Z0 = [61.237 + 20.4]^2 / 50 = 133.33 watts

Which is what we knew already.

> Note that going from 90 degrees to exactly in-phase gives us an additional 50
> watts, which is exactly what we expect, because the two generators are now huffing
> and puffing in unison, like a rowing team. In other words, the two generators are
> "coherent".

Now, I'm not arguing with you, Bill, just making an additional comment. When we
have two waves, e.g. a 75 watt delivered wave and an 8.33 watt re-reflected wave,
added in phase, the generator is not capable of "huffing and puffing" and delivering
more than the 100 watts of generated power. So we need 50 watts of additional power
in order to deliver the total of 133.33 watts. A little detective work shows us that
those 50 watts are contained in the constructive interference, i.e. wave
cancellation that occurs at the Z0-match. So the actual energy equation that
conserves energy is:

75w (delivered) + 8.33w (re-reflected) + 50w (wave cancellation) = 133.33 watts

which is what I have been saying for weeks.
--
cheers, Cecil

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5134. Re: please forgive my ignorance..but...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:53:15 UTC
From: Matt <matt_patt123@yahoo.com>
Message-ID: <9eugmb019go@enews1.newsguy.com>
Source record: 161788

What other rigs will do 2 meter SSB? That 706 is nice but WAY out of my budget!

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message news:3B12BE7E.3438D44F@IEEE.org...
> Matt wrote:
> > What is 2 meter SSB??? What class license do you need before you can
> > operate on these frequencies?
>
> 2m SSB-only is 144.1-144.3 MHz. Any presently available ham license will do.
> An IC-706 will do 2m SSB.
> --
> cheers, Cecil
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5135. WTB:ICOM FA-1443BA

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 21:57:58 UTC
From: Paul McCarron <w1hzy@cybertours.com>
Message-ID: <3B12C9E6.BA50C8D6@cybertours.com>
Source record: 161784

Wanted to buy Icom Rubber Duck FA-1443BA 144-440 ant. Used on the 24-AT
and others.
Paul

5136. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 22:00:59 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B12CA9B.FF23F225@mwci.net>
Source record: 161785

CAM wrote:

> "William E. Sabin" wrote:
> > 75 + 8.33 is obviously not equal to 133.33.
>
> Steve, are you reading this? I've been saying this for weeks while
> you said:
> **********
> From: VE9SRB (srbest@att.net)
> Subject: Addition of Power
> Newsgroups: rec.radio.amateur.antenna
> Date: 2001-05-02 06:55:46 PST
>
> 75 W added in phase with 8.33 Watts results in a total forward power of
> 133.33 Watts.

Steve said specifically "in-phase"

> **********
> > (A) [V1 + V2]^2 / Z0 = [61.237 + 20.4]^2 / 50 = 133.33 watts
>
> Which is what we knew already.
>
> > Note that going from 90 degrees to exactly in-phase gives us an additional 50
> > watts, which is exactly what we expect, because the two generators are now huffing
> > and puffing in unison, like a rowing team. In other words, the two generators are
> > "coherent".
>
> Now, I'm not arguing with you, Bill, just making an additional comment. When we
> have two waves, e.g. a 75 watt delivered wave and an 8.33 watt re-reflected wave,
> added in phase, the generator is not capable of "huffing and puffing" and delivering
> more than the 100 watts of generated power. So we need 50 watts of additional power
> in order to deliver the total of 133.33 watts. A little detective work shows us that
> those 50 watts are contained in the constructive interference, i.e. wave
> cancellation that occurs at the Z0-match. So the actual energy equation that
> conserves energy is:
>
> 75w (delivered) + 8.33w (re-reflected) + 50w (wave cancellation) = 133.33 watts
>
> which is what I have been saying for weeks.
> --

But 133.33 is the "forward" power. The reflected power is 33.33 watts and the "delivered" power is 100 watts, not 75 watts. The load is 150 ohms and the reflection coefficient is 0.5. I believe those were the original numbers that were posted for this

exercise.

Bill W0IYH

5137. Motorizing a Tower

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 22:05:56 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <ufi5htk08ufmjn1pasvrl1r91ubbpkimq4@4ax.com>
Source record: 161786

I have a Telex/Hygain tower that I would like to motorize. Even
though I bought a new hand winch with a lower gear and longer handle,
it still puts too much strain on the old bod. If I am going to go
from doing something strenuous, I would rather it not be from cranking
up my tower! :-)

I can't find anything about motors on the Hygain site. Maybe just not
posted yet. Probably way too expensive anyway. I have considered
using an SUV winch. They have more than enough power, are reversible
and are made to be out in the elements. I could put a large battery
at the base of the tower in a marine box and use a small solar cell to
keep it charged. If I then used the new Ramsey cordless remote I
wouldn't need any wires at all from the shack to the tower. Of course
I would need some limit switches to prevent disaster.

Has anyone tried this? If so, which winch did you use? Thanks for
any input.

Dick - W6CCD

5138. Re: Weatherproofing Connectors?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 22:11:43 UTC
From: Major Tom <EmailBrokenBy@home.com>
Message-ID: <z2AQ6.72488$p33.1528045@news1.sttls1.wa.home.com>
Source record: 161787

Hi Deni:

What I buy is the stuff they use for sealing car winshields(60's and 70's GM's and others). It's flexible black stuff that is round, about 1/2 inch thick, more than several feet in length and rolled up into a flat roll with wax paper in between. The last roll I bought was about 13 years ago and I still have plenty left. All it cost me back then was 7 bucks. You can pick this material up at any auto glass shop. This stuff stays fexible for decades, reusable, extremely tacky, will stick to anything that is dry except for maybe teflon. This material looks exactly the same as the stuff at the local radio store except for the cost (very cheap). I have not had a single seal failure on any of my connectors since using this material. It might be what your looking for.

Good luck in finding what you need
73
Tom / N7HXP

"DeniGm3skn" <deni@gm3skn.fsnet.co.uk> wrote in message
news:9euf1acm1@news8.svr.pol.co.uk...
> Does anyone know where to get that wonderful weatherproof black sealant
> mastic that comes in a 2 inch wide strip about a foot long with Andrews
> FHJ250/450 heliax connectors. It's the best I have ever come across, really
> works, never sets hard and can be moulded around any connector.
> Can it be bought anywhere? what is it? Any info?
>
> 73, Deni GM3SKN
>
>
>
>
>
>

5139. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 22:32:52 UTC
From: 2w8ji@contesting.com
Message-ID: <3b12cf02.2088753@news.accessunited.com>
Source record: 161789

On Mon, 28 May 2001 11:07:00 -0700, Gray Frierson Haertig
<gfh@haertig.com> wrote:

>The ground beneath the open wire unbalanced line is not shielded from
>the center conductor. If it were, then the ground would be exposed to
>an equal (but opposite phase) radiation from the outer conductors, and
>clearly it is not. Your experience and my experience confirms that the
>radiation level below an open wire unbalanced feed system is relatively low.

Open wire lines of any length radiate quite well unless the line is
twisted at fractional wavelength intervals. The same is not true for
coaxial lines.

>Since nothing "shields" the ground from the current in the outer
>conductors, the only way the field at the ground could be zero is if the
>field from the outer conductors was being cancelled by another field of
>equal magnitude but opposite sense. This is conveniently provided by
>the current in the inner wire.

That field is always generated, but it is at the inside of the shield
at normal frequencies. The only current possible on the inside of the
shield is the equal and exactly out-of-phase current...and it is
always there.

The coaxial line can only radiate because of current spilling over the
edges at the ends of the shield, once the shield is more than several
skin depths thick.

>If the mechanism of "shielding" in open wire unbalanced line is somehow
>different than the mechanism in coax, at what point in the evolution of
>coax from open wire line does the mechanism change?

When the current carrying conductor at the center is not surrounded by
the shield.

>What is the mechanism by which the "shielding" is improved by the
>addition of more wires to the "cage" around the center conductor?

There is progressively less current leaking around the individual
conductors making upo the shield.

>For arguement's sake, let's say my analysis is correct. Is there
>anyway, exterior to the line, to determine if the field is entirely
>contained within the line or whether there are two equal but opposite
>sense fields that are cancelling?

Sure, you just move the test device very close to the shield, much
closer than the spacing of the center conductor to the shield.

If you do that with open wire, you'll see almost no cancellation.
You'll find the fields cancel only when the two conductors are equal
distances from the test pickup.

That isn't true with coaxial lines.

It's easy to prove fields do not pass directly through a conductor
several skin depths thick. Why should coax be an exception?

73 Tom

5140. Re: Motorizing a Tower

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 22:42:08 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <4vAQ6.1817$824.225748@dfiatx1-snr1.gtei.net>
Source record: 161790

"Dick Hughes" <rhughes33@cableone.net> wrote in message
news:ufi5htk08ufmjn1pasvrl1r91ubbpkimq4@4ax.com...
> I have a Telex/Hygain tower that I would like to motorize. Even
> though I bought a new hand winch with a lower gear and longer handle,
> it still puts too much strain on the old bod. If I am going to go
> from doing something strenuous, I would rather it not be from cranking
> up my tower! :-)
>
> I can't find anything about motors on the Hygain site. Maybe just not
> posted yet. Probably way too expensive anyway. I have considered
> using an SUV winch. They have more than enough power, are reversible
> and are made to be out in the elements. I could put a large battery
> at the base of the tower in a marine box and use a small solar cell to
> keep it charged. If I then used the new Ramsey cordless remote I
> wouldn't need any wires at all from the shack to the tower. Of course
> I would need some limit switches to prevent disaster.
>
> Has anyone tried this? If so, which winch did you use? Thanks for
> any input.
>
> Dick - W6CCD

Yep, I use a small Ramsey 6,000 lb. 12 VDC truck winch (about $200.00) on my Tri-Ex WT-51. It works flawlessly, and it has been in constant use for over three years. I made another winch plate like the original one for the Ramsey, and welded it 6 inches above the manual winch plate. In the rare event that the electric winch would fail I can still attach the manual winch cable to the tower cable - using cable clamps - to support the tower while the Ramsey is removed for service.

I anticipated this scenario when I first put the Ramsey on the tower, so I bought a second one as a spare. But so far, that has not proved to be the case.

The winch is auto-braking and holds the tower/antenna weight with no slippage at all. I run it from the same batteries I use for station back-up power. It will raise the tower fully in about 1 minute- and bring it down a bit faster, but still slow enough that I can coil the coax while it comes down.

I have to raise/lower the tower from the control on the winch but since the tower is right outside my shack this is no problem. The remote might be nice, but would involve the need for limit switches and a position indicator of some type. For me, the only time I lower the tower is for very high winds, or to work on the antennas.

73 de W6DKN

5141. Re: Question regarding. linear loaded antenna.or wires?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 22:45:50 UTC
From: raiar@slacc.com.nospam
Message-ID: <3b12d476.399689987@news.galilei.com>
Source record: 161791

Hi Chuck

My only experience was with a Linear-Loaded-Inverted-V, so far it has outperformed any other antenna I have constructed for the 160 meter band (in the space I have available), and I have tried many before settling on that one. I still try others, but the one I have up still outperforms the others I have tried. So it stays up.

TTUL
Gary

5142. Re: please forgive my ignorance..but...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 22:51:56 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3b12d450.26681910@news.aepnet.com>
Source record: 161792

On Mon, 28 May 2001 16:53:15 -0500, "Matt" <matt_patt123@yahoo.com> wrote:

>What other rigs will do 2 meter SSB? That 706 is nice but WAY out of my
>budget!

Older multi-mode rigs (and personal observations) include:

Kenwood TS-700 (no personal experience)

Yaesu FT221 (I have one of these. With a decent preamp and outboard audio filter,---and of course a *big* amplifier--- I have worked a few stations on moonbounce)

Icom IC-211 (I have a non-working one of these too. Actually, that is redundant. All IC-211s are non-working, or will soon be. Avoid these like the plague.) Icom will never sell me another radio unless they refund my full purchase price for this piece of crap.

A reasonable price for either of the first two is $200-$300.

Wes Stewart N7WS

>
>"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
>news:3B12BE7E.3438D44F@IEEE.org...
>> Matt wrote:
>> > What is 2 meter SSB??? What class license do you need before you can
>> > operate on these frequencies?
>>
>> 2m SSB-only is 144.1-144.3 MHz. Any presently available ham license will
>do.
>> An IC-706 will do 2m SSB.
>> --
>> cheers, Cecil
>>
>>
>> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
>> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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>
>

5143. Re: Coax and antenna for 2-meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 23:01:08 UTC
From: W6DKN <w6dkn@qsl.net>
Message-ID: <UMAQ6.1834$824.231405@dfiatx1-snr1.gtei.net>
Source record: 161793

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B12BFE0.657C5491@IEEE.org...
> Jeremy wrote:
> > I have been told that to get a correct reading on a SWR meter that I
> > need odd multiples of a half wavelength such as 1/2, 3/2, 5/2, etc.
>
> That's a myth, Jeremy. SWR meters are designed to separately extract the
> forward wave and the reflected wave. A decent SWR meter will indicate
> the proper SWR no matter what is the length of the 50 ohm coax.

Not necessarily. At VHF frequencies and up, the losses in the feed line can absorb enough of the reflected wave to make the SWR look great at the rig, even though it is way off at the antenna. With enough loss (a real long feedline) you will get a 1:1 SWR even with no antenna...

>
> An N*1/2WL transmission line will repeat the antenna impedance but I
> doubt that is useful to you at the moment. Most of us simply adjust
> the 2m antenna for low SWR at the transmitter no matter what the
> length of the coax.
> --
> cheers, Cecil
>

Measure the SWR at the antenna during installation. If it's good at the antenna (and the antenna is properly de-coupled from the feedline), it will only get better (due to feedline loss) at the rig end of the cable.

73 de W6DKN

5144. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 23:03:25 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <c9m5ht0s8pmmd7aqncuqi8q2lvql4q54q6@4ax.com>
Source record: 161794

On Mon, 28 May 2001 15:32:38 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> So, your answer is NO, you have not chosen to perform this, and yet
>> you continue to draw on failed claims of superposition.
>
>One more time, Richard, it is I who is objecting to Steve's formulas
>involving superposition of powers, not the other way around. I have
>had no argument with Steve's vector addition of voltages. I, personally,
>have zero claims of superposition of powers. All my arguments are based
>on buckets of conserved energy not subject to superposition. Please cease
>and desist with this obfuscation.

Hi Cecil,

I will then scale my understanding to this:
>> So, your answer is NO, you have not chosen to perform this

73's
Richard Clark, KB7QHC

5145. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 23:23:00 UTC
From: Dave Shrader <W1MCE@arrl.net>
Message-ID: <3B12DDA9.B12C5F5E@arrl.net>
Source record: 161795

Vance, et al, in the Transactions of the IEEE from the 50s and 60s
treated this subject in depth. The shielding effectiveness of coaxial
cable is determined by the % of optical coverage and the weave angle in
the over braid. The weave angle introduces small apertures at the cross
over points. The small apertures create a leakage inductance that is
proportional to the inverse of the optical coverage. The effect can be
imagined as blowing up a baloon into a mesh. The baloon will expand into
the spaces in the mesh. The spaces contribute to RF Loss via leakage
inductance. Radio Shack coax at 80% optical coverage is more lossy than
Belden 95% cable. The losses increase as frequency increases.

The US government treated this subject fully in the EMP handbook series.

I've been away from the mathmatics of the analysis for over 20 years but
the conclusion is VERY valid for military system designers.

Dave, W1MCE
Program Chief Engineer, MK21

Gray Frierson Haertig wrote:
>
> Hey Richard,
>
> The ground beneath the open wire unbalanced line is not shielded from
> the center conductor. If it were, then the ground would be exposed to
> an equal (but opposite phase) radiation from the outer conductors, and
> clearly it is not. Your experience and my experience confirms that the
> radiation level below an open wire unbalanced feed system is relatively low.
>
> Since nothing "shields" the ground from the current in the outer
> conductors, the only way the field at the ground could be zero is if the
> field from the outer conductors was being cancelled by another field of
> equal magnitude but opposite sense. This is conveniently provided by
> the current in the inner wire.
>
> If the mechanism of "shielding" in open wire unbalanced line is somehow
> different than the mechanism in coax, at what point in the evolution of
> coax from open wire line does the mechanism change?
>
> What is the mechanism by which the "shielding" is improved by the
> addition of more wires to the "cage" around the center conductor?
>
> For arguement's sake, let's say my analysis is correct. Is there
> anyway, exterior to the line, to determine if the field is entirely
> contained within the line or whether there are two equal but opposite

> sense fields that are cancelling?
>
> Gray
>
> Richard Harrison wrote:
> >
> > Gray Frierson Haertig wrote:
> > "It is clear from this that the field from the center conductor is not
> > attenuated by the shield."
> >
> > The "this" above may be the evolution of coax from parallel wire line
> > where equal and opposite fields balance out at a distance from the
> > wires.
> >
> > This is not the mecanism with coax. The field of the center conductor is
> > confined within coax.
> >
> > I gave an example of skeletal open-wire coax used by broadcasters in my
> > previous post. These use 4, 6, 8, and 12 wires around the center
> > conductor in varying grades of effectiveness in containing the field of
> > that center conductor. The outer shield wires are shorted together at
> > small fractions of a wavelength along the path of the line and grounded
> > througth the support pole there.
> >
> > Every increase in the number of wires used in the "shield" around the
> > center conductor decreases the induced current in the ground under the
> > line.
> >
> > So, I would say it is clear that the field from the center conductor is
> > attenuated by the shield.
> >
> > Best regards, Richard Harrison, KB5WZI

5146. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 23:26:11 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12DE93.636F5F2C@IEEE.org>
Source record: 161797

"William E. Sabin" wrote:
>
> CAM wrote:
> Steve said specifically "in-phase"

He said: "75 W added in phase with 8.33 Watts results in a total forward
power of 133.33 Watts."

"In-phase power" implies superposition of power. Power is a scalar and has
no phase. What is actually adding (in phase) is the voltages and currents.
Whatever power does relative to a phase angle is just a mathematical shortcut.

There is not enough power in a single 75w wave to add "in phase" to the power in
a single 8.33w wave to achieve a total of 133.33w. That's like combining the
outputs of two generating stations "in phase" to get more than the sum of their
combined generating capabilities. Paraphrasing Bill Klocko, it takes 75 watts plus
8.33 watts *plus some more*. Powers are scalar values. They cannot add in phase.
There is either enough total energy to support 133.33 watts or there is not.

The valid equation is the one we've already come up with. 75w + 8.33w + 50w = 133.33w
The total forward power wave gets energy support from the 75 watts not reflected
on the coax, the 8.33 watts re-reflected, *PLUS* the 50 watts from the destructive/
constructive interference involved in wave cancellation at the Z0-match.

> But 133.33 is the "forward" power. The reflected power is 33.33 watts and the
> "delivered" power is 100 watts, not 75 watts. The load is 150 ohms and the reflection
> coefficient is 0.5. I believe those were the original numbers that were posted for this
> exercise.

Steve has been differentiating "delivered" power from "generated" power.
His 75w of "delivered" power is 100w(1-rho^2), i.e. the generated power
that is "delivered" across the Z0-match point into the 150 ohm line
which is the 75w.

Thanks, Bill, for your time and effort.
--
cheers, Cecil

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5147. Re: Good ham logging program?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 23:27:15 UTC
From: "Dennis P. Stahr" <irfutures@earthlink.net>
Message-ID: <n9BQ6.14621$Rh7.475163@newsread1.prod.itd.earthlink.net>
Source record: 161796
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment

Don't know if Charles is, but I'm not, and I agree completely. I tried a few different programs before I settled on this one. My decision was easy when I called in the evening to leave a message and got a the real developer of the product. We talked and he answered all my questions. He and his assistant (the YL shown on the front of his web page), have done a great job. I have emailed for help once and got a reply within an hour. I think these people will be around a while.

I really do appreciate all the features and I don't think I'll outgrow this program.

Dennis - W6NYC

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message news:3b12adeb.16851818@news.aepnet.com...
> On Thu, 24 May 2001 19:12:46 GMT, "Charles Johnston" <ctj92@earthlink.net>
> wrote:
>
> >Guess I'll chime in after trying most of the major logging programs such as
> >LogPlus , Log Windows , DX4WIN , and Logic 5 I have settled on DXBase 2002.
> >Here is a snippet about the product....
> >
> ><snip>
> >
> >Designed for those who demand the best, DXbase 2002 by Scientific Solutions,
> >Inc. is the premiere amateur radio logging software for 32bit Windows. One
> >look and you'll wonder how you ever managed without it. Whether you want to
> >custom design your own QSL cards and labels, operate PSK mode and log
> >directly into DXbase, perfect CW output with the direct interface to the
> >W5XD external keyer, automatically create award submission forms, create
> >your own reports, monitor VHF Packet and Internet Packet letting DXbase tell
> >you when you need one, or just log a QSO with the greatest of ease, DXbase
> >2002 is the software for you.
> >
> ><snip>
> >
> >I have used this product since DXBase 2000 and it is a reliable and

> >extremely high-performance logging program
> >That can do everything the other loggers do plus much more.....
> >
> >Download the informational demo at http://www.dxbase.com
>
> Charles,
>
> Are you one of their beta testers?
>
> Wes Stewart, N7WS
> >
> >--
> >
> >73 / DX
> >
> >Charles Johnston
> >charles@ab7sl.com
> >
> >AB7SL - Ham Radio Pages
> >http://www.ab7sl.com
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5148. Re: please forgive my ignorance..but...

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 23:33:16 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12E03C.3A4CDBEF@IEEE.org>
Source record: 161798

Matt wrote:
> What other rigs will do 2 meter SSB? That 706 is nice but WAY out of my
> budget!

What you probably want is a 2m all-mode transceiver. What would you
give for a used original IC-706?
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5149. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 23:51:50 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B12E496.E70DAA6A@IEEE.org>
Source record: 161799

Richard Clark wrote:
> I will then scale my understanding to this:
> >> So, your answer is NO, you have not chosen to perform this

Since your stated reason for me performing it is to discourage me
from trying to superposition powers, there's no need. I don't
try to superposition power. I track buckets of energy. Steve, OTOH,
thinks scalar power possesses phase. Here's what he said:

"75 W added in phase with 8.33 Watts results in a total forward power of
133.33 Watts."
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5150. Mounting Big Boy PST61 In 45G

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-28 23:55:13 UTC
From: Roger Halstead <rdhalste@tm.net>
Message-ID: <BzBQ6.323$kB1.60298@newshog.newsread.com>
Source record: 161800

Has anyone tried mounting the Big Boy PDT-61 in a Rohn 45G?

I've tried every position I can think of for the mounting plate, but just can't get the rotor quite centered. The motor always hits either the diagonal, or horizontal cross braces.

Roger (K8RI)

5151. Fresnel Zone Antennas...any joy?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 00:01:52 UTC
From: Mr Malcolm C Hedley <kayakkhan@bigpond.com>
Message-ID: <XvnQ6.22122$hV3.31229@newsfeeds.bigpond.com>
Source record: 161955

Has anyone successfully constructed a fresnel zone antenna?
What were the constructional difficulties?
Was it successful?
Did you/Have you used a zone plotting program?..if so which one and where
from..
Thanks
Mal

5152. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 00:06:23 UTC
From: k1bqt@aol.com
Message-ID: <20010528200623.01462.00001778@ng-da1.aol.com>
Source record: 161801

>The small apertures create a leakage inductance that is proportional to the inverse of the optical coverage.<

From that finding, can you express what the leakage in dB at 14 MHz would be over 100 feet of 80% cable might be? If so, how would you confirm it experimentally?

Rick K1BQT

5153. Re: Question regarding. linear loaded antenna.or wires?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 00:07:25 UTC
From: k1bqt@aol.com
Message-ID: <20010528200725.01462.00001779@ng-da1.aol.com>
Source record: 161802

That's pretty scientific!

Rick K1BQT

5154. Re: Coax and antenna for 2-meter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 00:20:07 UTC
From: k1bqt@aol.com
Message-ID: <20010528202007.01462.00001780@ng-da1.aol.com>
Source record: 161803

Disregarding losses, isn't it true that cable length rotates a load's impedance magnitude as seen at the transmitter end of the line because of transformer action, but not the SWR--which remains constant for all phase angles? At the same time, increasing coax losses will pad SWR progressively. Isn't that why we calibrate network analyzers at the far end of the feedline to ensure accurate readings--and why we use pads when working with unknown loads in a 50-Ohm system?

5155. Re: T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 00:22:22 UTC
From: ehsjr@bellatlantic.net
Message-ID: <3B12EC32.4BD3E37@bellatlantic.net>
Source record: 161804

Mine works fine, and I'm real pleased with it. Easy assembly
and easy installation. Performance wise, it is NOT a 3 element
monobander, nor is it a dipole. (ie - better gain than a dipole,
worse gain than a 3 element monobander.) You get some gain,
some directivity and multiple bands in an antenna small enough
to be spun by a TV rotor. I've heard some "wild claims" that
may make you believe this is some kind of super antenna -
claims of breaking pileups and so forth. Baloney. But at the
same height, it'll beat a simple dipole, every time.

"Timothy J. Fiebig" wrote:

> Looking for comments on the performance of the T.G.M Mini Quad antenna
> MQ-1. Does anyone own one or has owned one. Also would like to hear
> about the Curshcraft mini beam.
>
> Thanks,
>
> tjf

5156. Re: Motorizing a Tower

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 00:37:35 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <vlr5htg9b3egc8l06lo6v30cejphb05fua@4ax.com>
Source record: 161805

Thanks Dan. Sounds like I should try it. Although I have written
permission from our homeowner's association for the tower, it was with
the understanding that it would be cranked down when not in use. I
figure if I cranked it down every few days I would stay out of
trouble. :-)

73, Dick - W6CCD

On Mon, 28 May 2001 22:42:08 GMT, "W6DKN" <w6dkn@qsl.net> wrote:

>"Dick Hughes" <rhughes33@cableone.net> wrote in message
>news:ufi5htk08ufmjn1pasvrl1r91ubbpkimq4@4ax.com...
>> I have a Telex/Hygain tower that I would like to motorize. Even
>> though I bought a new hand winch with a lower gear and longer handle,
>> it still puts too much strain on the old bod. If I am going to go
>> from doing something strenuous, I would rather it not be from cranking
>> up my tower! :-)
>>
>> I can't find anything about motors on the Hygain site. Maybe just not
>> posted yet. Probably way too expensive anyway. I have considered
>> using an SUV winch. They have more than enough power, are reversible
>> and are made to be out in the elements. I could put a large battery
>> at the base of the tower in a marine box and use a small solar cell to
>> keep it charged. If I then used the new Ramsey cordless remote I
>> wouldn't need any wires at all from the shack to the tower. Of course
>> I would need some limit switches to prevent disaster.
>>
>> Has anyone tried this? If so, which winch did you use? Thanks for
>> any input.
>>
>> Dick - W6CCD
>
>Yep, I use a small Ramsey 6,000 lb. 12 VDC truck winch (about $200.00) on
>my Tri-Ex WT-51. It works flawlessly, and it has been in constant use for
>over three years. I made another winch plate like the original one for the
>Ramsey, and welded it 6 inches above the manual winch plate. In the rare
>event that the electric winch would fail I can still attach the manual
>winch cable to the tower cable - using cable clamps - to support the tower
>while the Ramsey is removed for service.
>
>I anticipated this scenario when I first put the Ramsey on the tower, so I
>bought a second one as a spare. But so far, that has not proved to be the
>case.
>
>The winch is auto-braking and holds the tower/antenna weight with no

>slippage at all. I run it from the same batteries I use for station back-up
>power. It will raise the tower fully in about 1 minute- and bring it down a
>bit faster, but still slow enough that I can coil the coax while it comes
>down.
>
>I have to raise/lower the tower from the control on the winch but since the
>tower is right outside my shack this is no problem. The remote might be
>nice, but would involve the need for limit switches and a position
>indicator of some type. For me, the only time I lower the tower is for very
>high winds, or to work on the antennas.
>
>73 de W6DKN
>

5157. Re: skin effect and stranded braid

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 00:56:31 UTC
From: richardharrison@webtv.net
Message-ID: <20068-3B12F3BF-79@storefull-118.iap.bryant.webtv.net>
Source record: 161807

Dave, W1MCE wrote:
"Vance, ei al, in the Transactions of the IEEE from the 50`s and 60`s tested this subject in depth. The shielding effectiveness of coaxial cable is determined by the % of optical coverage and the weave angle over the braid."

My impression from this and the rest of Dave`s posting is, the smaller the shield gaps and the fewer gaps in coverage, the more complete is the shielding and the less energy leaks through the coax.

Gray Frierson Haertig asked: "What is the mechanism by which the "shielding" is improved by addition of more wires to the "cage" around the center conductor?"

More wires in a cage around a center conductor attract more of the radial electrostatic flux lines around the center conductor, and fewer penetrate the spaces between the shield wires to land upon the earth. This results in more shield wire current and less earth current carrying total transmission current to the antenna. The earth is lossier than the cage wires.

Effectiveness of open-wire coax shielding in similar systems except for the number of wires in the cage might be tested by comparing how far your parallel path may be separated from a transmission line while carrying a flourescent tube in your hand. How wide the gap before the flourescent tube extinguishes?

Our 4-wire cages weren`t so good. You didn`t need a flashlight if you didn`t wander too far from a transmission line.

Best regards, Richard Harrison, KB5WZI

5158. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 01:01:51 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105281701.ae52aab@posting.google.com>
Source record: 161806

"Walter Maxwell" <w2du@iag.net> wrote in message
news:<aTtQ6.6840$X4.844771@nntp2.onemain.com>...
> Walter Maxwell <w2du@iag.net> wrote in message
> Bill, I've reviewed Johnson's pp 244-245 that defines superposition. But as
> I've said earlier in this thread, it is not superposition that adds the
> reflected power to that of the source at the matching point. It's true that
> in my QEX article I said it is superposition, but I was wrong there.
>
> With superposition any voltage added to a circuit comes from an additional,
> external source, which naturally increases the total voltage and current in
> the circuit. In our matching circuitry there is no additional source of
> voltage.

Walt,
By "source", I don't mean another transmitter, I mean a voltage wave component
or a current wave component. Johnson means a voltage or current wave component.
This can be seen in the derivation of eqn 6.17, where there are 2 voltage
sources: one in the fwd wave and one in the reflected wave. This is
indicated prior to Johnson's eqn 6.17 in the terms E+ and E-.

Now for the match point case, there are 3 sources (actually 6 if you count
the currents): a wave from the source transmitted through the match point,
a wave from the load incident on the match point, and a wave re-reflected
at the match point.

> By adding voltages via superposition in our matching case the total forward
> voltage becomes extreme, and if those voltages were added on each cycle the
> total voltage would increase exponentially.

If you look in that paper of mine, the total forward voltage remains finite,
and builds to the steady state value.

> But there is no additional
> voltage source, only that of the original source voltage entering the line.
> So let's look at what is really happening in the matching circuit.
>
> All of the energy circulating within the resonant line originated from the
> single source, none has been added at the matching point by virtue of an
> additional source of voltage. Therefore the energy reflected at the
> mismatched termination is simply re-reflected at the matching point as it
> circulates back and forth along the line in the manner similar that of the
> energy circulating in a lumped LC circuit. Consequently the steady-state
> level of the increased forward voltage (and power) is not due to
> superposition, and thus the reflected and source voltages do not add
> directly as claimed.
>

> Since the forward power equals the source power plus the reflected power,
> and since the forward power minus the reflected power equals the power
> absorbed in the load, the only way for the power budget to balance is for
> the reflected power to add to the source power to enable the forward power
> to deliver the source power to the load and still reflect the power not
> absorbed to the load.
>
> In other words, Johnson's Eq 6.17 can be made to read like this:
>
> Psource + Pref = Pfwd Pfwd - Pref = Pdel.
>

My point about Pfwd - Pref = Pdel being valid because the cross terms cancel still applies. You can see that by expanding the equation just prior to eqn 6.17. My point about Psource + Pref = Pfwd not being valid because the cross terms don't cancel still applies. You just can't manipulate a specialized equation and expect it to be physically meaningful. I provided a derivation for this that you apparently disagree with. I've provided quotes from references that explicitly advise extreme caution against adding nonlinear terms such as power. I guess we're at an impasse again. 73 es HMD,
Bill N3WK

5159. antenna for aviation band

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 01:41:17 UTC
From: marc <spambots@eatthis.com>
Message-ID: <17DQ6.12876$_Y5.2031157@typhoon.ne.mediaone.net>
Source record: 161808

perusing previous archived posts I see that folks often recommend a discone antenna for picking up aviation band. Where can I get one? I'd prefer to buy, not build (too many other hobbies as it is.....). I have a simple Radio Shack scanner, live next to an airport and do a lot of flying myself. I understand I will probably pick up mostly planes in the air, and few or no ground stations. I can mount the antenna outdoors, on the roof etc. Any recommendations for type of antenna and some place to purchase?

thanks for any advice.

-Marc

5160. Re: Large Horizontal Loop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 01:51:15 UTC
From: k9sqg@aol.com
Message-ID: <20010528215115.00476.00001761@ng-fr1.aol.com>
Source record: 161809

Rick

5161. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 01:54:12 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105281754.25932cb@posting.google.com>
Source record: 161810

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:<9etpm4$ue5$1@slb2.atl.mindspring.net>...
> Cecil:
>
> Heh, heh... I agree and I see what you have been trying to do with Walt and
> Steve, but they are convinced that "power" is what is important and are
> trying to defend their reputations on some "shaky" power statements that
> they have made in public.
>
> They don't seem prepared to drop the power considerations and look simply at
> Volts and Amps and Ohms, etc...
>

Peter,
Don't get turned around by certain people. Steve did a correct analysis based on voltage only and got an answer of 133w. Now, either because he's a nice guy, or because he was trying to tweak someone, he expressed the answer as 75w + 8.33w = 133.33w. That's the equation that's been the basis of all this argument. Someone may say that Steve is convinced that power is what is important, but I don't think that's true. Steve has been an advocate of voltage analysis rather than .

Personally, I wouldn't express the answer as 75w + 8.33w = 133.33w. I'd say it was an analysis based on superposition of the voltages and that the answer is 133.33w, end of story. 73,
Bill N3WK

5162. Directionality with whip antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 02:00:10 UTC
From: David Taylor <david.taylor@alphawest6dotcomdotau>
Message-ID: <3b13d470$1@quokka.wn.com.au>
Source record: 161811
Cross-posted to: rec.radio.amateur.antenna,alt.ham-radio.vhf-uhf,alt.ham-radio.hf

Hi all,

I am very new to RF stuff in general, having only become involved as a side effect of a project that I am working on. What I would like to know is if it would be possible to get some directional response in the frequency range 18Mhz-60Mhz by using two vertical whip antennas is some configuration?

My application requires receiving equipment to be car portable, so big yagi booms are kind of out of the question. A single whip would be OK at a stretch but I would very much like to be able to direct the antenna response.

I guess to broaden the question a little, does anyone have suggestions for a car portable directional antenna that will cover 18-60 or 18-100MHz.

Thanks heaps.
Dave Taylor

david . taylor @ alphawest6 . com . au

5163. Re: antenna for aviation band

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 02:07:35 UTC
From: kd1jt@arrl.net
Message-ID: <3b130241.20232082@news.mybizz.net>
Source record: 161812

On Tue, 29 May 2001 01:41:17 GMT, "marc" <spambots@eatthis.com> wrote:

>perusing previous archived posts I see that folks often recommend a discone
>antenna for picking up aviation band. Where can I get one? I'd prefer to
>buy, not build (too many other hobbies as it is.....). I have a simple Radio
>Shack scanner, live next to an airport and do a lot of flying myself. I
>understand I will probably pick up mostly planes in the air, and few or no
>ground stations. I can mount the antenna outdoors, on the roof etc. Any
>recommendations for type of antenna and some place to purchase?

Hi Marc,

I'm also a pilot, and a ham radio operator. You can get a discone
from Radio Shack #20-043 for about $60. They're the ones that look
like a starburst. They are "wide band" and will work fine with your
scanner. That's their only advantage over other VHF/UHF antennas.

For aviation only, you could even get away with a good external FM
(broadcast) antenna since the AM aviation band is just above the FM
broadcast band. For about $20 Radio Shack sells a simple vertical
VHF/UHF antenna #20-176, that would suit your purpose.

I just plug one of my 2m ham antennas into the scanner, and it works
great. I'm about 10nm from HFD, 20 from BDL, and I can often pick up
the ATIS, sometimes ground control, and sometimes the tower. I can
hear planes in the air for 30-40 miles with no problem.

5164. Re: Directionality with whip antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 02:38:45 UTC
From: Gene <webmaster@zylay.com>
Message-ID: <3B130BB5.ED25F890@zylay.com>
Source record: 161813
Cross-posted to: rec.radio.amateur.antenna,alt.ham-radio.vhf-uhf,alt.ham-radio.hf

David Taylor wrote:
>
> Hi all,
>
> I am very new to RF stuff in general, having only become involved as a side
> effect of a project that I am working on. What I would like to know is if
> it would be possible to get some directional response in the frequency range
> 18Mhz-60Mhz by using two vertical whip antennas is some configuration?
>
> My application requires receiving equipment to be car portable, so big yagi
> booms are kind of out of the question. A single whip would be OK at a
> stretch but I would very much like to be able to direct the antenna
> response.
>
> I guess to broaden the question a little, does anyone have suggestions for a
> car portable directional antenna that will cover 18-60 or 18-100MHz.

It sounds like you're thinking along the lines of co-phasing them, but
so much of that depends on physical antenna seperation that I doubt
you're going to be able to get them far enough apart on a car to matter,
except at the higher frequencies.

Then again, are you thinking of car-portable or mobile? A lot more can
be done if you only intend to transport them easily in a car, and not
actually operate while mobile. 2 verticals (whip or otherwise) set 1/2
wavelength apart and fed with equal lengths of feedline will give you
some directionality in a direction broadside to the pair. I used to
carry a complete base antenna setup on a pushup pole with me when I
worked nighttime security in college, and would set it up next to my
ancient VW bus so I could run my mouth when it got so late that my study
texts started making no sense, and that setup worked not only great for
my needs, but could be set up and taken down in a matter of minutes.

--
Ride to eat, eat to ride. __O
_-\<,_
Support Gene, his kids, and the Children's Miracle Network (_)/ (_)
Please visit http://www.tfn.net/~gfloyd7/cmn/

5165. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 02:46:46 UTC
From: Chuck O'Neal <coneal@ultranet.com>
Message-ID: <9ev2jh$n7d$1@bob.news.rcn.net>
Source record: 161814

Pure crap...His patents are VERY limited and
don't cover what was claimed by his "Phil" persona in
the above posting.

I'm using folded antenna designs in several mass produced
products that are quite "kinky" and look quite "fractal" !!!
So...there!!! and have been for a few years...This technology
is quite mainstream and not protected. PERIOD. Even his
issued patents would not stand up to a contest. Too lame
and obvious...No claims can be made for "patents pending".

You folks at "frackyworld" need to get real legal advice.

5166. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 03:03:09 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9ev3gd$425$1@slb1.atl.mindspring.net>
Source record: 161815

Bill:

[snip]
>personally, I wouldn't express the answer as 75w + 8.33w = 133.33w. I'd say
> it was an analysis based on superposition of the voltages and that the
answer
> is 133.33w, end of story. 73,
> Bill N3WK
[snip]

A man after my own heart! Same here...

All you really need to do any and all the engineering necessary is volts and amps. The power is superflouous to it all.

IMHO.... it's really a sorry state that the "formalists" have gotten the world into with all these somewhat difficult to interpert and completely unecessary power equations. All they do is lead to endless arguments and attempts at visualizations that are only loosely connected to the reality of the situation at best.

I say to the power pushing protagonists, stop jawboning about power, it simply doesn't matter!

Best,

-Peter K1PO

5167. Re: antenna for aviation band

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 03:53:38 UTC
From: marc <spambots@eatthis.com>
Message-ID: <63FQ6.12936$_Y5.2054197@typhoon.ne.mediaone.net>
Source record: 161816

"Dennis Collin" <kd1jt@arrl.net> wrote in message
news:3b130241.20232082@news.mybizz.net...
> Hi Marc,
>
> I'm also a pilot, and a ham radio operator. You can get a discone
> from Radio Shack #20-043 for about $60. They're the ones that look
> like a starburst. They are "wide band" and will work fine with your
> scanner. That's their only advantage over other VHF/UHF antennas.
>
> For aviation only, you could even get away with a good external FM
> (broadcast) antenna since the AM aviation band is just above the FM
> broadcast band. For about $20 Radio Shack sells a simple vertical
> VHF/UHF antenna #20-176, that would suit your purpose.
>
> I just plug one of my 2m ham antennas into the scanner, and it works
> great. I'm about 10nm from HFD, 20 from BDL, and I can often pick up
> the ATIS, sometimes ground control, and sometimes the tower. I can
> hear planes in the air for 30-40 miles with no problem.

Sounds great, thanks. I'll look for these antennas.

I am located just next to LWM (and I mean just next to):

http://newapt.tripod.com/myhome.jpg

LWM tower comes in scratchy, but I am hoping by mounting an antenna on the
roof I'll have better luck.

-Marc

5168. Delta loop beam design?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 04:05:33 UTC
From: Neoklis <neoklis@my-deja.com>
Message-ID: <Pine.LNX.4.21.0105290703330.468-100000@up1000.home>
Source record: 161817

Hi!

Is there a reliable formula for the size of delta loop beam elements?

73's

--
Regards My Ham Radio callsign: 5B4AZ
My website (with some Linux software):
Neoklis http://leonardo.spidernet.net/Copernicus/22420/

5169. Re: Weatherproofing Connectors?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 06:01:37 UTC
From: Gray Frierson Haertig <gfh@haertig.com>
Message-ID: <3B133B46.C400FBCD@haertig.com>
Source record: 161818

You can buy it from Andrew (or, rather, their dealers). They sell
waterproofing kits aside from the connectors. The kits consist of
several (much longer) rolls of the butyl rubber goo, and several rolls
of 2" wide high quality PVC electrical tape for the underwrap and the overwrap.

Gray

DeniGm3skn wrote:
>
> Does anyone know where to get that wonderful weatherproof black sealant
> mastic that comes in a 2 inch wide strip about a foot long with Andrews
> FHJ250/450 heliax connectors. It's the best I have ever come across, really
> works, never sets hard and can be moulded around any connector.
> Can it be bought anywhere? what is it? Any info?
>
> 73, Deni GM3SKN

5170. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 06:24:01 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9evfa1$6cf$4@208.206.142.102>
Source record: 161719

CAM wrote:
>
> "Peter O. Brackett" wrote:
> > Richard: I love you man! (In a brotherly way!)
>
> Hey Peter, you said the same thing about me. Want to try a
> threesome? :-)
>

He already said -"But ya can't have my Bud Light".

5171. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 07:17:51 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B134D1E.389926DF@mwci.net>
Source record: 161720

CAM wrote:

> "William E. Sabin" wrote:
> >
> > CAM wrote:
> > Steve said specifically "in-phase"
>
> He said: "75 W added in phase with 8.33 Watts results in a total forward
> power of 133.33 Watts."
>
> "In-phase power" implies superposition of power. Power is a scalar and has
> no phase. What is actually adding (in phase) is the voltages and currents.
> Whatever power does relative to a phase angle is just a mathematical shortcut.

I am certain that what he*meant* to say was that if *voltages* V1 and V2 are *in-phase* the power (scalar) is 133.3 watts. I also showed very clearly that if the phase is 90 degrees the
power is 83.33 watts.

I suggest that there is no actual problem here except an ambiguity in Steve's wording that caused some confusion.

Bill W0IYH

5172. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 11:29:46 UTC
From: fractenna@aol.com
Message-ID: <20010529072946.04925.00001842@ng-fy1.aol.com>
Source record: 161722

>Pure crap...His patents are VERY limited and
>don't cover what was claimed by his "Phil" persona in
>the above posting.
>
>I'm using folded antenna designs in several mass produced
>products that are quite "kinky" and look quite "fractal" !!!
>So...there!!! and have been for a few years...This technology
>is quite mainstream and not protected. PERIOD. Even his
>issued patents would not stand up to a contest. Too lame
>and obvious...No claims can be made for "patents pending".
>
>You folks at "frackyworld" need to get real legal advice.
>

Although we are pleased that you make a statement of great commercial application of fractal element antenna technology, your statement raises several concerns.

After conferring with the officers of the company, Fractal Antenna Systems, Inc. invites you to discuss this matter with the Chairman and one of the legal firms representing the firm for its IP.

One is in Boston and the other is in San Francisco.

As you live within 20 miles of the State Street (Boston) office of one of the legal firms, I am sure this is no impediment to you.

As it stands, your comments appear to bee wrong, misleading, and appear to be meant to encourage , in a very public forum, the notion that Fractal Antenna Systems, Inc., and Dr. Nathan Cohen (inventor) do not have legitimate claim to fractal element antenna technology. Furthermore, your public comments appear to have the intent of misleading others in that regard.

If you have factual and non-partisan intentions in making such comments we can think of no reason why you would not agree to this meeting and present evidence as you describe. Carefully explain your interpretation of what is 'prior art' and how this is admissible in a court of law as "prior art".

If, in fact, what you describe is within the claims of our extant patents, this evidence will then be used as evidence of patent infringement and the case will proceed accordingly.

If you call Dr. Cohen at 617-489-6952 I am sure this can be arranged in the next ten days or so.

Your failure to do so will be interpreted as malicious intent from your comments.

This is a public statement indicating efforts by the company to answer incorrect statements with factually accurate ones. This statement may be used in a court of law as needed.

73
Phil
de N1ZKT

5173. Gap Titan in a tree?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 11:31:30 UTC
From: Thor <thorvaldt@apexmail.com>
Message-ID: <th71uigc5it095@corp.supernews.com>
Source record: 161721

Anybody ever mount a GAP Titan vertical
in a tall pine tree? If so, how? Running out of
room and didn't know if there was some way
to either suspend it in the tree or use the tree
as a support with the antenna bolted to a 4x4.
Thanks,
Thor

5174. Re: portable HF antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 11:54:27 UTC
From: Gary McAdams <g.m.mcadams@worldnet.att.net>
Message-ID: <T5MQ6.50259$t12.3917766@bgtnsc05-news.ops.worldnet.att.net>
Source record: 161723

Franki,

Personally, I believe that everyone should have an
SWR meter if not a tuner. How else can you ensure
that the antenna is presenting a proper load to
the transciever?

So, I personally would go for a dipole, length not
critical, fed with small 300 ohm ladder line and a
small tuner with a built in swr meter. MFJ makes
many small tuners that would fill this need.

Good luck and have fun.
Gary, WG7X

ON4CLN <on4cln@qsl.net> wrote in message
news:7ZwQ6.17437$X03.1405036@afrodite.telenet-ops.be...
.
> I do not have a tuner/SWR meter, so "random wire going up a tree" is out
of
> the question.
>
> Multiband portable antennas: any suggestions or experiences? Design ideas?
> Or should I just buy a tuner and swing a wire up the trees?

5175. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 12:26:36 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B13957C.C238AA32@IEEE.org>
Source record: 161724

"William E. Sabin" wrote:
> I am certain that what he *meant* to say was that if *voltages* V1 and V2 are *in-phase* the
> power (scalar) is 133.3 watts.

That's what I thought also, Bill, and I asked him to state exactly what he *meant*. He simply kept arguing that his meaning was clear and that his unbalanced energy equation was valid.

> I suggest that there is no actual problem here except an ambiguity in Steve's wording that
> caused some confusion.

I suggest that the actual problem is that Steve is incapable of admitting that he is capable of ambiguity and confusion. It seems curious that many have gone from defending what Steve said to making excuses for what Steve said.

All these principles have been well known for many years. Yet authors need new material. So they perform mathematical manipulations until they get something that works and publish it as new and improved theory which outdates the previous theory. This seems to be especially true in ham radio where virtually anything can get published.

In the equation Ptot = P1 + P2 + 2*sqrt(P1*P2) P1 is simply Pgen(1-rho^2) and P2 is simply Pref(rho^2). 2*sqrt(P1*P2) is the rest of the power, i.e. Pgen(rho^2) + Pref(1-rho^2). Thus the known components of the equation are:

Ptot = P1 + P2 + 2*sqrt(P1*P2)
133.33 = 75 + 8.33 + 50

Ptot = Pgen(1-rho^2) + Pref(rho^2) + Pgen(rho^2) + Pref(1-rho^2)
133.33 = 75 + 25 + 8.33 + 25

Ptot = Pgen(1-rho^2) + Pgen(rho^2) + Pref(rho^2) + Pref(1-rho^2)
133.33 = 75 + 25 = 8.33 + 25

Ptot = Pgen + Pref
133.33 = 100 + 33.33

for a Z0-matched system which is common knowledge. When reflected energy is blocked from reaching the source by the Z0-match, there is no place else for the energy to go in a lossless system except toward the load. Conservation of energy is assured. Power is a scalar and has no phase.

Thanks Bill, for your rational contribution.
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5176. Re: Weatherproofing Connectors?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 12:44:04 UTC
From: KC1DI <elbc@pivot.net>
Message-ID: <3b139997_1@news.cybertours.com>
Source record: 161725

Another source of weather proofing tape is Electrical Supply houses. It's call Splicing tape, and works very well at keeping moisture out of connections.
73 Dave ,
"DeniGm3skn" <deni@gm3skn.fsnet.co.uk> wrote in message news:9euf1acm1@news8.svr.pol.co.uk...
> Does anyone know where to get that wonderful weatherproof black sealant
> mastic that comes in a 2 inch wide strip about a foot long with Andrews
> FHJ250/450 heliax connectors. It's the best I have ever come across, really
> works, never sets hard and can be moulded around any connector.
> Can it be bought anywhere? what is it? Any info?
>
> 73, Deni GM3SKN
>
>
>
>
>
>

5177. Zo-Match at tuner input.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 13:16:26 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9f07g1$hm9$1@neptunium.btinternet.com>
Source record: 161726

Cecil, I asked how do you know when the tuner has been adjusted for no reflected power back into the transmitter.

You, and others, replied the tuner is adjusted such that an SWR meter between tuner and transmitter indicates SWR = 1-to-1.

Your reply is fallacious.

Because, if I replace your 50-ohm meter with my 75-ohm meter, the tuner must be readjusted to return to SWR = 1-to-1.

Obviously, if the tuner settings depend on the type of meter, and neither meter has any effect on what is happening in the system, then they are equally useless for the purpose of detecting the presence or absence of reflected power.

Where do you think lies your fallacy?

It will be observed the internal resistance of the transmitter, and what exists between the output end of the tuner and the rest of the world, has nothing to do with it.

Reg, G4FGQ
http://www.btinternet.com/~g4fgq.regp

5178. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 13:19:46 UTC
From: richardharrison@webtv.net
Message-ID: <20068-3B13A1F2-94@storefull-118.iap.bryant.webtv.net>
Source record: 161728

Peter, K1PO wrote:
"The reflection voltage bridges, such as those made by the Bird company and others are simply not measuring what they say they are. It is all a big lie."

Peter`s remarks are silly and pernicious.

A generator produces electrical energy at a rate called power.

An ampere (amp) is a certain number of electrons passing a point in one second. It is a flow rate.

A volt is a measure of electrical pressure produced by an excess of free electrons when there is a difference in the number of charges per unit volume between two objects.

Power is volts times amps, and this product is power in watts.

One volt is needed to cause one amp to flow through an electrical resistance of one ohm.

Mechanical horsepower is 33,000 foot-pounds per minute, which is 550 foot-pounds per second. One horsepower is 746 watts.

All of the above is too basic, but seems to be misunderstood as we have endless inane arguments about current flowing, energy flowing, power flowing, etc. The nit-pickers should all go straight to hell!

If a 100-watt lamp is lit for one second it uses 100 joules (watt-seconds) of energy. Electric power conpanies say they produce power but they charge the customer for energy. The power company uses kilowatt-hours for billing, not watt-seconds, which are too small to be practical.

The idea that a wattmeter is somehow invalid is insane. Try that on your power company!

Your power company`s meter measures power times time to compute your electric bill. The power company`s meter senses in-phase volts and amps to determine power. So does the Bird wattmeter.

The Bird wattmeter has an extra something that the power company`s meter doesn`t need. That something is a directional coupler. It is needed to separate reflected power, found in most coax, from the forward power so that an accurate determination can be made of power delivered to the coax and to the load.

To call the Bird wattmeter another SWR bridge is idiotic. The Bird is used by broadcasters, fire departments, police, FAA, industrial, maritime, and other agencies. They are not the fools here!

Best regards, Richard Harrison, KB5WZI

5179. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 13:31:52 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <cxNQ6.52320$4f7.3898439@bgtnsc06-news.ops.worldnet.att.net>
Source record: 161727

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B114D14.FF59828D@IEEE.org...
> Richard Clark wrote:
> > If you pick up a text on circuit analysis, superposition examples
> > abound and the techniques of mesh and nodal analysis offer you the
> > correct techniques for examining these transmission line problems with
> > multiple sources. These two analytical techniques employ the bedrock
> > of superposition and Kirchoff's Laws.
>
> Do any of them say it is possible to combine 75 joules with 8.33 joules
> to obtain a total of 133.33 joules? If so, why don't the California
> power companies do that?
> --
> cheers, Cecil
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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This statement says it correctly:

"it is rare that the powers produced by two separate causes acting
individually upon even a linear system can simply be added algebraically to
determine the total power when both causes act together"

This quote is part of a discussion on power in transmission line systems.
The text is "Electromagnetic Energy Transmission and Radiation" Richard B.
Adler, Lan Jen Chu, Robert M. Fano - (c) 1960 John Wiley & Sons.

Steve VE9SRB

5180. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 13:47:03 UTC
From: "R. Scott" <kf7qz@yahoo.com>
Message-ID: <3B13A857.C5094CA2@yahoo.com>
Source record: 161733

> in a court of law as needed.
>
> 73
> Phil
> de N1ZKT

This time we are gonna sue

Really,

Honest

I know we have said it for 3 or 4 years

But this time we mean it

Really we mean it

quit laughing

We mean bidness

really

5181. Re: antenna for aviation band

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 13:55:30 UTC
From: marc <spambots@eatthis.com>
Message-ID: <mTNQ6.13482$_Y5.2085682@typhoon.ne.mediaone.net>
Source record: 161729

<mcduffie.spamcop@nospam.actcom.net> wrote in message
news:6i47htcihkcura8ki1mh265edqgd3304pn@4ax.com...
> On Tue, 29 May 2001 03:53:38 GMT, "marc" <spambots@eatthis.com> wrote:
>
> > I am located just next to LWM (and I mean just next to):
> >
> > http://newapt.tripod.com/myhome.jpg
> >
> > LWM tower comes in scratchy, but I am hoping by mounting an antenna on
the
> > roof I'll have better luck.
>
>
> I just looked at the picture. If you are getting it scratchy, something
> else is wrong. Unless the transmitter is remotely located quite a
> distance away from the airport, you should hear it on a piece of wire
> sticking out of the radio. I don't remember if you said what you were
> using for a radio, but a rubber duck on a "opened up" handheld 2m rig
> will pull aircraft 30 miles or more here. For enroute high altitude
> stuff, 150-200 miles is no problem. Look for noise sources in and
> around your house.

Not sure if it is noise. I do notice that very slight changes in the
position of the radio or antenna make a big difference in reception. I just
assumed that reception is poor because the airport is on a hill (not obvious
from the picture) and I am downhill inside a house with a small whip
antenna. I can pick up flying aircraft no problem. Can barely pick up the
airport information (ATIS) at all. So a roof-mounted antenna seemed the
first option.

> My best in-band 2m contact to a friend "at altitude" was 330 miles back
> in the early 70s on the northern Calif. coast. He flew for JAL and
> regularly "passed by" me between SFO and Tokyo. From Scottsbluff,
> Nebraska, I hear Colorado 2m (gen. aviation) air-mobiles fine as they
> fly over eastern Colorado and into Kansas.

Is 2m an amateur band? On the aviation frequency I have trouble picking up
the airport 1 mile away, but once in the air I can pick up small airplanes
from airports 100 miles away. This line of sight reception becomes very
noticable as you come in to land at an airport. In the air you get nonstop
chatter from 10 different local airports on some frequencies, but as you
descend it suddenly gets quiet, until all you can hear is yourself and just
nearby planes.

-Marc

5182. shortened 10 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 13:55:55 UTC
From: gwf2nospam@mediaone.net
Message-ID: <3b13a8d8.305151980@nntp.we.mediaone.net>
Source record: 161730

About 1970 I built a vertical antenna for 10 meter mobile use that was less than 3 feet in length. It was called a "variable pitch vertical" or some such. The antenna worked well and I would like to build another one but I no longer have the data. It was built on a fiber glass fishing rod. You wound so many turns at one pitch, so many turns at another pitch until the top section was close wound to the end of the rod.

Does anyone have a handbook of that era that has that article in it. I would very much like to have the data.

TNX, 73, Gordon WA6VIY

5183. Re: Zo-Match at tuner input.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 13:56:16 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B13AA80.E01F3349@IEEE.org>
Source record: 161731

Reg Edwards wrote:
>
> Cecil, I asked how do you know when the tuner has been adjusted for
> no reflected power back into the transmitter.

Essentially, when a 50 ohm bridge reads zero current, it has been
placed in a 50 ohm environment.

> You, and others, replied the tuner is adjusted such that an SWR
> meter between tuner and transmitter indicates SWR = 1-to-1.

Not just any SWR meter. It has to be an SWR meter (bridge) calibrated
for the existing boundary conditions, usually 50 ohms.

> Your reply is fallacious.

My reply might be fallacious but my meter calibrated for 50 ohms
works perfectly in the 50 ohm environment for which it was designed.

> Because, if I replace your 50-ohm meter with my 75-ohm meter, the
> tuner must be readjusted to return to SWR = 1-to-1.

That just proves that you are misusing your instruments. When you
use an instrument calibrated for an incorrect Z0, you are unbalancing
the system. Moral: Don't use the wrong instrument.

> Obviously, if the tuner settings depend on the type of meter, and
> neither meter has any effect on what is happening in the system,
> then they are equally useless for the purpose of detecting the
> presence or absence of reflected power.

When an SWR meter is used within its specified boundary conditions,
it indicates properly. Any instrument can be misused and abused.

> Where do you think lies your fallacy?

There's no fallacy. I don't use instruments calibrated for 75 ohms
in a 50 ohm environment.

> It will be observed the internal resistance of the transmitter, and
> what exists between the output end of the tuner and the rest of the
> world, has nothing to do with it.

That's what I said, Reg. The Z0-match is achieved between the transmitter
and the tuner. Have you ever considered the voltage and current phasors
and added and subtracted them? If you ensure the proper boundary conditions,
those phasor additions and subtractions result in voltages (or currents)
that are proportional to forward and reflected joules/sec.

--
cheers, Cecil

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5184. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 14:00:47 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B13AB8F.2DF63373@IEEE.org>
Source record: 161732

VE9SRB wrote:
> This statement says it correctly:
>
> "it is rare that the powers produced by two separate causes acting
> individually upon even a linear system can simply be added algebraically to
> determine the total power when both causes act together"

That quote proves your assertions to be wrong, Steve. You are certainly trying to add 75 joules/sec to 8.33 joules/sec algebraically to obtain 133.33 joules/sec.

So I repeat: If you can get 133.33 joules/sec out of individual waves of 75 joules/sec and 8.33 joules/sec, why can't the California power companies do the same thing?
--
cheers, Cecil

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5185. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 14:05:31 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <L0OQ6.50403$t12.3933937@bgtnsc05-news.ops.worldnet.att.net>
Source record: 161734

"Walter Maxwell" <w2du@iag.net> wrote in message
news:5BxP6.1072$z83.1280647@nntp1.onemain.com...
>
> > A calculation of the correct network output impedance can be made
starting
> with the input impedance, but the attenuation factor MUST be reversed to
> obtain the correct answer in returning to the starting point--the load.
But
> BEWARE of the MEASUREMENT looking into the output with the input
> terminated--the answer is wrong unless the network is lossless. With
> attenuation the difference in the value measured with he analyzer and the
> true output impedance increases in proportion to the amount of
attenuation.
>
> Walt, W2DU
>
> PS--an entire Appendix in Reflections II explains this concept, with a
Smith
> Chart presentation.
>
>

Walter:

Your method of calculating the impedance seen looking rearward into a network is simply incorrect and anyone familiar with network impedance calculations would recognize your gross errors.

First, you do not start with the input impedance to the network to perform the calculation. Second, you do not use negative resistance to perform the calculation. You're mixing and confusing separate concepts. Its appalling that that an electrical engineer would make such simple mistakes on such a simple topic.

Let's do this with a lossless network, so you can't play games with the negative resistance calculations.

Here's the circuit:

TX ---- 50 ohm line ---- Network

The impedance seen looking rearward into the transmitter is 25 + j25 ohms. The 50 ohm line is 1 WL long and lossless. The network is a series C - -j200 ohms, parallel L +j100 ohms, a series C -j200 ohms. The network is lossless.

What is the impedance seen looking rearward into the network? Show your method of calculation.

Steve VE9SRB

5186. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 14:12:48 UTC
From: richardharrison@webtv.net
Message-ID: <15662-3B13AE60-118@storefull-116.iap.bryant.webtv.net>
Source record: 161737

Peter, K1PO wrote:
"And I still maintain that, in scattering formalism, the so-called "reflected power" is a fictional or symbolic power and so cannot be treated as if it were a commodity to be traded in the great "conservation of energy" balance."

Speaking of the reflected wave in a transmission line Terman says it "---can be termed a wave train traveling from the receiver (load) toward the generator (transmitter). This second wave train can be thought of as resulting from reflection of the first wave train by the load impedance at the receiver end of the line. For this reason, the wave traveling to the receiver is often designated the incident wave, while the second wave is termed the reflected wave."

Waves have power. Scattering formalism produces 'scatter-brains".

Best regards, Richard Harrison, KB5WZI

5187. Re: Z0-matched systems

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 14:16:30 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <2bOQ6.50422$t12.3934234@bgtnsc05-news.ops.worldnet.att.net>
Source record: 161735

"Walter Maxwell" <w2du@iag.net> wrote in message
news:3b0e5dd7.590869@news.onemain.com...
> On Thu, 24 May 2001 23:13:07 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >"Walter Maxwell" <w2du@iag.net> wrote in message
> >news:3b0d7cfb.10852074@news.onemain.com...
> >>
> >> If you calculate the impedance looking rearward into the T-network
> >correctly it
> >> will be 200 - j200 ohms. If you calculate it using the same algorithm
you
> >used
> >> in smearing me in your CommQuart article, then you'll get a meaningless
> >answer,
> >> as I've explained to you before, and in my letter to the editor in QEX.
> >With the
> >> correct algorithm you'll also have a match at the input.
> >>
> >> Walt, W2DU
> >>
> >
> >What kind of an technical answer is this?
>
> I'll explain below what kind of a technical answer this is.
> >
> >The method I used is simple circuit theory. That's the beauty of this
type
> >of an example. 99.99% of the people on this NG can follow this
discussion
> >because the answer is either right or wrong. There is no room for
anybody's
> >interpretation of power flow or wave reflection mechanics (except for the
> >forward wave at the T-network input). With a T-network there is a steady
> >state voltage and current developed at the network input. After that the
> >analysis to find the power delivered to the load is easy.
> >
> >I don't mind that you disagree with me. But if you're going to claim
that
> >my statements are all horse manure you should be willing to back it up
with
> >proof rather than opinion. Work an example with me instead of posting
these
> >ambiguous responses.

> >
> >If my analysis is wrong, I'll apologize on the NG and in QEX, then move
on.
> >If you're wrong, I want an autographed copy of your new book.
> >snip
>
> >Steve
>
> First, Steve, the fact that you feel the need to 'calculate' anything to
> determine the output impedance of the network when the load impedance is a
given
> is proof that you still havn't learned how to calculate impedance
> transformations through networks correctly.
>
> When the network is designed to transfer to the load all the power
delivered at
> the input minus that lost in attenuation, the output impedance of the
network is
> the conjugate of the load impedance by definition. Therefore the output
> impedance in your example is 200 + j200 without any calculation.
>

Walter:

ALL networks, matched or mismatched transfer all of the power "delivered to the network" minus "the power lost in the network" to the load. Where else would the delivered power, not lost in the network go?

Here's a challenge for you Walter. I'll even use a lossless network so you can't play the negative resistance game.

The load impedance connected at the output of a T-network is 150 ohms.

Here's the circuit:

Source ---- 50 ohms ---- Network - Load

The load is connected directly to the network output. The 50 ohm line is lossless and 1 WL long.

The source impedance is 25 + j25 ohms.

You design a lossless network to present an impedance match (Zin = 50 ohms) at the network input and then I'll prove that this is not even close to a conjugate match.

Steve

5188. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 14:29:57 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <FnOQ6.50445$t12.3935319@bgtnsc05-news.ops.worldnet.att.net>
Source record: 161736

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B12A763.71CF09A8@IEEE.org...
>
> That's only one of Steve's equations. Please pay attention, Richard,
> and please tell me you are mistaken and not trying to falsify the
> information. It is virtually impossible to falsify information when
> everything is archived. Here's Steve's posting. I don't know if it
> was the original but it will do. Do you feel like an apology?
> **********
> From: VE9SRB (srbest@att.net)
> Subject: Addition of Power
> Newsgroups: rec.radio.amateur.antenna
> Date: 2001-05-02 06:55:46 PST
>
> 75 W added in phase with 8.33 Watts results in a total forward power of
> 133.33 Watts.
> **********
>

Here's what Steve said in numerous posts:

*****
Vtotal = V1 + V2 - complex vector voltages

|Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| cos(theta)]

Theta = 0 (in-phase). Note that when V1 and V2 are in phase, |Vtotal|
simplifies to |Vtotal| = |V1| + |V2|.

|V1| = 106.066 V P1 = 106.066^2 / 150 = 75W

|V2| = 35.355 V P2 = 35.355^2 / 150 = 8.33 W

|Vtotal| = Sqrt[106.066^2 + 35.355^2 + 2 106.066 * 35.355]

|Vtotal| = 141.42

Ptotal = |Vtotal|^2 / 150

Ptotal = 133.33 Watts.

When a signal having an associated power of 75 W combines in phase with a
signal having an associated power of 8.33 the resulting signal will have a
total power of 133.33 W. The single fact that makes this power relationship
work is that the signals are applied simultaneously in the same impedance
(Zo).
*****
There is no ambiguity in these statements. If we want to look at this from

the perspective of power then

Ptotal = P1 + P2 +2 Sqrt(P1) Sqrt(P2) Cos(theta)

This concept is consistent with superposition of voltage and current. As clearly stated by Chu and Fano:

"it is rare that the powers produced by two separate causes acting individually upon even a linear system can simply be added algebraically to determine the total power when both causes act together"

Cecil, IMHO, is twisting this discussion into some sick game in an effort to discredit me.

Steve VE9SRB

5189. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 15:20:29 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B13BE3D.EAA3BC5D@IEEE.org>
Source record: 161738

VE9SRB wrote:
>
> "CAM" <Cecil.A.Moore@IEEE.org> wrote in message
> > **********
> > From: VE9SRB (srbest@att.net)
> > 75 W added in phase with 8.33 Watts results in a total forward power of
> > 133.33 Watts.
> > **********
>
> Here's what Steve said in numerous posts:

This is bizarre. You want to repeat everything over again which was correct
and with which I have no argument and ignore your statements with which
I have a problem. I have said a couple of dozen times that I have no
problem with your vector addition of phasors. What I have a problem
with is your apparent concept of vector addition of scalar powers that
somehow magically possess phase.

> |V1| = 106.066 V P1 = 106.066^2 / 150 = 75W

Note P1 is simply Pgen(1-rho^2). What happened to Pgen(rho^2)?

> |V2| = 35.355 V P2 = 35.355^2 / 150 = 8.33 W

Note P2 is simply Pref(rho^2). What happened to Pref(1-rho^2)?

> Ptotal = 133.33 Watts.

Ptotal = 75w + 8.33w + 50w
Ptotal = P1 + P2 + 2sqrt(P1)sqrt(P2)
Ptotal = Pgen(1-rho^2) + Pgen(rho^2) + Pref(rho^2) + Pref(1-rho^2)
Ptotal = 75w + 8.33w + 25w + 25w
Ptotal = Pgen + Pref = 100w + 33.33w = 133.33w

> When a signal having an associated power of 75 W combines in phase with a

So now the power is only "associated" and not "in phase" anymore? That's
a definite step in the right direction for a scalar value.

> signal having an associated power of 8.33 the resulting signal will have a
> total power of 133.33 W.

Again I ask: If you can add 75 joules/sec to 8.33 joules/sec and obtain
133.33 joules/sec, why can't the California power companies do likewise?

> Ptotal = P1 + P2 +2 Sqrt(P1) Sqrt(P2) Cos(theta)

But elsewhere you said 75w + 8.33w = 133.33w. How can both be true?
Either there is enough power contained in those two signals to result
in 133.33w or there is not. If you say there is not, then you violate
the energy conservation principle. If you say it is then you must add
it to your equation such that 75w + 8.33w + 50w = 133.33w which is
what I have been saying for weeks.

> This concept is consistent with superposition of voltage and current. As
> clearly stated by Chu and Fano:

But you seem to have been trying to superposition powers possessing phase.
Let's look at the components of your equation for the Z0-matched condition.

P1 = Pgen(1-rho^2), P2 = Pref(rho^2)

2Sqrt(P1)Sqrt(P2)cos(0) = Pgen(rho^2) + Pref(1-rho^2)

Ptot = Pgen(1-rho^2) + Pref(rho^2) + Pgen(rho^2) + Pref(1-rho^2)

Ptot = Pgen + Pref but we already knew that, didn't we?

> "it is rare that the powers produced by two separate causes acting
> individually upon even a linear system can simply be added algebraically to
> determine the total power when both causes act together"

Your equation above seems to have two powers adding algebraically to
determine the total power, Steve. You seem to be arguing against yourself.
Which one of yourselves is going to eat the cake and which one is going to
have it?

> Cecil, IMHO, is twisting this discussion into some sick game in an effort to
> discredit me.

I'm just a lowly unemployed bum, Steve. How could I possibly discredit
a professional PhD Guru? I am merely trying to learn from your apparent
contradictions but you seem determined to thwart my learning experience.
--
cheers, Cecil

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5190. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 15:22:59 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <n9PQ6.52467$4f7.3915007@bgtnsc06-news.ops.worldnet.att.net>
Source record: 161739

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B13AB8F.2DF63373@IEEE.org...
> VE9SRB wrote:
> > This statement says it correctly:
> >
> > "it is rare that the powers produced by two separate causes acting
> > individually upon even a linear system can simply be added algebraically
to
> > determine the total power when both causes act together"
>
> That quote proves your assertions to be wrong, Steve. You are certainly
> trying to add 75 joules/sec to 8.33 joules/sec algebraically to obtain
> 133.33 joules/sec.
>

What the quote indicates is that it is rare that you can add powers algebraically as follows: 100 W + 33.33 W = 133.33 W. It is assumed that the 100 W and 33.33 W are the powers of the two waves when applied independently to the same impedance and that the 133.33 W is the power when the waves are combined in the same impedance. Combining a 100 W signal (power determined independently) in-phase with a 33.33 W signal (power determined independently) in the same impedance will not result in a total power of 133.33 W.

Steve VE9SRB

5191. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 15:32:16 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <4iPQ6.52481$4f7.3917085@bgtnsc06-news.ops.worldnet.att.net>
Source record: 161740

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B13BE3D.EAA3BC5D@IEEE.org...
> VE9SRB wrote:
> >
> > "CAM" <Cecil.A.Moore@IEEE.org> wrote in message
> > > **********
> > > From: VE9SRB (srbest@att.net)
> > > 75 W added in phase with 8.33 Watts results in a total forward power
of
> > > 133.33 Watts.
> > >
****
> >
> > Here's what Steve said in numerous posts:
>
> This is bizarre. You want to repeat everything over again which was
correct
> and with which I have no argument and ignore your statements with which
> I have a problem. I have said a couple of dozen times that I have no
> problem with your vector addition of phasors. What I have a problem
> with is your apparent concept of vector addition of scalar powers that
> somehow magically possess phase.
>

My statements are self explanatory and have always been consistent. You are
free to interpret them in any manner that suits your view of this
discussion. I will not participate in your game any further.

73
Steve

5192. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 15:43:45 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B13C3B1.D704F2BA@IEEE.org>
Source record: 161741

```
VE9SRB wrote:
>
> "CAM" <Cecil.A.Moore@IEEE.org> wrote in message
> news:3B13BE3D.EAA3BC5D@IEEE.org...
> > VE9SRB wrote:
> > >
> > > "CAM" <Cecil.A.Moore@IEEE.org> wrote in message
> > > > **********************************************************************
> > > > From: VE9SRB (srbest@att.net)
> > > > 75 W added in phase with 8.33 Watts results in a total forward power of
> > > > 133.33 Watts.
> > > > **********************************************************************
> > >
> > > Here's what Steve said in numerous posts:
> >
> > This is bizarre. You want to repeat everything over again which was correct
> > and with which I have no argument and ignore your statements with which
> > I have a problem. I have said a couple of dozen times that I have no
> > problem with your vector addition of phasors. What I have a problem
> > with is your apparent concept of vector addition of scalar powers that
> > somehow magically possess phase.
>
> My statements are self explanatory and have always been consistent. You are
> free to interpret them in any manner that suits your view of this
> discussion. I will not participate in your game any further.

Sorry Steve, "... 75 W added in phase with 8.33 Watts ...", is inconsistent.
--
cheers, Cecil

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5193. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 15:52:48 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B13C5D0.1DBD93C3@IEEE.org>
Source record: 161743

VE9SRB wrote:
> Combining a 100 W signal
> (power determined independently) in-phase with a 33.33 W signal (power
> determined independently) in the same impedance will not result in a total
> power of 133.33 W.

Assuming you can maintain the 100 joules/sec and 33.33 joules/sec energy sources as constants, it may not result in a forward power of 133.33 joules/sec but it certainly will result in a total power of 133.33 joules/sec. Otherwise, it violates the conservation of energy principle.
--
cheers, Cecil

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-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5194. Re: antenna for aviation band

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 15:53:12 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <e0h7ht4vtbbh7ak0tnhm2kcebs5d31nakp@4ax.com>
Source record: 161742

"marc" <spambots@eatthis.com>
shared these priceless pearls of wisdom:
This line of sight reception becomes very
->noticable as you come in to land at an airport. In the air you get nonstop
->chatter from 10 different local airports on some frequencies, but as you
->descend it suddenly gets quiet, until all you can hear is yourself and just
->nearby planes.

The rule of thumb is that your line of sight radio reception distance is given by the equation:

Reception distance (miles) = 1.33 * (square root of antenna height in feet).

Thus, for a perfectly Kansas terrain, your airplane on the ground has a top of fuselage com antenna perhaps 10 feet off the ground, and your range will be something on the order of 4 miles. (See note below about both transmitting and receiving antennas needing to be factored into the equation.)

However, in the pattern at 1000 AGL, your range is now around 40 miles.

In the practice area doing maneuvers at 4500 AGL, your range goes up to 90 miles.

In a 767 at FL350, your range is somewhere around 250 miles...and probably a bit more because the fundamental equation starts deviating from the actual long formula significantly when you get to 15,000AGL.

And so on...with the notation that "antenna height" is actually the height of the receiving antenna PLUS the height of the transmitting antenna.

Jim
Jim Weir, VP Eng. RST Eng. WX6RST
A&P, CFI, and other good alphabet soup

5195. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 16:05:01 UTC
From: kb7qhc@home.com
Message-ID: <3b13c830.864130734@news.seanet.com>
Source record: 161744

On Mon, 28 May 2001 18:51:50 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Since your stated reason for me performing it is to discourage me
>from trying to superposition powers

Hi Cecil,

Could you offer the posting where I stated this reason?

Really, Cecil, if one posting (provided you can find it) overwhelms
all those where I explicitly suggest you perform superposition, that
must've been a killer argument.

73's
Richard Clark, KB7QHC

5196. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 16:32:40 UTC
From: Pete <pete@etep.com>
Message-ID: <IaQQ6.44385$Ji.1068102@news1.rdc1.il.home.com>
Source record: 161745

Why don't you take all these fractal antennas and shove them where the sun doesn't shine and lets get back to talking about "real ham radio".

"R. Scott" <kf7qz@yahoo.com> wrote in message news:3B13A857.C5094CA2@yahoo.com...
> > in a court of law as needed.
> >
> > 73
> > Phil
> > de N1ZKT
>
>
> This time we are gonna sue
>
>
> Really,
>
> Honest
>
> I know we have said it for 3 or 4 years
>
>
> But this time we mean it
>
> Really we mean it
>
>
> quit laughing
>
>
> We mean bidness
>
> really

5197. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 16:35:51 UTC
From: richardharrison@webtv.net
Message-ID: <15661-3B13CFE7-291@storefull-116.iap.bryant.webtv.net>
Source record: 161746

Steve, VE9SRB wrote:
"Combining a 100-W signal (power determined independently) in-phase with a 33.33-W signal (power determined independently) in the same impedance will not result in a total power of 133.33-W."

It certainly could.

In a transmission line with only one sender and one load, you have lost independence. The sender`s current is forced by the pure resistance of Zo to be in-phase with the sender`s voltage in the incident wave.

The reflection, if any, is forced to remain 180-degrees out-of-phase by tjhe pure resistance of Zo in the path of the reflected wave.

The volts and amps have rotating relationships as the waves pass each other on the line. The power does not. It is only in-phase or out-of-phase.

Due to the above, the incident and reflected powers always add and subtract arithmetically at any point in a transmission line.

For confirmation, look at the types of voltage and current distributions produced buy different load impedances as diagrammed by Terman or another competent authority.

Or, behold: the Bird wattmeter! it works anywhere in the 50-ohm transmission line.

Best regards, Richard Harrison, KB5WZI

5198. Unsecure "secure server" at www.hamstick.com

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 16:54:44 UTC
From: CA <sm6pxj@hotmail.com>
Message-ID: <2sQQ6.8960$vR1.26472@nntpserver.swip.net>
Source record: 161747

Don't use the "encrypted secure server" at www.hamstick.com.
After pressing submit, it repeats all information on a regular web page with
no security at all.
/sm6pxj

5199. FA: 6 pole 222 MHz helical filter

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 16:55:53 UTC
From: Dave <jeronamo@REMOVEaol.com>
Message-ID: <nyQQ6.105$6T5.21373@news.pacbell.net>
Source record: 161748

6 pole adjustable helical filter for 222 MHz ham band
http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1241977990

5200. Re: Weatherproofing Connectors?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 16:59:22 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.com>
Message-ID: <CX7KKpBqV9E7EA0a@ifwtech.com>
Source record: 161754

KC1DI wrote:
>Another source of weather proofing tape is Electrical Supply houses. It's
>call Splicing tape, and works very well at keeping moisture out of
>connections.
>73 Dave ,
>"DeniGm3skn" <deni@gm3skn.fsnet.co.uk> wrote in message
>news:9euf1acm1@news8.svr.pol.co.uk...
>> Does anyone know where to get that wonderful weatherproof black sealant
>> mastic that comes in a 2 inch wide strip about a foot long with Andrews
>> FHJ250/450 heliax connectors. It's the best I have ever come across,
>really
>> works, never sets hard and can be moulded around any connector.
>> Can it be bought anywhere? what is it? Any info?

In the UK it's made by Denso, but I never found out how to buy it.

I had a reminder last year when using some Denso aluminium-backed flashing tape. The black sticky side, intended to mould and seal onto brickwork, just happened to touch the LDF5-50 cable passing by - never saw anything grab onto PVC like it! However, it could still be rolled off very, very slowly and carefully, leaving both surfaces OK.

It seemed exactly like the goo that's moulded over some surplus connectors, but I never followed it up. A real builder's merchant - not one of the big DIY sheds - may be able to get the plain tape on special order.

73 from Ian G3SEK Editor, 'The VHF/UHF DX Book'
'In Practice' columnist for RadCom (RSGB)
http://www.ifwtech.com/g3sek

5201. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 17:06:22 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <iGQQ6.52650$4f7.3930491@bgtnsc06-news.ops.worldnet.att.net>
Source record: 161749

I thought I would clarify this a bit further

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B1178DE.D174D0ED@IEEE.org...
> Richard Clark wrote:
> > This is an exercise that YOU need to perform per one of the two
> > techniques already identified. However, I would point out that
> > nowhere in any circuit analysis text that I have ever read do they
> > ever establish power as the basis of an exercise (unless that exercise
> > is an example of an exception rather than the rule - in other words, a
> > rare topic).
>
> My point exactly, Richard. Yet, Steve and now, Bill, have chosen to
> make power the central topic. I don't see anything except power in
> Steve's equation:
>
> Ptot = P1 + P2 + 2*sqrt(P1*P2)
>

I have always maintained that the total forward voltage magnitude can be found as follows:

|Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| cos(theta)]

from which the total power formula can be derived as

Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) cos(theta)

The *only* reason that power has ever been introduced into the discussion is because of the widely accepted (yet incorrect) concept of total power re-refection occurring as a result of a Zo match being established in a transmission line. You have stated that you agree with my voltage and current analysis yet when I add the voltages as V1 + V2, you claim that the voltages must add as Sqrt(V1^2 + V2^2). You can't have it both ways. It really doesn't matter if the discussion focuses on power or on voltage and current. Either way you twist the discussion and constantly misinterpret and misquote me.

> or Steve's other equation that contradicts that one:
>
> 75w + 8.33w = 133.33w
>

This statement is only meant to represent the fact that when a 75 W wave is added or combined in phase with an 8.33 W wave the total forward power in the resulting wave is 133.33 W. When the two waves are in-phase, the formula used to determine the resulting total forward power is always P1 +

P2 + 2 Sqrt(P1) Sqrt(2).

> I didn't bring the subject up, Richard. STEVE INTRODUCED THE SUBJECT OF
> POWER BY SAYING THAT 75W+8.33W=133.33W. If he had stuck with voltages, I
> wouldn't have had a problem with what he said. Since Steve brought up the
> subject of power, I want to get the issue of power resolved.
>

That's not quite true.

You have stated many times that the voltages and currents do not add in series and that the total voltage must be found as Sqrt(V1^2 + V2^2). Have you changed your opinion? If you agree with the vector addition of voltage and current then the power formula that results from this should not be an issue for you.

Steve VE9SRB

5202. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 17:09:05 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <RIQQ6.52652$4f7.3930091@bgtnsc06-news.ops.worldnet.att.net>
Source record: 161750

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:15661-3B13CFE7-291@storefull-116.iap.bryant.webtv.net...
>
> Or, behold: the Bird wattmeter! it works anywhere in the 50-ohm
> transmission line.
>
> Best regards, Richard Harrison, KB5WZI
>

If a bird wattmeter reads 133.33 W of forward power and 33.33 W of reflected power, what does this tell you?

Steve

5203. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 17:24:32 UTC
From: fractenna@aol.com
Message-ID: <20010529132432.28831.00003364@ng-fc1.aol.com>
Source record: 161751

>Why don't you take all these fractal antennas and shove them where the sun
>doesn't shine and lets get back to talking about "real ham radio".
>
>
>"R. Scott" <kf7qz@yahoo.com> wrote in message
>news:3B13A857.C5094CA2@yahoo.com...
>> > in a court of law as needed.
>> >
>> > 73
>> > Phil
>> > de N1ZKT
>>
>>
>> This time we are gonna sue
>>
>>
>> Really,
>>
>> Honest
>>
>> I know we have said it for 3 or 4 years
>>
>>
>> But this time we mean it
>>
>> Really we mean it
>>
>>
>> quit laughing
>>
>>
>> We mean bidness
>>
>> really
>
>
>
>
>
>
>
>

Hello "Pete",

You will notice that this thread started as a 'DDRR' one until other individuals made a point of diverting this to fractal antennas and then the IP on fractal antennas.

In fact fractal antennas are not discussed here by those who are experts on them.

The best source is the fractal antenna reflector, which I make an invitation announcement on every 2 weeks or so.

Those who deliberately make incorrect statements here with legal ramifications will now and always have responses. This is a public forum.

I think your best bet is to ask the offending few to stop their statements. Doesn't that make sense?

73
Phil
de N1ZKT

5204. Re: Direction of a Sloper Antenna.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 17:25:07 UTC
From: thompson@mindspring.com
Message-ID: <9f0mcf$g4j$1@slb1.atl.mindspring.net>
Source record: 161752

True, the sloper will pick up better to the South, but there is quite a bit
of broadside E/W also. There is no gain, however.
I have a partially vertical dipole that has a slope toward the east. I used
this antenna to work Indian Ocean and South Atlantic
from Atlanta. Its remarkably better than my other antennas on 80 in that
direction. (RX and TX)

The lobe is about 70 degrees wide on a sloper so it covers quite a bit.

73 Dave K4JRB

5205. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 17:56:58 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B13E2EA.286721D0@IEEE.org>
Source record: 161753

VE9SRB wrote:
> I have always maintained that the total forward voltage magnitude can be
> found as follows:

There you go again, Steve, repeating the 99% of the stuff you got
right and ignoring the 1% that I am questioning.

> You have stated that you agree with my voltage and
> current analysis yet when I add the voltages as V1 + V2, you claim that the
> voltages must add as Sqrt(V1^2 + V2^2). You can't have it both ways.

Steve, it is not I who am trying to have it both ways. You have presented
two equations. Assuming a Z0-match, here they are:

133.33w = 75w + 8.33w because
141.421v = 106.066v + 35.355v or
141.421^2/150 = 106.066^2/150 + 35.355^2/150

This is the equation to which I objected. Your voltages add up but your
energy doesn't add up. There is not enough energy in 75w + 8.33w to
cause your voltage values. Pgen(rho^2) + Pref(1-rho^2) = 50 watts must be
included to cause your voltage values. But if you include the 50 watts
then where is the equivalent voltage that the 50 watts causes?

Your other equation indicates:

133.33w = 75w + 8.33w + 50w i.e. P1 + P2 +2sqrt(P1*P2)
141.421v = 106.066v + 35.355v + unknown voltage related to the 50w

Your voltage equation contains three terms.

141.421v = 106.066v + 35.355v

Your power equation contains four terms.

133.33w = 75w + 8.33w + 50w

The 141.421 volts is associated with the 133.33 watts
The 106.066 volts is associated with the 75 watts
The 35.355 volts is associated with the 8.33 watts
The ????? volts is associated with the 50 watts

Where is the voltage associated with the 50 watts? You are trying to
sweep it under the rug but there is a gigantic lump under that rug.

If we normalize those powers to equivalent voltages in a 150 ohm
environment we get:

141.421 volts = 106.066 volts + 35.355 volts + 86.6 volts which
is obviously incorrect. Before you say I can't normalize power
back to the 150 ohm environment, please note that is exactly
what you do.

So with one of your equations, the energy doesn't add up and with
the other one of your equations, the voltages don't add up.

In the second case, the correct voltage is obtained by:
Vtot = sqrt(106.066^2 + 35.355^2 + 86.6v^2) = 141.421 volts where
106.066v is the voltage associated with the P1 electric field
35.355v is the voltage associated with the P2 electric field
86.6v is the voltage associated with the 2sqrt(P1*P2) electric field

Do you think it is an accident that the square root of the sum of the
squares of the component voltages yields the correct value for total voltage?

The reason that you cannot willy nilly add voltages is that part of the
energy is in the magnetic field, i.e. in the current. That's why you
cannot add 100 megawatts in phase with 100 megawatts to yield 400 megawatts.
I don't have a problem with how you add phasor voltages. One can observe
that they add up to the proper value. My problem is with your assumption
about energy based on those voltages. One posting, you leave out the 50w
of wave interference energy and the next you include it depending on what
angle you are arguing at the moment.

When you add voltages as you are doing, you are essentially counting the
power twice because some of it is in the current/magnetic field and you
are completely ignoring it. When you add two waves, in phase, such that
the voltage is the sum of the two voltages AND the current is the sum
of the two currents, you need more energy than is contained in either
of the two waves. That's why California cannot get 400 megawatts out
of two 100 megawatt generating stations.

The energy you need is the Pgen(rho^2)+Pref(1-rho^2) which you seem to
want to sweep under the rug because there is an equivalent voltage associated
with that power that you have not accounted for. There's a big lump in the
rug, Steve, that contains your missing power. Unfortunately, for you, it
also contains an equivalent voltage in the electric field which you have
left out of your equations.

> This statement is only meant to represent the fact that when a 75 W wave is
> added or combined in phase with an 8.33 W wave the total forward power in
> the resulting wave is 133.33 W.

Last time you said the power was combined in phase. Glad to see you giving
up on the concept of power having phase.

> You have stated many times that the voltages and currents do not add in
> series and that the total voltage must be found as Sqrt(V1^2 + V2^2). Have
> you changed your opinion? If you agree with the vector addition of voltage
> and current then the power formula that results from this should not be an
> issue for you.

That sqrt(V1^2 + V2^2) was an illustration of the problem you have when the missing 50 watts is included and normalized back, as a voltage, to a 150 ohm environment. You simply cannot have it both ways, Steve.
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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5206. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 18:00:20 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B13E3B4.D48E3C02@IEEE.org>
Source record: 161755

VE9SRB wrote:
>
> "Richard Harrison" <richardharrison@webtv.net> wrote in message
> news:15661-3B13CFE7-291@storefull-116.iap.bryant.webtv.net...
> >
> > Or, behold: the Bird wattmeter! it works anywhere in the 50-ohm
> > transmission line.
> >
> > Best regards, Richard Harrison, KB5WZI
>
> If a bird wattmeter reads 133.33 W of forward power and 33.33 W of reflected
> power, what does this tell you?

That there's 133.33 joules/sec of energy flowing toward the load and
33.33 joules/sec of energy flowing toward the source?
--
cheers, Cecil

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5207. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 18:11:57 UTC
From: kb7qhc@home.com
Message-ID: <3b13e642.871828643@news.seanet.com>
Source record: 161756

On Tue, 29 May 2001 14:05:31 GMT, "VE9SRB" <srbest@att.net> wrote:

>
>Your method of calculating the impedance seen looking rearward into a
>network is simply incorrect and anyone familiar with network impedance
>calculations would recognize your gross errors.
>
>First, you do not start with the input impedance to the network to perform
>the calculation. Second, you do not use negative resistance to perform the
>calculation. You're mixing and confusing separate concepts. Its appalling
>that that an electrical engineer would make such simple mistakes on such a
>simple topic.
>
>Let's do this with a lossless network, so you can't play games with the
>negative resistance calculations.
>

Hi Steve,

Everything above is not necessary for the conduct of a discussion.

73's
Richard Clark, KB7QHC

5208. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 18:45:08 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <U6SQ6.52778$4f7.3941272@bgtnsc06-news.ops.worldnet.att.net>
Source record: 161757

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b13e642.871828643@news.seanet.com...
> On Tue, 29 May 2001 14:05:31 GMT, "VE9SRB" <srbest@att.net> wrote:
>
> >
> >Your method of calculating the impedance seen looking rearward into a
> >network is simply incorrect and anyone familiar with network impedance
> >calculations would recognize your gross errors.
> >
> >First, you do not start with the input impedance to the network to
perform
> >the calculation. Second, you do not use negative resistance to perform
the
> >calculation. You're mixing and confusing separate concepts. Its
appalling
> >that that an electrical engineer would make such simple mistakes on such
a
> >simple topic.
> >
> >Let's do this with a lossless network, so you can't play games with the
> >negative resistance calculations.
> >
>
> Hi Steve,
>
> Everything above is not necessary for the conduct of a discussion.
>
> 73's
> Richard Clark, KB7QHC

Thank you.

You're right. It is not necessary. It is an unnecessary emotional
response. I loose my patience with this sometimes. For this I apologize to
Walter and to the other readers.

I would simply like Walter to stop avoiding a direct discussion on this
subject.

Steve

5209. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 19:03:03 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <HnSQ6.52792$4f7.3944196@bgtnsc06-news.ops.worldnet.att.net>
Source record: 161758

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B13E2EA.286721D0@IEEE.org...
>
> > You have stated that you agree with my voltage and
> > current analysis yet when I add the voltages as V1 + V2, you claim that
the
> > voltages must add as Sqrt(V1^2 + V2^2). You can't have it both ways.
>
> Steve, it is not I who am trying to have it both ways. You have presented
> two equations. Assuming a Z0-match, here they are:
>
> 133.33w = 75w + 8.33w because
> 141.421v = 106.066v + 35.355v or
> 141.421^2/150 = 106.066^2/150 + 35.355^2/150
>

The total forward voltage is 141.42 V. It is determined from the vector sum
of two in-phase forward voltages.

Vtotal = V1 + V2, where V1 and V2 are added as vectors.

106.066 V + 35.355 V = 141.42 V. This relationship only works if the
voltages V1 and V2 are in-phase.

The total power is found from |Vtotal|^2 / Zo. 141.42^2 / 150 = 133.33 W

> This is the equation to which I objected. Your voltages add up but your
> energy doesn't add up. There is not enough energy in 75w + 8.33w to
> cause your voltage values. Pgen(rho^2) + Pref(1-rho^2) = 50 watts must be
> included to cause your voltage values. But if you include the 50 watts
> then where is the equivalent voltage that the 50 watts causes?
>
> Your other equation indicates:
>
> 133.33w = 75w + 8.33w + 50w i.e. P1 + P2 +2sqrt(P1*P2)
> 141.421v = 106.066v + 35.355v + unknown voltage related to the 50w
>
> Your voltage equation contains three terms.
>

The magniutude of the forward voltage is found from

|Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| cos(theta)]. This is an
equation valid for any theta. It is a formula used to determine the
magnitude of the voltage that results from the vector addition of two vector
voltages V1 and V2.

|Vtotal| = Sqrt[106.066^2 + 35.355^2 + 2 (106.066) (35.355)]

|Vtotal| = 141.42 V

Ptotal = |Vtotal|^2 / Zo = 141.42^2 / 150 = 133.33 W

OR

Using the power formula that allows us to determine the total power in the w
ave that results from the vector combination of two waves of complex
voltages V1 and V2. The independent power associated with V1 is P1 and the
independent power associated with V2 is P2.

Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) cos(theta)

= 106.066 + 35.355 + 2 Sqrt(106.066) Sqrt(35.355)

= 133.33 W

There is no missing energy to account for. It is all accounted for in the
vector combination of two forward waves traveling in the same transmission
line.

Now, lets discuss a simple example:

TX ---- Zo1 ----- X ----Zo2 ----- Za

You do not know the steady state forward source power in Zo1. You do not
know the steady state reflected power in Zo1. You do not know Zo1. You do
not know Zo2. You do not know Za. X marks the junction between the two
lines. The forward source power in line 2 is 75 W. The re-reflected power
in line 2 is 8.33 W. An impedance match does not exist at point X. What is
the steady state forward power in line 2. You can ask for one more piece of
information. Determine the total steady state power in line 2.

Steve VE9SRB

5210. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 19:07:27 UTC
From: Bill Aycock <baycock@hiwaay.net>
Message-ID: <3B13F36F.D0383810@hiwaay.net>
Source record: 161760

see comments- HI
(Note- I snipped a LOT, but did not change anything.)

Fractenna wrote:
>
> >Why don't you take all these fractal antennas and shove them where the sun
> >doesn't shine

But- be careful not to hurt Phils nose, because it's there already.
> >

> >> > Phil
> >> > de N1ZKT

> In fact fractal antennas are not discussed here by those who are experts on
> them.

with one exception, (not named Cohen or "Phil"), that is a true
statement.

>
> The best source is the fractal antenna reflector,

That is NOT a true statement There is no traffic there.

which I make an invitation
> announcement on every 2 weeks or so.
That is a true statement (and the repetition of the nonesense is
boring)

>
> This is a public forum.

That is a true statement.
>
> I think your best bet is to ask the offending few to stop their statements.
> Doesn't that make sense?

So- why dont you, "Phil", and the guy you let use your name, stop for a
while?
>
> 73
> Phil
> de N1ZKT

That is probably not a true statement.

Bill-W4BSG

5211. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 19:09:09 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B13F3D5.31A39D3F@IEEE.org>
Source record: 161759

VE9SRB wrote:
> You're right. It is not necessary. It is an unnecessary emotional
> response. I loose my patience with this sometimes.

I don't know about you, Steve, but I treat people the way they treat me, i.e. I don't turn the other cheek. Bill Sabin seems to be able to carry on a rational exchange with me. So do a lot of others on this newsgroup over a period of more years than I care to think about.

Most of the references we have and quote had the good sense not to stray too far into the subject of powers and energy. That's Peter's advice to us also. Fortunately or unfortunately, you have chosen to stray into the subject of powers and energy and you are reaping the rewards/consequences.

If you will stop treating me like your ugly stepchild, I will stop treating you like my ugly step-mutha. Deal?
--
cheers, Cecil

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-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5212. Re: Motorizing a Tower

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 19:15:15 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010529151515.17282.00001681@ng-cv1.aol.com>
Source record: 161761

I do not have my AES catalog handy, so I can't give you the exact product name, but there is a device that actually "crawls" up your tower so you don't have to crank it down. You can put rotors, antennas, etc on it. I would contact AES and ask them for the name of the product.
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com ICQ#13829227
http://egroups.com/group/vhfallmode

5213. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 19:26:32 UTC
From: richardharrison@webtv.net
Message-ID: <20416-3B13F7E8-143@storefull-113.iap.bryant.webtv.net>
Source record: 161763

Steve, VE9SRB write:
"If a Bird wattmeter reads 133.33-W of forward power and 33.33-W of reflected power, wjhat does that tell you?"

In a 50-ohm transmission line, that tells me that the delivered power is 100-watts, the difference between the forward and reflected powers. Also it tells me that the VSWR on the 50-ohm line is 3.73.

Best regards, Richard Harrison, KB5WZI

5214. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 19:41:09 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <pXSQ6.50879$t12.3977818@bgtnsc05-news.ops.worldnet.att.net>
Source record: 161762

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B13F3D5.31A39D3F@IEEE.org...
> VE9SRB wrote:
> > You're right. It is not necessary. It is an unnecessary emotional
> > response. I loose my patience with this sometimes.
>
> I don't know about you, Steve, but I treat people the way they treat
> me, i.e. I don't turn the other cheek. Bill Sabin seems to be able to
> carry on a rational exchange with me. So do a lot of others on this
> newsgroup over a period of more years than I care to think about.
>
> Most of the references we have and quote had the good sense not to
> stray too far into the subject of powers and energy. That's Peter's
> advice to us also. Fortunately or unfortunately, you have chosen
> to stray into the subject of powers and energy and you are reaping
> the rewards/consequences.
>
> If you will stop treating me like your ugly stepchild, I will stop
> treating you like my ugly step-mutha. Deal?
> --
> cheers, Cecil

Sure its a deal.

I respect your opinions and our disagreement. It has caused me to think about this subject in more detail and I learn more each time. I learn more in disagreeing with you than I do in agreeing with most other people. That's why my patience lasts as long as it does. I also truly hope that someone else reading these posts learns something as well.

I'm human, so I loose my patience at times and say some things that I later regret. I think everyone that really gets into a long discussion and disagreement with another person will be guilty of this at least once (twice ...)

From my perspective, I have tried to keep our discussion focused on the technical aspects of our disagreement. It appears to me that you misquote me and turn my words and concepts inside out. It appears that when I try to explain it again to you, it gets twisted around even more. I looked through your discussion with Richard and Bill Sabin and you kept saying "Steve says this ...", but the statements you quote do not really represent what I said at all - at least IMO. Maybe there's an explanation problem or an interpretation problem. That's why I loose my patience on this.

I give you my word that I will treat you with the same level of respect that you treat me with.

As for voltage and power: I never analyze a system with power. I always use voltage and current and derive power from the steady state conditions. The only reason that power comes up is because most hams have access to power meters and they measure forward and reflected power. The problem, as I see it, is that people try to interpret what these power measurements tell them regarding the relationship between forward, reflected and re-reflected power and it really can't be done. With a steady state forward and reflected power measurement all you can do is determine the forward power, the reflected power and the delivered power. If Zo is complex, you technically can't even do that.

73
Steve

5215. Re: T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 19:51:30 UTC
From: sweeneyj@voicenet.com
Message-ID: <3b13fbde.23371432@netnews.voicenet.com>
Source record: 161764

On Tue, 29 May 2001 00:22:22 GMT, ehsjr@bellatlantic.net wrote:

>Mine works fine, and I'm real pleased with it. Easy assembly
>and easy installation. Performance wise, it is NOT a 3 element
>monobander, nor is it a dipole. (ie - better gain than a dipole,
>worse gain than a 3 element monobander.) You get some gain,
>some directivity and multiple bands in an antenna small enough
>to be spun by a TV rotor. I've heard some "wild claims" that
>may make you believe this is some kind of super antenna -
>claims of breaking pileups and so forth. Baloney. But at the
>same height, it'll beat a simple dipole, every time.
>
>"Timothy J. Fiebig" wrote:
>
>> Looking for comments on the performance of the T.G.M Mini Quad antenna
>> MQ-1. Does anyone own one or has owned one. Also would like to hear
>> about the Curshcraft mini beam.
>>
>> Thanks,
>>
>> tjf
>
I would add similar comments to those above. I no longer have the
"mni-quad", but did use it for several years. Mine was from the
original manufacturer, from whom (it appears) TGM bought the rights. I
used it as a "starter beam" - put it on the chimney with a TV rotator.
Then when the piggy bank got full, put up a tower and moved it to the
tower. Then when the piggy bank recovered, replaced the mini-quad with
a 3 element yagi.
While working on the mini-quad, was very satisfied with the results.
Consistently outperformed my wire doublets, but (as the man said) was
not as good as having a yagi. (Worked about 200 countries with it).
So - if you want it as a compromise between a dipole/doublet and the
expense of a yagi/rotator - I would recommend it. If you think it's as
good as a yagi - you're in for a disappointment.
BTW - Mine was up for several years, in some nasty winter storms
(eastern PA) and held up well.

Jim

5216. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 19:58:47 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B13FF77.4CBE7F56@IEEE.org>
Source record: 161765

VE9SRB wrote:
> The total forward voltage is 141.42 V. It is determined from the vector sum
> of two in-phase forward voltages.
>
> Vtotal = V1 + V2, where V1 and V2 are added as vectors.
>
> 106.066 V + 35.355 V = 141.42 V. This relationship only works if the
> voltages V1 and V2 are in-phase.
>
> The total power is found from |Vtotal|^2 / Zo. 141.42^2 / 150 = 133.33 W

Please pay very close attention, Steve. I agree with all of that. What I don't agree with is the conclusions that you draw about reality from all of that because there are some merely interesting mathematical relationships involved that appear to violate the conservation of energy principle. I agree with all your vector addition of phasors as I have stated approximately three dozen times. What I disagree with is your intermediate violations of the conservation of energy principle. You simply cannot have 'N' number of joules disappear from the universe, only to reappear later at your bidding. That is, unless you are claiming to be God in which case, I rest my case.

> The magniutude of the forward voltage is found from
>
> |Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| cos(theta)]. This is an
> equation valid for any theta. It is a formula used to determine the
> magnitude of the voltage that results from the vector addition of two vector
> voltages V1 and V2.
>
> |Vtotal| = Sqrt[106.066^2 + 35.355^2 + 2 (106.066) (35.355)]
>
> |Vtotal| = 141.42 V
>
> Ptotal = |Vtotal|^2 / Zo = 141.42^2 / 150 = 133.33 W

Steve, why do you insist on repeating the parts of your posting that I agree with? Why not address the parts that I am questioning? I agree with all the above. All the above is NOT the problem.

> Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) cos(theta)
> = 106.066 + 35.355 + 2 Sqrt(106.066) Sqrt(35.355) = 133.33 W

Are you saying that volts equals watts? You are farther gone than I thought. :-)
I assume you will admit that you make a typo mistake every once in awhile. :-)
If I had made the same mistake today, it would have been too much scotch. What's your excuse? Seriously, your equation is flawed. It should be either:

75w + 8.33w + 50w = 133.33w or 106.66 + 35.355 = 141.421

I can't tell which one you meant to type because you mixed volts and
watts in the same equation. That's obviously a no-no but I won't tell
anyone that you spoiled your perfect image by making a mistake. :-)

> There is no missing energy to account for. It is all accounted for in the
> vector combination of two forward waves traveling in the same transmission
> line.

There is either missing energy or missing voltage, Steve. This is what I have
dubbed the RF Guru Blind Spot (RFGBS). You are not alone in being infected,
seduced, or mesmerized by this concept. I'm begging you on my knees, Steve,
please read and understand the following:

You seem to have previously agreed that there is not enough energy in the
equation: 75w + 8.33w = 133.33w to make it valid. Virtually everyone
on this newsgroup has said that equation leaves something to be desired.

So we progress to your equation Ptot = P1 + P2 + 2*sqrt(P1*P2) which when
evaluated for the example yields: 133.33w = 75w + 8.33w + 50w

That looks like an OK equation to me. But now we come to your tricky part.
You say the 133.33 watts results in 141.421 volts. You say the 75 watts
results in 106.066 volts. You say the 8.33 watts results in 35.355 volts.
You say the 50 watts results in zero volts. Say what???????? How can all
the component energies except one result in a real number of volts????? Why
the inconsistency?????? If power results in volts, shouldn't all the power
components result in volts?????? Please enlighten me, Steve.

(Peter, you should be enjoying the heck out of this one.)
--
cheers, Cecil

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5217. Re: Motorizing a Tower

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 20:00:23 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <krv7ht8ddb8s1lptd6ske2look4jon8h82@4ax.com>
Source record: 161766

Thanks. I am aware of that unit. Believe it is called the Hazer.
Unfortunately, it has to be used on a non-crankup tower with smooth
sides like the Rohn.

73, Dick - W6CCD

On 29 May 2001 19:15:15 GMT, vhfradiobuff@aol.comspamsux
(VHFRadioBuff) wrote:

>I do not have my AES catalog handy, so I can't give you the exact product name,
>but there is a device that actually "crawls" up your tower so you don't have to
>crank it down. You can put rotors, antennas, etc on it. I would contact AES and
>ask them for the name of the product.
>=-
>73! de KC2SSB (ex: KF4KHC/HL9HCT)
>Toms River, NJ USA! Grid FM29
>http://vhfradiobuff.tripod.com ICQ#13829227
>http://egroups.com/group/vhfallmode

5218. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 20:15:01 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <9rTQ6.50919$t12.3982454@bgtnsc05-news.ops.worldnet.att.net>
Source record: 161767

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:20416-3B13F7E8-143@storefull-113.iap.bryant.webtv.net...
> Steve, VE9SRB write:
> "If a Bird wattmeter reads 133.33-W of forward power and 33.33-W of
> reflected power, wjhat does that tell you?"
>
> In a 50-ohm transmission line, that tells me that the delivered power is
> 100-watts, the difference between the forward and reflected powers. Also
> it tells me that the VSWR on the 50-ohm line is 3.73.
>
> Best regards, Richard Harrison, KB5WZI
>

Hi Richard:

Yes, the delivered power is 100 Watts. The SWR is actually 3.0:1 but that's not the significant issue.

The important issue here is that from only the steady state forward and reflected power levels, all we can determine is the total power delivered to the point at which the measurement is made. Other than SWR, there is really nothing else we can learn about the system. We cannot use the steady state levels of forward and reflected power to determine the level of re-reflected power at the transmitter or at the output of a tuner or other matching device - even if a steady state impedance match exists. In any system, impedance match or otherwise, the delivered power will always be equal to the forward power minus the reflected power (when Zo is not complex). This relationship cannot be worked backwards to assume that the reflected power is totally re-reflected and then "adds" to the delivered power. The delivered power is the result of how of the steady state forward and reflected powers develop. It is not a portion or component of the forward power.

Steve VE9SRB

5219. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 20:31:24 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B14071C.62ECED9D@IEEE.org>
Source record: 161768

VE9SRB wrote:
>
> "CAM" <Cecil.A.Moore@IEEE.org> wrote in message
> > If you will stop treating me like your ugly stepchild, I will stop
> > treating you like my ugly step-mutha. Deal?

> Sure its a deal.
>
> I respect your opinions and our disagreement. It has caused me to think
> about this subject in more detail and I learn more each time. I learn more
> in disagreeing with you than I do in agreeing with most other people.
> That's why my patience lasts as long as it does. I also truly hope that
> someone else reading these posts learns something as well.

I suspect that most reader's eyes rolled back in their heads the past few weeks. But I think we have attracted some attention now. This is a pure learning experience for me. Because of discussions like this one, I have actually had the courage to disagree with my hero, Walter Maxwell. We regularly exchange emails over points of disagreement.

> From my perspective, I have tried to keep our discussion focused on the
> technical aspects of our disagreement. It appears to me that you misquote
> me and turn my words and concepts inside out. It appears that when I try to
> explain it again to you, it gets twisted around even more. I looked through
> your discussion with Richard and Bill Sabin and you kept saying "Steve says
> this ...", but the statements you quote do not really represent what I said
> at all - at least IMO. Maybe there's an explanation problem or an
> interpretation problem. That's why I loose my patience on this.

I'm a straight up type of guy, Steve. If I say something, it's because I believe it to be true. 'Course a lot of things that appeared true after a couple of double-scotch's fall apart in the cold light of dawn. I'm a bipolar personality off my meds and an alcoholic. Please read between the lines and try to separate the wheat from the chaff. In your latest posting, you said volts equals watts. Strangely enough, I understand. :-) After a couple of double-scotch's, volts look like watts to me. :-) Remember the Abbot/Costello comic skit, "Who's on first?".

> I give you my word that I will treat you with the same level of respect that
> you treat me with.

Mark this posting as the agreement point. I may have strayed a bit in my posting just prior to this one. :-) To give you a preview:

If 133.33w = 75w + 8.33w + 50w AND if 133.33w results in a voltage of 141.421 volts, AND if 75 watts results in a voltage of 106.066 volts,

AND if 8.33 watts results in a voltage of 35.355 volts, WHY does 50 watts result in a voltage of zero?

> As for voltage and power: I never analyze a system with power.

Unfortunately, you have ventured into the topic of power here and in your latest article which you sent to me. Peter would advise you to rethink your position. If I know him, he is saying, "Heh-heh", right about now :-)
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5220. Re: shortened 10 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 20:35:09 UTC
From: Dave <jeronamo@REMOVEaol.com>
Message-ID: <LJTQ6.954$6T5.73853@news.pacbell.net>
Source record: 161619

Sounds like a loooong rubber duck or helical wound monopole.
Several pitch and wire gauges can deliver some performance when configured
that way. Try helical3.exe program to calculate...down load from here:

http://www.btinternet.com/~g4fgq.regp/page3.html

Dave

"Gordon SOCAL" <gwf2nospam@mediaone.net> wrote in message
news:3b13a8d8.305151980@nntp.we.mediaone.net...
> About 1970 I built a vertical antenna for 10 meter mobile use that was
> less than 3 feet in length. It was called a "variable pitch vertical"
> or some such. The antenna worked well and I would like to build
> another one but I no longer have the data. It was built on a fiber
> glass fishing rod. You wound so many turns at one pitch, so many
> turns at another pitch until the top section was close wound to the
> end of the rod.
>
> Does anyone have a handbook of that era that has that article in it.
> I would very much like to have the data.
>
> TNX, 73, Gordon WA6VIY
>

5221. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 20:41:11 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B140967.6B890839@IEEE.org>
Source record: 161620

VE9SRB wrote:
> This
> relationship cannot be worked backwards to assume that the reflected power
> is totally re-reflected and then "adds" to the delivered power.

Ain't that the truth, Steve. I challenged everyone to a thought experiment
a year or two ago. You are in a room where the transmission line enters
and exists. You have no idea about the source or the load. All you can
do is make *passive* measurements of voltage, current, phase, and power.

Can you determine if a conjugate match exists? If not, why does it matter?
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5222. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 20:51:36 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <sZTQ6.50984$t12.3987372@bgtnsc05-news.ops.worldnet.att.net>
Source record: 161621

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B14071C.62ECED9D@IEEE.org...
>
> Mark this posting as the agreement point. I may have strayed a bit in my
> posting just prior to this one. :-) To give you a preview:
>

Agreed.

> If 133.33w = 75w + 8.33w + 50w AND if 133.33w results in a voltage of
> 141.421 volts, AND if 75 watts results in a voltage of 106.066 volts,
> AND if 8.33 watts results in a voltage of 35.355 volts, WHY does 50 watts
> result in a voltage of zero?
>
> > As for voltage and power: I never analyze a system with power.
>
> Unfortunately, you have ventured into the topic of power here and in your
> latest article which you sent to me. Peter would advise you to rethink
your
> position. If I know him, he is saying, "Heh-heh", right about now :-)
> --
> cheers, Cecil
>

I agree that power should not be the point of discussion. Unfortunately
that's where we are on the NG. If you look at the QEX articles in detail,
you will see that they stick to voltage analysis (my preference over a
current analysis). Resulting power is always the derived quantity.

I'll get back to you in your other post.

Steve

5223. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 20:52:04 UTC
From: klocko@toad.net
Message-ID: <224d9cd4.0105291252.3bb0fdbf@posting.google.com>
Source record: 161622

> "Walter Maxwell" <w2du@iag.net> wrote in message
news:<aTtQ6.6840$X4.844771@nntp2.onemain.com>...
> > Bill, I've reviewed Johnson's pp 244-245 that defines superposition. But as
> > I've said earlier in this thread, it is not superposition that adds the
> > reflected power to that of the source at the matching point. It's true that
> > in my QEX article I said it is superposition, but I was wrong there.
> >
> > With superposition any voltage added to a circuit comes from an additional,
> > external source, which naturally increases the total voltage and current in
> > the circuit. In our matching circuitry there is no additional source of
> > voltage.

Walt,
As a follow-up, here's an example from that paper of mine that addresses the
the matter of adding power transmitted across the match point to re-reflected power,
(all values at time t=t5):
Etl = 0.5/0 Erl = 0.156/0 Efwd = Etl + Erl = 0.656/0
Itl = 0.006666/0 Irl = 0.002083/0 Ifwd = Itl + Irl = 0.00875/0
Ptl = (Etl)(Itl) = 0.00333 Prl = (Erl)(Irl) = 0.000325 Pfwd = (Efwd)(Ifwd) = 0.00574

I believe that Efwd and Ifwd are correct and of course lead to the correct
steady state values of voltage, current, and power. For this reason, I believe that the
value of forward power, 0.00574, is also correct.

If the forward power is calculated by simple superposition of the power associated with
the two waves, the resulting value P = Ptl + Prl = 0.00333 + 0.000325 = 0.00366 is not
correct.

There is a way to compute the forward power, but it does not involve simple superposition
of the power associated with each wave. From the derivation in my post of 5/25:
P = P1 + P2 + (E1)(E2)/Z0 + (E2)(E1)/Z0

setting P1 = Ptl, P2 = Prl, E1 = Etl, E2 = Erl, and Z0 = 75
P = 0.00333 + 0.000325 + 2(0.5)(0.156)/75
= 0.00574
= Pfwd

So the equation P = P1 + P2 + (E1)(E2)/Z0 + (E2)(E1)/Z0 leads to correct values,
whereas the equation P = P1 + P2 can result in inaccuracies.

The bottom line: working with the voltages and currents instead of power leads to correct
values, whereas simple superposition of the powers associated with a wave can result in
inaccuracies. 73,
Bill N3WK

5224. Re: Delta loop beam design?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 21:10:42 UTC
From: n4jzh@knology.net
Message-ID: <3b141043.36781615@news.knology.net>
Source record: 161623

On Tue, 29 May 2001 07:05:33 +0300, Neoklis <neoklis@my-deja.com>
wrote:

>Hi!
>
>Is there a reliable formula for the size of delta loop beam elements?
>
>73's
>
>--
>Regards My Ham Radio callsign: 5B4AZ
> My website (with some Linux software):
>Neoklis http://leonardo.spidernet.net/Copernicus/22420/
>
In this month QST
Donnie

5225. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 22:27:28 UTC
From: richardharrison@webtv.net
Message-ID: <17909-3B142250-227@storefull-111.iap.bryant.webtv.net>
Source record: 161624

Steve, VE9SRB wrote:
"The SWR is actually 3.0:1 but that`s not the significant issue."

Could be Steve, because I quickly shoved the meat in the grinder and turned out the sausage. I used Bird`s VSWR formula:
1+sq rt reflected power over forward power, all divided by 1-sq rt reflected power over forward power.

Re-making the sausage, I still get VSWR=3.73 using 100-W forward power and 33.33-W reflected power.

I will re-quote Bird: "A simple algebraic subtraction (Pfwd - Pref) yields the net power delivered to the load."

I believe Bird got the transmission line analysis correct because they had the greatest incentive to get it right. If everyone reading this thread had just studied Bird`s application notes, there would likely have been no big argument.

Everyone should be able from the Bird readings to calculate the volts and amps in the forward and reflected waves from V = sq rt of P (Zo), and I = sq rt P/Zo. One can look up the wave equations and calculate the instantaneous values and positions of minima and maxima, if that floats your boat.

I have found in using a Bird wattmeter for more than 40 years satisfaction with exactly what the meter tells me. It is the most durable and reliable instrument I ever used and accurate enough for almost all purposes. I own no Bird stock and have never had any imntrest in its sales or promotion.

Best regards, Richard Harrison, KB5WZI

5226. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 22:46:21 UTC
From: David Robbins <k1ttt@berkshire.net>
Message-ID: <3B1426BD.B7E0106B@berkshire.net>
Source record: 161632

> "CAM" <Cecil.A.Moore@IEEE.org> wrote in message
>
> > If 133.33w = 75w + 8.33w + 50w AND if 133.33w results in a voltage of
> > 141.421 volts, AND if 75 watts results in a voltage of 106.066 volts,
> > AND if 8.33 watts results in a voltage of 35.355 volts, WHY does 50 watts
> > result in a voltage of zero?

how about if i prove that: 100w = 133w - 33w - 66w + 66w using the same
circuit?

lets go back a bit and review my analysis from the 'back to basics' thread...
taken to the ad nauseum step.

step (ad nauseum)

first, the source is still applying the same wave so we have:

```
70.7v
----------------------> X
<------------------- ------->
70.7*REFL_50=35.3v 70.7*TRAN_50=106v
```

but now we have this one also:

```
-70.7v
X <-------
<------------------- ---------------------->
-70.7*TRAN=-35.3v -70.7*REFL=35.3v
```

now adding the voltages in the various components gives:

```
70.7v -70.7v
----------------------> X <-------------
<------------------- ----------------->
35.3v-35.3v=0v 106v+35.3v=141.3v
```

step (ad nauseum) in power notation

```
100w
----------------------> X
<------------------- ------->
25w 75w
```

but now we have this one also:

```
33.3w
X <-------
<------------------- ---------------------->
```

25w 8.33w

now adding the voltages in the various components gives:

100w 33.3w
----------------------> X <-------------
<------------------- ----------------->
0w 133.3w

now the conclusions....

taken in voltages obviously 106v+35.3v=141v this does not imply that 106^2/150 + 35.3^/150 = 141^2/150 in the same way that a+b=c doesn't imply that a^2+b^2=c^2. you could do an expansion of (a+b)^2=c^2 to get a^2+b^2+2ab=c which when applied above gets back the missing power... but the 2ab term is just a consequence of the power calculation squaring the sum of the voltages, not to be confused with other possible interpretations or applications. remember, powers can always be computed from voltages. the inverse doesn't always work as you lose information going from a complex (or vector) voltage to a scalar power. this example just makes it look easy because of specifically chosen impedances and cable lengths.

the other fun thing that looks contradictory at first is when you calculate the powers from the final voltage terms.

this should make sense for the 4 voltage wave components above:

70.7v + 0v = 141v + -70.7v

now, lets square each term and divide by their respective z0 values to balance the power(forget the zero term at this point):

70.7^2/50 = 141^2/150 + (-70.7^2)/150
or
100w = 133w + 33w

BUT WAIT A MINUTE! now we have 100w=166w! things are getting worse instead of better. we know that can't be right, so we look at the directions and reverse the sign on the 33w so we get 100w=133w-33w, but that isn't what the math tells us! this is a perfect example of the information lost when going from voltages to powers, in this case the '-' sign represents that 180 degree change in direction and it gets lost when you blindly apply the formula.

and now you look at it and say, BUT WAIT A MINUTE! you just did a+b=c and changed it to a^2+b^2=c^2 and it worked! ah, but it didn't... you see there are those extra terms for the impedance on each side of the junction. and because the magnitude of the voltages in the 150 ohm line are related to the voltage in the 50 ohm line by the reflection and transmission coeficients it just happens to add up to a value you recognize, IF you fudge the sign. do it the right way and what do you get:

70.7^2/50 = (141.4-70.7)^2/150
or
100w = 33w ?????????

no, no, no, that can't be right! lets expand it out and see what the other terms are:

70.7^2/50 = 141.4^2/150 + 70.7^2/150 + 2*141.4*-70.7/150
or
100w = 133w + 33w - 133w = 33w ???????again!

something is wrong! lets think about it a minute. what are we missing here??? we know that in steady state the powers do balance all along the line. so what can be wrong? lets get even further back to basics and compute powers with the formula p=i*e instead of just automatically assuming the impedance and using p=e^2/r.

<quote from my full analysis in the 'back to basics' thread>
well, assuming that all the power gets to the load, we have 100w into 50 ohms which gives a voltage of 70.7v. that must result in Vf=141.4v and Vb=-70.7v. this of course satisfies (1). if you look at the powers in the half wave line that gives Pf=141.4^2/150 = 133w and Pb=70.7^2/150=33w. so as expected 133-33=100w for the load.

i won't re-solve the set of equations for currents here, you can get them either from restating (3) in currents and solving again for If and Ib or use Ohm's law to convert voltage to current: If=.943a and Ib=-.471a to give Il=1.414a.
<unquote>

so by multiplying the net voltage*current on each side we get:
70.7*1.414 = (141.4 + -70.7)*(.943 - -.471)
or
100w = 70.7*1.414 = 100w
(note, currents subtract because If and Ib are in opposite directions)
whew! at least this still works.... so what was wrong before??

<side bar>
lets substitute using i=e/r for the current terms and get another way to look at it:
70.7*1.414 = (141.4 + -70.7)*(141.4/150 - -70.7/150)
or
100w = 141.4^2/150 - 70.7^2/150 - 70.7*141.4/150 + 141.4*70.7/150
= 133w - 33w - 66w + 66w
= 100w
but where did those +/- 66w come from??? why not +/- 50w... why? why not? if you take the equation (a+b)*(c+d) and multiply it out you get ac+bc+ad+bd, thats the only reason. they have no physical significance(IMO), they are just terms from multiplying before you add rather than adding before you multiply.
<end side bar>

but, why didn't that work when we did it before????? because the effective impedance at that junction for the waves in the 150 ohm line is really 50 ohms. look at the steady state Vf, Vb, If, and Ib in the 150 ohm line. if we calculate the effective impedance those waves see by the equation z=e/i we get:

z=(141.4+ -70.7)/(.943 - -.471) = 70.7/1.414 = 50 ohms !

now lets try the simple sum again but using 50 ohms instead of 150...

70.7^2/50 = (141.4-70.7)^2/50
or
100w = 100w

voila! it all adds up! as long as you keep in mind that you must add apples to apples and not multiply by oranges you can get the right values from basic principles.

IMPORTANT NOTE! as long as you are working with EITHER the forward or backward wave you use the Z0 of the line. so that for the forward wave z0=vf/if=141.4/.943=150 ohms, and for the backward wave z0=vb/ib=-70.7/-.471=150 ohms(note even the sign works out!). but as soon as you superimpose the waves by adding the voltages(or currents) you MUST use the effective impedance generated by the combined currents and voltages of those waves. which if you look at it, when those waves are combined back at the junction with the 50 ohm line we know that the impedance seen looking toward the load at that point is 50 ohms, so of course you must use the 50 ohms impedance in the power calculations for the combined wave at that point.

So, in final summation:
its not: 133.33w = 75w + 8.33w
and its not: 133.33w = 75w + 8.33w + 50w
its really: 100w = 133w - 33w - 66w + 66w

SO THERE!

--
David Robbins K1TTT
e-mail: mailto://k1ttt@berkshire.net
web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
AR-Cluster node: 145.69MHz or telnet://k1ttt.net

5227. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 22:55:04 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1428C7.F3E6AB81@IEEE.org>
Source record: 161625

Richard Harrison wrote:
> Re-making the sausage, I still get VSWR=3.73 using 100-W forward power
> and 33.33-W reflected power.

Power delivered to the load is 100w. Forward power is 133.33w.
Reflected power is 33.33w. That gives an SWR of 3:1
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5228. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 23:17:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9f1am6dvs1@slb2.atl.mindspring.net>
Source record: 161626

Richard:

So I see!

Why were the inventors of the "Scattering Formalism" so oblique in their methods. Trying to emulate mathematicians I guess.

It would be so much simpler if things were simpler. All you really need are V and I and Ohm's Law.

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:15662-3B13AE60-118@storefull-116.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "And I still maintain that, in scattering formalism, the so-called
> "reflected power" is a fictional or symbolic power and so cannot be
> treated as if it were a commodity to be traded in the great
> "conservation of energy" balance."
>
> Speaking of the reflected wave in a transmission line Terman says it
> "---can be termed a wave train traveling from the receiver (load) toward
> the generator (transmitter). This second wave train can be thought of as
> resulting from reflection of the first wave train by the load impedance
> at the receiver end of the line. For this reason, the wave traveling to
> the receiver is often designated the incident wave, while the second
> wave is termed the reflected wave."
>
> Waves have power. Scattering formalism produces 'scatter-brains".
>
> Best regards, Richard Harrison, KB5WZI
>

5229. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 23:30:52 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9f1beb$nj1$1@slb3.atl.mindspring.net>
Source record: 161627

Richard:

Heh heh... Richard my friend... you are soo o o o wrong!

Power is Volts times Amps. P = V*I.

To get power you must multiply V and I!

To get power you must multiply V and I!

To get power you must multiply V and I!

The electric power meter on the side of your house does multiply, it is a dynamometer and it is arranged so that it actually does a "multiplication" of V and I to arrive at power.

The Bird and all of those Breune design directional wattmeters have "absolutely no multiplication mechanism" in them. They have a directional coupler in them, and that particular device/function is nothing more nor less than a Wheatstone bridge circuit.

And Wheatstone bridge circuits can only add and subtract variables like I and V, they simply do not multiply!

Directional couplers have no mechanism for multiplication. Hence they can only indicate a "pale imitation" of power.

Take their readings with a grain of salt...

For, even though they have "Watts" painted upon their face they only indicated a special voltage!

Caveat emptor.

Directional couplers are only simple Wheatstone bridge circuits, nothing more nothing less, and so they cannot possibly be wattmeters since they cannot multiply V times I.

If you want to be a metrologist, then I say....

Metrologist, "know thy instruments".

Clearly from your comments, you don't seem to understand what the Bird Wattmeter really does...

How about giving us an analysis of the Breune SWR bridge circuit and show us with your detailed analysis, as I have elsewhere on this NG recently, where V is multiplied by I and perhaps further multiplied by cos(theta)...

All you really need to know are I and V...

And when the "reflected voltage" [b = I*(Z - R) = 0] is zero!

Don't fall into the trap of trying to visualize all of those ficticious
powers....

Good "multiplier" hunting!

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:20068-3B13A1F2-94@storefull-118.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "The reflection voltage bridges, such as those made by the Bird company
> and others are simply not measuring what they say they are. It is all a
> big lie."
>
> Peter`s remarks are silly and pernicious.
>
> A generator produces electrical energy at a rate called power.
>
> An ampere (amp) is a certain number of electrons passing a point in one
> second. It is a flow rate.
>
> A volt is a measure of electrical pressure produced by an excess of free
> electrons when there is a difference in the number of charges per unit
> volume between two objects.
>
> Power is volts times amps, and this product is power in watts.
>
> One volt is needed to cause one amp to flow through an electrical
> resistance of one ohm.
>
> Mechanical horsepower is 33,000 foot-pounds per minute, which is 550
> foot-pounds per second. One horsepower is 746 watts.
>
> All of the above is too basic, but seems to be misunderstood as we have
> endless inane arguments about current flowing, energy flowing, power
> flowing, etc. The nit-pickers should all go straight to hell!
>
> If a 100-watt lamp is lit for one second it uses 100 joules
> (watt-seconds) of energy. Electric power conpanies say they produce
> power but they charge the customer for energy. The power company uses
> kilowatt-hours for billing, not watt-seconds, which are too small to be
> practical.
>
> The idea that a wattmeter is somehow invalid is insane. Try that on your
> power company!
>
> Your power company`s meter measures power times time to compute your
> electric bill. The power company`s meter senses in-phase volts and amps
> to determine power. So does the Bird wattmeter.
>

> The Bird wattmeter has an extra something that the power company`s
> meter doesn`t need. That something is a directional coupler. It is
> needed to separate reflected power, found in most coax, from the forward
> power so that an accurate determination can be made of power delivered
> to the coax and to the load.
>
> To call the Bird wattmeter another SWR bridge is idiotic. The Bird is
> used by broadcasters, fire departments, police, FAA, industrial,
> maritime, and other agencies. They are not the fools here!
>
> Best regards, Richard Harrison, KB5WZI
>

5230. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 23:32:09 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9f1bgobm1@slb3.atl.mindspring.net>
Source record: 161628

Yep!

-Peter K1PO

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B13FF77.4CBE7F56@IEEE.org...
> VE9SRB wrote:
> > The total forward voltage is 141.42 V. It is determined from the vector
sum
> > of two in-phase forward voltages.
> >
> > Vtotal = V1 + V2, where V1 and V2 are added as vectors.
> >
> > 106.066 V + 35.355 V = 141.42 V. This relationship only works if the
> > voltages V1 and V2 are in-phase.
> >
> > The total power is found from |Vtotal|^2 / Zo. 141.42^2 / 150 = 133.33
W
>
> Please pay very close attention, Steve. I agree with all of that. What I
> don't agree with is the conclusions that you draw about reality from all
> of that because there are some merely interesting mathematical
relationships
> involved that appear to violate the conservation of energy principle. I
> agree with all your vector addition of phasors as I have stated
approximately
> three dozen times. What I disagree with is your intermediate violations of
> the conservation of energy principle. You simply cannot have 'N' number of
> joules disappear from the universe, only to reappear later at your
bidding.
> That is, unless you are claiming to be God in which case, I rest my case.
>
> > The magniutude of the forward voltage is found from
> >
> > |Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| cos(theta)]. This is
an
> > equation valid for any theta. It is a formula used to determine the
> > magnitude of the voltage that results from the vector addition of two
vector
> > voltages V1 and V2.
> >
> > |Vtotal| = Sqrt[106.066^2 + 35.355^2 + 2 (106.066) (35.355)]
> >
> > |Vtotal| = 141.42 V
> >

> > Ptotal = |Vtotal|^2 / Zo = 141.42^2 / 150 = 133.33 W
>
> Steve, why do you insist on repeating the parts of your posting that I
> agree with? Why not address the parts that I am questioning? I agree with
> all the above. All the above is NOT the problem.
>
> > Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) cos(theta)
> > = 106.066 + 35.355 + 2 Sqrt(106.066) Sqrt(35.355) = 133.33 W
>
> Are you saying that volts equals watts? You are farther gone than I
thought. :-)
> I assume you will admit that you make a typo mistake every once in awhile.
:-)
> If I had made the same mistake today, it would have been too much scotch.
What's
> your excuse? Seriously, your equation is flawed. It should be either:
>
> 75w + 8.33w + 50w = 133.33w or 106.66 + 35.355 = 141.421
>
> I can't tell which one you meant to type because you mixed volts and
> watts in the same equation. That's obviously a no-no but I won't tell
> anyone that you spoiled your perfect image by making a mistake. :-)
>
> > There is no missing energy to account for. It is all accounted for in
the
> > vector combination of two forward waves traveling in the same
transmission
> > line.
>
> There is either missing energy or missing voltage, Steve. This is what I
have
> dubbed the RF Guru Blind Spot (RFGBS). You are not alone in being
infected,
> seduced, or mesmerized by this concept. I'm begging you on my knees,
Steve,
> please read and understand the following:
>
> You seem to have previously agreed that there is not enough energy in the
> equation: 75w + 8.33w = 133.33w to make it valid. Virtually everyone
> on this newsgroup has said that equation leaves something to be desired.
>
> So we progress to your equation Ptot = P1 + P2 + 2*sqrt(P1*P2) which when
> evaluated for the example yields: 133.33w = 75w + 8.33w + 50w
>
> That looks like an OK equation to me. But now we come to your tricky part.
> You say the 133.33 watts results in 141.421 volts. You say the 75 watts
> results in 106.066 volts. You say the 8.33 watts results in 35.355 volts.
> You say the 50 watts results in zero volts. Say what???????? How can all
> the component energies except one result in a real number of volts?????
Why

> the inconsistency?????? If power results in volts, shouldn't all the power
> components result in volts?????? Please enlighten me, Steve.
>
> (Peter, you should be enjoying the heck out of this one.)
> --
> cheers, Cecil
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5231. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 23:36:53 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9f1bpl$ds5$1@slb0.atl.mindspring.net>
Source record: 161629

Richard:

The Bird is not a Wattmeter, despite the silk screened markings on it's chassis and meter face, it is nothing more nor less than a voltmeter.

Stop and think!

You have been conned by Bird and others, don't take it any more, stand up and shout, "I'm not going to take it any more". Selling voltmeters and calling them wattmeters! Jeesh...

A horse painted on the side of a cow, doesn't make it a horse!

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:15661-3B13CFE7-291@storefull-116.iap.bryant.webtv.net...
> Steve, VE9SRB wrote:
> "Combining a 100-W signal (power determined independently) in-phase with
> a 33.33-W signal (power determined independently) in the same impedance
> will not result in a total power of 133.33-W."
>
> It certainly could.
>
> In a transmission line with only one sender and one load, you have lost
> independence. The sender`s current is forced by the pure resistance of
> Zo to be in-phase with the sender`s voltage in the incident wave.
>
> The reflection, if any, is forced to remain 180-degrees out-of-phase by
> tjhe pure resistance of Zo in the path of the reflected wave.
>
> The volts and amps have rotating relationships as the waves pass each
> other on the line. The power does not. It is only in-phase or
> out-of-phase.
>
> Due to the above, the incident and reflected powers always add and
> subtract arithmetically at any point in a transmission line.
>
> For confirmation, look at the types of voltage and current distributions
> produced buy different load impedances as diagrammed by Terman or
> another competent authority.
>
> Or, behold: the Bird wattmeter! it works anywhere in the 50-ohm
> transmission line.
>
> Best regards, Richard Harrison, KB5WZI

>

5232. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 23:41:41 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9f1c2l$9jh$1@slb6.atl.mindspring.net>
Source record: 161630

Richard:

So for the past 40 years you have been taken in by Bird. Get over it!

Measuring voltages and thinking it was power!

What a lot of horse pucky...

Learn what is inside those Bird "elements" and what functions actually go on in there!

It won't hurt...

My wife has been driving cars for 40 years and still doesn't know that pistons go up and down.

So much for instrument operators! Real hams build their own instruments!

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:17909-3B142250-227@storefull-111.iap.bryant.webtv.net...
> Steve, VE9SRB wrote:
> "The SWR is actually 3.0:1 but that`s not the significant issue."
>
> Could be Steve, because I quickly shoved the meat in the grinder and
> turned out the sausage. I used Bird`s VSWR formula:
> 1+sq rt reflected power over forward power, all divided by 1-sq rt
> reflected power over forward power.
>
> Re-making the sausage, I still get VSWR=3.73 using 100-W forward power
> and 33.33-W reflected power.
>
> I will re-quote Bird: "A simple algebraic subtraction (Pfwd - Pref)
> yields the net power delivered to the load."
>
> I believe Bird got the transmission line analysis correct because they
> had the greatest incentive to get it right. If everyone reading this
> thread had just studied Bird`s application notes, there would likely
> have been no big argument.
>
> Everyone should be able from the Bird readings to calculate the volts
> and amps in the forward and reflected waves from V = sq rt of P (Zo),
> and I = sq rt P/Zo. One can look up the wave equations and calculate the
> instantaneous values and positions of minima and maxima, if that floats
> your boat.
>

> I have found in using a Bird wattmeter for more than 40 years
> satisfaction with exactly what the meter tells me. It is the most
> durable and reliable instrument I ever used and accurate enough for
> almost all purposes. I own no Bird stock and have never had any imntrest
> in its sales or promotion.
>
> Best regards, Richard Harrison, KB5WZI
>

5233. Re: portable HF antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-29 23:46:10 UTC
From: Ken Anderson <longrange2@home.com>
Message-ID: <3B1433E0.85CF602C@home.com>
Source record: 161631

Go to www.qrz.com and do a search for W3FF. There is a link there to a site with directions for building his multiband portable dipole. I use this one for pedestrian portable ops on the HF bands. It will cover 2M to 20M. You can tune each band to 1.5 SWR or better. (the two I built will usually tune up at 1.1 to 1.3 on most bands). Materials will cost about $30 to build. Have worked much good DX while pedestrian mobile. You can see a picture of the antenna in use at qrz.com. Just do a search on my call sign. 73, KC0INZ.

ON4CLN wrote:

> Hello to all...
>
> I just bought a second hand HF+6m rig (Alinco TH-70) and now I'm planning to
> make some portable antennas.
> I do not have a tuner/SWR meter, so "random wire going up a tree" is out of
> the question.
>
> I could make verticals or dipoles for each band of interest, but this makes
> up a fair amount of stuff to take into the field.
>
> Multiband portable antennas: any suggestions or experiences? Design ideas?
> Or should I just buy a tuner and swing a wire up the trees?
>
> All input is greatly appreciated!
> 73! Franki ON4CLN

5234. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 00:32:21 UTC
From: kb7qhc@home.com
Message-ID: <3b143c8e.893920970@news.seanet.com>
Source record: 161633

On Tue, 29 May 2001 19:36:53 -0400, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>The Bird is not a Wattmeter, despite the silk screened markings on it's
>chassis and meter face, it is nothing more nor less than a voltmeter.
>
>Stop and think!

Hi Peter,

Perhaps you should take your own advice. With very few exceptions,
most voltmeters measure current (if we are speaking of the D'Arsonval
movement which is the principal indicator) and by your own logic are
current meters with silkscreened voltage indications.

You are simply spouting negative tautologies that reveal the hayseed
in your logic.

Reduction Ad Absurdum goes further to lay claim that these are force
meters as the moving coil presents a torsion to the existing magnetic
field by virtue of charge transfer. However, as the needle swings it
is positive evidence of power as it has to satisfy Newton's Laws
wherein F = MA. So, even by this logical reduction, the meter does
measure power. The power expended is in direct correlation to the
power passed through the device. Hence, your hayseed logic bears very
little hay for all the fertilizer applied.

73's
Richard Clark, KB7QHC

5235. Re: Ant switch:Daiwa or AlphaDelta?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 01:03:28 UTC
From: aidehua@aol.com
Message-ID: <20010529210328.10943.00001654@ng-mc1.aol.com>
Source record: 161634

Find a good, used Bird 74 or Transco, Practically lossless at high frequencies.

Ed NI6S

5236. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 01:22:25 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B144B51.EE07C2D0@IEEE.org>
Source record: 161635

David Robbins wrote:
> how about if i prove that: 100w = 133w - 33w - 66w + 66w using the same
> circuit?

Hey, no negative energy allowed unless it is generated using antimatter.
--
cheers, Cecil

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5237. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 01:24:19 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B144BC3.787F0C74@IEEE.org>
Source record: 161636

"Peter O. Brackett" wrote:
> It would be so much simpler if things were simpler.

Dang Peter, that would make a good bumper sticker. Sounds like
something Yogi Berra said.
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5238. Re: T.G.M. Minibeam

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 01:40:06 UTC
From: djohnson <dbjohnson@sympatico.ca>
Message-ID: <9cYQ6.9273$XI.881169@news20.bellglobal.com>
Source record: 161637

I have the MQ-2sr with the 6 meter kit. In comparing it my G5RV, the MQ-2 is about 1 s unit stronger on 20 meters but much quieter, on 17 meters its better than the G5RV but the higher bands are about equal. I bought this one used and the white plastic insultator broke while working with it, the plastic cures with age and become very brittle, Tom had a new one in stock for about $ 15 us and said the new ones are made of a different material that has resolved that problem. I would rather have kept my TH6 Thunderbird but the neighbors appreciate the small beam.
"Jim" <sweeneyj@voicenet.com> wrote in message
news:3b13fbde.23371432@netnews.voicenet.com...
> On Tue, 29 May 2001 00:22:22 GMT, ehsjr@bellatlantic.net wrote:
>
> >Mine works fine, and I'm real pleased with it. Easy assembly
> >and easy installation. Performance wise, it is NOT a 3 element
> >monobander, nor is it a dipole. (ie - better gain than a dipole,
> >worse gain than a 3 element monobander.) You get some gain,
> >some directivity and multiple bands in an antenna small enough
> >to be spun by a TV rotor. I've heard some "wild claims" that
> >may make you believe this is some kind of super antenna -
> >claims of breaking pileups and so forth. Baloney. But at the
> >same height, it'll beat a simple dipole, every time.
> >
> >"Timothy J. Fiebig" wrote:
> >
> >> Looking for comments on the performance of the T.G.M Mini Quad antenna
> >> MQ-1. Does anyone own one or has owned one. Also would like to hear
> >> about the Curshcraft mini beam.
> >>
> >> Thanks,
> >>
> >> tjf
> >
> I would add similar comments to those above. I no longer have the
> "mni-quad", but did use it for several years. Mine was from the
> original manufacturer, from whom (it appears) TGM bought the rights. I
> used it as a "starter beam" - put it on the chimney with a TV rotator.
> Then when the piggy bank got full, put up a tower and moved it to the
> tower. Then when the piggy bank recovered, replaced the mini-quad with
> a 3 element yagi.
> While working on the mini-quad, was very satisfied with the results.
> Consistently outperformed my wire doublets, but (as the man said) was
> not as good as having a yagi. (Worked about 200 countries with it).
> So - if you want it as a compromise between a dipole/doublet and the
> expense of a yagi/rotator - I would recommend it. If you think it's as

> good as a yagi - you're in for a disappointment.
> BTW - Mine was up for several years, in some nasty winter storms
> (eastern PA) and held up well.
>
> Jim
>

5239. Re: Helical Antenna Design - how do I?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 01:41:49 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3B144FDD.658C179D@dialpoint.net>
Source record: 161640

While I can't help you out with exect info, I have read that you usually need about twice as much wire as for a regular dipole. That is instead of winding 1/4 wavelength of wire you should have started with about 1/2 wavelength. Try what you have on 10 meters.

ken wrote:
>
> I'm interested in building a homebrew helical antenna similar to a
> HamStick (tm). Over the weekend I tried simply winding 1/4 wave
> at 20M of insulated wire on an old broomstick and working it against
> a counterpoise. Since this worked only marginally well on receive
> I didn't try transmitting with it, although it did seem to tune up OK on low power.
> I'm sure there are some calculations that I'm missing here to do this right,
> so can anyone point me to some resources with design specs for this type
> of antenna?
>
> Thanks,
> Ken

5240. Re: Back to Basics

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 02:13:46 UTC
From: Dick Carroll <dixie@townsqr.com>
Message-ID: <9f1l0q$5ib$0@208.206.142.82>
Source record: 161638

CAM wrote:
>
> Dick Carroll wrote:
> >
> > CAM wrote:
> > > The trap is there is not enough coax between the transmitter and tuner to be
> > > able to develop standing waves so how can we possibly measure the SWR. :-)
> > >
> > > That may be a trap for you. It isn't for me.
> >
> > Yep, ignorance is bliss.

You thrive on attempteing to toss wrenches into the works. They bounce
off as far as I'm concerned. You're concerned about any SWR between the
transmitter and the tuner? I cna't imagine why, if the Zo matchpoint is
at the input of the tuner. Oh, I understand the meaning of what you
said, there is virtually no percentage of a wavelength at HF in that
short piece of coax. I also understand that it matters not in the least.

5241. Helical Antenna Design - how do I?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 02:22:56 UTC
From: kld68@my-deja.com
Message-ID: <d1523471.0105291822.727bbc1f@posting.google.com>
Source record: 161639

I'm interested in building a homebrew helical antenna similar to a
HamStick (tm). Over the weekend I tried simply winding 1/4 wave
at 20M of insulated wire on an old broomstick and working it against
a counterpoise. Since this worked only marginally well on receive
I didn't try transmitting with it, although it did seem to tune up OK on low power.
I'm sure there are some calculations that I'm missing here to do this right,
so can anyone point me to some resources with design specs for this type
of antenna?

Thanks,
Ken

5242. Re: Slinky Antenna Schematic Wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 02:55:43 UTC
From: Markaren@ix.netcom.com
Message-ID: <3b145e8e.2952046@nntp.ix.netcom.com>
Source record: 161641

All,
I purchased a "slinky" antenna a long time ago. It consists of enough coiled metal to stretch out to a full size dipole on 40 meters. The center insulator has six turns of 50 ohm coax to form a balun/choke. The coax and the slinky sections are each about 6 inches in diameter with the slinky being approx 150 turns. The antenna comes with a chunk of 1/4" nylon rope and knitting "safety" pins. The safety pins are used to hold together unused turns at the end of the antenna. I was able to tune the antenna on several bands when beach operating in Florida and merely marked the slinky with a rope loop where it was tuned on each band. This allowed quick (10-15 minutes) band changes.
Al

5243. Re: shortened 10 meter antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 03:30:59 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B146973.3188@wt.net>
Source record: 161642

Gordon SOCAL wrote:
>
> About 1970 I built a vertical antenna for 10 meter mobile use that was
> less than 3 feet in length. It was called a "variable pitch vertical"
> or some such. The antenna worked well and I would like to build
> another one but I no longer have the data. It was built on a fiber
> glass fishing rod. You wound so many turns at one pitch, so many
> turns at another pitch until the top section was close wound to the
> end of the rod.
>
> Does anyone have a handbook of that era that has that article in it.
> I would very much like to have the data.
>
> TNX, 73, Gordon WA6VIY

What you are doing is placing the dense windings near the top to act as a lumped coil instead of a even taper helical. Normally you will have better current distribution with the higher lumped coil. But for this antenna to really work it needs a stinger above the top of the helical part. You need some capacitance above the coil.
I don't have any data, I just guestimate and go from there. You can get programs to calculate even wound helicals, but I would thinm you would have to tweak these numbers for the lumped version. In general, you can count on a good 1/2 wave of wire to make a short 1/4 wl helical. You can also wind the matching coil at the base if needed , so it can be built in. The taper isn't critical. It can be almost no taper up until you get to the coil. So normally, you would take the 3 ft stick, and wind a few matching turns at the base, maybe 4 or 5 maybe, and then only a few turns up to the point where you start winding the coil. Then you have an even fairly tight wound loading coil up to the top, and then preferably a stinger attached to the top . You then end up with a center loaded antenna. MK
--
http://web.wt.net/~nm5k

5244. Re: Helical Antenna Design - how do I?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 03:33:06 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B1469F2.252@wt.net>
Source record: 161643

ken wrote:
>
> I'm interested in building a homebrew helical antenna similar to a
> HamStick (tm). Over the weekend I tried simply winding 1/4 wave
> at 20M of insulated wire on an old broomstick and working it against
> a counterpoise. Since this worked only marginally well on receive
> I didn't try transmitting with it, although it did seem to tune up OK on low power.
> I'm sure there are some calculations that I'm missing here to do this right,
> so can anyone point me to some resources with design specs for this type
> of antenna?
>
> Thanks,
> Ken

Check the thread for "shortend 10m antenna". My post for Gordon applies
here too. MK

--
http://web.wt.net/~nm5k

5245. Re: antenna for aviation band

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 03:44:23 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B146C97.75CE@wt.net>
Source record: 161645

Jim Weir wrote:

> In the practice area doing maneuvers at 4500 AGL, your range goes up to 90
> miles.
>
> In a 767 at FL350, your range is somewhere around 250 miles...and probably a bit
> more because the fundamental equation starts deviating from the actual long
> formula significantly when you get to 15,000AGL.

I've copied planes at cruise over 300 miles away. I have my 706 rigged
up to copy WACARS , which is like aircraft packet "ARINC". I hear planes
all over this part of the state. I'm in Houston, and have copied a few
nearly in Oklahoma, north of Dallas. East into LA., farther west than
San Antonio. All this is on the normal VHF air band. Locally, I can hear
both big airport towers, and usually both ATIS's unless the band is
flaky. "appx 15 and 25 miles away". I hear planes on approach that are
30 miles out that blow me out of the room. Also the type radio makes a
difference. My 706 is much better than my cheaper radio shack scanner.
MK
--
http://web.wt.net/~nm5k

5246. Winding loop for VHF GP antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 03:46:52 UTC
From: <>
Message-ID: <9f1qfc$2d03$1@news1.sinica.edu.tw>
Source record: 161644

Hello,

I am a new ham so please bear with me on the basics. I often see
a winding small loop below the radials(counter-poise) on many GP
antennas here in Taipei. I am wondering the function of that small
extra loop. Is it for the purpose of creating more L or is it
simply be used as extra cable length when you want to adjust the coax?

many thanks and 73, frank, bv2wn

5247. Re: portable HF antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 03:47:23 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B146D4B.49FC@wt.net>
Source record: 161646

Gary McAdams wrote:
>
> Franki,
>
> Personally, I believe that everyone should have an
> SWR meter if not a tuner. How else can you ensure
> that the antenna is presenting a proper load to
> the transciever?

I think all radios should have one built in. All my newer ones do. Sure
is better than lugging a seperate meter around. MK
--
http://web.wt.net/~nm5k

5248. Opinions wanted: KMA Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 04:14:39 UTC
From: vhfradiobuff@aol.comspamsux
Message-ID: <20010530001439.00531.00001451@ng-mr1.aol.com>
Source record: 161647

I am considering a KMA5054 antenna for use on 6 and 2m. The webpage says it works on 2m. Anyone have any experience with this antenna in this fashion?
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de KC2SSB (ex: KF4KHC/HL9HCT)
Toms River, NJ USA! Grid FM29
http://vhfradiobuff.tripod.com ICQ#13829227
http://egroups.com/group/vhfallmode

5249. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 04:19:48 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3b1474bd.13428624@news.aepnet.com>
Source record: 161648

On Wed, 30 May 2001 00:32:21 GMT, kb7qhc@home.com (Richard Clark) wrote:

>On Tue, 29 May 2001 19:36:53 -0400, "Peter O. Brackett"
><ab4bc@ix.netcom.com> wrote:
>
>>Richard:
>>
>>The Bird is not a Wattmeter, despite the silk screened markings on it's
>>chassis and meter face, it is nothing more nor less than a voltmeter.
>>
>>Stop and think!
>
>Hi Peter,
>
>Perhaps you should take your own advice. With very few exceptions,
>most voltmeters measure current (if we are speaking of the D'Arsonval
>movement which is the principal indicator) and by your own logic are
>current meters with silkscreened voltage indications.
>
>You are simply spouting negative tautologies that reveal the hayseed
>in your logic.
>
>Reduction Ad Absurdum goes further to lay claim that these are force
>meters as the moving coil presents a torsion to the existing magnetic
>field by virtue of charge transfer. However, as the needle swings it
>is positive evidence of power as it has to satisfy Newton's Laws
>wherein F = MA. So, even by this logical reduction, the meter does
>measure power. The power expended is in direct correlation to the
>power passed through the device. Hence, your hayseed logic bears very
>little hay for all the fertilizer applied.

I love it! Heh Heh.

Wes Stewart N7WS
>
>73's
>Richard Clark, KB7QHC

5250. Re: Winding loop for VHF GP antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 04:26:57 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3b147530.13543717@news.aepnet.com>
Source record: 161649

On Wed, 30 May 2001 03:46:52 +0000 (UTC), mpc@.sinica.edu.tw (Meng-Po Chen) wrote:

>Hello,
>
> I am a new ham so please bear with me on the basics. I often see
>a winding small loop below the radials(counter-poise) on many GP
>antennas here in Taipei. I am wondering the function of that small
>extra loop. Is it for the purpose of creating more L or is it
>simply be used as extra cable length when you want to adjust the coax?

It is difficult to say with certainty without seeing the antenna but if it is a coil of coaxial cable then it must function as a choke.

Even with the radials, there will be some current on the outside of the cable. The choke acts to impede this current and prevent radiation from the transmission line.

If this is not what you are seeing then please try to explain in more detail and we can offer another possibility.

73,

Wes N7WS
>
> many thanks and 73, frank, bv2wn
>

5251. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 04:39:05 UTC
From: richardharrison@webtv.net
Message-ID: <17910-3B147969-131@storefull-111.iap.bryant.webtv.net>
Source record: 161650

Peter, K1PO wrote:
"The Bird and all those Breune design directional wattmeters have
"absolutely no multiplication mechanism in them."

Yes, they do. It is simply in the meter scale calibration. The measurement is from samples of both volts and amps. All that is required is to mark the meter scale in the correct number of watts for the needle deflection produced by samples of a signal of various power levels being measured.

Best regards, Richard Harrison, KB5WZI

5252. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 05:14:58 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B1481A0.7CAC@wt.net>
Source record: 161651

Frackytenna wrote:

> Hello "Pete",
>
> You will notice that this thread started as a 'DDRR' one until other
> individuals made a point of diverting this to fractal antennas and then the IP
> on fractal antennas.

Huh???I see this thread starting as Subject: "Roy Lewallen Comments on
'Fractal Patents" orginating from frackytenna. I see no pointers to any
previous threads.
>
> In fact fractal antennas are not discussed here by those who are experts on
> them.

I think most of the experts like real "macho" antennas that are not
kinky in orientation.
>
> The best source is the fractal antenna reflector, which I make an invitation
> announcement on every 2 weeks or so.

It's not the best source I've seen. Not even close. I could tell you the
best source, but then I would have to sue you. But being this is a
public forum, you can go on making your invitations to your reflector. I
know it gets slow over there, and we wouldn't want your keyboard to gum
up from the lack of activity.
>
> Those who deliberately make incorrect statements here with legal ramifications
> will now and always have responses. This is a public forum.

yep, you can even make statements about Wakefield "killer hams" and such
.
>
> I think your best bet is to ask the offending few to stop their statements.
> Doesn't that make sense?

No, this is a public forum. Have you forgotten already? MK
--
http://web.wt.net/~nm5k

5253. Winding loop for VHF GP antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 06:07:50 UTC
From: <>
Message-ID: <9f22nm$2d03$2@news1.sinica.edu.tw>
Source record: 161652

Thanks Wes and sorry for my English.

Yes indeed it's what your mention in your post that it's a coil of
coax cable about 20cm below from the connectting point of the 4 radials and
the mast.
it looks like this:

```
ant
|
|
------+------ <---radials
| <- coax on mast
D <- a coil of coax
|
| <-- coax on mast
|
```

The D shape is a small circle loop but i cannot type it with my keyboard.

some time ago my local ham friend told me the usage of that small circle
loop is for adjusing the lenght of the coax in case it is
too "tight".

Thanks again for the enlightment.

73, frank, bv2wn
mpc@asiaa.sinica.edu.tw

--

5254. Re: Helical Antenna Design - how do I?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 09:02:58 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9f2cv1puh1@uranium.btinternet.com>
Source record: 161653

For design and performance of small HF helically-wound antennas
download, in a few seconds, program HELICAL3 from website below.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

ken <kld68@my-deja.com> wrote in message
news:d1523471.0105291822.727bbc1f@posting.google.com...
> I'm interested in building a homebrew helical antenna similar to
a
> HamStick (tm). Over the weekend I tried simply winding 1/4 wave
> at 20M of insulated wire on an old broomstick and working it
against
> a counterpoise. Since this worked only marginally well on receive
> I didn't try transmitting with it, although it did seem to tune
up OK on low power.
> I'm sure there are some calculations that I'm missing here to do
this right,
> so can anyone point me to some resources with design specs for
this type
> of antenna?
>
> Thanks,
> Ken

5255. Re: Dipole vs Isotron

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 09:26:20 UTC
From: gpewitt@execpc.com
Message-ID: <3b150420$0$12826$272ea4a1@news.execpc.com>
Source record: 161665

I have the 10, 15, and 20 meter Isotrons set up in my guest bathroom.
Try that with a rotatable dipole. I work Europe from Wisconsin all
the time with them. The 80 and 40 meter Isotrons are in the dineing
room. Set up and tuned properly they work fine. No, I have no
connection with Isotron. Just a satisfied condo dwelling customer.
My rig, if it matters, is a Yaesu FT-847
Gary N9ZSV

On Sun, 27 May 2001 21:14:21 -0400, Bruno Quesnel
<quesnelb@ve2.ele.etsmtl.ca> wrote:

>Hi to all,
>
> My question is mostly to compare the Isotron combo 10-15-20 meters
>versus a rotatable dipole (or just dippole). Mainly to find people that
>have operated maybe both or at least offer material to compare.
>
> Which one would be the best to operate within space limited space
>and give the best performance for the buck.
>
>thanks in advance
>
>--
>Bruno Quesnel quesnelb@ve2.ele.etsmtl.ca
>Genie Electrique va2bmg@videotron.ca
>Electrical Engineering VA2BMG
>Ecole de Technologie Superieure
>
>

5256. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 12:00:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9f2ncpkdg1@slb1.atl.mindspring.net>
Source record: 161654

Richard:

Markings on a meter face, eh? The cost of printers ink and a silkscreen.

Silkscreening is cheap.

Even though I'm "retired" I can even afford to silkscreen up a deed for myself.

Yeah... and I really do own the Brooklyn bridge, let me show you the deed.

-Peter K1PO

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:17910-3B147969-131@storefull-111.iap.bryant.webtv.net...
> Peter, K1PO wrote:
> "The Bird and all those Breune design directional wattmeters have
> "absolutely no multiplication mechanism in them."
>
> Yes, they do. It is simply in the meter scale calibration. The
> measurement is from samples of both volts and amps. All that is required
> is to mark the meter scale in the correct number of watts for the needle
> deflection produced by samples of a signal of various power levels being
> measured.
>
> Best regards, Richard Harrison, KB5WZI
>

5257. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 12:02:54 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9f2ngfkjv1@slb6.atl.mindspring.net>
Source record: 161655

Richard:

I just mowed the lawn here for the first time this year... wanna by some
hay?

Best,

-Peter K1PO

"Richard Clark" <kb7qhc@home.com> wrote in message
news:3b143c8e.893920970@news.seanet.com...
> On Tue, 29 May 2001 19:36:53 -0400, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Richard:
> >
> >The Bird is not a Wattmeter, despite the silk screened markings on it's
> >chassis and meter face, it is nothing more nor less than a voltmeter.
> >
> >Stop and think!
>
> Hi Peter,
>
> Perhaps you should take your own advice. With very few exceptions,
> most voltmeters measure current (if we are speaking of the D'Arsonval
> movement which is the principal indicator) and by your own logic are
> current meters with silkscreened voltage indications.
>
> You are simply spouting negative tautologies that reveal the hayseed
> in your logic.
>
> Reduction Ad Absurdum goes further to lay claim that these are force
> meters as the moving coil presents a torsion to the existing magnetic
> field by virtue of charge transfer. However, as the needle swings it
> is positive evidence of power as it has to satisfy Newton's Laws
> wherein F = MA. So, even by this logical reduction, the meter does
> measure power. The power expended is in direct correlation to the
> power passed through the device. Hence, your hayseed logic bears very
> little hay for all the fertilizer applied.
>
> 73's
> Richard Clark, KB7QHC

5258. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 12:04:11 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9f2nis$nf1$1@nntp9.atl.mindspring.net>
Source record: 161656

Wes: Heh, heh... I love it. By golly I think Wes is starting to "get it".
The desert air does not dull the senses after all! -Peter K1PO

"Wes Stewart" <nospam_n7ws@arrl.net> wrote in message
news:3b1474bd.13428624@news.aepnet.com...
> On Wed, 30 May 2001 00:32:21 GMT, kb7qhc@home.com (Richard Clark) wrote:
>
> >On Tue, 29 May 2001 19:36:53 -0400, "Peter O. Brackett"
> ><ab4bc@ix.netcom.com> wrote:
> >
> >>Richard:
> >>
> >>The Bird is not a Wattmeter, despite the silk screened markings on it's
> >>chassis and meter face, it is nothing more nor less than a voltmeter.
> >>
> >>Stop and think!
> >
> >Hi Peter,
> >
> >Perhaps you should take your own advice. With very few exceptions,
> >most voltmeters measure current (if we are speaking of the D'Arsonval
> >movement which is the principal indicator) and by your own logic are
> >current meters with silkscreened voltage indications.
> >
> >You are simply spouting negative tautologies that reveal the hayseed
> >in your logic.
> >
> >Reduction Ad Absurdum goes further to lay claim that these are force
> >meters as the moving coil presents a torsion to the existing magnetic
> >field by virtue of charge transfer. However, as the needle swings it
> >is positive evidence of power as it has to satisfy Newton's Laws
> >wherein F = MA. So, even by this logical reduction, the meter does
> >measure power. The power expended is in direct correlation to the
> >power passed through the device. Hence, your hayseed logic bears very
> >little hay for all the fertilizer applied.
>
> I love it! Heh Heh.
>
> Wes Stewart N7WS
> >
> >73's
> >Richard Clark, KB7QHC
>
>

5259. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 12:10:35 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <9f2nvjcem1@slb5.atl.mindspring.net>
Source record: 161657

Dave:

Heh, heh.... Hey... thanks for that wonderful Thesis. Your logic is unfathomable!

You have now qualified for the Ph.D. degree from the University of Reflection Mechanics.

Just send in your thesis, as outlined in your posting here below, along with a box top from Kellog's Corn Flakes, to URM, PO Box SWR-3:1, Reflections, MT 17805.

Please enclose a check in the amount of $100.00 made out to Peter K1PO, to cover the cost of labeling and printing.

Just keep adding up those powers, and sending in for you Ph.D.!

Best,

-Peter K1PO [Dr. of Reflections]

"David Robbins" <k1ttt@berkshire.net> wrote in message news:3B1426BD.B7E0106B@berkshire.net...
>
> > "CAM" <Cecil.A.Moore@IEEE.org> wrote in message
> > >
> > > If 133.33w = 75w + 8.33w + 50w AND if 133.33w results in a voltage of
> > > 141.421 volts, AND if 75 watts results in a voltage of 106.066 volts,
> > > AND if 8.33 watts results in a voltage of 35.355 volts, WHY does 50 watts
> > > result in a voltage of zero?
>
> how about if i prove that: 100w = 133w - 33w - 66w + 66w using the same
> circuit?
>
>
> lets go back a bit and review my analysis from the 'back to basics' thread...
> taken to the ad nauseum step.
>
> step (ad nauseum)
>
> first, the source is still applying the same wave so we have:
>
> 70.7v
> ----------------------> X
> <------------------- ------->

> 70.7*REFL_50=35.3v 70.7*TRAN_50=106v
>
> but now we have this one also:
>
> -70.7v
> X <-------
> <------------------- ---------------------->
> -70.7*TRAN=-35.3v -70.7*REFL=35.3v
>
> now adding the voltages in the various components gives:
>
> 70.7v -70.7v
> ----------------------> X <-------------
> <------------------- ----------------->
> 35.3v-35.3v=0v 106v+35.3v=141.3v
>
>
> step (ad nauseum) in power notation
>
>
> 100w
> ----------------------> X
> <------------------- ------->
> 25w 75w
>
> but now we have this one also:
>
> 33.3w
> X <-------
> <------------------- ---------------------->
> 25w 8.33w
>
> now adding the voltages in the various components gives:
>
> 100w 33.3w
> ----------------------> X <-------------
> <------------------- ----------------->
> 0w 133.3w
>
>
> now the conclusions....
>
>
> taken in voltages obviously 106v+35.3v=141v this does not imply that
106^2/150 +
> 35.3^/150 = 141^2/150 in the same way that a+b=c doesn't imply that
> a^2+b^2=c^2. you could do an expansion of (a+b)^2=c^2 to get
a^2+b^2+2ab=c
> which when applied above gets back the missing power... but the 2ab term
is just

> a consequence of the power calculation squaring the sum of the voltages,
not to
> be confused with other possible interpretations or applications.
remember,
> powers can always be computed from voltages. the inverse doesn't always
work as
> you lose information going from a complex (or vector) voltage to a scalar
> power. this example just makes it look easy because of specifically
chosen
> impedances and cable lengths.
>
> the other fun thing that looks contradictory at first is when you
calculate the
> powers from the final voltage terms.
>
> this should make sense for the 4 voltage wave components above:
>
> 70.7v + 0v = 141v + -70.7v
>
> now, lets square each term and divide by their respective z0 values to
balance
> the power(forget the zero term at this point):
>
> 70.7^2/50 = 141^2/150 + (-70.7^2)/150
> or
> 100w = 133w + 33w
>
> BUT WAIT A MINUTE! now we have 100w=166w! things are getting worse
instead of
> better. we know that can't be right, so we look at the directions and
reverse
> the sign on the 33w so we get 100w=133w-33w, but that isn't what the math
tells
> us! this is a perfect example of the information lost when going from
voltages
> to powers, in this case the '-' sign represents that 180 degree change in
> direction and it gets lost when you blindly apply the formula.
>
> and now you look at it and say, BUT WAIT A MINUTE! you just did a+b=c and
> changed it to a^2+b^2=c^2 and it worked! ah, but it didn't... you see
there are
> those extra terms for the impedance on each side of the junction. and
because
> the magnitude of the voltages in the 150 ohm line are related to the
voltage in
> the 50 ohm line by the reflection and transmission coeficients it just
happens
> to add up to a value you recognize, IF you fudge the sign. do it the
right way
> and what do you get:

>
> 70.7^2/50 = (141.4-70.7)^2/150
> or
> 100w = 33w ?????????
>
> no, no, no, that can't be right! lets expand it out and see what the
other
> terms are:
>
> 70.7^2/50 = 141.4^2/150 + 70.7^2/150 + 2*141.4*-70.7/150
> or
> 100w = 133w + 33w - 133w = 33w
???????again!
>
> something is wrong! lets think about it a minute. what are we missing
here???
> we know that in steady state the powers do balance all along the line. so
what
> can be wrong? lets get even further back to basics and compute powers
with the
> formula p=i*e instead of just automatically assuming the impedance and
using
> p=e^2/r.
>
> <quote from my full analysis in the 'back to basics' thread>
> well, assuming that all the power gets to the load, we have 100w into 50
ohms
> which gives a voltage of 70.7v. that must result in Vf=141.4v and
Vb=-70.7v.
> this of course satisfies (1). if you look at the powers in the half wave
line
> that gives Pf=141.4^2/150 = 133w and Pb=70.7^2/150=33w. so as expected
> 133-33=100w for the load.
>
> i won't re-solve the set of equations for currents here, you can get them
either
> from restating (3) in currents and solving again for If and Ib or use
Ohm's law
> to convert voltage to current: If=.943a and Ib=-.471a to give Il=1.414a.
> <unquote>
>
> so by multiplying the net voltage*current on each side we get:
> 70.7*1.414 = (141.4 + -70.7)*(.943 - -.471)
> or
> 100w = 70.7*1.414 = 100w
> (note, currents subtract because If and Ib are in opposite directions)
> whew! at least this still works.... so what was wrong before??
>
> <side bar>
> lets substitute using i=e/r for the current terms and get another way to

look at
> it:
> 70.7*1.414 = (141.4 + -70.7)*(141.4/150 - -70.7/150)
> or
> 100w = 141.4^2/150 - 70.7^2/150 - 70.7*141.4/150 + 141.4*70.7/150
> = 133w - 33w - 66w + 66w
> = 100w
> but where did those +/- 66w come from??? why not +/- 50w... why? why not?
if
> you take the equation (a+b)*(c+d) and multiply it out you get ac+bc+ad+bd,
thats
> the only reason. they have no physical significance(IMO), they are just
terms
> from multiplying before you add rather than adding before you multiply.
> <end side bar>
>
> but, why didn't that work when we did it before????? because the
effective
> impedance at that junction for the waves in the 150 ohm line is really 50
ohms.
> look at the steady state Vf, Vb, If, and Ib in the 150 ohm line. if we
> calculate the effective impedance those waves see by the equation z=e/i we
get:
>
> z=(141.4+ -70.7)/(.943 - -.471) = 70.7/1.414 = 50 ohms !
>
> now lets try the simple sum again but using 50 ohms instead of 150...
>
> 70.7^2/50 = (141.4-70.7)^2/50
> or
> 100w = 100w
>
> voila! it all adds up! as long as you keep in mind that you must add
apples to
> apples and not multiply by oranges you can get the right values from basic
> principles.
>
> IMPORTANT NOTE! as long as you are working with EITHER the forward or
backward
> wave you use the Z0 of the line. so that for the forward wave
> z0=vf/if=141.4/.943=150 ohms, and for the backward wave
z0=vb/ib=-70.7/-.471=150
> ohms(note even the sign works out!). but as soon as you superimpose the
waves
> by adding the voltages(or currents) you MUST use the effective impedance
> generated by the combined currents and voltages of those waves. which if
you
> look at it, when those waves are combined back at the junction with the 50
ohm
> line we know that the impedance seen looking toward the load at that point

is 50
> ohms, so of course you must use the 50 ohms impedance in the power
calculations
> for the combined wave at that point.
>
> So, in final summation:
> its not: 133.33w = 75w + 8.33w
> and its not: 133.33w = 75w + 8.33w + 50w
> its really: 100w = 133w - 33w - 66w + 66w
>
> SO THERE!
>
>
> --
> David Robbins K1TTT
> e-mail: mailto://k1ttt@berkshire.net
> web: http://www.berkshire.net/~robbins/k1ttt.html or http://www.k1ttt.net
> AR-Cluster node: 145.69MHz or telnet://k1ttt.net
>

5260. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 12:59:26 UTC
From: richardharrison@webtv.net
Message-ID: <1706-3B14EEAE-5@storefull-111.iap.bryant.webtv.net>
Source record: 161660

Cecil, W6RCA wrote:
"Power delivered to the load is 100w. Forward power is 133.33w.
Reflected power is 33.33w. That gives an SWR of 3:1.

That is correct. I used 100w for the forward power to get an SWR of
3.73. Using 133.33w gives an SWR of 3:1. I used Termans formula (4-21)
in his 1955 edition. It gives the same answers as Bird`s formula. I made
the mistake of using the wrong power in the calculation.

Best regards, Richartd Harrison, KB5WZI

5261. Dual band mobile 1/4 wave antenna recomendations?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 13:01:54 UTC
From: Jeff Farrar <jeff@farrar.com>
Message-ID: <6b6R6.15064$IP5.7659584@news1.rdc2.pa.home.com>
Source record: 161658

Well I finally got out the 3/4" hole saw this weekend and now have a NMO mount in the roof of the truck. I plan on using a Diamond 1/2 wave for long trips, but I want to use a 1/4 wave around town to hit the local repeaters. I can goes as high as 26" to clear my garage which should be fine for every 1/4 I've seen. While not mandatory, I would like something on the flexible side just in case the XYL or myself forget to remove it going into a parking garage. I know most 1/4 have no gain but does anyone know one that does? Right now I am looking at Diamond, Larsen, Austin. Any recommendations???

THANKS!!!

5262. Re: Motorizing a Tower

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 13:04:04 UTC
From: Larry Gauthier <larryg5099@chartermi.net>
Message-ID: <th9ru88k8ksm17@corp.supernews.com>
Source record: 161659

Dick,

I removed the handle from the winch and attached two opposing "stop nuts" (nuts with nylon bushing to prevents slippage... an alternate to lock washers) on the threaded post where the winch handle had been. I then purchased a large diameter socket to match the stop nuts and a 3/8 drive to fit into the chuck of a drill. I drive the socket with my 1/2 reversible Craftsman drill ($100). Works great, raises and lowers my tower with ease, and I have a tool that I can use for other purposes (as compared to a dedicated electric winch motor)

-larry
K8UT
"Dick Hughes" <rhughes33@cableone.net> wrote in message
news:ufi5htk08ufmjn1pasvrl1r91ubbpkimq4@4ax.com...
> I have a Telex/Hygain tower that I would like to motorize. Even
> though I bought a new hand winch with a lower gear and longer handle,
> it still puts too much strain on the old bod. If I am going to go
> from doing something strenuous, I would rather it not be from cranking
> up my tower! :-)
>
> I can't find anything about motors on the Hygain site. Maybe just not
> posted yet. Probably way too expensive anyway. I have considered
> using an SUV winch. They have more than enough power, are reversible
> and are made to be out in the elements. I could put a large battery
> at the base of the tower in a marine box and use a small solar cell to
> keep it charged. If I then used the new Ramsey cordless remote I
> wouldn't need any wires at all from the shack to the tower. Of course
> I would need some limit switches to prevent disaster.
>
> Has anyone tried this? If so, which winch did you use? Thanks for
> any input.
>
> Dick - W6CCD

5263. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 13:23:24 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B14F44C.C0B8C9E7@IEEE.org>
Source record: 161661

Richard Clark wrote:
>
> On Mon, 28 May 2001 18:51:50 -0500, CAM <Cecil.A.Moore@IEEE.org>
> wrote:
>
> >Since your stated reason for me performing it is to discourage me
> >from trying to superposition powers
>
> Hi Cecil,
>
> Could you offer the posting where I stated this reason?
>
> Really, Cecil, if one posting (provided you can find it) overwhelms
> all those where I explicitly suggest you perform superposition, that
> must've been a killer argument.

You explicitly suggest that I perform superposition of powers?
I thought that was a no-no. Is this your form of crazy-making?
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

5264. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 13:25:29 UTC
From: Gerald Schmitt <KK5YY@arrl.net>
Message-ID: <6es9ht0t1029k3gs49vbil52iq1r77qe8u@4ax.com>
Source record: 161662

Chip/Nathan/Fracsybil/"Phil,

It is painfully obvious that the codswollop posted below did not
spring forth from the uneducated thug we have all come to know
and love as "Phil".

First of all there is a profound lack of profanity. The real Phil has
never spelled this many words correctly before, so regretfully,
one must draw the unfortunate conclusion that the Chipsybil is
having us on.

I always had a suspicion that Fracsybil was, in addition to being
a fool and a mentally unbalanced, a pathogenic liar. Thank you so
much for proving, at least to my satisfaction, that my theory had
basis.

By the way Chip what did "Hate Do".

On 29 May 2001 11:29:46 GMT, fractenna@aol.com (Fractenna) wrote:

>>Pure crap...His patents are VERY limited and
>>don't cover what was claimed by his "Phil" persona in
>>the above posting.
>>
>>I'm using folded antenna designs in several mass produced
>>products that are quite "kinky" and look quite "fractal" !!!
>>So...there!!! and have been for a few years...This technology
>>is quite mainstream and not protected. PERIOD. Even his
>>issued patents would not stand up to a contest. Too lame
>>and obvious...No claims can be made for "patents pending".
>>
>>You folks at "frackyworld" need to get real legal advice.
>>
>
>Although we are pleased that you make a statement of great commercial
>application of fractal element antenna technology, your statement raises
>several concerns.
>
>After conferring with the officers of the company, Fractal Antenna Systems,
>Inc. invites you to discuss this matter with the Chairman and one of the legal
>firms representing the firm for its IP.
>
>One is in Boston and the other is in San Francisco.
>
>As you live within 20 miles of the State Street (Boston) office of one of the
>legal firms, I am sure this is no impediment to you.

>
>As it stands, your comments appear to bee wrong, misleading, and appear to be
>meant to encourage , in a very public forum, the notion that Fractal Antenna
>Systems, Inc., and Dr. Nathan Cohen (inventor) do not have legitimate claim to
>fractal element antenna technology. Furthermore, your public comments appear to
>have the intent of misleading others in that regard.
>
>If you have factual and non-partisan intentions in making such comments we can
>think of no reason why you would not agree to this meeting and present evidence
>as you describe. Carefully explain your interpretation of what is 'prior art'
>and how this is admissible in a court of law as "prior art".
>
>If, in fact, what you describe is within the claims of our extant patents,
>this evidence will then be used as evidence of patent infringement and the case
>will proceed accordingly.
>
>If you call Dr. Cohen at 617-489-6952 I am sure this can be arranged in the
>next ten days or so.
>
>Your failure to do so will be interpreted as malicious intent from your
>comments.
>
>This is a public statement indicating efforts by the company to answer
>incorrect statements with factually accurate ones. This statement may be used
>in a court of law as needed.
>
>73
>Phil
>de N1ZKT
>

5265. I just found an real auction site for CB, export radios, scanners

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 13:49:44 UTC
From: booujie <booujie@hotmail.com>
Message-ID: <YT6R6.52784$t12.4137992@bgtnsc05-news.ops.worldnet.att.net>
Source record: 161663
Cross-posted to: alt.radio.scanner,rec.radio.amateur.antenna,rec.radio.cb,rec.radio.swap

Check it out : http://www.bidfind.com/cobids/cobids.cgi?siteid=cbbf1729

I have no affiliation with them. I just wanted to pass it along for all the group to see if they were interested. That's all.

5266. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 13:56:04 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3b14fb43.47871563@news.aepnet.com>
Source record: 161664

On Wed, 30 May 2001 07:59:26 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Cecil, W6RCA wrote:
>"Power delivered to the load is 100w. Forward power is 133.33w.
>Reflected power is 33.33w. That gives an SWR of 3:1.
>
>That is correct. I used 100w for the forward power to get an SWR of
>3.73. Using 133.33w gives an SWR of 3:1. I used Termans formula (4-21)
>in his 1955 edition. It gives the same answers as Bird`s formula. I made
>the mistake of using the wrong power in the calculation.

A man who admits his mistakes. What an unusual occurrence in this group. Refreshing!

73,

Wes N7WS
>
>Best regards, Richartd Harrison, KB5WZI
>

5267. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 14:50:37 UTC
From: tdonaly@cs.com
Message-ID: <20010530105037.21656.00002096@ng-fs1.news.cs.com>
Source record: 161666

Priceless quote from Peter Brackett,
>
>It would be so much simpler if things were simpler. All you really need are
>V and I and Ohm's Law.
>
>-Peter K1PO

I take back everything I said about your mathematics, Peter. If you can make statements like that you know everything there is to know about mathematics.

Tom Donaly KA6RUH

5268. Re: Dipole vs Isotron

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 15:07:54 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B150CCA.62432201@IEEE.org>
Source record: 161667

Gary Pewitt wrote:
> I have the 10, 15, and 20 meter Isotrons set up in my guest bathroom.
> Try that with a rotatable dipole. I work Europe from Wisconsin all
> the time with them.

What mode, power?
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

5269. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 15:42:08 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <Su8R6.4334$5V1.1472003@nntp3.onemain.com>
Source record: 161668

Peter O. Brackett <ab4bc@ix.netcom.com> wrote in message
news:9f1beb$nj1$1@slb3.atl.mindspring.net...
> Richard:
>
> Heh heh... Richard my friend... you are soo o o o wrong!
>
> Power is Volts times Amps. P = V*I.
>
> To get power you must multiply V and I!
>
> To get power you must multiply V and I!
>
> To get power you must multiply V and I!
>
> The electric power meter on the side of your house does multiply, it is a
> dynamometer and it is arranged so that it actually does a "multiplication"
> of V and I to arrive at power.
>
> The Bird and all of those Breune design directional wattmeters have
> "absolutely no multiplication mechanism" in them. They have a directional
> coupler in them, and that particular device/function is nothing more nor
> less than a Wheatstone bridge circuit.
>
> And Wheatstone bridge circuits can only add and subtract variables like I
> and V, they simply do not multiply!
>
> Directional couplers have no mechanism for multiplication. Hence they can
> only indicate a "pale imitation" of power.
>
> Take their readings with a grain of salt...
>
> For, even though they have "Watts" painted upon their face they only
> indicated a special voltage!
>
> Caveat emptor.
>
> Directional couplers are only simple Wheatstone bridge circuits, nothing
> more nothing less, and so they cannot possibly be wattmeters since they
> cannot multiply V times I.
>
> If you want to be a metrologist, then I say....
>
> Metrologist, "know thy instruments".
>

> Clearly from your comments, you don't seem to understand what the Bird
> Wattmeter really does...
>
> How about giving us an analysis of the Breune SWR bridge circuit and show
us
> with your detailed analysis, as I have elsewhere on this NG recently,
where
> V is multiplied by I and perhaps further multiplied by cos(theta)...
>
> All you really need to know are I and V...
>
> And when the "reflected voltage" [b = I*(Z - R) = 0] is zero!
>
> Don't fall into the trap of trying to visualize all of those ficticious
> powers....
>
> Good "multiplier" hunting!
>
> -Peter K1PO

And Peter implied that I'm a moron when I tried to convince him that reflected power is real power by showing that a resistor terminating port 3 of a 3-port circulator dissipates the power reflected from a mismatch terminating port 2.

He told me that that's not the way a circulator works, and that I don't understand how they work. If that's so then why did my MEAUSUREMENT of the power dissipated in the resistor on port 3 equal the power known to be reflected from the specific mismatch terminating port 2?

I guess the heat emanating from the resistor must have been 'fictitious' heat.

Walt, W2DU

5270. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 15:43:15 UTC
From: richardharrison@webtv.net
Message-ID: <5114-3B151513-5@storefull-114.iap.bryant.webtv.net>
Source record: 161676

Steve, VE9SRB wrote:
"If a Bird wattmeter reads 133.33w of forward power and 33.33w of reflected power, what does that tell you?"

My first response was flawed because I used 100w as the forward power. But, the Bird formula gave the right answer using the right data.

100w is the power delivered by the sender and it is also the power delivered to the load, given a line with no loss.

That says the same 33.33w reflected by the load is also completely re-reflected by the sender. This totals 133.33w when totaled with 100w of newly emitted power from the sender.

The cause of a total reflection by the sender has to be that the sender`s internal impedance can`t accept energy which has its volts and amps 180-degrees out-of-phase as the energy reflected by the load has.

Re-reflection by the sender`s internal impedance restores the in-phase relationship between the volts and amps in the now twice reflected wave. This results in the in-phase merger of delivered and re-reflected power to form the forward power as read by the Bird Wattmeter.

Best regards, Richard Harrison, KB5WZI

5271. FA: Coax Relay

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 15:47:59 UTC
From: Dave <jeronamo@REMOVEaol.com>
Message-ID: <ME8R6.17$6C1.8515@news.pacbell.net>
Source record: 161669

New (old stock) coax relay

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1242249986

5272. WTB Rohn 45 Guy Brkt.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 15:52:37 UTC
From: "Richard J. Gillani" <tbolt@ix.netcom.com>
Message-ID: <9f350s$um7$1@slb6.atl.mindspring.net>
Source record: 161670
Cross-posted to: rec.radio.amateur.antenna,rec.radio.swap

Hello Group;
I am looking to purchase one Rohn 45 guy bracket part # GA45GD either new or used. Does anyone have a spare that they would like to sell? Please advise me what you have, condition and the price.
Thanks; Richard

5273. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 15:53:11 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <QP8R6.4343$5V1.1480708@nntp3.onemain.com>
Source record: 161673

VE9SRB <srbest@att.net> wrote in message
news:iGQQ6.52650$4f7.3930491@bgtnsc06-news.ops.worldnet.att.net...
>
> You have stated many times that the voltages and currents do not add in
> series and that the total voltage must be found as Sqrt(V1^2 + V2^2).
Have
> you changed your opinion? If you agree with the vector addition of
voltage
> and current then the power formula that results from this should not be an
> issue for you.
>
>
> Steve VE9SRB

Steve, are you now agreeing that the total voltage is found as sqrt (V1^2 +
V2^2) ? I argued this with you over and over, but you then insisted it was
simply (V1 + V2)^2.

When did you have the religious conversion?

Walt, W2DU

5274. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 15:58:54 UTC
From: kb7qhc@home.com
Message-ID: <3b151754.949926351@news.seanet.com>
Source record: 161672

On Wed, 30 May 2001 08:23:24 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> On Mon, 28 May 2001 18:51:50 -0500, CAM <Cecil.A.Moore@IEEE.org>
>> wrote:
>>
>> >Since your stated reason for me performing it is to discourage me
>> >from trying to superposition powers
>>
>> Hi Cecil,
>>
>> Could you offer the posting where I stated this reason?
>>
>> Really, Cecil, if one posting (provided you can find it) overwhelms
>> all those where I explicitly suggest you perform superposition, that
>> must've been a killer argument.
>
>You explicitly suggest that I perform superposition of powers?
>I thought that was a no-no. Is this your form of crazy-making?

Hi Cecil,

This does not respond to my request:
>> Could you offer the posting where I stated this reason?

As you are so sensitive to what is said, and who said it, could you
respond with the same attention? If you cannot, then we must assume
that cries of lies, paranoia, collusion and foul play are simply
missing your smiley face (which is fine by me either way).

73's
Richard Clark, KB7QHC

5275. Re: I just found an real auction site for CB, export radios, scanners

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 16:01:17 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <hP8R6.85611$425.23010872@news3.rdc1.on.home.com>
Source record: 161671
Cross-posted to: alt.radio.scanner,rec.radio.amateur.antenna,rec.radio.cb,rec.radio.swap

Why would hams want to buy ack cbs ack

"booujie" <booujie@hotmail.com> wrote in message
news:YT6R6.52784$t12.4137992@bgtnsc05-news.ops.worldnet.att.net...
> Check it out : http://www.bidfind.com/cobids/cobids.cgi?siteid=cbbf1729
>
> I have no affiliation with them. I just wanted to pass it along for all
the
> group to see if they were interested. That's all.
>
>

5276. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 16:04:00 UTC
From: kb7qhc@home.com
Message-ID: <3b1618d4.950310914@news.seanet.com>
Source record: 161674

On Wed, 30 May 2001 13:56:04 GMT, nospam_n7ws@arrl.net (Wes Stewart)
wrote:

>On Wed, 30 May 2001 07:59:26 -0500 (CDT), richardharrison@webtv.net (Richard
>Harrison) wrote:
>
>>Cecil, W6RCA wrote:
>>"Power delivered to the load is 100w. Forward power is 133.33w.
>>Reflected power is 33.33w. That gives an SWR of 3:1.
>>
>>That is correct. I used 100w for the forward power to get an SWR of
>>3.73. Using 133.33w gives an SWR of 3:1. I used Termans formula (4-21)
>>in his 1955 edition. It gives the same answers as Bird`s formula. I made
>>the mistake of using the wrong power in the calculation.
>
>A man who admits his mistakes. What an unusual occurrence in this group.
>Refreshing!
>
>73,
>
>Wes N7WS
>>
>>Best regards, Richartd Harrison, KB5WZI
>>
>

Hi Wes,

Don't forget Walt. He did also within the last day. It's not that
rare, its just not grist for the mill that would turn into a 600 post
thread.

Thanks Walt - I didn't want to make a point of it by appearing to
gloat.

73's
Richard Clark, KB7QHC

5277. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 16:08:46 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <8U8R6.676$C64.867937@nntp1.onemain.com>
Source record: 161675

VE9SRB <srbest@att.net> wrote in message
news:cxNQ6.52320$4f7.3898439@bgtnsc06-news.ops.worldnet.att.net...
>
> This statement says it correctly:
>
> "it is rare that the powers produced by two separate causes acting
> individually upon even a linear system can simply be added algebraically
to
> determine the total power when both causes act together"
>
> This quote is part of a discussion on power in transmission line systems.
> The text is "Electromagnetic Energy Transmission and Radiation" Richard
B.
> Adler, Lan Jen Chu, Robert M. Fano - (c) 1960 John Wiley & Sons.
>
> Steve VE9SRB

But Steve, the reflected power is not from a separate cause, it is directly related to the original cause, because both powers are from the SAME source, and when the combining mechanism is the matching device the powers DO add algebraicly because the phase angles of all components are zero.

Walt, W2DU

5278. FA: Saber PA module

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 16:13:25 UTC
From: Dave <jeronamo@REMOVEaol.com>
Message-ID: <D09R6.25$6C1.14519@news.pacbell.net>
Source record: 161677

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=1242255258

5279. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 16:46:39 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <Er9R6.4350$5V1.1498430@nntp3.onemain.com>
Source record: 161678

Richard Clark <kb7qhc@home.com> wrote in message
news:3b1618d4.950310914@news.seanet.com...
> >A man who admits his mistakes. What an unusual occurrence in this group.
> >Refreshing!
> >
> >73,
> >
> >Wes N7WS

> Hi Wes,
>
> Don't forget Walt. He did also within the last day. It's not that
> rare, its just not grist for the mill that would turn into a 600 post
> thread.
>
> Thanks Walt - I didn't want to make a point of it by appearing to
> gloat.
>
> 73's
> Richard Clark, KB7QHC

Thank you Richard, I needed that. I'm glad someone noticed.

Walt, W2DU

5280. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 17:11:40 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1529CC.48FD87BC@IEEE.org>
Source record: 161679

Walter Maxwell wrote:
> And Peter implied that I'm a moron when I tried to convince him that
> reflected power is real power by showing that a resistor terminating port 3
> of a 3-port circulator dissipates the power reflected from a mismatch
> terminating port 2.

Walt, you've got to understand that Peter doesn't accept dictionary
definitions of words so it is impossible to communicate with him. :-)
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5281. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 17:49:56 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <nnaR6.707$C64.904314@nntp1.onemain.com>
Source record: 161680

```
VE9SRB <srbest@att.net> wrote in message
news:L0OQ6.50403$t12.3933937@bgtnsc05-news.ops.worldnet.att.net...
>
> "Walter Maxwell" <w2du@iag.net> wrote in message
> news:5BxP6.1072$z83.1280647@nntp1.onemain.com...
> >
> > > A calculation of the correct network output impedance can be made
> starting
> > with the input impedance, but the attenuation factor MUST be reversed to
> > obtain the correct answer in returning to the starting point--the load.
> But
> > BEWARE of the MEASUREMENT looking into the output with the input
> > terminated--the answer is wrong unless the network is lossless. With
> > attenuation the difference in the value measured with he analyzer and
the
> > true output impedance increases in proportion to the amount of
> attenuation.
> >
> > Walt, W2DU
> >
> > PS--an entire Appendix in Reflections II explains this concept, with a
> Smith
> > Chart presentation.
> >
> >
>
> Walter:
>
> Your method of calculating the impedance seen looking rearward into a
> network is simply incorrect and anyone familiar with network impedance
> calculations would recognize your gross errors.
>
> First, you do not start with the input impedance to the network to perform
> the calculation. Second, you do not use negative resistance to perform
the
> calculation. You're mixing and confusing separate concepts. Its
appalling
> that that an electrical engineer would make such simple mistakes on such a
> simple topic.
>
> Let's do this with a lossless network, so you can't play games with the
> negative resistance calculations.
>
> Here's the circuit:
```

>
> TX ---- 50 ohm line ---- Network
>
> The impedance seen looking rearward into the transmitter is 25 + j25 ohms.
> The 50 ohm line is 1 WL long and lossless. The network is a series
> C - -j200 ohms, parallel L +j100 ohms, a series C -j200 ohms. The network
> is lossless.
>
> What is the impedance seen looking rearward into the network? Show your
> method of calculation.
>
> Steve VE9SRB

Steve, you didn't read the Appendix 9A in Reflections II. If you did read it you don't understand it, else you would not have made the statement you did above concerning the proper use of attenuation, depending on the direction of the calculation. Please look again at the proof in the Smith Chart diagram.

If you can't understand the concept proven there it's easy to see why you can't appreciate Cecil's point that 75 w + 33 w doesn't = 133.33 w.

Walt, W2DU

5282. Re: WTB Rohn 45 Guy Brkt.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 17:51:44 UTC
From: Roger Halstead <rdhalste@tm.net>
Message-ID: <QqaR6.3862$gA.1439018@monger.newsread.com>
Source record: 161681
Cross-posted to: rec.radio.amateur.antenna,rec.radio.swap

"Richard J. Gillani" <tbolt@ix.netcom.com> wrote in message
news:9f350s$um7$1@slb6.atl.mindspring.net...
> Hello Group;
> I am looking to purchase one Rohn 45 guy bracket part # GA45GD either new
or
> used. Does anyone have a spare that they would like to sell? Please advise
> me what you have, condition and the price.

Don't know where you are located, but I have a couple new ones.
Are you looking for the one using shackles, or with the torque arms?

"I think" I have a couple with shackles and torque arms. I'll have to
check.
Shipping might be kind of high as theise things are heavy. Expensive too.

I may be adding another set of guys at the rotor which is mounted down in
the tower, but that will still leave me with at least one spare set.

How about thrust bearings?

Roger (K8RI)
www.rogerhalstead.com
> Thanks; Richard
>
>

5283. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 17:57:48 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B15349C.16518811@IEEE.org>
Source record: 161683

Walter Maxwell wrote:
> Steve, are you now agreeing that the total voltage is found as sqrt (V1^2 +
> V2^2) ? I argued this with you over and over, but you then insisted it was
> simply (V1 + V2)^2.

For those just joining the discussion, Walt, I would like to summarize and emphasize that I am asserting very little and questioning a lot.

One-to-one-correspondence is a well accepted mathematical concept. If we choose to accept a one-to-one-correspondence between voltage and power, then we must abide the consequences of that choice.

Normalized to a Z0 ohm transmission line environment, the power associated with a voltage is P = V^2/Z0. The voltage associated with a power is V = sqrt(P*Z0). Note that these are magnitudes only.

So, since Steve buys into one-to-one-correspondence between voltage and power, we can write a voltage equation for every power equation and/or write a power equation for every voltage equation.

Steve's voltage equation gives us the correct answer but does it really tell the factual physics story? Or is it just mathematically useful?

V1 + V2 = Vtot = 106.066v + 35.355v = 141.421v

Converting this voltage equation to a power equation in a 150 ohm transmission line environment yields:

106.066^2/150 + 35.355^2/150 = 141.421^2/150 or

75 watts + 8.33 watts = 133.33 watts

This equation comes directly from Steve's statement: "75 W added in phase with 8.33 Watts results in a total forward power of 133.33 Watts."

Seems there are two things wrong. The equation doesn't balance and power doesn't have phase. Given that:
delta power = delta energy/delta time, this power (energy) equation seems to violate the principle of conservation of energy.

Steve's proposed power equation has the opposite conceptual problem.

Ptot = P1 + P2 + 2sqrt(P1*P2) for Z0-matched systems

For the earlier example: 133.33w = 75w + 8.33w + 50w

Assuming a one-to-one-correspondence between power and voltage:

141.421v = 106.066v + 35.355v + 86.6v

This equation is possible for phasor voltages out of phase but we know that all the voltages are adding in phase in the forward direction. Given we know all the voltages are in phase, this equation seems to violate the superposition principle.

If we choose method number one, the powers don't add up. If we choose method two, the voltages don't add up. This is what I said weeks ago.

My take on all of this is that there is not a one-to-one-correspondence between voltages and powers. The source powers effect the electromagnetic fields which in turn effect the total voltage with its associated power. Strictly speaking, what gets added are the source energies in the electromagnetic fields.

If that is true, it is only mathematically interesting that V1 + V2 = Vtot and doesn't really tell us all that much about the underlying physics. The present argument thus boils down to a choice between two flawed models - which is the lesser of two evils?
--
cheers, Cecil

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5284. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 17:58:19 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <%waR6.55657$4f7.4135944@bgtnsc06-news.ops.worldnet.att.net>
Source record: 161682

"Walter Maxwell" <w2du@iag.net> wrote in message
news:QP8R6.4343$5V1.1480708@nntp3.onemain.com...
>
> VE9SRB <srbest@att.net> wrote in message
> news:iGQQ6.52650$4f7.3930491@bgtnsc06-news.ops.worldnet.att.net...
> >
> > You have stated many times that the voltages and currents do not add in
> > series and that the total voltage must be found as Sqrt(V1^2 + V2^2).
> Have
> > you changed your opinion? If you agree with the vector addition of
> voltage
> > and current then the power formula that results from this should not be
an
> > issue for you.
> >
> >
> > Steve VE9SRB
>
> Steve, are you now agreeing that the total voltage is found as sqrt (V1^2
+
> V2^2) ?

No.

The total voltage is determined from Vtotal = V1 + V2, where V1 and V2 are vectors with their appropriate magnitude and phase. Note that with this relationship, Vtotal has its own magnitude and phase. Vtotal is also a vector.

Your stated realtionship above would be valid to determine the magnitude of the total voltage if the two vectors, V1 and V2 are 90 degrees out of phase. Assuming of course that you are squaring the individual voltage magnitudes. |Vtotal| = Sqrt(|V1|^2 + |V2|^2), when V1 and V2 are 90 degrees out of phase.

>I argued this with you over and over, but you then insisted it was
> simply (V1 + V2)^2.
>
> When did you have the religious conversion?
>
> Walt, W2DU
>
>

I believe that you have misinterpreted my statements regarding voltage and power.

If the two voltage vectors V1 and V2 are in-phase, then Vtotal = V1 + V2 and it is also true that the |Vtotal| = |V1| + |V2|. If one were going to determine power from |Vtotal|, then Ptotal can validly be written as (|V1| + |V2|)^2 / Zo (this requires that V1 and V2 be in-phase). This is not the same as your implication above that |Vtotal| = (|V1| + |V2|)^2. I have never stated this relationship to be valid. Perhaps you should review the details of our previous correspondence.

In general:

Vtotal = V1 + V2 (vector addition)

|Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| cos(theta)]

theta is the phase angle difference between vectors V1 and V2.

Steve VE9SRB

5285. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 18:04:30 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <xAaR6.4361$5V1.1529474@nntp3.onemain.com>
Source record: 161684

```
Walter Maxwell <w2du@iag.net> wrote in message
news:nnaR6.707$C64.904314@nntp1.onemain.com...
>
> VE9SRB <srbest@att.net> wrote in message
> news:L0OQ6.50403$t12.3933937@bgtnsc05-news.ops.worldnet.att.net...
> >
> > "Walter Maxwell" <w2du@iag.net> wrote in message
> > news:5BxP6.1072$z83.1280647@nntp1.onemain.com...
> > >
> > > > A calculation of the correct network output impedance can be made
> > starting
> > > > with the input impedance, but the attenuation factor MUST be reversed
to
> > > > obtain the correct answer in returning to the starting point--the
load.
> > But
> > > > BEWARE of the MEASUREMENT looking into the output with the input
> > > > terminated--the answer is wrong unless the network is lossless. With
> > > > attenuation the difference in the value measured with he analyzer and
> the
> > > > true output impedance increases in proportion to the amount of
> > attenuation.
> > > >
> > > > Walt, W2DU
> > > >
> > > > PS--an entire Appendix in Reflections II explains this concept, with a
> > Smith
> > > > Chart presentation.
> > > >
> > > >
> > >
> > Walter:
> >
> > Your method of calculating the impedance seen looking rearward into a
> > network is simply incorrect and anyone familiar with network impedance
> > calculations would recognize your gross errors.
> >
> > First, you do not start with the input impedance to the network to
perform
> > the calculation. Second, you do not use negative resistance to perform
> the
> > calculation. You're mixing and confusing separate concepts. Its
> appalling
> > that that an electrical engineer would make such simple mistakes on such
```

a
> > simple topic.
> >
> > Let's do this with a lossless network, so you can't play games with the
> > negative resistance calculations.
> > Steve VE9SRB

Steve, it's not necessary to use an example here to understand the concept, especially a lossless network.

> Steve, you didn't read the Appendix 9A in Reflections II. If you did read it
> you don't understand it, else you would not have made the statement you did
> above concerning the proper use of attenuation, depending on the direction
> of the calculation. Please look again at the proof in the Smith Chart
> diagram.
>
> If you can't understand the concept proven there it's easy to see why you
> can't appreciate Cecil's point that 75 w + 33 w doesn't = 133.33 w.
>
> Walt, W2DU
>

I should have mentioned above that there are two programs in both Reflections I and II that calculate impedance transformations on lines, going in either desired direction, from input to output and from output to input. These programs have been used for more than twenty years by many RF engineers, with no objections to changing the attenuation factor as needed,depending on which direction the transformation is going.

I referred you to these programs a year or more ago, but you refused to look at them.

On the other hand, Dean Straw developed his TL.exe and TLA.exe programs for performing the same function, which he published. Please take note that he used my Reflections programs to test his exe programs, and found they agree 100%.

So how about trying Straw's exe programs--are you ready to heave his programs to the scrap heap as you do mine?

Walt, W2DU

5286. Re: Kenwood's TS-50 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 18:14:28 UTC
From: garneval@aol.com
Message-ID: <20010530141428.21770.00001911@ng-fs1.aol.com>
Source record: 161685

The icom 718 is an excellant sounding radio with a lot of features for the money I had an ft 840 and the transmit audio sounded lousy in comparison. The 718 is going for less than 600 dollars

5287. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 18:15:48 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1538D4.F8E7319F@IEEE.org>
Source record: 161686

Richard Harrison wrote:
> The cause of a total reflection by the sender has to be that the
> sender`s internal impedance can`t accept energy which has its volts and
> amps 180-degrees out-of-phase as the energy reflected by the load has.

Richard, I've thought about this a lot and for what it's worth, here's
my take.

The cause of a total reflection at the sender end is the existence
of a Z0-match (or Zg-match) as provided by an antenna tuner or other
means. If reflections are allowed to flow into (through?) the source,
depending on phase, the current will increase and the voltage decrease,
or vice versa, or increase both the voltage and current while shifting
the voltage and current out of phase with each other. (I can't seem
to visualize a way for reflections to reduce voltage and current
simultaneously except by triggering the fold-back circuitry.)

In any case, the generator is not seeing it's designed-for impedance
and can overheat from over-current, blow up from over-voltage, or
fold back because of the protection circuitry. Efficiency suffers.
This is akin to the same-cycle reflection stuff that Peter has been
talking about.

You are probably right about some re-reflection from the sender, but
it's pretty hard to determine exactly what is being generated under
those conditions and thus hard to determine the source impedance that
would cause re-reflection.
--
cheers, Cecil

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5288. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 18:21:12 UTC
From: w2du@iag.net
Message-ID: <3b1538c4.11210700@news.onemain.com>
Source record: 161687

On Wed, 30 May 2001 12:57:48 -0500, CAM <Cecil.A.Moore@IEEE.org> wrote:

>Walter Maxwell wrote:
>> Steve, are you now agreeing that the total voltage is found as sqrt (V1^2 +
>> V2^2) ? I argued this with you over and over, but you then insisted it was
>> simply (V1 + V2)^2.
>
>For those just joining the discussion, Walt, I would like to summarize and
>emphasize that I am asserting very little and questioning a lot.
>
>One-to-one-correspondence is a well accepted mathematical concept. If
>we choose to accept a one-to-one-correspondence between voltage and
>power, then we must abide the consequences of that choice.
>
>Normalized to a Z0 ohm transmission line environment, the power
>associated with a voltage is P = V^2/Z0. The voltage associated
>with a power is V = sqrt(P*Z0). Note that these are magnitudes only.
>
>So, since Steve buys into one-to-one-correspondence between voltage
>and power, we can write a voltage equation for every power equation
>and/or write a power equation for every voltage equation.
>
>Steve's voltage equation gives us the correct answer but does it
>really tell the factual physics story? Or is it just mathematically
>useful?
>
>V1 + V2 = Vtot = 106.066v + 35.355v = 141.421v
>
>Converting this voltage equation to a power equation in a 150 ohm
>transmission line environment yields:
>
>106.066^2/150 + 35.355^2/150 = 141.421^2/150 or
>
>75 watts + 8.33 watts = 133.33 watts
>
>This equation comes directly from Steve's statement: "75 W added in
>phase with 8.33 Watts results in a total forward power of 133.33 Watts."
>
>Seems there are two things wrong. The equation doesn't balance and
>power doesn't have phase. Given that:
>delta power = delta energy/delta time, this power (energy) equation
>seems to violate the principle of conservation of energy.
>
>Steve's proposed power equation has the opposite conceptual problem.

>
>Ptot = P1 + P2 + 2sqrt(P1*P2) for Z0-matched systems
>
>For the earlier example: 133.33w = 75w + 8.33w + 50w
>
>Assuming a one-to-one-correspondence between power and voltage:
>
>141.421v = 106.066v + 35.355v + 86.6v
>
>This equation is possible for phasor voltages out of phase but we
>know that all the voltages are adding in phase in the forward
>direction. Given we know all the voltages are in phase, this equation
>seems to violate the superposition principle.
>
>If we choose method number one, the powers don't add up. If we choose
>method two, the voltages don't add up. This is what I said weeks ago.
>
>My take on all of this is that there is not a one-to-one-correspondence
>between voltages and powers. The source powers effect the electromagnetic
>fields which in turn effect the total voltage with its associated power.
>Strictly speaking, what gets added are the source energies in the
>electromagnetic fields.
>
>If that is true, it is only mathematically interesting that V1 + V2 = Vtot
>and doesn't really tell us all that much about the underlying physics.
>The present argument thus boils down to a choice between two flawed
>models - which is the lesser of two evils?
>--
>cheers, Cecil
>
It is the energies in the electromagnetic fields. The energies in the resonant line section that performs the impedance matching simply circulate from one end to the other of the line section, with increase in voltage caused by the resonant voltage increase because the Q of the resonant circuit is greater than one.

Walt, W2DU
>-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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5289. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 18:35:06 UTC
From: kb7qhc@home.com
Message-ID: <3b153c91.959459980@news.seanet.com>
Source record: 161688

On Wed, 30 May 2001 11:42:08 -0400, "Walter Maxwell" <w2du@iag.net>
wrote:

>
>Peter O. Brackett <ab4bc@ix.netcom.com> wrote in message
>news:9f1beb$nj1$1@slb3.atl.mindspring.net...
>> Richard:
>>
>> Heh heh... Richard my friend... you are soo o o o wrong!
>>
>> Power is Volts times Amps. P = V*I.
>>
>> To get power you must multiply V and I!
>>
>> To get power you must multiply V and I!
>>
>> To get power you must multiply V and I!
>>
>> The electric power meter on the side of your house does multiply, it is a
>> dynamometer and it is arranged so that it actually does a "multiplication"
>> of V and I to arrive at power.
>>
>> The Bird and all of those Breune design directional wattmeters have
>> "absolutely no multiplication mechanism" in them. They have a directional
>> coupler in them, and that particular device/function is nothing more nor
>> less than a Wheatstone bridge circuit.
>>
>> And Wheatstone bridge circuits can only add and subtract variables like I
>> and V, they simply do not multiply!
>>
>> Directional couplers have no mechanism for multiplication. Hence they can
>> only indicate a "pale imitation" of power.
>>
>> Take their readings with a grain of salt...
>>
>> For, even though they have "Watts" painted upon their face they only
>> indicated a special voltage!
>>
>> Caveat emptor.
>>
>> Directional couplers are only simple Wheatstone bridge circuits, nothing
>> more nothing less, and so they cannot possibly be wattmeters since they
>> cannot multiply V times I.
>>

>> If you want to be a metrologist, then I say....
>>
>> Metrologist, "know thy instruments".
>>
>> Clearly from your comments, you don't seem to understand what the Bird
>> Wattmeter really does...
>>
>> How about giving us an analysis of the Breune SWR bridge circuit and show
>us
>> with your detailed analysis, as I have elsewhere on this NG recently,
>where
>> V is multiplied by I and perhaps further multiplied by cos(theta)...
>>
>> All you really need to know are I and V...
>>
>> And when the "reflected voltage" [b = I*(Z - R) = 0] is zero!
>>
>> Don't fall into the trap of trying to visualize all of those ficticious
>> powers....
>>
>> Good "multiplier" hunting!
>>
>> -Peter K1PO
>
>And Peter implied that I'm a moron when I tried to convince him that
>reflected power is real power by showing that a resistor terminating port 3
>of a 3-port circulator dissipates the power reflected from a mismatch
>terminating port 2.
>
>He told me that that's not the way a circulator works, and that I don't
>understand how they work. If that's so then why did my MEAUSUREMENT of the
>power dissipated in the resistor on port 3 equal the power known to be
>reflected from the specific mismatch terminating port 2?
>
>I guess the heat emanating from the resistor must have been 'fictitious'
>heat.
>
>Walt, W2DU

Hi Walt,

We've been around the track on this several times with Peter. Yes the
load heats, and it may a be a cold day in - the caribbean - before
Peter can acknowledge that without undercutting his acceptance with a
flip embellishment that tosses it back into the soup.

Let it pass, Walt.

73's
Richard Clark, KB7QHC

5290. EZNEC modeling of hamsticks?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 18:44:19 UTC
From: Robert Joshua Chen <rjchen@Stanford.EDU>
Message-ID: <9f3f23$qm7$1@nntp.Stanford.EDU>
Source record: 161689

I just recently put together a vertical dipole consisting of two 80m hamsticks, and I'd like to model the system with EZNEC to see what the radiation efficiency and pattern look like at different frequencies (I'll be using an autocoupler at feedpoint). Has anyone carried out this model on EZNEC before? How would I take into account the helical loading that the hamsticks employ?

Thanks,
-Robert

--

5291. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 18:52:00 UTC
From: kb7qhc@home.com
Message-ID: <3b163fe9.960315500@news.seanet.com>
Source record: 161690

On Wed, 30 May 2001 13:15:48 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Harrison wrote:
>> The cause of a total reflection by the sender has to be that the
>> sender`s internal impedance can`t accept energy which has its volts and
>> amps 180-degrees out-of-phase as the energy reflected by the load has.
>
>Richard, I've thought about this a lot and for what it's worth, here's
>my take.
>
>The cause of a total reflection at the sender end is the existence
>of a Z0-match (or Zg-match) as provided by an antenna tuner or other
>means. If reflections are allowed to flow into (through?) the source,
>depending on phase, the current will increase and the voltage decrease,
>or vice versa, or increase both the voltage and current while shifting
>the voltage and current out of phase with each other. (I can't seem
>to visualize a way for reflections to reduce voltage and current
>simultaneously except by triggering the fold-back circuitry.)
>
>In any case, the generator is not seeing it's designed-for impedance
>and can overheat from over-current, blow up from over-voltage, or
>fold back because of the protection circuitry. Efficiency suffers.
>This is akin to the same-cycle reflection stuff that Peter has been
>talking about.
>
>You are probably right about some re-reflection from the sender, but
>it's pretty hard to determine exactly what is being generated under
>those conditions and thus hard to determine the source impedance that
>would cause re-reflection.

Hi Cecil,

Your posting reveals my pet issue with these threads in that you have
mixed both Basis of discussion in the same topic.

On the one hand you introduce this as a Z0 match, and then a paragraph
later you discuss Efficiency. The two are not logically related even
if the are in practicality.

Such mixing leads to these "you said - he said" marathons that twist
and turn around without confronting the genesis of the problem (the
unnecessary inclusion of the second Basis).

73's
Richard Clark, KB7QHC

5292. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 18:55:10 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B15420E.A5C52E20@IEEE.org>
Source record: 161691

VE9SRB wrote:
> This is not the
> same as your implication above that |Vtotal| = (|V1| + |V2|)^2. I have
> never stated this relationship to be valid.

But you have stated something that would lead an ordinary prudent man
to that conclusion:

You appear to have adopted the rule that there is a one-to-one (1:1)
correspondence between any voltage and any power existing in a
transmission line environment. Thus your power equation:

Ptot = P1 + P2 + 2sqrt(P1*P2) = 133.33w = 75w + 8.33w + 50w

leads directly to a voltage equation of:

Vtot = V1 + V2 + V3 = 141.421v = 106.066v + 35.355v + 86.6v

The power equation above is valid but the voltage equation is invalid.

The mathematical process that will make the voltage equation valid is:

Vtot = sqrt(V1^2 + V2^2 + V3^2)

141.421 = sqrt(106.066^2 + 35.355^2 + 86.6v^2)

Now, I don't know *why* this works but it obviously works. Why does
reverse engineering your power equation require taking the square
root of the sum of the squares of the resulting voltages to make
it a valid equation. What is the physical meaning of the fact that
of all possible answers, this process gets the correct answer?
--
cheers, Cecil

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5293. Re: EZNEC modeling of hamsticks?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 19:05:14 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B15446A.E72AFDB9@IEEE.org>
Source record: 161692

Robert Joshua Chen wrote:
> I just recently put together a vertical dipole consisting of two 80m hamsticks, and
> I'd like to model the system with EZNEC to see what the radiation efficiency and
> pattern look like at different frequencies (I'll be using an autocoupler at
> feedpoint). Has anyone carried out this model on EZNEC before? How would I take into
> account the helical loading that the hamsticks employ?

I can tell you the efficiency will be less than 1%. For every 100
watts you put in, you will be lucky to get one watt out. Happy QRPing.

You can check for yourself. Load up and key down for one minute,
then key up. I doubt you will be able to grab and hold on to the
hamsticks around the top of the coil. If you have frostbite, an 80m
hamstick is a good thing to warm up your hands. Be careful, though.
You are likely to burn your hands.
--
cheers, Cecil

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5294. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 19:10:24 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <AAbR6.53153$t12.4175951@bgtnsc05-news.ops.worldnet.att.net>
Source record: 161693

"Walter Maxwell" <w2du@iag.net> wrote in message
news:8U8R6.676$C64.867937@nntp1.onemain.com...
>
> VE9SRB <srbest@att.net> wrote in message
> news:cxNQ6.52320$4f7.3898439@bgtnsc06-news.ops.worldnet.att.net...
> >
> > This statement says it correctly:
> >
> > "it is rare that the powers produced by two separate causes acting
> > individually upon even a linear system can simply be added algebraically
> to
> > determine the total power when both causes act together"
> >
> > This quote is part of a discussion on power in transmission line
systems.
> > The text is "Electromagnetic Energy Transmission and Radiation" Richard
> B.
> > Adler, Lan Jen Chu, Robert M. Fano - (c) 1960 John Wiley & Sons.
> >
> > Steve VE9SRB
>
> But Steve, the reflected power is not from a separate cause, it is
directly
> related to the original cause, because both powers are from the SAME
source,
> and when the combining mechanism is the matching device the powers DO add
> algebraicly because the phase angles of all components are zero.
>
> Walt, W2DU
>

Hi Walt,

I will state my opinion and you are free to disagree. I promise everyone that I will not go back and forth with multiple 400 line posts on this aspect of the discussion.

In the case of the Zo match, I agree with you that the forward source wave and the re-reflected wave are in phase. That's why I add voltages as |Vtotal| = |V1| + |V2|. One of the significant points that I disagree with you on here is the actual value of the forward source wave beyond the Zo match point. I calculate the forward source wave beyond the Zo match point from the system's initial conditions. In Cecil's Zo match example, the forward source voltage in the 150 ohm line is 106.066 V. I then calculate the re-reflected voltage from the reflected voltage and the physical

reflection coefficient seen in the rearward direction at the transmission line junction. In Cecil's example, the re-reflected voltage is 35.355 V. The total voltage is therefore 141.42 V. The total forward power is simply determined to be 133.33 W (141.42^2 / 150). When the two waves are in phase, the voltages and currents add algebraically, the powers do not.

You on the other hand (IMO) look at the known steady state conditions of forward, reflected and delivered power and then assume that the 100 W of delivered power is the forward source power beyond the Zo match point. The delivered power beyond the Zo match point and the forward source power beyond the Zo match point are two different things. Anyway, to balance the power relationship you then assume that a total re-reflection of the reflected power occurs such that Pfwd = Pdel + Pref. You are simply re-writing the relationship Pdel = Pfwd - Pref.

As for your voltage calculations, it is incorrect to assume that the delivered power has an associated forward voltage. Your voltage addition formula is also a version of the steady state relationship Pdel = Pfwd - Pref. Expressing this power relationship as a voltage relationship |Vtot|^2 = |Vfwd|^2 - |Vref|^2. Then |Vfwd|^2 = |Vtot|^2 + |Vref|^2. Then |Vfwd| = Sqrt(|Vtot|^2 + |Vref|^2).

Mathematically your discussion works but only because of the relationship that Pdel = Pwd - Pref. IMO, one point that you fail to miss is that all of your equations and math work even if a Zo match does not exist, simply because Pdel is always equal to Pfwd - Pref (Zo real). I could duplicate your math and translate it into the total power re-reflection concept when a Zo match does not exist. Would you conclude that a total re-reflection of power occurs even when a Zo match does not exist?

As for both powers being from the same source: IMO, that's partially correct. The two forward signals that are combining in the forward direction are from the same source but they are not time coherent (this may be a poor choice of words or perspective). From the transient perspective, the forward source wave [F(t)] that created the re-reflected wave is long gone. The re-reflected wave is not combining with the time coherent forward source wave that created it. The total forward wave is equal to the forward source wave plus the re-reflections (ghosts) of previous forward source waves. I don't want to go down this road much more.

Steve VE9SRB

5295. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 19:16:14 UTC
From: nospam_n7ws@arrl.net
Message-ID: <3b153c5d.3097208@news.aepnet.org>
Source record: 161694

On Wed, 30 May 2001 11:42:08 -0400, "Walter Maxwell" <w2du@iag.net>
wrote:

[snip]
>
>And Peter implied that I'm a moron when I tried to convince him that
>reflected power is real power by showing that a resistor terminating port 3
>of a 3-port circulator dissipates the power reflected from a mismatch
>terminating port 2.
>
>He told me that that's not the way a circulator works, and that I don't
>understand how they work. If that's so then why did my MEAUSUREMENT of the
>power dissipated in the resistor on port 3 equal the power known to be
>reflected from the specific mismatch terminating port 2?
>
>I guess the heat emanating from the resistor must have been 'fictitious'
>heat.

Peter said the same of my waveguide directional coupler example. But
he admitted that it was "too complicated" for him to understand and
went on to discuss the weather.

Wes Stewart N7WS

ps. Peter my email address is in the header---remove "nospam_" and my
mail address is easily found in qrz.com, etc.
>
>Walt, W2DU
>
>
>
>

5296. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 19:16:42 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B15471A.841936F8@IEEE.org>
Source record: 161695

Richard Clark wrote:
> Your posting reveals my pet issue with these threads in that you have
> mixed both Basis of discussion in the same topic.
>
> On the one hand you introduce this as a Z0 match, and then a paragraph
> later you discuss Efficiency. The two are not logically related even
> if the are in practicality.
>
> Such mixing leads to these "you said - he said" marathons that twist
> and turn around without confronting the genesis of the problem (the
> unnecessary inclusion of the second Basis).

Richard, may I offer a suggestion to you that my daughter often
offers to me - "Chill out!". This is a casual conversational
unmoderated newsgroup, not a PhD dissertation. We may go all
around the world during a discussion but we usually arrive
at the required destination. If not, we agree to disagree.

Now for a little Pot/Kettle thought. Steve's and my discussion
was diverted from the subject for days by - guess who?
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

5297. Re: WTB Rohn 45 Guy Brkt.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 19:27:21 UTC
From: CJ <cjr@visi.com>
Message-ID: <3B154999.A9BDCA8A@visi.com>
Source record: 161696
Cross-posted to: rec.radio.amateur.antenna,rec.radio.swap

I believe that I have one out back. I'd like to be rid of it.

73, CJ K0CJ, Burnsville, MN

"Richard J. Gillani" wrote:
>
> Hello Group;
> I am looking to purchase one Rohn 45 guy bracket part # GA45GD either new or
> used. Does anyone have a spare that they would like to sell? Please advise
> me what you have, condition and the price.
> Thanks; Richard

5298. Low Altitude Horizontal Loop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 19:32:04 UTC
From: dieselburner <unknown.address@nowhere.etin.com>
Message-ID: <1349.990795302194@iw0.mailusenet.com>
Source record: 161697

I just installed a 350 foot long horizontal loop in my yard. It is only 6 feet above the ground except for
about 80 feet which follows the roof line on the house. The antenna replaces a 330' horizontal loop
which I had running throught the trees at my house and was up about 20-25 feet. With the old antenna I
was able to talk to a fellow in Algeria on the first call through I pile up using only 100 watts. From the
west coast, thats not bad! I have only had this antenna up for a couple of days but it seems that signals
are way down. I had to go with this antenna because of restrictions in the neighborhood. Does anyone
have any suggestions? I know the answer is to move but I need to make it work at this location for a
while.
Steve
K9

Posted via http://www.etin.com - the FREE public USENET portal on the Web
Complete SEARCHING, BROWSING, and POSTING of text and BINARY messages!

5299. I Need Ideas For A Townhouse Antenna!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 19:34:16 UTC
From: Mike Barrett <zootv@mgfairfax.rr.com>
Message-ID: <3B154B32.159C1F7A@mgfairfax.rr.com>
Source record: 161700

Hello,
I just moved into a townhouse with the usual antenna restrictions (though oddly enough I can have whatever I want if I can get the Review Board to issue me a permit!). I've got a row of trees that is about 50-60 feet long and about 10-15 feet wide with a path running through it. The trees are about 10 feet behind the house. The trees are small; the tallest is maybe 30 feet. There is one huge tree on the far right side of the row, but the house is located on the far left. I'm thinking about running a small wire up one of the trees to make a vertical, or just using the screwdriver in my car and putting it up when I want to operate. I'd like to remain stealth if at all possible, so the screwdriver is more or less a last resort. I'd like to stay out of the attic because I'd like to use SSB (apologies to the CW junkies out there, I've just never enjoyed the mode). Any other designs I should consider? Opinions on the designs I mentioned before? I've been using my mobile station when I want to get on HF for the last year or so, but it gets mighty cold in the winter and mighty hot in the summer! Thanks for any help,
Mike

PS - Yes, I did look at deja.com but most of the articles suggest attic antennas. I'm hoping to do something with these trees...

5300. Re: Helical Antenna Design - how do I?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 19:41:59 UTC
From: kld68@my-deja.com
Message-ID: <d1523471.0105301141.48cb49e6@posting.google.com>
Source record: 161698

Mark Keith <nm5k@wt.net> wrote in message news:<3B1469F2.252@wt.net>...
> ken wrote:
> >
> Check the thread for "shortend 10m antenna". My post for Gordon applies
> here too. MK

Sorry, a search in the newsgroup didn't show it, at least not on Google.
Thanks,
Ken

5301. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 19:45:45 UTC
From: kb7qhc@home.com
Message-ID: <3b154d35.963719104@news.seanet.com>
Source record: 161699

On Wed, 30 May 2001 14:16:42 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> Your posting reveals my pet issue with these threads in that you have
>> mixed both Basis of discussion in the same topic.
>>
>> On the one hand you introduce this as a Z0 match, and then a paragraph
>> later you discuss Efficiency. The two are not logically related even
>> if the are in practicality.
>>
>> Such mixing leads to these "you said - he said" marathons that twist
>> and turn around without confronting the genesis of the problem (the
>> unnecessary inclusion of the second Basis).
>
>Richard, may I offer a suggestion to you that my daughter often
>offers to me - "Chill out!". This is a casual conversational
>unmoderated newsgroup, not a PhD dissertation. We may go all
>around the world during a discussion but we usually arrive
>at the required destination. If not, we agree to disagree.
>
>Now for a little Pot/Kettle thought. Steve's and my discussion
>was diverted from the subject for days by - guess who?

Hi Cecil,

I suppose you haven't followed your daughters advice then.

These discussion are a far cry from academic, and because of that we
find ad hominem, conspiracy, cries of foul play, paranoia, and so on.

I suspect the diversions were more a consequence of this last (do I
hear an Amen?).

73's
Richard Clark, KB7QHC

5302. Re: Helical Antenna Design - how do I?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 19:54:05 UTC
From: kld68@my-deja.com
Message-ID: <d1523471.0105301154.4dc6b490@posting.google.com>
Source record: 161701

I looked at that and didn't find it very useful, but thanks.

What I really need is a formula where the known values are the frequency
of interest, the size of the wire form (L and D) and the size of the wire
being used where the output is the length of wire needed, the number of
turns on the form and maybe even the spacing between the turns.

A formula or group of formulas would be fine, I'm not afraid of my calculator.

Thanks,
Ken

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<9f2cv1puh1@uranium.btinternet.com>...
> For design and performance of small HF helically-wound antennas
> download, in a few seconds, program HELICAL3 from website below.
> --

5303. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 20:06:38 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <ipcR6.53234$t12.4182528@bgtnsc05-news.ops.worldnet.att.net>
Source record: 161703

```
"Walter Maxwell" <w2du@iag.net> wrote in message
news:nnaR6.707$C64.904314@nntp1.onemain.com...
>
> VE9SRB <srbest@att.net> wrote in message
> news:L0OQ6.50403$t12.3933937@bgtnsc05-news.ops.worldnet.att.net...
> >
> > "Walter Maxwell" <w2du@iag.net> wrote in message
> > news:5BxP6.1072$z83.1280647@nntp1.onemain.com...
> > >
> > > > A calculation of the correct network output impedance can be made
> > starting
> > > > with the input impedance, but the attenuation factor MUST be reversed
to
> > > > obtain the correct answer in returning to the starting point--the
load.
> > But
> > > > BEWARE of the MEASUREMENT looking into the output with the input
> > > > terminated--the answer is wrong unless the network is lossless. With
> > > > attenuation the difference in the value measured with he analyzer and
> the
> > > > true output impedance increases in proportion to the amount of
> > attenuation.
> > > >
> > > > Walt, W2DU
> > > >
> > > > PS--an entire Appendix in Reflections II explains this concept, with a
> > Smith
> > > > Chart presentation.
> > > >
> > > >
> > >
> > Walter:
> >
> > Your method of calculating the impedance seen looking rearward into a
> > network is simply incorrect and anyone familiar with network impedance
> > calculations would recognize your gross errors.
> >
> > First, you do not start with the input impedance to the network to
perform
> > the calculation. Second, you do not use negative resistance to perform
> the
> > calculation. You're mixing and confusing separate concepts. Its
> appalling
> > that that an electrical engineer would make such simple mistakes on such
```

a
> > simple topic.
> >
> > Let's do this with a lossless network, so you can't play games with the
> > negative resistance calculations.
> >
> > Here's the circuit:
> >
> > TX ---- 50 ohm line ---- Network
> >
> > The impedance seen looking rearward into the transmitter is 25 + j25
ohms.
> > The 50 ohm line is 1 WL long and lossless. The network is a series
> > C - -j200 ohms, parallel L +j100 ohms, a series C -j200 ohms. The
network
> > is lossless.
> >
> > What is the impedance seen looking rearward into the network? Show your
> > method of calculation.
> >
> > Steve VE9SRB
>
> Steve, you didn't read the Appendix 9A in Reflections II. If you did read
it
> you don't understand it, else you would not have made the statement you
did
> above concerning the proper use of attenuation, depending on the direction
> of the calculation. Please look again at the proof in the Smith Chart
> diagram.
>
> If you can't understand the concept proven there it's easy to see why you
> can't appreciate Cecil's point that 75 w + 33 w doesn't = 133.33 w.
>
> Walt, W2DU
>
>

Walter:

Why can't you just answer a question or enter into a real discussion?
Simply claiming that I'm wrong and that you are right is of no value to you,
me or anyone else on this NG.

Answer the question I posed above and show your calculations. Answer the
question posed in the other thread. Let everyone that reads these posts
decide who is right and who is not.

Steve VE9SRB

5304. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 20:12:52 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B155444.59E8D73B@IEEE.org>
Source record: 161704

VE9SRB wrote:

Steve, Let me say this is a three-sided argument. Walt and I have our disagreements and you and I have our disagreements. Please don't assume that by questioning something you say, that I am agreeing with Walt.

> I calculate the forward source wave beyond the Zo match point
> from the system's initial conditions. In Cecil's Zo match example, the
> forward source voltage in the 150 ohm line is 106.066 V.

I understand your "forward source wave" to be related to the power, Pgen(1-rho^2). Please define what you mean by the "delivered" wave. Is that the wave incident to the load? Or is that the generated wave?

> I then calculate
> the re-reflected voltage from the reflected voltage and the physical
> reflection coefficient seen in the rearward direction at the transmission
> line junction. In Cecil's example, the re-reflected voltage is 35.355 V.
> The total voltage is therefore 141.42 V. The total forward power is simply
> determined to be 133.33 W (141.42^2 / 150). When the two waves are in
> phase, the voltages and currents add algebraically, the powers do not.

The conservation of energy principle says that the separate energies must add up to the total energy. The only difference between power and energy is delta-time. The RF Guru Blind Spot requires defining the conservation of energy equation as irrelevant. :-)

> You on the other hand (IMO) look at the known steady state conditions of
> forward, reflected and delivered power and then assume that the 100 W of
> delivered power is the forward source power beyond the Zo match point.

Without playing games with definitions of "forward source power", if no reflected energy is allowed past the Z0-match point to reach the source, then all the generated energy is "delivered" to the 150 ohm line. Pgen(1-rho^2) is delivered in your "forward source power" and Pgen(rho^2) is delivered through wave cancellation. But *ALL* the generated energy is delivered into the 150 ohm line, just by two separate means. Playing word games will not change that fact that *ALL* the generated energy winds up flowing toward the load in the forward energy wave. Ignoring the wave cancellation energy does not make it disappear from the universe. Walt is correct in asserting that each bucket of generated energy is passed down the L/C bucket brigade toward the load because there is no other place for it to go. Actually, Walt didn't assert that but I'll bet he will agree with it. :-)
****

Answer required here: A non-answer will speak volumes!
All 100 joules/sec of the generated power (energy) winds up flowing toward
the load because there is nowhere else for it to go. If you say, "No it
doesn't", Steve, please tell us where exactly in the universe that 25w of
Pgen(rho^2) joules/sec goes. If you decline to answer, I will know why.
****
> The
> delivered power beyond the Zo match point and the forward source power
> beyond the Zo match point are two different things.

Please define "delivered power beyond the Z0-match" and "forward source
power". A large part of our disagreement could be semantic.

> As for your voltage calculations, it is incorrect to assume that the
> delivered power has an associated forward voltage.

Oh? Is that why you assume that the 75w of forward source power has
an associated voltage of 106.066 volts? (Leading question alert :-)

> Mathematically your discussion works but only because of the relationship
> that Pdel = Pwd - Pref. IMO, one point that you fail to miss is that all of

"fail to miss"???? :-) Was that a Freudian slip? Could it be that
"mathematically your discussion works" but doesn't tell us anything
about the underlying physics?

> your equations and math work even if a Zo match does not exist, simply
> because Pdel is always equal to Pfwd - Pref (Zo real). I could duplicate
> your math and translate it into the total power re-reflection concept when a
> Zo match does not exist. Would you conclude that a total re-reflection of
> power occurs even when a Zo match does not exist?

I wouldn't. I won't speak for Walt. When a Z0-match doesn't exist,
wave cancellation is not complete. Whatever percent of wave cancelation
occurs, that is the magnitude of the energy contributed to the forward
energy on its way back to the load. This equation always works:

Forward power to the load equals Pgen(1-rho^2) plus Pref(rho^2) plus
destructive/constructive interference power re-routed back toward
the load.

There's your missing energy in every equation, Steve. It works in
each and every case. Conservation of energy is preserved. I fail to
see why this is not mentioned in any of my textbooks.

> As for both powers being from the same source: IMO, that's partially
> correct. The two forward signals that are combining in the forward
> direction are from the same source but they are not time coherent (this may
> be a poor choice of words or perspective).

Yep, that seems to be a very poor choice of words. They are certainly
coherent if we keep everything constant at steady-state with a continuous
wave source. If we were doing very fast frequency hopping or considering
modulation components, they wouldn't be coherent and some of the analysis

would fall apart. Let the KISS principle prevail.

> From the transient perspective,
> the forward source wave [F(t)] that created the re-reflected wave is long
> gone.

Yep, presumably Pfor(1-rho^2) has been radiated.

> The re-reflected wave is not combining with the time coherent forward
> source wave that created it. The total forward wave is equal to the forward
> source wave plus the re-reflections (ghosts) of previous forward source
> waves. I don't want to go down this road much more.

The reflected wave source could actually be a phase-locked generator
with the same source impedance as the reflected waves. :-) But let's
not go down that road either. May KISS prevail. I like your kinder,
gentler half, Steve.
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5305. What went wrong with my 2m dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 20:14:26 UTC
From: Randon Loeb <rloebusenet@cticonsulting.net>
Message-ID: <3B1554A2.E1DA00F8@cticonsulting.net>
Source record: 161702

I built a 2m dipole for indoor use on the second floor of a house, a few inches away from a wall. Two lengths of coathanger 19.5 inches in length, one soldered to the center wire of rg-58 coax, the other soldered to the braid. they were seperated by about 3-4 inches, exposed leads from coax about 2-3 inches. the radials feed into a 'cross' piece of plastic PVC, which is itself screwed to the wall to allow for rotation of the antena from vertical to horizontal if needed. the radials do touch the pvc as the enter the 'cross chamber'.
When testing the antenna, I found SWR on 2meters to range from 17 to 9. After much trial and error, found that adding lengths of wire to the center fed radial brought swr to around 2 on most of the band. No wire added to the braid-connected radial seemed to make any difference. Seemed to me that I didn't have a dipole, just a vertical with no radials? I assume I ended up with a center fed vertical of some kind, and it was an ok length for the band. On 5 watts (my lowest setting) I was able to speak to some local hams who copied me clearly.

So I tested the following:
1. Continuity from radio through swr meter to antenna- no problem.
2. Connections - well it eventually came down to 2, so they are probably ok.
3. impedence matches - cables are all 50 ohm coax, but no idea what antenna is alone, no way to test it. although i thought it would be around 50. coax cables are both about 5 ft. long. from radio to swr meter is rg-8 from radioshack, from swr to antenna is rg-58 from radioshack.

What possibly happened? Is a balun necessary? I must admit I am a little confused about what is meant between balanced and unbalanced antennas and lines. I have heard I need a balun, on the other hand, I've seen pictures of emergency dipoles where the coax is simply exposed 19.5 inches and the braid goes in one direction and the center in another. Note that nothing in the station is RF grounded, as it is on the second floor of the house, and none of the equipment has any grounding screws anyhow.

Thanks for any advice.
73
KG4NLX

5306. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 20:24:10 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1556EA.AB5147BA@IEEE.org>
Source record: 161705

Richard Clark wrote:
> These discussion are a far cry from academic, and because of that we
> find ad hominem, conspiracy, cries of foul play, paranoia, and so on.

Richard, everyone except you has agreed to be nice.
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5307. Re: How to receive spread specturm transmissions from cordless phones?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 20:44:50 UTC
From: JB <ac6tk@nospamcybertime.net>
Message-ID: <9f3m45$2j7$1@madmax.keyway.net>
Source record: 161706
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.digital.misc,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.homebrew,rec.radio.amateur.misc,rec.radio.amateur.policy,rec.radio.amateur.spac

I'll do it for $3,500,000. 2 year contract. No guarantees.

Jim Bradshaw, ac6tk@cybertime.net
http://www.cybertime.net/~ac6tk

"Tim Willson" <tim.willson@state.mn.us> wrote in message
news:3B11DE3E.EA5ADEC6@state.mn.us...
: Anyone have any success or or suggestions about the method and
: equipment used to recover spread spectrum cordless telephone
: transmissions? They are in the 902 to 927 mHz range. Thanks
: for answering here, so that all may benefit.
:

5308. Re: New antenna patented. Really cool

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 20:55:03 UTC
From: n6buu@aol.com
Message-ID: <20010530165503.11279.00002429@ng-mp1.aol.com>
Source record: 161707

AH YES, THE VAUNTED 13 ELEMENT RUMOR ANTENNA , FED WITH 26.53694 OHM 3 CONDUCTOR COAX. THE GAIN IS SAID TO BE BETWEEN -0 AND +1000 DB

BUT HAS NOT BEEN VARIFIED!!

HANK, N6BUU

5309. Re: I Need Ideas For A Townhouse Antenna!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 20:55:56 UTC
From: Dennis Kaylor <k4oxg@tampabay.rr.com>
Message-ID: <3B155E40.4BB08951@tampabay.rr.com>
Source record: 161708

hey mike
what i would do is buy something like the cushcraft R7 or R8 and hide it in those trees so it was very hard to see from the street or another thing you could do is string a thin wire all the way around the roof line of the house using old 300 ohm twin lead stand offs screwed into the facia every so many inches and if the home owners association asks tell them its a support wire for xmas lights....grin
or put up a BIG flag pole made of PVC piple and hide the R8 inside of it
good luck

Mike Barrett wrote:

> Hello,
> I just moved into a townhouse with the usual antenna restrictions
> (though oddly enough I can have whatever I want if I can get the Review
> Board to issue me a permit!). I've got a row of trees that is about
> 50-60 feet long and about 10-15 feet wide with a path running through
> it. The trees are about 10 feet behind the house. The trees are small;
> the tallest is maybe 30 feet. There is one huge tree on the far right
> side of the row, but the house is located on the far left. I'm thinking
> about running a small wire up one of the trees to make a vertical, or
> just using the screwdriver in my car and putting it up when I want to
> operate. I'd like to remain stealth if at all possible, so the
> screwdriver is more or less a last resort. I'd like to stay out of the
> attic because I'd like to use SSB (apologies to the CW junkies out
> there, I've just never enjoyed the mode). Any other designs I should
> consider? Opinions on the designs I mentioned before? I've been using
> my mobile station when I want to get on HF for the last year or so, but
> it gets mighty cold in the winter and mighty hot in the summer! Thanks
> for any help,
> Mike
>
> PS - Yes, I did look at deja.com but most of the articles suggest attic
> antennas. I'm hoping to do something with these trees...

5310. Re: What went wrong with my 2m dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 21:27:42 UTC
From: Ralph Mowery <rmowery@dialpoint.net>
Message-ID: <3B1565CE.695CC7EB@dialpoint.net>
Source record: 161709

The two lenghts of coathanger should only be seperated by about 1/2 inch
or so. By sepearting them 2 to 3 inches you actually made them that
much longer (electrically).

Enclosing the coathangers in the pvc will have some effect on the
length, but probalby not much. Make sure the coax comes off the antenna
at a right amgle for a distance of a couple of feet or more. Where the
coax seperates becomes an effective part of the antenna. I would start
with about 20 inches or maybe 21 inches and start cutting off an equal
ammount from each end tuil the swr starts to fall. Cut about 1/2 inch
at a time . When the swr starts to fall then you may want to cut off
less each time. Check the swr at 144.120 or so then at 146 and then
147.95. That is assuming and FM transmitter to keep things legal and in
the band. The frequencies are not really criticl, just near the ends
and middle of the band. The swr should start falling off and as it
rises on the low end and falls in the middle and high end is wher you
need to pay attention to the cutting as you are getting close. If you
check the swr from the low end to the high end you will see the swr drop
to a low value and then start back up. There it is at the lowest is
where the antenna is resonate. You will probalby not see the swr go
much lelow 1.5 to 1 with the dipole.

The swr of a simple dipole like this will be aout 1.5 to 1 as the
impedance of the dipole is around 70 ohms and not 50. This should be ok
as you are using short lengths of coax. At VHF is is almost impossiable
to get a ground in the same sense it is used for on the low bands. At
vhf the anenna if used outside should be grounded for lightning
protection, not for reasons of RF.

A dipole is balanced and the coax is an unbalanced line. If the
feedline was made similar to TV twinlead then you would have a ballanced
feed. I would not worry about the balance and unbalanced thing in the
case of simple antennas. While there is a lot of theory about this and
much discussion about this need I don't think it is worth it in most
cases.
Randon Loeb wrote:
>
> I built a 2m dipole for indoor use on the second floor of a house, a few
> inches away from a wall. Two lengths of coathanger 19.5 inches in
> length, one soldered to the center wire of rg-58 coax, the other
> soldered to the braid. they were seperated by about 3-4 inches, exposed
> leads from coax about 2-3 inches. the radials feed into a 'cross' piece
> of plastic PVC, which is itself screwed to the wall to allow for
> rotation of the antena from vertical to horizontal if needed. the
> radials do touch the pvc as the enter the 'cross chamber'.

> When testing the antenna, I found SWR on 2meters to range from 17 to 9.
> After much trial and error, found that adding lengths of wire to the
> center fed radial brought swr to around 2 on most of the band. No wire
> added to the braid-connected radial seemed to make any difference.
> Seemed to me that I didn't have a dipole, just a vertical with no
> radials? I assume I ended up with a center fed vertical of some kind,
> and it was an ok length for the band. On 5 watts (my lowest setting) I
> was able to speak to some local hams who copied me clearly.
>
> So I tested the following:
> 1. Continuity from radio through swr meter to antenna- no problem.
> 2. Connections - well it eventually came down to 2, so they are probably
> ok.
> 3. impedence matches - cables are all 50 ohm coax, but no idea what
> antenna is alone, no way to test it. although i thought it would be
> around 50. coax cables are both about 5 ft. long. from radio to swr
> meter is rg-8 from radioshack, from swr to antenna is rg-58 from
> radioshack.
>
> What possibly happened? Is a balun necessary? I must admit I am a
> little confused about what is meant between balanced and unbalanced
> antennas and lines. I have heard I need a balun, on the other hand,
> I've seen pictures of emergency dipoles where the coax is simply exposed
> 19.5 inches and the braid goes in one direction and the center in
> another. Note that nothing in the station is RF grounded, as it is on
> the second floor of the house, and none of the equipment has any
> grounding screws anyhow.
>
> Thanks for any advice.
> 73
> KG4NLX

5311. Re: What went wrong with my 2m dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 21:47:06 UTC
From: "M.J.Powell" <mike@pickmere.demon.co.uk>
Message-ID: <STfm+AAapWF7Ew$4@pickmere.demon.co.uk>
Source record: 161545

In article <3B1554A2.E1DA00F8@cticonsulting.net>, Randon Loeb <rloebusen
et@cticonsulting.net> writes
>I built a 2m dipole for indoor use on the second floor of a house, a few
>inches away from a wall. Two lengths of coathanger 19.5 inches in
>length, one soldered to the center wire of rg-58 coax, the other
>soldered to the braid. they were seperated by about 3-4 inches, exposed
>leads from coax about 2-3 inches. the radials feed into a 'cross' piece
>of plastic PVC, which is itself screwed to the wall to allow for
>rotation of the antena from vertical to horizontal if needed.

Why are you using radials with a dipole?

Mike
--
M.J.Powell

5312. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 22:34:08 UTC
From: richardharrison@webtv.net
Message-ID: <16492-3B157560-70@storefull-115.iap.bryant.webtv.net>
Source record: 161710

Cecil, W6RCA wrote:
"I`ve thought of this a lot--"

So have I. In 40+ years using a Bird wattmeter it seems to usually produce a forward power indication which is the sum of the delivered power and the reflected power. I`ve concluded that the original source is an open-circuit for disjointed reflected power but that the internal impedance of the sender is much lower than infinity.

The two parcels of energy in the reflected wave are exactly equal in magnitude and opposite in phase. Anything that adds to zero is not likely to affect a load, but an open-circuit load will affect a traveling wave.

I`ll try to test the idea and see what happens to reflections some fine day.

Best regards, Richard Harrison, KB5WZI

5313. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 22:55:02 UTC
From: richardharrison@webtv.net
Message-ID: <16494-3B157A46-10@storefull-115.iap.bryant.webtv.net>
Source record: 161711

Steve, VE9SRB wrote:
"The re-reflected wave is not combining with the time coherent forward source wave that created it."

One thing that I remember (I hope correctly) from my engineering education 50 years ago is that two waves of the same frequency don`t occupy the same space, direction, and time without creating a third resultant wave which replaces the original waves for all practical purposes.

Best regards, Richard Harrison, KB5WZI

5314. Old Cushcraft yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-30 23:37:53 UTC
From: eightrrr@yahoo.com
Message-ID: <f4048e16.0105301537.15631458@posting.google.com>
Source record: 161712

Anyone have a manual or specs on an old (vintage 1960's) Cushcraft 6 meter 5 element yagi. This antenna had one piece 3/4" dia elements, a gamma match and possibly a 12' boom. The Cushcraft manual web page only shows the current version.

5315. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 00:17:24 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <R1gR6.4693$5V1.1641048@nntp3.onemain.com>
Source record: 161713

VE9SRB <srbest@att.net> wrote in message
news:AAbR6.53153$t12.4175951@bgtnsc05-news.ops.worldnet.att.net...
>
> "Walter Maxwell" <w2du@iag.net> wrote in message
> news:8U8R6.676$C64.867937@nntp1.onemain.com...
I could duplicate
> your math and translate it into the total power re-reflection concept when
a
> Zo match does not exist. Would you conclude that a total re-reflection of
> power occurs even when a Zo match does not exist?

Total reflection does NOT exist when a Zo match does not exist. In that case
some of the energy is transmitted rearward through and not re-reflected.
>
> As for both powers being from the same source: IMO, that's partially
> correct.

You'd better review Chipman, who you say is one of your most reliable
references. He wouldn't agree with you.

>The two forward signals that are combining in the forward
> direction are from the same source but they are not time coherent (this
may
> be a poor choice of words or perspective).

According to Chipman that's a perfect choice of words.

> From the transient perspective,
> the forward source wave [F(t)] that created the re-reflected wave is long
> gone. The re-reflected wave is not combining with the time coherent
forward
> source wave that created it.

Again Steve, review Chipman. Tell me, should I believe you or Chipman?

> Steve VE9SRB

Walt, W2DU

>

5316. High SWR with HF9V

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 00:40:30 UTC
From: Donald Munson <munsonjr@bellatlantic.net>
Message-ID: <2qgR6.474$Uj5.125074@typhoon2.ba-dsg.net>
Source record: 161714

I recently purchased an HF9V from a fellow ham here in the area. The antenna has been used in the past as a club Field Day antenna and infrequently at his home. The installation went without event and I have installed 13 radials of about 30 feet each (500 feet of wire total).

My problem is that I can not get the SWR into range. The lowest band is 17 meters and it is a respectable 1.5:1. 20 and 10 are around 3:1 and the other bands are generally worse with 75 meters being 10:1! This is the same results without radials and with varying numbers of radials. Nothing makes a difference.

My TS-440 does not like this and the best I can get out of it for power is 40 watts on 10 meters (I get a bit less than 20 watts on 20 meters and next to nil on 75).

Any ideas as to what may be happening? I continually read posts in various places of people about using the HF9V without radials and getting good results so I'm fairly sure this is NOT a normal response for this antenna.

Don, KB4RAC
Waldorf, MD

5317. Re: Low Altitude Horizontal Loop

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 00:42:17 UTC
From: k9sqg@aol.com
Message-ID: <20010530204217.25444.00002145@ng-ma1.aol.com>
Source record: 161715

invalid email address precludes a response

5318. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 00:46:50 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <kvgR6.776$C64.1026002@nntp1.onemain.com>
Source record: 161716

```
VE9SRB <srbest@att.net> wrote in message
news:ipcR6.53234$t12.4182528@bgtnsc05-news.ops.worldnet.att.net...
>
> "Walter Maxwell" <w2du@iag.net> wrote in message
> news:nnaR6.707$C64.904314@nntp1.onemain.com...
> >
> > VE9SRB <srbest@att.net> wrote in message
> > news:L0OQ6.50403$t12.3933937@bgtnsc05-news.ops.worldnet.att.net...
> > >
> > > "Walter Maxwell" <w2du@iag.net> wrote in message
> > > news:5BxP6.1072$z83.1280647@nntp1.onemain.com...
> > > >
> > > > > A calculation of the correct network output impedance can be made
> > > starting
> > > > with the input impedance, but the attenuation factor MUST be
reversed
> to
> > > > obtain the correct answer in returning to the starting point--the
> load.
> > > But
> > > > BEWARE of the MEASUREMENT looking into the output with the input
> > > > terminated--the answer is wrong unless the network is lossless. With
> > > > attenuation the difference in the value measured with he analyzer
and
> > the
> > > > true output impedance increases in proportion to the amount of
> > > attenuation.
> > > >
> > > > Walt, W2DU
> > > >
> > > > PS--an entire Appendix in Reflections II explains this concept, with
a
> > > Smith
> > > > Chart presentation.
> > > >
> > > >
> > >
> > > Walter:
> > >
> > > Your method of calculating the impedance seen looking rearward into a
> > > network is simply incorrect and anyone familiar with network impedance
> > > calculations would recognize your gross errors.
> > >
> > > First, you do not start with the input impedance to the network to
```

> perform
> > > the calculation. Second, you do not use negative resistance to
perform
> > the
> > > calculation. You're mixing and confusing separate concepts. Its
> > appalling
> > > that that an electrical engineer would make such simple mistakes on
such
> a
> > > simple topic.
> > >
> > > Let's do this with a lossless network, so you can't play games with
the
> > > negative resistance calculations.
> > >
> > > Here's the circuit:
> > >
> > > TX ---- 50 ohm line ---- Network
> > >
> > > The impedance seen looking rearward into the transmitter is 25 + j25
> ohms.
> > > The 50 ohm line is 1 WL long and lossless. The network is a series
> > > C - -j200 ohms, parallel L +j100 ohms, a series C -j200 ohms. The
> network
> > > is lossless.
> > >
> > > What is the impedance seen looking rearward into the network? Show
your
> > > method of calculation.
> > >
> > > Steve VE9SRB
> >
> > Steve, you didn't read the Appendix 9A in Reflections II. If you did
read
> it
> > you don't understand it, else you would not have made the statement you
> did
> > above concerning the proper use of attenuation, depending on the
direction
> > of the calculation. Please look again at the proof in the Smith Chart
> > diagram.
> >
> > If you can't understand the concept proven there it's easy to see why
you
> > can't appreciate Cecil's point that 75 w + 33 w doesn't = 133.33 w.
> >
> > Walt, W2DU
> >
> >
>

> Walter:
>
> Why can't you just answer a question or enter into a real discussion?
> Simply claiming that I'm wrong and that you are right is of no value to
you,
> me or anyone else on this NG.
>
> Answer the question I posed above and show your calculations. Answer the
> question posed in the other thread. Let everyone that reads these posts
> decide who is right and who is not.
>
> Steve VE9SRB
>
Steve, no one is going to learn anything from solving that example using a lossless network. Besides, they are weary of your problems.

Now it's my turn. In Reflections go to my BASIC program lintrnsm.bas, or Program HP2, both for transmission-line impedance transformation. (They are in Chapter 15.) Note the instructions for the correct prompts to set the program for transforming in the correct direction, either from input to output or from output to input. (The original version 'lintrnsm.bas' program was written in 1974, and has been used successfully by many RF engineers since then. You are the only one to ever find a problem with using the correct attenuation factor determined by the direction of the calculation. Like I said earlier, Dean Straw used lintrnsm.bas to test his published tl.exe and tla.exe programs, which are used widely.)

Then work a problem with either program and see what happens when using the incorrect attenuation factor. This is a lesson you need to learn that can't be learned by solving the lossless network problem you offered. If you still don't see what's happening, then read the aforementioned Appendix over and over with a open mind. If that doesn't help then it's hopeless and I give up.

Walt, W2DU

5319. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 01:21:34 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B159C9E.81A9E3E@IEEE.org>
Source record: 161717

Richard Harrison wrote:
> The two parcels of energy in the reflected wave are exactly equal in
> magnitude and opposite in phase.

That's true of a Z0-match but not true at a non-Z0-match. At a non-Z0-match, the wave cancellation is incomplete so some of the not-re-reflected power continues on toward the source.
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5320. Re: What went wrong with my 2m dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 01:28:16 UTC
From: Randy <randyap@geocities.delete.com>
Message-ID: <P2hR6.3656$6t.1996513@newsrump.sjc.telocity.net>
Source record: 161718

Ralph's suggestions should get you on the right track. An SWR of 1.5 should be achievable with a little work and patience. Antenna building has become one of my favorite aspects of ham radio.

I'm proud of my little copper dipole shown in this image:

http://www.qvsinc.com/images/antenna.jpg

The horizontal section and T are plastic, even though it doesn't show clearly in the picture. The verticals are 1/2" copper leftovers from a j-pole antenna. I started with 19 1/2" in length, then trimmed for best SWR (1.5 at 146.000, I could probably do a little better).

This is my "motel" antenna to hang in the window of motels when traveling. Performance is much better than that of a rubber duck antenna.

"Ralph Mowery" <rmowery@dialpoint.net> wrote in message
news:3B1565CE.695CC7EB@dialpoint.net...
> The two lenghts of coathanger should only be seperated by about 1/2 inch
> or so. By sepearting them 2 to 3 inches you actually made them that
> much longer (electrically).
>
> Enclosing the coathangers in the pvc will have some effect on the
> length, but probalby not much. Make sure the coax comes off the antenna
> at a right amgle for a distance of a couple of feet or more. Where the
> coax seperates becomes an effective part of the antenna. I would start
> with about 20 inches or maybe 21 inches and start cutting off an equal
> ammount from each end tuil the swr starts to fall. Cut about 1/2 inch
> at a time . When the swr starts to fall then you may want to cut off
> less each time. Check the swr at 144.120 or so then at 146 and then
> 147.95. That is assuming and FM transmitter to keep things legal and in
> the band. The frequencies are not really criticl, just near the ends
> and middle of the band. The swr should start falling off and as it
> rises on the low end and falls in the middle and high end is wher you
> need to pay attention to the cutting as you are getting close. If you
> check the swr from the low end to the high end you will see the swr drop
> to a low value and then start back up. There it is at the lowest is
> where the antenna is resonate. You will probalby not see the swr go
> much lelow 1.5 to 1 with the dipole.
>
> The swr of a simple dipole like this will be aout 1.5 to 1 as the
> impedance of the dipole is around 70 ohms and not 50. This should be ok
> as you are using short lengths of coax. At VHF is is almost impossiable
> to get a ground in the same sense it is used for on the low bands. At
> vhf the anenna if used outside should be grounded for lightning
> protection, not for reasons of RF.

>
> A dipole is balanced and the coax is an unbalanced line. If the
> feedline was made similar to TV twinlead then you would have a ballanced
> feed. I would not worry about the balance and unbalanced thing in the
> case of simple antennas. While there is a lot of theory about this and
> much discussion about this need I don't think it is worth it in most
> cases.
> Randon Loeb wrote:
> >
> > I built a 2m dipole for indoor use on the second floor of a house, a few
> > inches away from a wall. Two lengths of coathanger 19.5 inches in
> > length, one soldered to the center wire of rg-58 coax, the other
> > soldered to the braid. they were seperated by about 3-4 inches, exposed
> > leads from coax about 2-3 inches. the radials feed into a 'cross' piece
> > of plastic PVC, which is itself screwed to the wall to allow for
> > rotation of the antena from vertical to horizontal if needed. the
> > radials do touch the pvc as the enter the 'cross chamber'.
> > When testing the antenna, I found SWR on 2meters to range from 17 to 9.
> > After much trial and error, found that adding lengths of wire to the
> > center fed radial brought swr to around 2 on most of the band. No wire
> > added to the braid-connected radial seemed to make any difference.
> > Seemed to me that I didn't have a dipole, just a vertical with no
> > radials? I assume I ended up with a center fed vertical of some kind,
> > and it was an ok length for the band. On 5 watts (my lowest setting) I
> > was able to speak to some local hams who copied me clearly.
> >
> > So I tested the following:
> > 1. Continuity from radio through swr meter to antenna- no problem.
> > 2. Connections - well it eventually came down to 2, so they are probably
> > ok.
> > 3. impedence matches - cables are all 50 ohm coax, but no idea what
> > antenna is alone, no way to test it. although i thought it would be
> > around 50. coax cables are both about 5 ft. long. from radio to swr
> > meter is rg-8 from radioshack, from swr to antenna is rg-58 from
> > radioshack.
> >
> > What possibly happened? Is a balun necessary? I must admit I am a
> > little confused about what is meant between balanced and unbalanced
> > antennas and lines. I have heard I need a balun, on the other hand,
> > I've seen pictures of emergency dipoles where the coax is simply exposed
> > 19.5 inches and the braid goes in one direction and the center in
> > another. Note that nothing in the station is RF grounded, as it is on
> > the second floor of the house, and none of the equipment has any
> > grounding screws anyhow.
> >
> > Thanks for any advice.
> > 73
> > KG4NLX

5321. Re: Dipole vs Isotron

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 01:48:55 UTC
From: gpewitt@execpc.com
Message-ID: <3b15a37c$0$12824$272ea4a1@news.execpc.com>
Source record: 161519

Mode ssb, power 10 to 100 watts. When 10 meters is open 10 watts works all of Europe, when it's not open 100 watts won't do it. 20 meters is great. 40 meters is even better. 80 meters has a narrow bandwidth for low swr but the antenna tunner takes care of that. I set them all up with my MFJ analyser and used it to find the best settings on the antenna tunner. I wrote the settings down and it's a cinch to tune up. On 80 I have to make adjustments as I tune through the band but I can peak on receiver noise.
On 10 meters the setting on my MFJ-949C tunner is 6L6. On 15 it's 6A4.5, on 20 it's 6B3.5, on 40 it's 8D6, and on 80 it's 2J4. That's in the middle of each band. With the two antenna outputs on the tunner I don't even need an antenna switch between the two antennas. For 6 meters I use a halo antenna and for 2 meters and 440 mhz I have a Cushcraft vertical. The Isotrons are mounted on a five foot mast supported by rooftop tripods sitting on the floor of my second floor condo. I hope to get them out on the balcony soon as they are kind of in the way.
73 Gary N9ZSV

On Wed, 30 May 2001 10:07:54 -0500, CAM <Cecil.A.Moore@IEEE.org> wrote:

>Gary Pewitt wrote:
>> I have the 10, 15, and 20 meter Isotrons set up in my guest bathroom.
>> Try that with a rotatable dipole. I work Europe from Wisconsin all
>> the time with them.
>
>What mode, power?
>--
>cheers, Cecil
>
>
>-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
>http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
>-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5322. Re: I Need Ideas For A Townhouse Antenna!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 02:22:20 UTC
From: Bob Miller <bamiller@texas.net>
Message-ID: <HqkVO4qJJ0+MgNiatTB5aZ9XPowp@4ax.com>
Source record: 161520

Dennis Kaylor <k4oxg@tampabay.rr.com> wrote:

>hey mike
>what i would do is buy something like the cushcraft R7 or R8 and hide it in
>those trees

Well, having run an R-3 from a house, and having had a neighbor who ran an R-7 from his house, I just don't know that these antennas are "tree-able." You'd have to climb up into the damned tree, and put heavy straps around a limb -- these are antennas that require a **very** sturdy support pole; this sounds like a nightmare to me. You could get killed, trying to mount an R7 or 8 in a tree :-(

Personally, I'd give the B&W AP-10A a try. It worked very well for me, from a 3rd story apartment window.

Have fun...

Bob
k5qwg

5323. Re: What went wrong with my 2m dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 02:30:15 UTC
From: richardharrison@webtv.net
Message-ID: <520-3B15ACB7-95@storefull-116.iap.bryant.webtv.net>
Source record: 161522

Randon Loeb wrote:
"What possibly happened?"

It happens all the time. Resonance doesn`t produce an antenna feedpoint impedance matching the coax. A 1/2-wave dipole in free-space is near 75 ohms resistive at its drivepoint. But, you are not in free-space so your impedance is likely quite different.

A 1/4-wave antenna is likely to have about 1/2 the drivepoint resistance of a 1/2-wave dipole, but alas it is subject to the same external influences as the dipole. Its drivepoint impedance may be 30 or 40 ohms. Bending the ground plane radials down may help raise the impedance, but it is still unlikely to perfectly match the coax, even though the antenna may be resonant.

Don`t worry. Be happy.

Dipoles usually don`t need radials.

Baluns can isolate the coax and help it from becoming an undesirable part of the antenna.

I`ve used folded monopoles, ground planes, twinlead j-poles, coaxial antennas, and various gain antennas. All were satisfactory. 2-meter antennas are easy. Try a few. You can even buy them cheaply. MFJ has some. Building gives more satisfaction, so please yourself.

Best regards, Richard Harrison, KB5WZI

5324. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 02:31:54 UTC
From: Richard Clark <kb7qhc@home.com>
Message-ID: <js9bht07dbc3qkmb76dps9gg1vvvqnua88@4ax.com>
Source record: 161521

On Wed, 30 May 2001 17:55:02 -0500 (CDT), richardharrison@webtv.net (Richard Harrison) wrote:

>Steve, VE9SRB wrote:
>"The re-reflected wave is not combining with the time coherent forward
>source wave that created it."
>
>One thing that I remember (I hope correctly) from my engineering
>education 50 years ago is that two waves of the same frequency don`t
>occupy the same space, direction, and time without creating a third
>resultant wave which replaces the original waves for all practical
>purposes.
>
>Best regards, Richard Harrison, KB5WZI

Hi Richard,

How prescient to have qualified your remembrance.

Two waves occupying the same space, and so on, can hardly cause a third to appear. For one, unless the media is non-linear, there can be no product. I would suppose that you are saying that this "third" wave is the composite of the original two and given they occupy the same space, and so on, differentiation between them, much less their composite is very difficult.

Another way to put it would be to say that all fields can be said to be sources for the fields that emanate from the point(s) we are considering. This is known as Huygen's principle which is largely a subject of Optics, but is equally applicable in our discussions here. Under such an understanding, there are an infinite number of sources and waves.

And as a relativistic sidebar, at the speed of light space has no volume and it is thus impossible for two waves to co-exist within your context. In the frame of reference of any wave, the transit from source to sink is instantaneous - two waves could never be in transit at the same "time" - there is none of that either. (fun and games with Lorentz)

73's
Richard Clark, KB7QHC

5325. opinions please..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 02:42:49 UTC
From: Matt <matt_patt123@yahoo.com>
Message-ID: <9f4aeh0ti5@enews3.newsguy.com>
Source record: 161524

Here is my situation..

I have a 13el and a 17el cushcraft. The 17el is made for SSB and the 13el is good across the whole two meter band. What I was planning is just having both antennas on my tower and use the 17el for SSB work (mounted horizontal) and the other for regular two meter (also mounted horizontal???). Or should I
find someone that would take my 17el in exchange for another 13 and then I could stack them for better gain. But, correct me if I'm wrong, if I stack them the polarization would then become vertical and it would work good for 2 meter but it wouldn't for 2 meter SSB since just about everyone that runs SSB is running horizontal. I guess it all comes down to what I want to do. Do I really want to mess around with SSB or just stick to regular 2 meter work. With a stacked array like that I could probably make many more contacts then I could with just one 13el antenna but then I wouldn't be able to work SSB (which I dont even have a radio for yet anyway). decisions, decisions, decisions... What do you think would be the easiest and best way to do it.

73s,
Matt
KC5YTV

5326. Re: EZNEC modeling of hamsticks?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 02:52:46 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3B15B1FE.B0003382@eznec.com>
Source record: 161523

You can model a loading coil with EZNEC by inserting a wire the length and outside diameter of the coil, then inserting in it a load with the coil's L and R. But this gets less and less accurate at the coil gets to be a more significant part of the overall radiator. From a picture of a Hamstick, the "loading coil" is about half the radiator -- and the high current half at that. So I don't think you can do a very good job of modeling a Hamstick with EZNEC.

The shape of the pattern will be virtually the same as for a plain wire the length of the Hamstick, and you can build this simple model to see the pattern shape. But you won't be able to get an accurate idea of the efficiency or feedpoint impedance.

Roy Lewallen, W7EL

Robert Joshua Chen wrote:
>
> I just recently put together a vertical dipole consisting of two 80m hamsticks, and
> I'd like to model the system with EZNEC to see what the radiation efficiency and
> pattern look like at different frequencies (I'll be using an autocoupler at
> feedpoint). Has anyone carried out this model on EZNEC before? How would I take into
> account the helical loading that the hamsticks employ?
>
> Thanks,
> -Robert
>
> --

5327. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 03:10:10 UTC
From: richardharrison@webtv.net
Message-ID: <2519-3B15B612-89@storefull-112.iap.bryant.webtv.net>
Source record: 161525

Cecil, W6RCA wrote:
"That`s true of a Zo-match but not at a non-Zo-match. At a non-Zo-match, the wave cancellation is incomplete so some of the not-re-reflected power continues on toward the source."

That would be a case where the wattmeter connected in a pigtail to the transmitter would show remaining reflected power, I suppose.

I was considering a simple case of 50-ohm coax between a transmitter and a mis-matched load. The reflected power from the mismatch suffers a phase reversal of either the voltage or current, but not both, as a result of reflection. This forces the voltage and current in a reflected wave to always be 180-degrees out-of-phase after only one reflection.

The E and H fields each contain exactly 50% of the total energy in the reflected wave.

There is little that can change the described phase and magnitude relations. This is why the Bird wattmeter works.

I think this may also be the reason that the transmitter seems to reflect 100% of the reflected wave.

Best regards, Richard Harrison, KB5WZI

5328. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 03:41:14 UTC
From: richardharrison@webtv.net
Message-ID: <4661-3B15BD5A-13@storefull-117.iap.bryant.webtv.net>
Source record: 161527

Richard Clark wrote:
"I would suppose that you are saying that "third" wave is the composite of the original two and given they occupy the asame space, and so on, differentiation between them, much less their composite is very difficult."

Thank you for clarifying my posting. I`ll never compete with a real wordsmith.

Richard clark is exactly correct. I did not mean multiplication of the waves. No second harmonic or anything like that. I only meant that "differentiation between them is very difficult".
Thanks again to Richard Clark.

Best regards, Richard Harrison, KB5WZI

5329. Re: I Need Ideas For A Townhouse Antenna!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 03:55:41 UTC
From: mike.luther@ziplog.com
Message-ID: <thbg5t9cvm2b40@corp.supernews.com>
Source record: 161526

In <HqkVO4qJJ0+MgNiatTB5aZ9XPowp@4ax.com>, Bob Miller <bamiller@texas.net> writes:
>Dennis Kaylor <k4oxg@tampabay.rr.com> wrote:

You can use one of these smaller capcitively tuned loops and disquise it as part of the geometry of a large circular bird house! Of course, depending on the power and all, if your loop is a neat circulary "perch rail" around the bottom, the birds might get the hot foot, but you can put neat plexiglass blocking panes behind the holes and none of 'em will be able to nest. It'll take a sharp neighbor to even spot it!

Grin...

--> Sleep well; OS2's still awake! ;)

Mike.Luther@ziplog.com
Mike.Luther@f3000.n117.z1.fidonet.org

5330. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 04:02:44 UTC
From: richardharrison@webtv.net
Message-ID: <3305-3B15C264-95@storefull-113.iap.bryant.webtv.net>
Source record: 161528

I wrote:
"There is little that can change the described phase and magnitude relations. (180-degrees between volts and amps in a reflected wave. Also, equal E&H fields.)"

Before someone else notes the obvious, a short-circuit or open on the line can temporarily eliminate E or H. It can also put the volts and amps back in-phase.

I recall a simpler time when we could post in half-truths.

Best regards, Richard Harrison, KB5WZI

5331. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 04:14:38 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B15C52E.564AD79A@IEEE.org>
Source record: 161529

Richard Clark wrote:
> Under such an understanding, there are an infinite number of sources
> and waves.

I've been thinking about that, Richard. The most simple implementation of that statement would be to take one wave and mentally break it into two identical waves.

Consider a 100 volt at 2 amp wave in phase in a piece of 50 ohm coax. Can we mentally break that wave into two waves, each 50 volts at 1 amp? 50 volts plus 50 volts equals 100 volts and 1 amp plus 1 amp equals 2 amps so it looks like voltages add up and currents add up right. What about power? We started with 200 watts and ended up with 100 watts. Where did the other 100 watts go?
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

5332. Re: I Need Ideas For A Townhouse Antenna!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 04:43:08 UTC
From: Pete <pete@etep.com>
Message-ID: <wZjR6.49949$Ji.1218994@news1.rdc1.il.home.com>
Source record: 161530

Have you thought about an Isotron antenna?

<mike.luther@ziplog.com> wrote in message
news:thbg5t9cvm2b40@corp.supernews.com...
> In <HqkVO4qJJ0+MgNiatTB5aZ9XPowp@4ax.com>, Bob Miller <bamiller@texas.net>
writes:
> >Dennis Kaylor <k4oxg@tampabay.rr.com> wrote:
>
> You can use one of these smaller capcitively tuned loops and disquise it
> as part of the geometry of a large circular bird house! Of course,
> depending on the power and all, if your loop is a neat circulary "perch
> rail" around the bottom, the birds might get the hot foot, but you can
> put neat plexiglass blocking panes behind the holes and none of 'em will
> be able to nest. It'll take a sharp neighbor to even spot it!
>
> Grin...
>
> --> Sleep well; OS2's still awake! ;)
>
> Mike.Luther@ziplog.com
> Mike.Luther@f3000.n117.z1.fidonet.org
>

5333. Re: Motorizing a Tower

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 05:12:39 UTC
From: Larry Anderson <w6lar@cybertime.net>
Message-ID: <3B15D2C7.912DEE55@cybertime.net>
Source record: 161531

Dick, from the responses I see for your question I think your on the rigth track. I have a GlennMartin tower with Voyager 7 Hazer. It rides a set of rails up and down the tower. They provided a hand crank that takes FOREVER to operate. So like a few others here I use the two nuts on the winch shaft and socket into a half inch drill to run the hand winch. Just be sure the winch has a good brake. Mine stays put wherever you stop it.

Larry W6LAR

Dick Hughes wrote:

> I have a Telex/Hygain tower that I would like to motorize. Even
> though I bought a new hand winch with a lower gear and longer handle,
> it still puts too much strain on the old bod. If I am going to go
> from doing something strenuous, I would rather it not be from cranking
> up my tower! :-)
>
> I can't find anything about motors on the Hygain site. Maybe just not
> posted yet. Probably way too expensive anyway. I have considered
> using an SUV winch. They have more than enough power, are reversible
> and are made to be out in the elements. I could put a large battery
> at the base of the tower in a marine box and use a small solar cell to
> keep it charged. If I then used the new Ramsey cordless remote I
> wouldn't need any wires at all from the shack to the tower. Of course
> I would need some limit switches to prevent disaster.
>
> Has anyone tried this? If so, which winch did you use? Thanks for
> any input.
>
> Dick - W6CCD

5334. Re: opinions please..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 05:59:01 UTC
From: Roger Leone <arleone@inreach.com>
Message-ID: <B4IR6.41799$ca.57900@news.inreach.com>
Source record: 161532

Matt:

Stacking two horizontally polarized antennas will not result in a vertically polarized signal...it will still be horizontally polarized.

Most 2 Meter operation is on FM. Almost all FM operation is done with vertically polarized antennas and unless you are down in a ravine, a simple vertical antenna will allow you to work every repeater within many miles. You will also be able to contact lots of locals on simplex. If there are distant stations that you cannot contact with a simple vertical antenna, then you might want to use a yagi with its elements in a vertical plane to give you vertical polarization.

I am curious how you ended up with two yagi antennas before you got your feet wet on 2 meters. I hope it wasn't because of a pushy salesman.

Good luck,

Roger K6XQ

5335. Re: What went wrong with my 2m dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 07:25:26 UTC
From: Mark Keith <nm5k@wt.net>
Message-ID: <3B15F1E6.4741@wt.net>
Source record: 161533

Randon Loeb wrote:
> I built a 2m dipole for indoor use on the second floor of a house, a few
> inches away from a wall. Two lengths of coathanger 19.5 inches in
> length, one soldered to the center wire of rg-58 coax, the other
> soldered to the braid. they were seperated by about 3-4 inches, exposed
> leads from coax about 2-3 inches. the radials feed into a 'cross' piece
> of plastic PVC, which is itself screwed to the wall to allow for
> rotation of the antena from vertical to horizontal if needed. the
> radials do touch the pvc as the enter the 'cross chamber'.
> When testing the antenna, I found SWR on 2meters to range from 17 to 9.
> After much trial and error, found that adding lengths of wire to the
> center fed radial brought swr to around 2 on most of the band. No wire
> added to the braid-connected radial seemed to make any difference.
> Seemed to me that I didn't have a dipole, just a vertical with no
> radials? I assume I ended up with a center fed vertical of some kind,
> and it was an ok length for the band. On 5 watts (my lowest setting) I
> was able to speak to some local hams who copied me clearly.
>
> So I tested the following:
> 1. Continuity from radio through swr meter to antenna- no problem.
> 2. Connections - well it eventually came down to 2, so they are probably
> ok.
> 3. impedence matches - cables are all 50 ohm coax, but no idea what
> antenna is alone, no way to test it. although i thought it would be
> around 50. coax cables are both about 5 ft. long. from radio to swr
> meter is rg-8 from radioshack, from swr to antenna is rg-58 from
> radioshack.
>
> What possibly happened? Is a balun necessary? I must admit I am a
> little confused about what is meant between balanced and unbalanced
> antennas and lines. I have heard I need a balun, on the other hand,
> I've seen pictures of emergency dipoles where the coax is simply exposed
> 19.5 inches and the braid goes in one direction and the center in
> another. Note that nothing in the station is RF grounded, as it is on
> the second floor of the house, and none of the equipment has any
> grounding screws anyhow.
>
> Thanks for any advice.
> 73
> KG4NLX

It's too long. You add the 2-3 inch leads from the coax, and you are
quite a bit too long. You can place the elements very close together at

the center. 1/2 to 1 inch could be used. With those long leads you are probably resonant about 125 mhz. You must include the length of the leads with the element lengths. So if the lead is 3 inches long, you only need about 16-16.5 inches element length. MK
--
http://web.wt.net/~nm5k

5336. Re: Helical Antenna Design - how do I?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 07:55:08 UTC
From: Gisli Sigurdsson <gisli.sigurdsson@ZZZvisir.is>
Message-ID: <3b165b48.0@news.isholf.is>
Source record: 161534

Try this link:

http://users.bigpond.net.au/jhecker/

/GGS

"ken" <kld68@my-deja.com> wrote in message
news:d1523471.0105291822.727bbc1f@posting.google.com...
> I'm interested in building a homebrew helical antenna similar to a
> HamStick (tm). Over the weekend I tried simply winding 1/4 wave
> at 20M of insulated wire on an old broomstick and working it against
> a counterpoise. Since this worked only marginally well on receive
> I didn't try transmitting with it, although it did seem to tune up OK on
low power.
> I'm sure there are some calculations that I'm missing here to do this
right,
> so can anyone point me to some resources with design specs for this type
> of antenna?
>
> Thanks,
> Ken

5337. Re: EZNEC modeling of hamsticks?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 08:33:53 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9f4vkk$pc9$1@plutonium.btinternet.com>
Source record: 161535

If a hamstick is something like a helical antennna with a loading
rod above it, it can be modelled with program HELICAL3 available by
downloading from following website.
--
****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

5338. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 11:27:38 UTC
From: richardharrison@webtv.net
Message-ID: <7153-3B162AAA-3@storefull-116.iap.bryant.webtv.net>
Source record: 161536

Cecil, W6RCA wrote:
"Consider a 100 volt at 2 amp wave in phase in a piece of 50 ohm coax.
Can we mentally break that wave into 2 waves, each 50 volts at 1 amp?"

Since power equals E squared over R, and I squared times R, 100 watts in 50 ohms is 70,7 volts and 1.414 amps, not 100 volts at 1 amp (100 ohms is the wrong impedance). This has nothing to do with quadrature, but everything to do with multiplication and impedance.

Best regards, Richard Harrison, KB5WZI

5339. Re: opinions please..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 12:14:29 UTC
From: "Rob St.Denis" <tstdenis3160@home.com>
Message-ID: <FAqR6.94789$425.25155846@news3.rdc1.on.home.com>
Source record: 161537

> is good across the whole two meter band. What I was planning is just
having
> both antennas on my tower and use the 17el for SSB work (mounted
horizontal)
> and the other for regular two meter (also mounted horizontal???). Or
should

Well most people run FM vertical, so there would be 20dB of cross
polarisation loss there ...

> I
> find someone that would take my 17el in exchange for another 13 and then I
> could stack them for better gain. But, correct me if I'm wrong, if I
stack
> them the polarization would then become vertical and it would work good
for
> 2 meter but it wouldn't for 2 meter SSB since just about everyone that
runs
> SSB is running horizontal. I guess it all comes down to what I want to
do.

How about this ... trade it for another 17 (perhaps have to pay a wee bit on
top) and polarize them in between vertical and horizontal at pi/4.

> Do I really want to mess around with SSB or just stick to regular 2 meter

SSB can Be quite interesting if it's active in your area ...

> work. With a stacked array like that I could probably make many more
> contacts then I could with just one 13el antenna but then I wouldn't be
able
> to work SSB (which I dont even have a radio for yet anyway). decisions,
> decisions, decisions... What do you think would be the easiest and best
way
> to do it.
>
> 73s,
> Matt
> KC5YTV
>
>

5340. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 12:32:00 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <4RqR6.57362$4f7.4294753@bgtnsc06-news.ops.worldnet.att.net>
Source record: 161538

"Walter Maxwell" <w2du@iag.net> wrote in message
news:R1gR6.4693$5V1.1641048@nntp3.onemain.com...
>
> VE9SRB <srbest@att.net> wrote in message
> news:AAbR6.53153$t12.4175951@bgtnsc05-news.ops.worldnet.att.net...
> >
> > "Walter Maxwell" <w2du@iag.net> wrote in message
> > news:8U8R6.676$C64.867937@nntp1.onemain.com...
> I could duplicate
> > your math and translate it into the total power re-reflection concept
when
> a
> > Zo match does not exist. Would you conclude that a total re-reflection
of
> > power occurs even when a Zo match does not exist?
>
> Total reflection does NOT exist when a Zo match does not exist. In that
case
> some of the energy is transmitted rearward through and not re-reflected.
> >

Okay, Walter.

I'm going to use the exact same logic, math and argument with a non-Zo match example that you use with a Zo match example.

Here's the example:

50 ohm source ---- Zo = 50 ---- X ---Zo = 150 --- Za = 50

Both lines are lossless. The 150 ohm line is 0.75 WL long

The forward power in the 50 ohm line is 100 W. The reflected power in the 50 ohm line is 64 W.

The forward power in the 150 ohm line is 48 W. The reflected power in the 150 ohm line is 12 W.

Looking at the steady state conditions we can determine that the power delivered to the 150 ohm line is 36 W. (Note that you always use delivered power in your discussion with the Zo match - you never actually use the correct forward source power) Note that the reflected power in the 150 ohm line is 12 W and the forward power is 48 W. Pdel = Pfwd - Pref. I conclude that the 12 W of reflected power is totally re-reflected and adds to the delivered power of 36 W, resulting in a total forward power of 48 W. 36 + 12 = 48. The "math" works and it is the exact same argument that you use with the Zo match.

Looking at voltage, we see that the total forward voltage in the 150 ohm line must be 85.853 V, the total reflected voltage must be 42.426 V. The 36 W of delivered power in the 150 ohm line would have a voltage of 73.484 V. Adding voltages as the Sqrt of the sum of the squares we have 85.853 V = Sqrt(42.426^2 + 73.484^2). The "math" works and it is the exact same argument that you use with the Zo match.

Based on your method of analysis, I guess we could conclude that a total re-reflection of power occurs even when a Zo match does not exist. Here's what you say to me when I disagree with you - if you disagree with this analysis then it is obvious that you do not understand the basic concepts.

The truth is that the above analysis is incorrect for the non Zo match AND it is incorrect for the Zo match.

> > As for both powers being from the same source: IMO, that's partially
> > correct.
>
> You'd better review Chipman, who you say is one of your most reliable
> references. He wouldn't agree with you.
>
> >The two forward signals that are combining in the forward
> > direction are from the same source but they are not time coherent (this
> may
> > be a poor choice of words or perspective).
>
> According to Chipman that's a perfect choice of words.
>
> > From the transient perspective,
> > the forward source wave [F(t)] that created the re-reflected wave is
long
> > gone. The re-reflected wave is not combining with the time coherent
> forward
> > source wave that created it.
>
> Again Steve, review Chipman. Tell me, should I believe you or Chipman?
>
> > Steve VE9SRB
>
> Walt, W2DU
>
> >

Your reference to Chipman is diversionary and unrelated to our points of disagreement. I would prefer that you focus on our points of disagreement and directly answer the questions I pose to you. Why do you continue to avoid those direct discussions?

Steve VE9SRB

5341. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 12:36:34 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <mVqR6.57365$4f7.4293015@bgtnsc06-news.ops.worldnet.att.net>
Source record: 161539

"Walter Maxwell" <w2du@iag.net> wrote in message
news:kvgR6.776$C64.1026002@nntp1.onemain.com...
>
> VE9SRB <srbest@att.net> wrote in message
> news:ipcR6.53234$t12.4182528@bgtnsc05-news.ops.worldnet.att.net...
> >
> > "Walter Maxwell" <w2du@iag.net> wrote in message
> > news:nnaR6.707$C64.904314@nntp1.onemain.com...
> > >
> > > VE9SRB <srbest@att.net> wrote in message
> > > news:L0OQ6.50403$t12.3933937@bgtnsc05-news.ops.worldnet.att.net...
> > > > >
> > > > "Walter Maxwell" <w2du@iag.net> wrote in message
> > > > news:5BxP6.1072$z83.1280647@nntp1.onemain.com...
> > > > > >
> > > > > > A calculation of the correct network output impedance can be
made
> > > > starting
> > > > > with the input impedance, but the attenuation factor MUST be
> reversed
> > to
> > > > > obtain the correct answer in returning to the starting point--the
> > load.
> > > > But
> > > > > BEWARE of the MEASUREMENT looking into the output with the input
> > > > > terminated--the answer is wrong unless the network is lossless.
With
> > > > > attenuation the difference in the value measured with he analyzer
> and
> > > the
> > > > > true output impedance increases in proportion to the amount of
> > > > attenuation.
> > > > > >
> > > > > Walt, W2DU
> > > > > >
> > > > > PS--an entire Appendix in Reflections II explains this concept,
with
> a
> > > > Smith
> > > > > Chart presentation.
> > > > > >
> > > > > >
> > > > >
> > > > Walter:

> > > >
> > > > Your method of calculating the impedance seen looking rearward into
a
> > > > network is simply incorrect and anyone familiar with network
impedance
> > > > calculations would recognize your gross errors.
> > > >
> > > > First, you do not start with the input impedance to the network to
> > perform
> > > > the calculation. Second, you do not use negative resistance to
> perform
> > > the
> > > > calculation. You're mixing and confusing separate concepts. Its
> > > appalling
> > > > that that an electrical engineer would make such simple mistakes on
> such
> > a
> > > > simple topic.
> > > >
> > > > Let's do this with a lossless network, so you can't play games with
> the
> > > > negative resistance calculations.
> > > >
> > > > Here's the circuit:
> > > >
> > > > TX ---- 50 ohm line ---- Network
> > > >
> > > > The impedance seen looking rearward into the transmitter is 25 + j25
> > ohms.
> > > > The 50 ohm line is 1 WL long and lossless. The network is a series
> > > > C - -j200 ohms, parallel L +j100 ohms, a series C -j200 ohms. The
> > network
> > > > is lossless.
> > > >
> > > > What is the impedance seen looking rearward into the network? Show
> your
> > > > method of calculation.
> > > >
> > > > Steve VE9SRB
> > >
> > > Steve, you didn't read the Appendix 9A in Reflections II. If you did
> read
> > it
> > > you don't understand it, else you would not have made the statement
you
> > did
> > > above concerning the proper use of attenuation, depending on the
> direction
> > > of the calculation. Please look again at the proof in the Smith Chart
> > > diagram.

> > >
> > > If you can't understand the concept proven there it's easy to see why
> you
> > > can't appreciate Cecil's point that 75 w + 33 w doesn't = 133.33 w.
> > >
> > > Walt, W2DU
> > >
> > >
> >
> > Walter:
> >
> > Why can't you just answer a question or enter into a real discussion?
> > Simply claiming that I'm wrong and that you are right is of no value to
> you,
> > me or anyone else on this NG.
> >
> > Answer the question I posed above and show your calculations. Answer
the
> > question posed in the other thread. Let everyone that reads these posts
> > decide who is right and who is not.
> >
> > Steve VE9SRB
> >
> Steve, no one is going to learn anything from solving that example using a
> lossless network. Besides, they are weary of your problems.
>
> Now it's my turn. In Reflections go to my BASIC program lintrnsm.bas, or
> Program HP2, both for transmission-line impedance transformation. (They
are
> in Chapter 15.) Note the instructions for the correct prompts to set the
> program for transforming in the correct direction, either from input to
> output or from output to input. (The original version 'lintrnsm.bas'
program
> was written in 1974, and has been used successfully by many RF engineers
> since then. You are the only one to ever find a problem with using the
> correct attenuation factor determined by the direction of the calculation.
> Like I said earlier, Dean Straw used lintrnsm.bas to test his published
> tl.exe and tla.exe programs, which are used widely.)
>
> Then work a problem with either program and see what happens when using
the
> incorrect attenuation factor. This is a lesson you need to learn that
can't
> be learned by solving the lossless network problem you offered. If you
still
> don't see what's happening, then read the aforementioned Appendix over and
> over with a open mind. If that doesn't help then it's hopeless and I give
> up.
>
> Walt, W2DU

>

The program you discuss is used to calculate the input impedance to a transmission line given the load impedance at the end of the line. It can also be used to determine the load impedance at the end of the line given the input impedance. These are not issues we disagree on. We are discussing how to correctly determine the impedance seen looking rearward into a network. This is not the same thing as trying to determine the load connected at the network output given the input impedance to the network.

Why do you continue to avoid a discussion surrounding the points that we disagree on?

Steve VE9SRB

5342. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 12:41:04 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <AZqR6.57372$4f7.4296053@bgtnsc06-news.ops.worldnet.att.net>
Source record: 161540

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B15420E.A5C52E20@IEEE.org...

>
> Now, I don't know *why* this works but it obviously works.

Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) cos(theta) works because it is an equation derived entirely from the vector addition of two forward vector voltages V1 and V2.

The magnitude of the total forward voltage resulting from the vector combination of two forward voltages V1 and V2 is given as

|Vtotal| = Sqrt[|V1|^2 + |V2|^2 + 2 |V1| |V2| cos(theta)]

|Vtotal|^2 = |V1|^2 + |V2|^2 + 2 |V1| |V2| cos(theta)

converting to a power relationship

Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) cos(theta)

Steve VE9SRB

5343. Re: antenna for aviation band

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 12:50:02 UTC
From: marc <spambots@eatthis.com>
Message-ID: <_5rR6.15396$_Y5.2436251@typhoon.ne.mediaone.net>
Source record: 161541

"Jim Weir" <jim@rst-engr.com> wrote in message
news:e0h7ht4vtbbh7ak0tnhm2kcebs5d31nakp@4ax.com...
> "marc" <spambots@eatthis.com>
> shared these priceless pearls of wisdom:
> This line of sight reception becomes very
> ->noticable as you come in to land at an airport. In the air you get
nonstop
> ->chatter from 10 different local airports on some frequencies, but as you
> ->descend it suddenly gets quiet, until all you can hear is yourself and
just
> ->nearby planes.
>
> The rule of thumb is that your line of sight radio reception distance is
given
> by the equation:
>
> Reception distance (miles) = 1.33 * (square root of antenna height in
feet).

thanks

Marc

5344. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 12:55:56 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B163F5C.125A090E@IEEE.org>
Source record: 161542

Richard Harrison wrote:
>
> Cecil, W6RCA wrote:
> "Consider a 100 volt at 2 amp wave in phase in a piece of 50 ohm coax.
> Can we mentally break that wave into 2 waves, each 50 volts at 1 amp?"
>
> Since power equals E squared over R, and I squared times R, 100 watts in
> 50 ohms is 70,7 volts and 1.414 amps, not 100 volts at 1 amp (100 ohms
> is the wrong impedance). This has nothing to do with quadrature, but
> everything to do with multiplication and impedance.

Well Richard, if we cannot mentally break that wave into 2 waves, each 50 volts at 1 amp, why can we do it in reverse? i.e. take two 50 volt at 1 amp waves and add them together to get 100 volts at 2 amps?

Consider the following lossless Z0-matched example:

170.7V---291.5 ohm twinlead---1/2WL 50 ohm coax---291.5 ohm load

On the 291.5 ohm twinlead, there's 100 watts of forward power and zero watts of reflected power because 170.7^2/291.5 = 100 watts and the 291.5 ohm twinlead sees a load of 291.5 ohms.

rho = 0.707 so the SWR on the coax is 5.83:1 and exactly half the incident power is reflected by the load.

Steve's V1 equals 50 volts and his V2 equals 50 volts. Adding them together in phase gives us 100 volts which is the forward voltage. Similarly, I1 equals 1 amp and I2 equals 1 amp and adding them together yields 2 amps.

So Steve says we can add 50 volts at 1 amp to 50 volts at 1 amp to get 100 volts at 2 amps. Why can't we take that 100 volts at 2 amp wave and reverse the process to get two 50 volt at 1 amp waves? You said above that we couldn't do that.
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5345. Re: I Need Ideas For A Townhouse Antenna!

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 12:58:04 UTC
From: Floyd Sense <sentek@sprintmail.com>
Message-ID: <wdrR6.5425$651.372003@newsread1.prod.itd.earthlink.net>
Source record: 161543

Use a random length, end fed wire. Black or gray insulation will make it
nearly invisible if you stick to smaller wire sizes. Feed it with an SGC
automatic antenna tuner, which can easily be hidden outdoors. You failed to
mention the bands of interest, but this configuration will work just fine on
80 thru 10 meters.

K8AC
Floyd Sense - Angier, NC
"Mike Barrett" <zootv@mgfairfax.rr.com> wrote in message
news:3B154B32.159C1F7A@mgfairfax.rr.com...
>
> Hello,
> I just moved into a townhouse with the usual antenna restrictions
> (though oddly enough I can have whatever I want if I can get the Review
> Board to issue me a permit!). I've got a row of trees that is about
> 50-60 feet long and about 10-15 feet wide with a path running through
> it. The trees are about 10 feet behind the house. The trees are small;
> the tallest is maybe 30 feet. There is one huge tree on the far right
> side of the row, but the house is located on the far left. I'm thinking
> about running a small wire up one of the trees to make a vertical, or
> just using the screwdriver in my car and putting it up when I want to
> operate. I'd like to remain stealth if at all possible, so the
> screwdriver is more or less a last resort. I'd like to stay out of the
> attic because I'd like to use SSB (apologies to the CW junkies out
> there, I've just never enjoyed the mode). Any other designs I should
> consider? Opinions on the designs I mentioned before? I've been using
> my mobile station when I want to get on HF for the last year or so, but
> it gets mighty cold in the winter and mighty hot in the summer! Thanks
> for any help,
> Mike
>
> PS - Yes, I did look at deja.com but most of the articles suggest attic
> antennas. I'm hoping to do something with these trees...
>
>

5346. Re: EZNEC modeling of hamsticks?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 12:58:55 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B16400F.E96E3550@IEEE.org>
Source record: 161544

Reg Edwards wrote:
> If a hamstick is something like a helical antennna with a loading
> rod above it, it can be modelled with program HELICAL3 available by
> downloading from following website.

Reg, how does your program handle a coil that has 30 close-spaced
turns/inch on a 1/2 inch fiberglas coil form?
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5347. Re: High SWR with HF9V

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 13:18:47 UTC
From: dputnick@alumni.caltech.edu
Message-ID: <9f5gbn$jkp@gap.cco.caltech.edu>
Source record: 161546

Donald Munson <munsonjr@bellatlantic.net> wrote:
[snip]
>My problem is that I can not get the SWR into range. The lowest band is 17
>meters and it is a respectable 1.5:1. 20 and 10 are around 3:1 and the
>other bands are generally worse with 75 meters being 10:1! This is the same
>results without radials and with varying numbers of radials. Nothing makes
>a difference.
[snip]
>Any ideas as to what may be happening? I continually read posts in various
>places of people about using the HF9V without radials and getting good
>results so I'm fairly sure this is NOT a normal response for this antenna.
>Don, KB4RAC

And I thought I was having a hard time with my HF6V. A few questions for
you, Don. Ground mount or roof mount? Are you using the 75 ohm matching
coax? Do you have the assembly manual?

don p KK6DP
--
Don Putnick
dputnick@alumni.caltech.edu

5348. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 13:19:16 UTC
From: VE9SRB <srbest@att.net>
Message-ID: <oxrR6.54573$t12.4336882@bgtnsc05-news.ops.worldnet.att.net>
Source record: 161547

"CAM" <Cecil.A.Moore@IEEE.org> wrote in message
news:3B155444.59E8D73B@IEEE.org...
> VE9SRB wrote:
>
> Steve, Let me say this is a three-sided argument. Walt and I have our
> disagreements and you and I have our disagreements. Please don't
> assume that by questioning something you say, that I am agreeing with
> Walt.
>

I accept that.

> > I calculate the forward source wave beyond the Zo match point
> > from the system's initial conditions. In Cecil's Zo match example, the
> > forward source voltage in the 150 ohm line is 106.066 V.
>
> I understand your "forward source wave" to be related to the power,
> Pgen(1-rho^2). Please define what you mean by the "delivered" wave.
> Is that the wave incident to the load? Or is that the generated wave?
>

The forward source wave is simply determined from the system's initial state where no reflections exist on the line. The forward source wave is determined from the Zo seen at the junction X. If a source is modeled as having a voltage V and an impedance Z and this source is connected to a line of Zo, then the forward source voltage delivered to the line is simply Vf = V (Zo / Z + Zo) - see Johnson page 98. The forward source power is determined as |Vf|^2 / Zo.

In your particular example, we need to determine the forward source wave in the 150 ohm line. This is determined from the forward source wave arriving at the 150 line and seeing the 150 Zo impedance as a discontinuity. If the forward source voltage arriving at the junction is Vs, then a reflected voltage Vr = Vs rhoX is created. The total forward source voltage transmitted into the 150 ohm line is Vf = Vs (1 + rhoX). So, the resulting forward source power is |Vf|^2 / Zo.

The delivered wave (bad term) - it should really be power - is the *net* power delivered to the line. In the initial state, where no reflections exist on the line, the forward source power and the delivered power are the same. When a reflection arrives at the junction X, the forward source power remains unchanged but the delivered power now changes and is equal to Pfwd - Pref. The *total* forward power will also change. The total forward wave is the vector combination of the forward source wave plus the re-reflected wave. The total forward power changes accordingly.

The delivered power is not a forward traveling power. The delivered power is a * net result* of the levels of forward and reflected power developed in the line. There is no *forward* traveling voltage associated with the delivered power. From a voltage and impedance perspective, the delivered power is determined from the *total* voltage developed in the line: Vtotal = Vfwd + Vref and the effective line impedance Zin (this is not Zo). Pdel = |Vtotal|^2 / Zin.

> > I then calculate
> > the re-reflected voltage from the reflected voltage and the physical
> > reflection coefficient seen in the rearward direction at the
transmission
> > line junction. In Cecil's example, the re-reflected voltage is 35.355
V.
> > The total voltage is therefore 141.42 V. The total forward power is
simply
> > determined to be 133.33 W (141.42^2 / 150). When the two waves are in
> > phase, the voltages and currents add algebraically, the powers do not.
>
> The conservation of energy principle says that the separate energies
> must add up to the total energy. The only difference between power and
> energy is delta-time. The RF Guru Blind Spot requires defining the
> conservation of energy equation as irrelevant. :-)
>

The conservation of energy requires that the energy in the system balance as follows: Pdel = Pfwd - Pref and that the *net* power flowing into the junction be equal to the *net* power flowing out of the junction. The law of conservation of energy does not restrict how the forward or rearward waves (powers) combine. They combine through the vector addition of voltage and current. The law of conservation of energy does not require that an independently applied power of 75 W and an independently applied power of 8.33 W, when combined together, must result in a power of 83.33 W.

We are not discussing constant power sources applied together, nor are we discussing the addition of power in a closed loop. We are discussing constant vector voltages applied simultaneously to the same impedance.

> > You on the other hand (IMO) look at the known steady state conditions of
> > forward, reflected and delivered power and then assume that the 100 W of
> > delivered power is the forward source power beyond the Zo match point.
>
> Without playing games with definitions of "forward source power", if no
> reflected energy is allowed past the Z0-match point to reach the source,
> then all the generated energy is "delivered" to the 150 ohm line.

I agree with this statement. Remember though that the amount delivered power is a net end result of the process.

> Pgen(1-rho^2) is delivered in your "forward source power" and Pgen(rho^2)
> is delivered through wave cancellation. But *ALL* the generated energy is
> delivered into the 150 ohm line, just by two separate means. Playing word
> games will not change that fact that *ALL* the generated energy winds up

> flowing toward the load in the forward energy wave. Ignoring the wave
> cancellation energy does not make it disappear from the universe. Walt
> is correct in asserting that each bucket of generated energy is passed
> down the L/C bucket brigade toward the load because there is no other
> place for it to go. Actually, Walt didn't assert that but I'll bet he
> will agree with it. :-)
>
****
> Answer required here: A non-answer will speak volumes!
> All 100 joules/sec of the generated power (energy) winds up flowing toward
> the load because there is nowhere else for it to go. If you say, "No it
> doesn't", Steve, please tell us where exactly in the universe that 25w of
> Pgen(rho^2) joules/sec goes. If you decline to answer, I will know why.
>
****
>

In your particular example, there is a process of vector wave combination in the rearward direction and a process of vector wave combination in the forward direction. These two processes do balance one another. The rearward combination of two vector waves results in a *net* power flow of 0 W. The forwards combination of vector waves results in a *net* power flow of 133.33 W. The delivered power is the result and can be determined from the difference between forward and reflected powers. It is a balancing process consistent with the laws of conservation of energy. I really don't understand why you must convince yourself that the energy must somehow reverse direction. To discuss further we really should go back to the example I set up with the Zo match established through the combination of two parallel transmission lines. This example should really cause you to think about the process.

> The
> > delivered power beyond the Zo match point and the forward source power
> > beyond the Zo match point are two different things.
>
> Please define "delivered power beyond the Z0-match" and "forward source
> power". A large part of our disagreement could be semantic.
>

I defined these above.

> > As for your voltage calculations, it is incorrect to assume that the
> > delivered power has an associated forward voltage.
>
> Oh? Is that why you assume that the 75w of forward source power has
> an associated voltage of 106.066 volts? (Leading question alert :-)
>

Because the forward source wave is actually a traveling wave. The delivered power is simply a result of the difference between forward and reflected powers. The delivered power is not "traveling". The forward and rearward waves are the only waves traveling. The delivered power is simply a net

result.

> > Mathematically your discussion works but only because of the
relationship
> > that Pdel = Pwd - Pref. IMO, one point that you fail to miss is that
all of
>
> "fail to miss"???? :-) Was that a Freudian slip? Could it be that
> "mathematically your discussion works" but doesn't tell us anything
> about the underlying physics?
>

Yes, a slip.

> > your equations and math work even if a Zo match does not exist, simply
> > because Pdel is always equal to Pfwd - Pref (Zo real). I could
duplicate
> > your math and translate it into the total power re-reflection concept
when a
> > Zo match does not exist. Would you conclude that a total re-reflection
of
> > power occurs even when a Zo match does not exist?
>
> I wouldn't. I won't speak for Walt. When a Z0-match doesn't exist,
> wave cancellation is not complete. Whatever percent of wave cancelation
> occurs, that is the magnitude of the energy contributed to the forward
> energy on its way back to the load. This equation always works:
>
> Forward power to the load equals Pgen(1-rho^2) plus Pref(rho^2) plus
> destructive/constructive interference power re-routed back toward
> the load.
>
> There's your missing energy in every equation, Steve. It works in
> each and every case. Conservation of energy is preserved. I fail to
> see why this is not mentioned in any of my textbooks.
>

I discussed this in a response to Walter.

> > As for both powers being from the same source: IMO, that's partially
> > correct. The two forward signals that are combining in the forward
> > direction are from the same source but they are not time coherent (this
may
> > be a poor choice of words or perspective).
>
> Yep, that seems to be a very poor choice of words. They are certainly
> coherent if we keep everything constant at steady-state with a continuous
> wave source. If we were doing very fast frequency hopping or considering
> modulation components, they wouldn't be coherent and some of the analysis
> would fall apart. Let the KISS principle prevail.
>
> > From the transient perspective,

> > the forward source wave [F(t)] that created the re-reflected wave is
long
> > gone.
>
> Yep, presumably Pfor(1-rho^2) has been radiated.
>
> > The re-reflected wave is not combining with the time coherent forward
> > source wave that created it. The total forward wave is equal to the
forward
> > source wave plus the re-reflections (ghosts) of previous forward source
> > waves. I don't want to go down this road much more.
>
> The reflected wave source could actually be a phase-locked generator
> with the same source impedance as the reflected waves. :-) But let's
> not go down that road either. May KISS prevail. I like your kinder,
> gentler half, Steve.
> --
> cheers, Cecil
>

Cecil, I'm going to be offline for a several days. I I don'r respond, I'm
not ignoring you.

Steve

5349. T-Tuner Design & Performance - New program.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 13:21:52 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9f5h7u$1lq$1@uranium.btinternet.com>
Source record: 161548

NEW PROGRAM " T_TUNER.exe "

This program assists with selecting maximum component values
necessary to secure an impedance match when confronted with a
specified wide range of feeder or antenna input impedances.

For given coil and capacitor Q's, and power input, the power
dissipated and lost in each component is calculated. Also all
currents and voltages.

Input and ouput image impedances are calculated. The program will
demonstrate that the output image impedance is the conjugate of the
feedline input imedance. By first of all setting Q values to
infinity, it will also demonstrate that when a conjugate match
exists at one end of a network a conjugate match will exist at the
other end only when the network is lossless. Or conversely, if a
conjugate match exists at one end of a lossy network, a conjugate
match cannot exist at the other end.

A timely program.

51 kilobytes. One file only. Not zipped up. Download program
T_MATCH in a few seconds. Run immediately.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

5350. Re: Motorizing a Tower

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 13:38:11 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <19ichtgoei8e642otgh1p4j96f9dj9c25c@4ax.com>
Source record: 161549

The drill idea sounds pretty good to me. I'm going to try it.

Dick - W6CCD

On Wed, 30 May 2001 22:12:39 -0700, Larry Anderson
<w6lar@cybertime.net> wrote:

>Dick, from the responses I see for your question I think your on the rigth
>track. I have a GlennMartin tower with Voyager 7 Hazer. It rides a set of
>rails up and down the tower. They provided a hand crank that takes FOREVER
>to operate. So like a few others here I use the two nuts on the winch
>shaft and socket into a half inch drill to run the hand winch. Just be
>sure the winch has a good brake. Mine stays put wherever you stop it.
>
>Larry W6LAR
>
>Dick Hughes wrote:
>
>> I have a Telex/Hygain tower that I would like to motorize. Even
>> though I bought a new hand winch with a lower gear and longer handle,
>> it still puts too much strain on the old bod. If I am going to go
>> from doing something strenuous, I would rather it not be from cranking
>> up my tower! :-)
>>
>> I can't find anything about motors on the Hygain site. Maybe just not
>> posted yet. Probably way too expensive anyway. I have considered
>> using an SUV winch. They have more than enough power, are reversible
>> and are made to be out in the elements. I could put a large battery
>> at the base of the tower in a marine box and use a small solar cell to
>> keep it charged. If I then used the new Ramsey cordless remote I
>> wouldn't need any wires at all from the shack to the tower. Of course
>> I would need some limit switches to prevent disaster.
>>
>> Has anyone tried this? If so, which winch did you use? Thanks for
>> any input.
>>
>> Dick - W6CCD

5351. Re: T-Tuner Design & Performance - New program.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 14:22:30 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B1653A6.891C3EB@mwci.net>
Source record: 161550

Reg Edwards wrote:

> Input and ouput image impedances are calculated. The program will
> demonstrate that the output image impedance is the conjugate of the
> feedline input imedance. By first of all setting Q values to
> infinity, it will also demonstrate that when a conjugate match
> exists at one end of a network a conjugate match will exist at the
> other end only when the network is lossless. Or conversely, if a
> conjugate match exists at one end of a lossy network, a conjugate
> match cannot exist at the other end.

I have some questions:

There seems to be a *terrific* and *consuming* interest in the
conjugate matched PA/Tuner/Antenna system despite the facts that:

1) It requires a PA output resistance of 50 + j0 ohms.

2) It requires a lossless tuner and lossless coax.

3) In Amateur Radio applications it very seldom, if ever, makes even
the slightest difference in the performance of the system as long as
the specified value of 50 ohm resistive load is presented to the PA.

What is this all about? Why is it so important? And why we have to
justify it by inventing new and totally awesome fundamental principles
such as:

1) A PA output impedance is, by declaration, 50 +j0 ohms (no doubt
about it).

2) Lossy networks can be simultaneously conjugate matched at both ends
(no doubt about it).

3) Conjugate match everywhere is really important (no doubt about it).

What the hell is going on here?

Bill W0IYH

5352. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 14:36:29 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1656ED.BEFCC136@IEEE.org>
Source record: 161551

VE9SRB wrote:
> Ptotal = P1 + P2 + 2 Sqrt(P1) Sqrt(P2) cos(theta) works because it is an
> equation derived entirely from the vector addition of two forward vector
> voltages V1 and V2.

On another thread, I asked Richard H. if a a 100 volt at 2 amp wave could be broken into two waves of 50 volts at 1 amp each. He said no. Yet you can combine two waves of 50 volts at 1 amp each to obtain a single wave of 100 volts at 2 amps. One wonders why your process is not reciprocal?

Consider the following Z0-matched lossless system:

170.7V---291.5 ohm twinlead---x---1/2WL 50 ohm coax---291.5 ohm load

rho equals 0.707 so half the incident power is reflected.

The two forward vectors, V1 and V2, that you mention above are:

V1 = 50 volts and V2 = 50 volts. The corresponding currents are:
I1 = 1 amp and I2 = 1 amp.

You say that adding 50 volts at 1 amp plus 50 volts at 1 amp equals 100 volts at 2 amps. If you can go that direction, why can't you reverse the direction and take a 100 volt at 2 amp wave and create two waves of 50 volts at 1 amp each?
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5353. Re: T-Tuner Design & Performance - New program.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 15:04:12 UTC
From: tdonaly@cs.com
Message-ID: <20010531110412.24277.00001524@ng-cq1.news.cs.com>
Source record: 161552

Reg wrote;
>Input and ouput image impedances are calculated. The program will
>demonstrate that the output image impedance is the conjugate of the
>feedline input imedance. By first of all setting Q values to
>infinity, it will also demonstrate that when a conjugate match
>exists at one end of a network a conjugate match will exist at the
>other end only when the network is lossless. Or conversely, if a
>conjugate match exists at one end of a lossy network, a conjugate
>match cannot exist at the other end.
>
>A timely program.

I thought everyone already knew that. Why is it important, anyway, except as
a sure-fire way to start an argument between Walt and Steve?

Tom Donaly KA6RUH

5354. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 15:08:38 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B165E76.F5D93543@IEEE.org>
Source record: 161553

VE9SRB wrote:
>
> "CAM" <Cecil.A.Moore@IEEE.org> wrote in message
> > I understand your "forward source wave" to be related to the power,
> > Pgen(1-rho^2). Please define what you mean by the "delivered" wave.
> > Is that the wave incident to the load? Or is that the generated wave?
>
> The forward source wave is simply determined from the system's initial state
> where no reflections exist on the line.

I asked for a definition for "forward source wave", Steve, not a repeat
of a statement where I don't know the definitions.

> The forward source wave is
> determined from the Zo seen at the junction X. If a source is modeled as
> having a voltage V and an impedance Z and this source is connected to a line
> of Zo, then the forward source voltage delivered to the line is simply Vf =
> V (Zo / Z + Zo) - see Johnson page 98. The forward source power is
> determined as |Vf|^2 / Zo.

Again I ask. Is the "forward source wave" equal to Pgen(1-rho^2)? Please
give me a definition, Steve, not another statement using the words for which
I am asking definitions.

> In your particular example, we need to determine the forward source wave in
> the 150 ohm line. This is determined from the forward source wave arriving
> at the 150 line and seeing the 150 Zo impedance as a discontinuity. If the
> forward source voltage arriving at the junction is Vs, then a reflected
> voltage Vr = Vs rhoX is created. The total forward source voltage
> transmitted into the 150 ohm line is Vf = Vs (1 + rhoX). So, the resulting
> forward source power is |Vf|^2 / Zo.

Sure seems like |Vf|^2/Z0 = Pgen(1-rho^2) Does it?

> The delivered wave (bad term) - it should really be power - is the *net*
> power delivered to the line.

What line? Is delivered power the same as Pgen in a Z0-matched system?
Please provide definitions for the terms you are using, Steve, and when
you say "line" please indicate what line you are talking about.

> In the initial state, where no reflections
> exist on the line, the forward source power and the delivered power are the
> same. When a reflection arrives at the junction X, the forward source power
> remains unchanged but the delivered power now changes and is equal to Pfwd -
> Pref. The *total* forward power will also change. The total forward wave
> is the vector combination of the forward source wave plus the re-reflected

> wave. The total forward power changes accordingly.
>
> The delivered power is not a forward traveling power. The delivered power
> is a * net result* of the levels of forward and reflected power developed in
> the line. There is no *forward* traveling voltage associated with the
> delivered power. From a voltage and impedance perspective, the delivered
> power is determined from the *total* voltage developed in the line: Vtotal =
> Vfwd + Vref and the effective line impedance Zin (this is not Zo). Pdel =
> |Vtotal|^2 / Zin.

Please give a more understandable explanation, Steve. Your posting reminds
me of something I read in a Japanese to English translation one time.

"The user functions are functions that are used by the user."

> The conservation of energy requires that the energy in the system balance as
> follows:

You don't have to explain the conservation of energy principle, Steve. It
means you cannot get blood out of a turnip.

> I agree with this statement. Remember though that the amount delivered
> power is a net end result of the process.

You have not adequately defined "delivered power" so I don't know what
you are talking about yet.

> **********
> > Answer required here: A non-answer will speak volumes!
> > All 100 joules/sec of the generated power (energy) winds up flowing toward
> > the load because there is nowhere else for it to go. If you say, "No it
> > doesn't", Steve, please tell us where exactly in the universe that 25w of
> > Pgen(rho^2) joules/sec goes. If you decline to answer, I will know why.
> >
> **********
>
> In your particular example, there is a process of vector wave combination in
> the rearward direction and a process of vector wave combination in the
> forward direction. These two processes do balance one another. The
> rearward combination of two vector waves results in a *net* power flow of 0
> W. The forwards combination of vector waves results in a *net* power flow
> of 133.33 W. The delivered power is the result and can be determined from
> the difference between forward and reflected powers. It is a balancing
> process consistent with the laws of conservation of energy. I really don't
> understand why you must convince yourself that the energy must somehow
> reverse direction.

To quote yourself, Steve: Zero watts power flow in the rearward direction
and 133.33 watts power flow in the forward direction. All of the power
that was flowing in the rearward direction stops flowing in the rearward
direction and starts flowing in the forward direction. Why do you think
I'm too stupid to recognize that there is a reversal of direction
of some of the energy?

> I defined these above.

Not well enough, Steve. I still don't understand the definitions. How about
a dictionary definition format?

> Because the forward source wave is actually a traveling wave. The delivered
> power is simply a result of the difference between forward and reflected
> powers. The delivered power is not "traveling". The forward and rearward
> waves are the only waves traveling. The delivered power is simply a net
> result.

The power involved in the wave cancellation is also delivered, Steve. It
doesn't go rearward so it must go forward and therefore is delivered into
the forward wave energy. All the component energies are delivered through
the electromagnetic fields into the forward wave.

These postings are entirely too wordy. How about we agree to discuss this
one page at a time, i.e. 24 lines maximum for newly posted lines?
--
cheers, Cecil

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5355. Re: What went wrong with my 2m dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 15:11:57 UTC
From: Dave Shrader <W1MCE@arrl.net>
Message-ID: <3B165F1E.792E9A76@arrl.net>
Source record: 161554

The total length of your dipole from tip to tip should be 38.5 inches
for 146 MHz. I state this because the length of lead material, braid and
center conductor, as described is difficult to understand.

Your feedline (coax) will radiate because it is connected directly to
1/2 of the antenna. Add a coax choke at the feedpoint.

Finally, walls have all sorts of 'stuff' in them, wire, plumbing, nails,
screws, etc. Get the antanna AWAY from the walls by at least 1/4
wavelength (20 inches).

Any VSWR <2.0 to 1 is acceptable.

Dave, W1MCE
Manager, MK21 Antenna Range

Randon Loeb wrote:
>
> I built a 2m dipole for indoor use on the second floor of a house, a few
> inches away from a wall. Two lengths of coathanger 19.5 inches in
> length, one soldered to the center wire of rg-58 coax, the other
> soldered to the braid. they were seperated by about 3-4 inches, exposed
> leads from coax about 2-3 inches. the radials feed into a 'cross' piece
> of plastic PVC, which is itself screwed to the wall to allow for
> rotation of the antena from vertical to horizontal if needed. the
> radials do touch the pvc as the enter the 'cross chamber'.
> When testing the antenna, I found SWR on 2meters to range from 17 to 9.
> After much trial and error, found that adding lengths of wire to the
> center fed radial brought swr to around 2 on most of the band. No wire
> added to the braid-connected radial seemed to make any difference.
> Seemed to me that I didn't have a dipole, just a vertical with no
> radials? I assume I ended up with a center fed vertical of some kind,
> and it was an ok length for the band. On 5 watts (my lowest setting) I
> was able to speak to some local hams who copied me clearly.
>
> So I tested the following:
> 1. Continuity from radio through swr meter to antenna- no problem.
> 2. Connections - well it eventually came down to 2, so they are probably
> ok.
> 3. impedence matches - cables are all 50 ohm coax, but no idea what
> antenna is alone, no way to test it. although i thought it would be
> around 50. coax cables are both about 5 ft. long. from radio to swr
> meter is rg-8 from radioshack, from swr to antenna is rg-58 from
> radioshack.
>
> What possibly happened? Is a balun necessary? I must admit I am a

> little confused about what is meant between balanced and unbalanced
> antennas and lines. I have heard I need a balun, on the other hand,
> I've seen pictures of emergency dipoles where the coax is simply exposed
> 19.5 inches and the braid goes in one direction and the center in
> another. Note that nothing in the station is RF grounded, as it is on
> the second floor of the house, and none of the equipment has any
> grounding screws anyhow.
>
> Thanks for any advice.
> 73
> KG4NLX

5356. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 15:15:57 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B16602D.DD171030@IEEE.org>
Source record: 161555

VE9SRB wrote:
> The truth is that the above analysis is incorrect for the non Zo match AND
> it is incorrect for the Zo match.

The truth is that, as usual, you left out the energy involved in the destructive/constructive interference pattern. If you take that energy into account, everything balances correctly and all values of power are known and correct.

In every one of your and my examples, Steve, you try to sweep the wave cancellation energy under the rug. That lump in the rug has gotten so big that I can't even see over it and I'm 6'4".
--
cheers, Cecil

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5357. Re: T-Tuner Design & Performance - New program.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 15:20:10 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B16612A.9B2D4DA8@IEEE.org>
Source record: 161558

"William E. Sabin" wrote:
> There seems to be a *terrific* and *consuming* interest in the
> conjugate matched PA/Tuner/Antenna system despite the facts that:
>
> 1) It requires a PA output resistance of 50 + j0 ohms.

Doesn't it only require an internal tank circuit that matches
50 + j0 ohms to the PA output impedance?
--
cheers, Cecil

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5358. Re: opinions please..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 15:20:16 UTC
From: Dave Shrader <W1MCE@arrl.net>
Message-ID: <3B166112.F6FE7A97@arrl.net>
Source record: 161556

Mount the 17 element horizontally for SSB.

Above it, by about 1/2 wavelength, mount the 13 element vertically for
FM. The 1/2 wavelength separation is simply to achieve a little
e;ectrical separation and a good mechanical separation. The two antenns
should exhibit about -25 to -30 dB isolation. There will be some
interaction but it should be very low.

Feed each antenna with a dedicated coax line to a high quality coax
switch in your shack. Use the switch to select between SSB or FM modes
as you set up ur rig for SSB or FM.

73, Dave, W1MCE
Manager, MK21 Antenna Range
Matt wrote:
>
> Here is my situation..
>
> I have a 13el and a 17el cushcraft. The 17el is made for SSB and the 13el
> is good across the whole two meter band. What I was planning is just having
> both antennas on my tower and use the 17el for SSB work (mounted horizontal)
> and the other for regular two meter (also mounted horizontal???). Or should
> I
> find someone that would take my 17el in exchange for another 13 and then I
> could stack them for better gain. But, correct me if I'm wrong, if I stack
> them the polarization would then become vertical and it would work good for
> 2 meter but it wouldn't for 2 meter SSB since just about everyone that runs
> SSB is running horizontal. I guess it all comes down to what I want to do.
> Do I really want to mess around with SSB or just stick to regular 2 meter
> work. With a stacked array like that I could probably make many more
> contacts then I could with just one 13el antenna but then I wouldn't be able
> to work SSB (which I dont even have a radio for yet anyway). decisions,
> decisions, decisions... What do you think would be the easiest and best way
> to do it.
>
> 73s,
> Matt
> KC5YTV

5359. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 15:20:48 UTC
From: Bart Rowlett <bart@wb6hqk.ampr.org>
Message-ID: <3B166150.2B3C2434@wb6hqk.ampr.org>
Source record: 161557

CAM wrote:
>
> Richard Clark wrote:
> > Under such an understanding, there are an infinite number of sources
> > and waves.
>
> I've been thinking about that, Richard. The most simple implementation
> of that statement would be to take one wave and mentally break it into
> two identical waves.
>
> Consider a 100 volt at 2 amp wave in phase in a piece of 50 ohm
> coax. Can we mentally break that wave into two waves, each 50 volts
> at 1 amp?

Assuming the conditions for linearity exist, you can break it down into any number of components which when summed, give the actual voltage and current on the transmission line.

Normally, when analyzing a signal by decomposition into components, or basis functions, the analyst chooses a set of orthogonal basis functions. If and only if the components are orthogonal over an appropriate interval, is it possible to associate separate power flows with the individual components and have any useful accounting of the 'individual' power flows. In general, the power flow 'associated' with the individual components is fictitious, the only real power is V*I where V and I are the actual voltage (Vtotal if you wish) and current (Itotal). In the case where the components are orthogonal, the cross terms drop out and the analyst may be able to associate individual power flow 'components' to the constituent waves.

> 50 volts plus 50 volts equals 100 volts and 1 amp plus 1
> amp equals 2 amps so it looks like voltages add up and currents
> add up right.

You have chosen two identical basis functions, each with identical amplitude and phase. The two components are clearly not orthogonal and are in fact identical, which means you cannot separate out the individual power flows into independent components.

Power is V*I. Nowhere in your system can you find a 50 volt, one amp point to insert a wattmeter. Remember, wattmeters multiply V*I. Bird 'wattmeters' add V+-kI where k is an arbitrary chosen value usually equal to the characteristic impedance of the transmission line. The bird wattmeter scale is calibrated to read the power which would be delivered into a resistor of k ohms. Another thread on RF power measurment, and how wattmeters such as the Bird work would be

beneficial.

> What about power? We started with 200 watts and ended
> up with 100 watts. Where did the other 100 watts go?

Your 200 watts is real. You can insert a true wattmeter anywhere along the transmission line and measure 200 watts. The meter does not need to know anything about the assumed characteristic impedance of the transmission line. A Bird wattmeter can also be used to measure the true power by subracting the 'reflected' power reading from the 'forward' power reading. In principal, the difference will be the correct power regardless of the characteristic impedance the wattmeter is calibrated for. In practice, instrument and reading errors can become severe when the 'forward' and 'reflected' terms are similar.

Nowhere in your system can you insert a wattmetter, voltmeter, or ammeter and measure 50 volts at one amp. You have exploited the linearity of the system for _analysis_ purposes and decomposed the physical waveform into arbitrarily chosen component parts which are not orthogonal. If they were orthogonal, you could have kept track of the power flows separately (but you would still need to be very careful). If you wish to keep track of power, you cannot just assume the cross terms cancel without justification. In your case, the cross terms 'carry' as much power as the independent terms.

Attempting to apply the law of conservation of energy to the component parts is a red herring, plain and simple.

bart
wb6hqk

5360. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 15:24:16 UTC
From: richardharrison@webtv.net
Message-ID: <24818-3B166220-3@storefull-115.iap.bryant.webtv.net>
Source record: 161560

Cecil, W6RCA wrote:
"So Steve says we can add 50 volts at 1 amp to 50 volts at 1 amp to get 100 volts at 2 amps."

100 volts at 2 amps has the right voltage to current ratio, 50 ohms, but the power is 200 watts. The power each source can deliver is only 50 watts, 50 volts times 1 amp. Their sum can not exceed 100 watts.

100 watts in 50 ohms produces a voltage, sq rt of PR equals 70.7 volts. This produces 1.414 amps. Constant source powers and Ohm`s law constrain power in the example to 100 watts. Physics must be satisfied.

Best regards, Richard Harrison, KB5WZI

5361. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 15:24:56 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B166248.AC5EC008@IEEE.org>
Source record: 161559

VE9SRB wrote:
> Why do you continue to avoid a discussion surrounding the points that we
> disagree on?

Steve, I have asked you a couple of dozen questions that you have neglected
to answer. (Are you the Pot calling the Kettle black? :-)

One question in particular. In a lossless Z0-matched system:

Your P1 equals Pgen(1-rho^2) and your P2 equals Pref(rho^2)

That leaves Pgen(rho^2) and Pref(1-rho^2) unaccounted for.

Steve, what happens to Pgen(rho^2) and Pref(1-rho^2)???????
--
cheers, Cecil

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5362. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 15:48:47 UTC
From: kb7qhc@home.com
Message-ID: <3b1667bb.1036045925@news.seanet.com>
Source record: 161562

On Wed, 30 May 2001 23:14:38 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

> Can we mentally break that wave into two waves, each 50 volts
>at 1 amp?

Hi Cecil,

No.

73's
Richard Clark, KB7QHC

5363. Re: T-Tuner Design & Performance - New program.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 15:52:39 UTC
From: "William E. Sabin" <sabinw@mwci.net>
Message-ID: <3B1668C7.1C60CC4D@mwci.net>
Source record: 161561

CAM wrote:

> "William E. Sabin" wrote:
> > 1) It requires a PA output resistance of 50 + j0 ohms.
>
> Doesn't it only require an internal tank circuit that matches
> 50 + j0 ohms to the PA output impedance?

This kind of "matching" is not required for correct operation. What matters is that the impedance presented to the plate/drain/collector be the value that is needed for *specified* operation.

Impedance "matching" has nothing to do with it. Impedance "transforming" is what is needed. A quick reference to Everitt and Anner 1955 clearly explains in detail the important differences between these two ideas.

Bill W0IYH

5364. Re: Conjugate Match in a T-network

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 16:15:10 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <04uR6.258$I8.255394@nntp2.onemain.com>
Source record: 161563

VE9SRB <srbest@att.net> wrote in message
news:mVqR6.57365$4f7.4293015@bgtnsc06-news.ops.worldnet.att.net...
>

> The program you discuss is used to calculate the input impedance to a
> transmission line given the load impedance at the end of the line. It can
> also be used to determine the load impedance at the end of the line given
> the input impedance. These are not issues we disagree on. We are
> discussing how to correctly determine the impedance seen looking rearward
> into a network. This is not the same thing as trying to determine the
load
> connected at the network output given the input impedance to the network.
>
> Why do you continue to avoid a discussion surrounding the points that we
> disagree on?
>
> Steve VE9SRB
>
Steve, there is no need for discussion any further than what I already said
in Appendix 9A in Reflections II. The discussion there explains the method
for determining input and and load impedances, as well as explaining why one
obtains the wrong value for output impedance when using the wrong
attenuation factor when going from input to output.

If you disagree with what is said in that reference there is no more
discussion necessary. You believe what you have to believe and I'll do
likewise.

Walt, W2DU

5365. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 16:16:48 UTC
From: richardharrison@webtv.net
Message-ID: <11731-3B166E70-12@storefull-117.iap.bryant.webtv.net>
Source record: 161564

Steve, VE9SRB wrote:
"We are not discussing constant power sources applied together, nor are we discussing the addition of power in a closed loop."

If not, you are accident prone.

In a 1/2-wavelength of lossless foreign cable inserted within a 50-ohm transmission line, the same power enters and leaves the foreign cable.

The standing wave which results from internal reflections within the foreign cable comes from the mis-matches the foreign cable finds at its ends.

That is all there is to it. The forward power traveling from the transmitter end of the foreign cable toward the load must consist of the power from the transmitter, also called the delivered power, plus the reflected power circulating within the foreign cable.

The delivered power is absorbed by the load, but leaves behind the reflected power which didn`t fit the load impedance. This refused power is reflected back towards the source. So, the reflected power continues to circulate like a bag on the airport carrosel tthat nobody claims.

Best regards, Richard Harrison, KB5WZI

5366. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 17:14:50 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B167C0A.876AF0AE@IEEE.org>
Source record: 161565

Richard Harrison wrote:
>
> Cecil, W6RCA wrote:
> "So Steve says we can add 50 volts at 1 amp to 50 volts at 1 amp to get
> 100 volts at 2 amps."
>
> 100 volts at 2 amps has the right voltage to current ratio, 50 ohms, but
> the power is 200 watts. The power each source can deliver is only 50
> watts, 50 volts times 1 amp. Their sum can not exceed 100 watts.
>
> 100 watts in 50 ohms produces a voltage, sq rt of PR equals 70.7 volts.
> This produces 1.414 amps. Constant source powers and Ohm`s law constrain
> power in the example to 100 watts. Physics must be satisfied.

My point exactly, Richard.
--
cheers, Cecil

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5367. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 17:39:15 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B1681C3.B348D4C3@IEEE.org>
Source record: 161566

Bart Rowlett wrote:
> You have chosen two identical basis functions, each with identical
> amplitude and phase. The two components are clearly not orthogonal and
> are in fact identical, which means you cannot separate out the
> individual power flows into independent components.

But, but, but Bart, Steve combined them from independent components.
Why can't I separate them back into the same components that Steve used
when he combined them?

> Power is V*I. Nowhere in your system can you find a 50 volt, one amp
> point to insert a wattmeter.

Then how does Steve locate two 50 volt, one amp signals to combine?

> Another thread on RF power
> measurment, and how wattmeters such as the Bird work would be
> beneficial.

We've had that, Bart. You must have missed them. Everyone agreed how
they work. The only argument was whether they are a Wheatstone bridge
or not.

> Nowhere in your system can you insert a wattmetter, voltmeter, or
> ammeter and measure 50 volts at one amp.

Then why is Steve allowed to use those exact same quantities in
his mathematical manipulations? Why are you not objecting to Steve
doing exactly what you seem to be objecting to?

The following lossless Z0-match is the best illustration yet of what
is wrong with trying to glean some physics from Steve's interesting
mathematical manipulations.

170.7V---291.5 ohm twinlead---x---1/2WL 50 ohm coax---291.5 ohm load

Since rho=0.707, reflected power is 1/2 the forward power. Forward
power on the 291.5 ohm twinlead is 100 watts, reflected is zero.
Forward power on the coax is 200 watts, reflected is 100 watts.

Steve's P1 is 50 watts, his V1 is 50 volts, and his I1 is one amp

Steve's P2 is 50 watts, his V2 is 50 volts, and his I2 is one amp

He adds V1=50v plus V2=50v to get Vtot=100 volts

I1=1a plus I2=1a adds to get Itot=2 amps

He winds up with 100 volts at 2 amps from combining two 50 volt at 1 amp signals, i.e. he winds up with 200 watts by combining two 50 watt signals. You seem to object to that.

My take: Steve's P1 = Pgen(1-rho^2). Where does Pgen(rho^2) go?

Steve's P2 = Pref(rho^2). Where does Pref(1-rho^2) go?

Steve's 2sqrt(P1*P2) equals Pgen(rho^2) plus Pref(1-rho^2) so it didn't go anywhere. Steve just covered it up in his power equation.

Steve's equation: Ptot = P1 + P2 + 2sqrt(P1*P2) can be rewritten as:

Ptot = Pgen(1-rho^2) + Pref(rho^2) + Pgen(rho^2) + Pref(1-rho^2)

Pgen(1-rho^2) + Pgen(rho^2) obviously equals Pgen.

Pref(rho^2) + Pref(1-rho^2) obviously equals Pref.

Ptot obviously equals Pgen + Pref. Look familiar?
--
cheers, Cecil

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5368. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 17:41:34 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B16824E.60BFC573@IEEE.org>
Source record: 161567

Richard Clark wrote:
>
> On Wed, 30 May 2001 23:14:38 -0500, CAM <Cecil.A.Moore@IEEE.org>
> wrote:
>
> > Can we mentally break that wave (100v at 2a) into two waves, each
> > 50 volts at 1 amp?
>
> Hi Cecil,
>
> No.

Then why can Steve combine two waves, each 50 volts at 1 amp to get
the forward wave of 100 volts at 2 amps? If he can put it together
that way, why can't it be taken apart that way?
--
cheers, Cecil

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5369. Re: T-Tuner Design & Performance - New program.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 17:44:54 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B168316.683D960@IEEE.org>
Source record: 161568

"William E. Sabin" wrote:
>
> CAM wrote:
>
> > "William E. Sabin" wrote:
> > > 1) It (a conjugate match) requires a PA output resistance of 50 + j0 ohms.
> > >
> > Doesn't it (a conjugate match) only require an internal tank circuit that matches
> > 50 + j0 ohms to the PA output impedance?
>
> This kind of "matching" is not required for correct operation.

Nobody said it was, Bill. We are talking about what is necessary
for a conjugate match. So please read your statement and my
question again in the context of a conjugate match. thanks
--
cheers, Cecil

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5370. Re: T-Tuner Design & Performance - New program.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 17:56:02 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <iyvR6.306$I8.277550@nntp2.onemain.com>
Source record: 161569

Reg Edwards <g4fgq.regp@btinternet.com> wrote in message
news:9f5h7u$1lq$1@uranium.btinternet.com...
> NEW PROGRAM " T_TUNER.exe "
>
> This program assists with selecting maximum component values
> necessary to secure an impedance match when confronted with a
> specified wide range of feeder or antenna input impedances.
>
> For given coil and capacitor Q's, and power input, the power
> dissipated and lost in each component is calculated. Also all
> currents and voltages.
>
> Input and ouput image impedances are calculated. The program will
> demonstrate that the output image impedance is the conjugate of the
> feedline input imedance. By first of all setting Q values to
> infinity, it will also demonstrate that when a conjugate match
> exists at one end of a network a conjugate match will exist at the
> other end only when the network is lossless. Or conversely, if a
> conjugate match exists at one end of a lossy network, a conjugate
> match cannot exist at the other end.
>
> A timely program.

Reg, I'm concerned about your statement that in a network with attenuation a conjugate match cannot exist at both ends simultaneously. The Appendix 9A in Reflections II addresses this situation, explaining why a conjugate match can exist at both ends simultaneously.

I'm sending a copy of this appendix separately by email for your consideration.

73,

Walt, W2DU

5371. Re: T-Tuner Design & Performance - New program.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 18:23:12 UTC
From: richardharrison@webtv.net
Message-ID: <9094-3B168C10-3@storefull-111.iap.bryant.webtv.net>
Source record: 161572

Bill, W0IYH wrote:
"What is this all about? Why is it so important?"

Exactly my reaction when this topic previously appeared in this newsgroup. My experience was with commercial transmitters loaded to produce exactly the promised power, no more and no less. Maximum power transfer? It`s nuts!

The amateur mindset is different. The amateur wants all he can get from a transmitter without its early demise. That power hunger drives the maximum power transfer interest.

New principles are discovered, and new ways are invented to explain the old principles. Not every new idea is necessarily valid as everyone knows, but every new idea is guaranteed a negative reception from those who believe that it`s time to close the patent office.

Best regards, Richard Harrison, KB5WZI

5372. Gap antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 18:24:47 UTC
From: Harvey Easton <harveye@uwo.ca>
Message-ID: <3B168C6F.C8528AD5@uwo.ca>
Source record: 161570

I'm considering the purchase of a Gap Challenger antenna, and I'd like commentary on it from anyone who has had experience with Gap antenna's, pro & con. The concept seems like the right idea, but I'd like to hear personal experiences.

Thanks & 73's

Harvey

5373. Re: Gap antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 18:31:48 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B168E14.2389A8B6@IEEE.org>
Source record: 161571

Harvey Easton wrote:
> I'm considering the purchase of a Gap Challenger antenna, and I'd like
> commentary on it from anyone who has had experience with Gap antenna's,
> pro & con. The concept seems like the right idea, but I'd like to hear
> personal experiences.

Harvey, why not try a nice $20 dipole first?
--
cheers, Cecil

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5374. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 19:20:02 UTC
From: kb7qhc@home.com
Message-ID: <3b1695a0.1047794989@news.seanet.com>
Source record: 161573

On Thu, 31 May 2001 12:41:34 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>>
>> On Wed, 30 May 2001 23:14:38 -0500, CAM <Cecil.A.Moore@IEEE.org>
>> wrote:
>>
>> > Can we mentally break that wave (100v at 2a) into two waves, each
>> > 50 volts at 1 amp?
>>
>> Hi Cecil,
>>
>> No.
>
>Then why can Steve combine two waves, each 50 volts at 1 amp to get
>the forward wave of 100 volts at 2 amps? If he can put it together
>that way, why can't it be taken apart that way?

Hi Cecil,

This is an age old problem. Consider how easy it is to combine a drop
of ink with a glass of milk. Now try to separate the two. Your
question may be better handled with Mesh or Nodal analysis to provide
a more suitable answer.

73's
Richard Clark, KB7QHC

5375. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 19:28:39 UTC
From: kb7qhc@home.com
Message-ID: <3b17999f.1048817349@news.seanet.com>
Source record: 161574

On Thu, 31 May 2001 12:39:15 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

> Everyone agreed how
>they work. The only argument was whether they are a Wheatstone bridge
>or not.

Hi Cecil,

Physics is not a democracy subject to majority votes. The two
instruments (Bird or Bruene) operate identically from the perspective
of EITHER's paradigm.

73's
Richard Clark, KB7QHC

5376. Re: Gap antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 19:34:19 UTC
From: kb7qhc@home.com
Message-ID: <3b189bc4.1049366999@news.seanet.com>
Source record: 161575

On Thu, 31 May 2001 14:24:47 -0400, Harvey Easton <harveye@uwo.ca>
wrote:

>I'm considering the purchase of a Gap Challenger antenna, and I'd like
>commentary on it from anyone who has had experience with Gap antenna's,
>pro & con. The concept seems like the right idea, but I'd like to hear
>personal experiences.
>
>Thanks & 73's
>
>Harvey

Hi Harvey,

Don't count on it for its lowest band, performance-wise. Yes it will
match, but there are other considerations(like being heard or hearing
others).

I have the Gap Eagle and it has worked with bullet proof performance
(on its higher bands) through 6 years of rain and wind (and un-guyed
at that).

73's
Richard Clark, KB7QHC

5377. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 20:02:15 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B16A347.6C19C0E7@IEEE.org>
Source record: 161576

Richard Clark wrote:
> Physics is not a democracy subject to majority votes.

Who said it was? I was merely making an observation of what transpired.

> The two instruments (Bird or Bruene) operate identically from the perspective
> of EITHER's paradigm.

I agree, Richard, why did you think otherwise? That you are against me
no matter which side I'm on, speaks volumes.
--
cheers, Cecil

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5378. Re: Gap antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 20:19:06 UTC
From: Brian Reid <reidb@nbnet.nb.ca>
Message-ID: <3B16A75F.A2590C23@nbnet.nb.ca>
Source record: 161577

Harvey,
I had a Gap Titan, rugged as hell, had it on the back of my garage unguyed for 2 years, survived the ice storm of '98 up here in the northeast. That said, its a lot of money for a multiband antenna. If you have the room, save yourself a lot of money and put up a dipole.

Brian

Harvey Easton wrote:

> I'm considering the purchase of a Gap Challenger antenna, and I'd like
> commentary on it from anyone who has had experience with Gap antenna's,
> pro & con. The concept seems like the right idea, but I'd like to hear
> personal experiences.
>
> Thanks & 73's
>
> Harvey

5379. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 20:19:20 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B16A748.D3DBA065@IEEE.org>
Source record: 161578

Richard Clark wrote:
> This is an age old problem. Consider how easy it is to combine a drop
> of ink with a glass of milk. Now try to separate the two.

Shirley, you jest. Why do people like you object when I use Steve's
arguments but don't object when Steve uses them?

The ink is the modulation about which nobody cares a rat's patootie. What
I want to do is take the two glasses of inky milk that Steve used to
make that large glass of inky milk and pour that exact amount of milk
back into the two original glasses. It doesn't work, Richard. Why are
you trying to defend it? The sum of the parts is equal to the whole.
The whole is equal to the sum of the parts.

If a voltage/current/energy addition is not reversible, that raises a
red flag that something is wrong. After all, one should be able to divide
the associated electrons into two sets of electrons with each set containing
the same energy (if not the same inky modulation).
--
cheers, Cecil

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5380. Re: EZNEC modeling of hamsticks?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 20:38:21 UTC
From: Bill Turner <w7ti@jps.net>
Message-ID: <hpadhto7juh2rs10iscq882abs6fv33u1p@4ax.com>
Source record: 161579

On Wed, 30 May 2001 14:05:14 -0500, CAM <Cecil.A.Moore@IEEE.org> wrote:

>I can tell you the efficiency will be less than 1%. For every 100
>watts you put in, you will be lucky to get one watt out. Happy QRPing.

That figure of 1% is probably true using a HamStick on a car with its associated lossy ground, but he is using two HamSticks back to back. I'd be interested to hear a factual report (not just opinions) on the difference.

73, Bill W7TI

5381. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 21:07:26 UTC
From: kb7qhc@home.com
Message-ID: <3b16a92b.1052797562@news.seanet.com>
Source record: 161580

On Thu, 31 May 2001 15:19:20 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> This is an age old problem. Consider how easy it is to combine a drop
>> of ink with a glass of milk. Now try to separate the two.
>
>Shirley, you jest. Why do people like you object when I use Steve's
>arguments but don't object when Steve uses them?
>
>The ink is the modulation about which nobody cares a rat's patootie. What
>I want to do is take the two glasses of inky milk that Steve used to
>make that large glass of inky milk and pour that exact amount of milk
>back into the two original glasses. It doesn't work, Richard. Why are
>you trying to defend it? The sum of the parts is equal to the whole.
>The whole is equal to the sum of the parts.
>
>If a voltage/current/energy addition is not reversible, that raises a
>red flag that something is wrong. After all, one should be able to divide
>the associated electrons into two sets of electrons with each set containing
>the same energy (if not the same inky modulation).

Hi Cecil,

As your daughters suggest - chill out some.

This is not a conspiracy (sheesh), you can progress from a wavefront
acting as a multiplicity of waves towards a sink, but the sink could
as easily act as though those multiplicity of waves came from
ANYWHERE, and not strictly confined to the original configuration.

In other words, working backwards leads to an infinite number of
possibilities, only one of which is the original configuration. Thus,
progressing from the original configuration toward the sink yields a
unique solution and going in reverse yields an ambiguous one. Without
knowing the original state, you have no unique solution in the reverse
extrapolation.

Any experience with the "solutions" of complex Differentials/Integrals
will present the same problem of added constants of ambiguous and
indeterminate values for exactly the same reasons.

73's
Richard Clark, KB7QHC

5382. Re: T-Tuner Design & Performance - New program.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 21:35:46 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9f6dej$6g4$1@neptunium.btinternet.com>
Source record: 161581

Tdonaly wrote
> Reg wrote;
> >Input and ouput image impedances are calculated. The program
will
> >demonstrate that the output image impedance is the conjugate of
the
> >feedline input imedance. By first of all setting Q values to
> >infinity, it will also demonstrate that when a conjugate match
> >exists at one end of a network a conjugate match will exist at
the
> >other end only when the network is lossless. Or conversely, if a
> >conjugate match exists at one end of a lossy network, a
conjugate
> >match cannot exist at the other end.
> >
> >A timely program.
==============================
> I thought everyone already knew that. Why is it important,
anyway, except as
> a sure-fire way to start an argument between Walt and Steve?
==============================

Two points :-

(1) Very few people seem to know that or have ever even thought about it. From a practical point of view it is not important. I mentioned its timelyness in conjunction with presentation of the program merely because of the childlike acrimonious arguments posted on this newsgroup. But then, how much notice does anyone ever take about a little 71 K-bytes computer program.

(2) And I was hoping to STOP the futile argument between Walt and others rather than stoke up the fires. But from YOUR response I can see I am wasting my time on such niceties. But then, most of our lives are frittered away into nothingness anyway. So why shoud you or I be bothered with electrical trivialities anyway ? Let's get back to thumping the key.

Tom, I wish you best of health, the very best of family relationships and, most of all, good DX.

5383. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 21:46:33 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B16BBB9.63F34E02@IEEE.org>
Source record: 161582

Richard Clark wrote:
> In other words, working backwards leads to an infinite number of
> possibilities, only one of which is the original configuration.

Yes, but what if working backwards toward the *known* original
configuration yields an impossibility? Doesn't that raise a
red flag for you?
--
cheers, Cecil

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5384. Re: EZNEC modeling of hamsticks?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 21:50:14 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B16BC96.5D32E9EF@IEEE.org>
Source record: 161583

Bill Turner wrote:
>
> On Wed, 30 May 2001 14:05:14 -0500, CAM <Cecil.A.Moore@IEEE.org> wrote:
> >I can tell you the efficiency will be less than 1%. For every 100
> >watts you put in, you will be lucky to get one watt out. Happy QRPing.
>
> That figure of 1% is probably true using a HamStick on a car with its associated
> lossy ground, but he is using two HamSticks back to back. I'd be interested to
> hear a factual report (not just opinions) on the difference.

But remember he is using it in a vertical configuration and I'm assuming
he won't have it 1/2WL high. I somehow got the mental image of it leaning
up against the wall in a corner of his basement. :-)
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5385. Gamma Match Cap: What types can I use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 21:52:36 UTC
From: casey@dsl-only.net
Message-ID: <47343202.0105311352.22e01d93@posting.google.com>
Source record: 161584

Folks,

Combing the Handbook, the 'net, etc., I find only vague references to what sorts of caps are suitable for building a gamma match. I have seen "receiving type" (what does that mean?), "air variable" (expensive if you need more than a few), "coax" (would work in a pinch), and "not compression type".

Specifically, I'm trying to find out what types are suitable, what characteristics make them suitable, all while trying to minimize cost. Ceramic OK? How about ceramic variables? What voltage ratings would be suitable for running under 200W on a resonant loop?

Thanks for your suggestions!

73,

Casey, KS7J

5386. Re: T-Tuner Design & Performance - New program.

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 21:57:22 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <u5zR6.2146$C64.1345400@nntp1.onemain.com>
Source record: 161585

Reg Edwards <g4fgq.regp@btinternet.com> wrote in message
news:9f6dej$6g4$1@neptunium.btinternet.com...
>

> Two points :-
>
> (1) Very few people seem to know that or have ever even thought
> about it. From a practical point of view it is not important. I
> mentioned its timelyness in conjunction with presentation of the
> program merely because of the childlike acrimonious arguments
> posted on this newsgroup. But then, how much notice does anyone
> ever take about a little 71 K-bytes computer program.
>
> (2) And I was hoping to STOP the futile argument between Walt and
> others rather than stoke up the fires. But from YOUR response I can
> see I am wasting my time on such niceties. But then, most of our
> lives are frittered away into nothingness anyway. So why shoud you
> or I be bothered with electrical trivialities anyway ? Let's get
> back to thumping the key.
>
Reg, I downloaded your t-net program and it looks fine, except I see no way
for the correct attenuation factor determined by R/Q to be inserted
depending on the direction of the calculation. Do you not believe this is an
important issue for the sake of obaining the correct answer when calculating
from input to output?

And do you really mean this is a futile argument between me and others?

Walt, W2DU

5387. Re: Gamma Match Cap: What types can I use?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 21:58:34 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B16BE8A.2C5AC2BF@IEEE.org>
Source record: 161586

KS7J wrote:
> Combing the Handbook, the 'net, etc., I find only vague references to what sorts of
> caps are suitable for building a gamma match. I have seen "receiving type" (what does
> that mean?), "air variable" (expensive if you need more than a few), "coax"
> (would work in a pinch), and "not compression type".
>
> Specifically, I'm trying to find out what types are suitable, what characteristics
> make them suitable, all while trying to minimize cost. Ceramic OK? How about ceramic
> variables? What voltage ratings would be suitable for running under 200W on a
> resonant loop?

I have set ceramics on fire. Depending on your power level, two types you
can use are silver micas or doorknobs.

Why do you want to gamma feed a resonant loop?
--
cheers, Cecil

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5388. Re: Mantenna

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 22:01:06 UTC
From: Studebaker Haque <art6n9@yahoo.com>
Message-ID: <9f6f05fij1@bob.news.rcn.net>
Source record: 161587
Cross-posted to: alt.radio.scanner,alt.radio.scanner.uk,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.shortwave

Brought to us by the Procrastinators DX club - it should have been released
on April 1.

N2ERI - Art
"jamesm.stewart" <jamesm.stewart@ntlworld.com> wrote in message
news:U3AP6.2189$Tj4.626783@news2-win.server.ntlworld.com...
>
> > Stay Tuned For The Official Release!!
> >
> >
> no.what about womantenna...the one with dual discones
>
>

5389. Re: EZNEC modeling of hamsticks?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 22:11:32 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <9f6fhl$mg6$1@plutonium.btinternet.com>
Source record: 161588

Cecil wrote:
> Reg Edwards wrote:
> > If a hamstick is something like a helical antennna with a
loading
> > rod above it, it can be modelled with program HELICAL3
available by
> > downloading from following website.
==========
> Reg, how does your program handle a coil that has 30 close-spaced
> turns/inch on a 1/2 inch fiberglas coil form?
==========

Cecil, why don't you answer your own question by trying it. It's accuracy is of the same order as the acuracy of the data you feed into it.

The fiber (US spelling) coil form has very little to do with it. Just enter the dimensions into HELICAL3 and the program will make sufficiently accurate predictions. Program VERTLOAD does a similar job except that it starts with different input data. Program LOADCOIL also does a related job but it has the advantage of being able to slide the loading coil up and down the antenna to obtain maximum radiating efficiency. Coil height is lower than you imagine.

Should you find any of my programs give significant differences between predictions and what you actually measure, I implore you, as a good spur-jingling, gun-packing, 'John Wayne' Hollywood stature, Texan friend, to let me know.

****
Regards, Reg, G4FGQ
Free radio design & modelling software
http://www.btinternet.com/~g4fgq.regp

****

5390. Re: opinions please..

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 22:14:11 UTC
From: Matt <matt_patt123@yahoo.com>
Message-ID: <9f6f2r0bb3@enews3.newsguy.com>
Source record: 161593

I'm not a newbie..been in this hobby for close to 5 years now..Even though I'm just a No code tech..I just haven't taken the time upgrade my license.. And yes, the reason for my 2 yagi antennas is that I was to reach distant stations..say 100 miles or greater. But I also want to do some SSB FM work as well and I just wanted some opinions as to how I could go about doing this.

Thanks
Matt

"Roger Leone" <arleone@inreach.com> wrote in message news:B4lR6.41799$ca.57900@news.inreach.com...
> Matt:
>
> Stacking two horizontally polarized antennas will not result in a vertically
> polarized signal...it will still be horizontally polarized.
>
> Most 2 Meter operation is on FM. Almost all FM operation is done with
> vertically polarized antennas and unless you are down in a ravine, a simple
> vertical antenna will allow you to work every repeater within many miles.
> You will also be able to contact lots of locals on simplex. If there are
> distant stations that you cannot contact with a simple vertical antenna,
> then you might want to use a yagi with its elements in a vertical plane to
> give you vertical polarization.
>
> I am curious how you ended up with two yagi antennas before you got your
> feet wet on 2 meters. I hope it wasn't because of a pushy salesman.
>
> Good luck,
>
> Roger K6XQ
>
>

5391. Re: Directionality with whip antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 22:14:18 UTC
From: 'Doc <w5lz@oio.net>
Message-ID: <3B16C23A.3E150416@oio.net>
Source record: 161589
Cross-posted to: rec.radio.amateur.antenna,alt.ham-radio.vhf-uhf,alt.ham-radio.hf

David,
Find a Radio Amateur's Handbook, then look under
radio direction finding. There are several antenna
suggestions and most can be scaled for any frequency,
or frequency range.
'Doc

5392. Icom IC-706 MKIIG

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 22:26:23 UTC
From: John Cunningham <johngrac@surfsouth.com>
Message-ID: <iyzR6.216974$ho6.12723445@news5.aus1.giganews.com>
Source record: 161590

I want to buy a new IC-706MKIIG. Who got the best deal?
KE4QOP John

5393. 2-Meter Vertical Went Bonkers

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 22:30:42 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <d4gdhtgi4frujr8d7er0fpsfikoh0mgasc@4ax.com>
Source record: 161591

For the antenna guru's among us. I have a Diamond X-50 2-meter/440 base station antenna. I have used it for several years sitting on top of a stereo cabinet in my office where it worked great. I use it only on 2-meters. About a year ago, I installed it outside on a 10' mast next to the roof gutter. The small radials at the bottom (7" long) are located about 14" above the aluminum gutter at the nearest point. The antenna had been working just fine in that location for several months.

Then we had the gutters replaced. Same type, same thickness, even the same color. Now I can't get the swr under 3:1 no matter what I do. This is in the 2-meter band. The resonance point has moved up to 152 mHz (The antenna is not adjustable.) I have taken the antenna down and cleaned and examined it. Replaced the coax. Tried different length coax. Nothing helps. What could possibly have caused the resonance point to move up about 6 mHz?

My IC-746 starts shutting down at anything over 1.5:1. At 3:1 it is down to 30 watts (from 100.) I know I should raise the antenna up to get it away from the gutter, but it was working OK before. What is the minimum distance I should keep the radials above the gutters? 1/4-wave? 1/2-wave? More?

Dick - W6CCD

5394. Titanex GP160/10 or 80/10

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 22:48:21 UTC
From: f5idj@aol.com
Message-ID: <20010531184821.14727.00002432@ng-cm1.aol.com>
Source record: 161592

Hi, I'd like to receive any experiences with the vertical Titanex?
(www.titanex.de) Thank you
73 F5IDJ
valery@onetelnet.fr

5395. Re: EZNEC modeling of hamsticks?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 23:15:16 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B16D084.680B30C0@IEEE.org>
Source record: 161594

Reg Edwards wrote:
> Cecil, why don't you answer your own question by trying it.

I was just asking for information, Reg. The simplified
inductance estimation formula for a short fat coil is different
from the simplified estimation formula for a long skinny one.
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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5396. Re: High SWR with HF9V

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 23:24:04 UTC
From: Donald Munson <munsonjr@bellatlantic.net>
Message-ID: <ooAR6.2622$Uj5.959251@typhoon2.ba-dsg.net>
Source record: 161595

Ground

Yep, using 75 ohm cable between antenna iteself and the RG8 feeding
transceiver

And I have the manual.

Based on responses that is my task for Saturday AM. Going to take it down
and remeasure everything to be sure it is where it is supposed to be. We'll
see what that will do.

Don

Donald R. Putnick <dputnick@alumni.caltech.edu> wrote in message
news:9f5gbn$jkp@gap.cco.caltech.edu...
> Donald Munson <munsonjr@bellatlantic.net> wrote:
> [snip]
> >My problem is that I can not get the SWR into range. The lowest band is
17
> >meters and it is a respectable 1.5:1. 20 and 10 are around 3:1 and the
> >other bands are generally worse with 75 meters being 10:1! This is the
same
> >results without radials and with varying numbers of radials. Nothing
makes
> >a difference.
> [snip]
> >Any ideas as to what may be happening? I continually read posts in
various
> >places of people about using the HF9V without radials and getting good
> >results so I'm fairly sure this is NOT a normal response for this
antenna.
> >Don, KB4RAC
>
> And I thought I was having a hard time with my HF6V. A few questions for
> you, Don. Ground mount or roof mount? Are you using the 75 ohm matching
> coax? Do you have the assembly manual?
>
> don p KK6DP
> --
> Don Putnick
> dputnick@alumni.caltech.edu

5397. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 23:28:54 UTC
From: kb7qhc@home.com
Message-ID: <3b17cdb9.1062155128@news.seanet.com>
Source record: 161596

On Thu, 31 May 2001 16:46:33 -0500, CAM <Cecil.A.Moore@IEEE.org>
wrote:

>Richard Clark wrote:
>> In other words, working backwards leads to an infinite number of
>> possibilities, only one of which is the original configuration.
>
>Yes, but what if working backwards toward the *known* original
>configuration yields an impossibility? Doesn't that raise a
>red flag for you?

Hi Cecil,

Yes, but?

There is nothing inherently impossible about Huygen's principle except what I've already offered as this being an artifice that works very well.

Listen to yourself, we have an external condition that at the sink creates a situation that when run in reverse reveals the original condition is impossible? Yeah, sure, I see that flag waving now [backing slowly towards the door]. ;-)

73's
Richard Clark, KB7QHC

5398. Re: Superposition - H.W. Bode

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 23:34:04 UTC
From: CAM <Cecil.A.Moore@IEEE.org>
Message-ID: <3B16D4EC.1F1486BF@IEEE.org>
Source record: 161597

Richard Clark wrote:
> Listen to yourself, we have an external condition that at the sink
> creates a situation that when run in reverse reveals the original
> condition is impossible? Yeah, sure, I see that flag waving now
> [backing slowly towards the door]. ;-)

I'm just questioning, Richard, not asserting anything. Steve takes
50 volts at 1 amp and adds 50 volts at 1 amp and gets 100 volts at
2 amps. Why can't we take the 100 volts at 2 amps back to Steve's
original two waves of 50 volts at 1 amp each?
--
cheers, Cecil

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

5399. Re: Roy Lewallen Comments on 'Fractal Patents"

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 23:34:11 UTC
From: Chuck O'Neal <coneal@ultranet.com>
Message-ID: <9f6kfc$e5i$1@bob.news.rcn.net>
Source record: 161598

BS...pure BS....you guys need to get a life.....
I find this MOST humorous....since I'm producing,
profitably, (something I'm sure you are not familiar
with), many of these antennas!!!! HA...HA!!!
In a rather lucrative product line...find it if you can...
your turn to do some work...call me if you have a
problem with that!

5400. Diamond X-50A Antenna - Problems?

Newsgroup: rec.radio.amateur.antenna
Date: 2001-05-31 23:47:17 UTC
From: Dick Hughes <rhughes33@cableone.net>
Message-ID: <rlldht4c2mj39t94f395eudqmmaals2g8s@4ax.com>
Source record: 161599

I posted earlier about a problem with my Diamond X-50A 2m/70cm vertical. It seems to have jumped frequency about 6 mHz. Anyone had any problems with Diamond antennas? Something in the back of my mind tells me that I have read of problems in the past.

Dick - W6CCD